Chapter 22
Advertising:
It's in the Game

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ABSTRACT

The diffusion of digital media technologies since the 1990s has opened many new channels through which advertisers may reach consumers. This chapter examines the manifestations and effects of advertising in video games. Although early video games rarely and purposefully included advertising, its presence in many contemporary game genres (particularly sports and racing titles) is impossible to ignore. In-game advertising has become a more than $60 million dollar industry (Gaudiosi, 2006) and is expected to grow to almost $2 billion by 2010 (Shields, 2006). The present chapter covers the history and types of advertising in video games before shifting to a discussion of research on its effectiveness. The chapter concludes by highlighting the potential of advertising in games, from both applied and research perspectives.

A BRIEF HISTORY…

In-game advertising has a history almost as old as video games themselves, and like the medium in which they take place, games have gone through considerable changes over time. This section chronicles the history of in-game ads and touches on some of the reasons for its recent explosion in popularity. This is not meant to be an exhaustive history[1], but simply an overview noting key events of in-game advertisement history and providing some perspective on its recent developments.

In-game advertisements did not originate solely in early video games, but can be traced back to the coin-operated devices that preceded video games, including pinball. In 1964 there was a *Mustang* pinball machine that feature artwork resembling the car that Ford released that year, but it is not known if the brand name was licensed (Vedrashko, 2006). This may not be the very first example of gaming-related advertising, but it is certainly similar to some of the early and current

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instances of advertising in video games where the goal is not so much to sell a product unrelated to the game, but to incorporate a real product into a game environment to enhance the believability and authenticity of the experience.

Many examples of video game advertisements were brand placements fairly unrelated to the game content, however. A graphical version of the 1973 text game *Lunar Lander*, for example, included an element where the player could make a McDonalds appear by landing in a certain location (Lunar Lander, 2008). After the restaurant appears, the astronaut is shown ordering a Big Mac to go. Similar to *Mustang,* this example illustrates how real world brands can make it into virtual environments and games without the owner of the brand necessarily paying for the "advertisement." Some early game ads were for other products from the game company or designer. For instance, *Adventureland*, a game by Scott Adams released in 1978, featured an ad for an upcoming game of his called *Pirate Adventure* (In-game advertising, 2008).

Besides these early examples, of which there are too many examples to cover completely, one type of in-game advertisement, the advergame, really captures many of the early attempts at integrating advertisements into video games. Here, the term *advergame* is used to describe those games developed or modified primarily for the purpose of advertising, branding or promotion. Although many past and current games have product placements or billboards that are analogous to the real world, those advertisements are generally added for either additional revenue or to enhance the authenticity of the experience. True advergames in the purest sense are not subtle and started to appear in the early 1980s. A prime example is 1982's *Tooth Protector,* which was a mail order game from Crest Toothpaste producers Johnson & Johnson. In this game, the player controls a character known as the "Tooth Protector" who protects a row of teeth from food particles dropped by the "Snack Attackers." The Tooth Protector bounces the particles back at the Attackers; otherwise three hits to the same tooth causes it to decay and the player must save it with a toothbrush, dental floss, and rinse (Bogost, 2007). Another early and very rare example is a game called *Pepsi Invaders*, which was a clone of the popular *Space Invaders* produced by Atari for Coca-Cola in 1983. The game looked and played similarly to *Space Invaders*, but instead of shooting aliens the player's ship shot at letters spelling Pepsi and a Pepsi logo which replaced the original game's command ship that soared across the top of the screen. The game is notable for adopting the unusual in-game advertising strategy of the "attack ad," since the Pepsi name and logo were included in a negative context with no mention of the sponsoring brand (Vedrashko, 2006). A final advergame of this era that deserves mention is *Chase the Chuck Wagon*, produced by Spectravision for the Atari 2600 to promote Ralston Purina's Chuck Wagon Dog Food. Like *Tooth Protector*, this game was only available by mail. Its rarity has led some video game collectors to refer to searching for rare games as "chasing the chuck wagon" (Cassidy, 2002).

Advergames like these were produced during a relatively short period of time before the video game industry crash of 1983, which essentially put an end to their development for awhile. At least one game released before the golden age came to an end, however, transcended the standard definition of an advergame. For the arcade game *Tapper*, developers Bally-Midway came to Budweiser with the idea for a game featuring a bartender with the goal of serving drinks and picking up empty glasses. The Budweiser brand would be used for various bar items and on the arcade machine's artwork. The marketers of the game hoped this would make it easier to get the game into bars serving Budweiser, thereby increasing sales of the machine. This game was not developed solely to advertise Budweiser, but also to make a good game and sell arcade machines. The addition of the Budweiser brand was done to

increase sales in bars, and the brand also worked in the context of the game to make it seem more authentic. For this reason, *Tapper* is not a true advergame, since it does not meet the definition requirement of being developed solely to advertise the product. *Tapper's* ability to stand on its own without the branding was demonstrated clearly after some of the machines found their way into dedicated video game arcades. This created controversy, however, since minors had access to the game and there was a fear that it would promote underage drinking. To eliminate this problem, the company took out all Budweiser references and changed the name of the game to the generic *Root Beer Tapper* (Fox, 2006).

In the late 80s, video games had a massive resurgence in popularity due to the success of the Nintendo Entertainment System (NES) (Kent, 2001), and a new generation of advergames followed. One notable example is *Avoid the Noid*, which was released in 1989 for personal computers. The game was part of an advertising campaign by Domino's Pizza that included TV commercials featuring the Noid, a mischievous character who desired to make pizzas cold with a freeze ray. In the game, the player controlled a delivery boy who needed to get pizzas delivered to the top of an apartment building within 30 minutes or lose his job. During the trek, the player was confronted by the villainous Noid, who was subsequently featured in an NES game called *Yo! Noid* ("Yo! Noid Shrine," n.d.). Other games utilizing this model included *Cool Spot* and *Too Cool to Fool* featuring the 7-Up spot and the Frito-Lay character Chester Cheetah, respectively (Vedrashko, 2006). As in the golden age, there were also games like *Tapper* that might not be considered pure advergames but certainly contained their fair share of product placement. *Zool*, for example, was a platform game released for the Amiga in 1992 that featured Chupa Chups lollipops heavily in the first three "Sweet World" levels which looked like candy fantasy lands (Zool, 2008).

Today, the world of advertising in-games is not so simple, as there are a multitude of manifestations. For instance, banner advertisements on websites sometimes look like "games" encouraging web surfers to "swat the fly" or "punch the monkey" or engage in some similar action just to get a hit and transport them to a product site (usually). There are also numerous, simple advergames on websites for brands like M&M's and General Mills. An early example was a flash game on the M&M's site where the player used virtual M&M's to draw pictures that were judged in a weekly contest (Lindstrom, 2003).

Current generation graphics allow game characters and avatars to be dressed and accessorized with products for real brands that can be purchased in stores, like Gibson guitars in *Guitar Hero III* or Nike shoes in the NBA 2K6 basketball game (Burns, 2005). Due to the online capabilities of modern consoles, virtual billboards and movie posters can also be changed and updated throughout the life of a game. Entire virtual worlds like *Second Life* have their own markets complete with currencies and products in addition to advertising. Amidst all of these new dynamic changes, however, the tried and true advergame is still being developed and made available to consumers. A promotional effort by Burger King in 2006, for example, resulted in the King Games, three titles developed by Blitz Games for the Xbox and Xbox 360. The games, *Sneak King*, *Pocketbike Racer,* and *Big Bumpin'*, were available for an additional $3.99 with the purchase of a value meal. All together more than 3.2 million of the games were sold in the U.S. and Canada over a six week period (Nuttall, 2007).

One especially noteworthy example of a modern advergame is *Americas Army (AA)*. *AA* was developed for the purpose of recruiting by the United States Army. Since it was created for this purpose, as opposed to sell game units, it fits the definition of an advergame. *AA* is a tactical shooter in which the player controls a soldier in the Army (America's Army, 2008). The player

must complete training missions before going on to further levels, similar to the training they would receive in the real army. *AA* is owned by the U.S. government and is distributed for free online or on free DVDs at recruitment centers. It has gone through multiple updates and is available on platforms ranging from PC to mobile phone. *AA* is superior to most advergames which are generally simple, short and derivative. The game features 3-D environments, multiple soldier classes, and numerous training levels. *AA* takes advergaming to the next level and it remains to be seen where this type of advertising goes next.

These are merely a few examples of a much larger phenomenon. Advertising in and through video games is now quite common and expected to become even more widespread in coming years (Shields, 2006). There are many reasons for this spike in popularity, according to Nelson (2002), including increasing horizontal integration of media industries and resulting opportunities for cross promotion, unique characteristics of games like interactivity along with their shift toward greater realism, and the increasing appeal of games to diverse segments of the population. Games may now be the best advertising vehicle to reach young males in particular, in fact, given recent reports suggesting they now spend more on games than on other forms of media (Slocombe, 2005). To better understand contemporary in-game advertising and provide further examples, this chapter now shifts to a detailed discussion of types or categories of in-game advertising.

TYPES OF IN-GAME ADVERTISEMENTS

To date, little work has been done on attempting to comprehensively categorize the various types of advertising in games. As with any topic that spans more than one industry, attempts made come from multiple perspectives that often fail to acknowledge competing views. A more encompassing consideration of the many kinds of in-game advertising will help advance knowledge of this topic. This section will try to cover the different forms of in-game ads from a non-theoretical perspective, given the small amount of existing literature in this area. Distinctions between forms will be made simply if they seem different and not be based on whether or not they have a different impact. This can provide a foundation for future research examining the effects of in-game ads.

Some categorizations describe in-game ads in ways that borrow from advertising terms generally applied to other forms of media. Bogost (2007), for example, describes three approaches to advertising in general, including (1) demonstrative, (2) illustrative, and (3) associative, that may be applied to games. *Demonstrative* ads would showcase the use of a product's features and functions directly. This type can been seen in racing games like *Gran Turismo*, in which a driver may have to select between different vehicles based on their performance specifications approximating their real world abilities. *Illustrative* ads are more indirect than demonstrative ads and usually provide a context for the product while promoting its use. Using the same example, the incremental benefit of choosing a car with better specifications will be illustrated to the player through their performance in a race. *Associative* advertising seems to be the most prevalent form of in-game ad, especially in advergames, and it tries to make a connection between the product and niche market, lifestyle, or abstract ideal (like "being cool"). An example of this type of advertising is the snowmobile game *Arctic Racer 3D* on Nabisco's website. The game does little to demonstrate the features or illustrate the benefits of the product but instead tries to associate Nabisco products with snowmobiling and the attitudes people have toward that activity (e.g., it being fun, exciting, cool, etc.). Taken as a whole, this categorization scheme offers some insight into how in-game advertising can be used, but since it applies to all forms of advertising it does not address the unique qualities of in-game ads.

One of the first attempts at differentiating between types of in-game ads specifically breaks them down into two categories, giveaways and integral games (Gardner, 2001). *Giveaways* are described as games which have little to do with the brand being advertised and tend to be short, simple, and derivative of other classic games. A couple of examples would include the flash games *Invaders* and *Whipround* that were once featured on Pilsner Urquell's website (Bogost, 2005). *Invaders* is an obvious *Space Invaders* clone (like *Pepsi Invaders*) that replaces the space ship the player controls with a bottle of Pilsner Urquell beer. *Whipround* is a *Pac-Man* clone that features Pilsner Urquell beer bottles as energizer pellets allowing Pac-Man to temporarily eat his ghost enemies. These examples use a similar formula and feature a product placed in a game in an unnatural context for the product. *Integral games* vary from giveaways in that the game play requires the brand, product, or service being advertised. One example of an integral game is *Ericsson Ground Zero* in which the player needs to utilize an Ericsson mobile phone to track down items in a scavenger hunt. These two types are a good starting point for understanding how in-game ads can differ. However, they miss some types of advertising in games that are better explained through additional categories.

Another categorization outlines four approaches to video game advertising including (1) standard mainstream video games as a platform for advertising or product placement, (2) games as a part of a larger cross-media strategy, (3) custom-built advergames, and (4) edge cases (Maragos, 2005). This categorization approaches game advertising by focusing on the ways a company could attempt to advertise with a game as opposed to how necessary they are for the game play, like the previous categorization. The first way listed, *standard mainstream video games*, are non-advergames that are developed as games in and of themselves and include advertising. This may be too broad of a category because it would include both in-game product placement and more traditional advertising like billboards advertisements in racing games. *Games that are a part of a larger cross-media strategy*, the second category, includes instances when a movie and a game based on the movie are released simultaneously. The movie and the game for *Spiderman*, for instance, work as advertisements for each other. Although this is a common occurrence today, it is a borderline in-game advertisement since the whole game could be considered an advertisement. Third, *custom built advergames* are games designed around a product. Again, this may be too broad as it does not address whether the ads are, borrowing from the previous categorization, giveaways or integral. The final type listed, *edge cases,* seem to refer to advertising that does not fit into the other categories. Some of the examples given include the Pepsi-branded Nintendo DS released in Japan and *Virtual Magic Kingdom* which is a virtual re-creation of Disneyland. This type of advertising certainly takes place, but it is difficult to observe where in the game, if at all, the advertising takes place. This categorization adds some breadth to the previous classification scheme, however, due to the inclusion of games other than advergames.

A third categorization expands on outlining types of in-game ads and includes (1) advergames, (2) product placement, (3) real-world analogs, and (4) cross-promotion (Horwitz, 2004). *Advergames* have already been discussed, and here the term is used similarly to describe games that are sponsored by advertisers and developed as stand-alone games with branding messages. The main difference between this definition and the one listed in the first section of the chapter is that this one allows for games like *Tapper* to be considered an advergame. This is because the definition only states the game is sponsored by advertisers which allows for the game to be developed in order to sell games instead of just the product or brand. *Product placement* refers to appearance branded objects in a game, like name brand cars in the *Gran*

Turismo series. The *real-world analogs* category is the one that really expands on previous categorizations and includes virtual ads that would appear in the real world, without which the game may lose authenticity. This includes stadium boards covered with ads in sports games or billboards in racing games, which almost all new titles in these genres have. The fourth format, *cross-promotion*, is similar to the cross-media advertising type mentioned in the previous categorization but extends to product lines of a non-media nature. The example given by Horwitz is the use of the Diesel clothing line in the game *Devil May Cry 2*. The game featured a few sets of clothing for the playable characters featuring the Diesel logo, while Japanese Diesel stores featured the games characters in promotional material (IGN Staff, 2003). Cross-promotion advertising goes beyond product placement because the company that has its products featured within the game reciprocates by advertising for the game.

Nelson (2002), finally, adds more breadth to the above categorization schemes by discussing seven types of brand/product placements in video games: (1) sponsorship, (2) brands as major part of gameplay, (3) characters as branded images, (4) background images as self promotion for a game or game publisher's games, (5) background advertisements and product placements, (6) game players create own advertisements/brands through character customization, and (7) background—licensed music uses well known groups, sports commentators. *Sponsorship* refers to "cross selling" of a league, network, etc. such as a basketball game promoting the NBA. *Brands as major part of game play* is pretty much the same as integral games described above. C*haracters as branded images* seem like a borderline case that includes the use of real athletes in sports games. The next two types integrate background images in games that promote either the game/publisher (category 4) or other brands/products (category 5). The sixth type, *game players create own advertisements/brands through character customization*, seems borderline again and would include creating sponsors (possible in some NASCAR games) or selecting/attracting sponsors. The final *background* category refers to selling music, groups and other audio through a game by having it play during the game or be a major part of gameplay.

The categorizations above offer a fairly complete picture of the forms an in-game advertisement can take, but more must be said about their necessity, state, interactivity, and potential to be a part of larger online communities, which are important potential distinguishing features of ads in games compared to those in traditional media like television and film.

AD PROMINENCE

The first game-specific categorization was focused on the prominence of the brand featured in advergames and outlined giveaways versus integral game ads (Gardner, 2001). This categorization may be important to remember when investigating the effects of advergames on the player. For example, prominent integral ads such as having real brands of rackets in a tennis game that affect outcomes through varying properties and qualities may have a stronger effect on consumers than a brand or product that merely appears in the background of a game environment for associative purposes.

Static vs. Dynamic Ads

Another factor to keep in mind with in-game advertising is whether the ad is static or dynamic. A static in-game ad will not change over time, whereas a dynamic ad may. This feature is made easier today due to the Internet capabilities of modern consoles and personal computers. Static ads appear to be the most prominent form, but more dynamic ads may make an appearance as technology and the in-game advertising industry

grow. The examples listed throughout this chapter so far have been static ads, but technology has allowed for games that once featured static ads to be updated in order to accommodate dynamic advertisements. *SWAT 4*, for example, is a game that originally featured static ads, but if players downloaded the 1.1 patch (an update to a game), the game presented dynamic ad posters (Smith and Wood, 2005). The posters (for game rental services, TV show premieres, and soft drinks) did not display the same ad in the same place but rather altered the content and location of posters when a level was replayed. In a fascinating new twist on dynamic ad placement, U.S. President Barack Obama purchased space on billboards appearing in the racing video game *Burnout: Paradise* during his presidential campaign (Pigna, 2008).

Both product placement and real-world analog ads could be either static or dynamic. A good example of an integral product placement in an advergame is a basketball game designed to advertise Nike Shox as discussed by Chen and Ringel (as cited in Bogost, 2007). The game demonstrated the qualities of different shoes in the Shox lineup by having them impact how high a player could jump. This type of advertising is static as the shoe lineup was set at the game's release and did not change. However, a dynamic approach could be used in a more advanced basketball game such as one of the *NBA Live* or *NBA 2K* titles. This approach would allow the shoes featured in the game to be updated throughout the game's life to match any new styles released after the game. Similar to the posters in *SWAT 4,* the same dynamic model can be applied easily to billboards in video games so that they always feature a product that matches the player's profile (Gaudiosi, 2006). This consideration may seem to be of minor importance, but it could moderate an advertisement's impact since it can directly affect the number of exposures to the ad and whether the ad is customized or targeted to the player.

Ad Interactivity

One vitally important consideration is the interactivity of an in-game advertisement, given that interactivity is perhaps the most important feature distinguishing games from other forms of media entertainment. There are real-world analog billboards that players see as part of the environment and then there are billboards that the player can crash through or repel down like the Axe deodorant billboard in *Splinter Cell: Chaos Theory* (Jana, 2006). The same goes for product placements, which could be used by the player as a health source, a weapon, or in some other way. Jeep used an interactive product placement in *Tony Hawk's Pro Skater 2*, for example, that featured a Jeep vehicle in which the player could perform rail tricks for points (Wong, 2004). The game could have easily featured a Jeep the player could not interact with but the developers instead chose to include an interactive model. Considerations such as these have potential implications for the effects of in-game ads.

Ads in MMO Games

The presence of advertising in online multiplayer virtual worlds should also be considered. The most prominent example of an online virtual world with ads is *Second Life*, which probably would not fit most definitions of a video game but still functions as a game-like multiplayer online world. These types of virtual worlds can reach new heights of in-game advertising that includes future product promotion. The aloft Hotel being planned by Starwood Hotel & Resorts Worldwide, for example, was first built in *Second Life*, which allowed users to visit the hotel and give feedback to the developers before the completion of its real-world counterpart (Siklos, 2006). The potential for ads in online virtual worlds is vast, and massively multiplayer online role playing games (MMORPGs) are beginning to incorporate them. One borderline example is the Pizza Hut

command line available in *Everquest II* that allows players to order food from the restaurant's menu (Svennson, 2005). This is more of a feature than an advertisement, since players are not confronted by any kind of message but rather decide to type in the command of their own volition. However, if more of these borderline examples crop up, or if they begin to expand in their capabilities, it may be necessary to add them to a typology of in-game ads.

Clearly, there are many types of in-game advertisements. The most prominent forms seem to be advergames and product/brand placements, and the latter may include virtual objects, real-world analogs, and even characters and music in games. Each type of in-game ad can also be more or less necessary to gameplay (integral vs. giveaways), static or dynamic, and interactive or non-interactive. The dizzying number of forms in-game advertisements can take does not address one vitally important consideration for advertisers, however—the impact in-game ads have on consumers. What does the research evidence on this say?

RESEARCH EVIDENCE

Paralleling the rise of in-game advertising in this decade, several recent studies have been conducted on its effectiveness. Almost all of these studies have focused on brand placement using memory as the primary dependent variable. Research on memory of game ads parallels similar research that has been conducted on film and television (e.g., Karrh, 1998; McCarty, 2004; Yang, Roskos-Ewoldsen, & Roskos-Ewoldsen, 2004) and findings in these traditional media areas have been mixed, depending on factors such as story placement and brand type (Yang, Roskos-Ewoldsen, Dinu, & Arpan, 2006). Video games introduce several new considerations into this mix, chiefly interactivity. This section reviews research on advertising in games beginning with memory-related findings, given the important role of memory in past product placement research and in the process of persuasion (Perloff, 2007).

MEMORY/RECALL/ RECOGNITION EFFECTS

In one of the first published research articles on in-game advertising effects, Nelson (2002) explored how brand placement impacts recall through two experiments. In study one, she had 20 subjects play the console auto racing game *Grand Turismo 2* for 15 minutes. The game was selected because it contains an average of 10 advertisements per game in the form of billboards and sideboards (e.g., for Goodyear tires, Penzoil motor oil). Immediately following exposure to the game, subjects were given a free recall measure asking them to list any brands remembered from the game and it revealed that, on average, 4.53 brands were remembered. Additionally, all but one of the participants remembered the brand of car they chose, suggesting that brands that are a major part of game play are more highly recalled. A follow-up survey five months later revealed that many of the brands were forgotten, which points to a possible lack of long-term effects. In study two, Nelson used the same procedure but had subjects play a computer "racing game demo" that was selected because the content could be manipulated. She varied whether the ads were for local brands (e.g., Mad Dogs Sports Bar and Pizzeria) or national brands (e.g., Pepsi) and asked participants (N = 16) how many they recalled following exposure. On average, 30 percent of ads were remembered. The most remembered ads, interestingly, were for local/novel brands and brands personally relevant to the participants, with the local brands even being remembered by some after a delay. This suggests the potential value of localizing ads in video games, a practice that was once difficult given static programming but may now be possible given the rise of gam-

ing over online connections. Overall, Nelson's (2002) work offers some support for in-game advertising impacting memory and suggests two potential moderating variables: level of game play integration (major vs. minor) and type of brand (local/novel vs. national).

Nelson, Yaros, and Keum (2006) extended this initial research to include additional variables, including a slightly different brand type manipulation (fictional vs. real) and media context (playing vs. watching). Sixty-two participants in this study either played or watched a racing game in which they were exposed to two real brands (Coca-Cola, Gap Jeans) and two fictional brands (Crank Cola, Gem Jeans) a total of 24 times each. They then completed a free recall measure as in the previous study, and results indicated that real brands were more remembered than fictitious ones, though the authors believe this effect could diminish over longer game playing times or with dynamic in-game ads that change. Findings also revealed that playing impeded recall, as players recalled significantly fewer ads than watchers. The authors speculate that the cognitive resources required for active control of a video game may inhibit learning of embedded brands. While this might suggest that games are a less effective advertising vehicle than passive media due to their interactivity, Nelson et al. believe they can be similarly effective if ads are integrated through non-interactive "cut scenes" or in games in which players take turns, which are fairly common now. Players and watchers did not differ in game liking or perceived persuasion in this study, suggesting that watching does not negatively impact the experience of a game. The findings of this study address the crucial variable of interactivity and further advance understanding of brand type as a determinant of in-game advertising effectiveness.

In another racing game study involving brand placement and memory, Schneider and Cornwell (2005) explored the effects of ad prominence, game experience and flow on recall. Flow is a psychological state thought to be common during game play that involves focused attention, a sense of complete control, a distortion in sense of time passing, and lack of self consciousness (Csikszentmihalyi, 1990). For their study, Schneider and Cornwell had 46 players fill out a questionnaire that included measures of flow (multiple-item scale), brand recall (as in the previous two studies), and prior game experience after completing five laps in the PC racing game *Rallisport Challenge*. A content analysis conducted before the study coded the ads in the game according to whether they were subtle or prominent, depending on their size, color, attractiveness and position in the game environment. Results indicated that, as expected, prominent placements had higher recall and recognition levels than subtle placements. This suggests that not all placements are the same and points to the value of emphasizing certain brands, perhaps even as a part of gameplay. Expert players were also found to have higher recall levels than novices, perhaps because they can see more or do not have to focus as much on central action, allowing them to take in more peripheral content such as brands. Contrary to expectations, the authors found no relationship between flow and brand recognition/recall. They speculate that this may have been due to the game not being challenging enough for players to enter a flow state and recommend using different games and genres in future research.

MEMORY AND NON-RACING GAMES

A few recent studies have looked at memory of in-game advertising in genres other than racing. Chaney, Lin, and Chaney (2004) had 42 participants play an online first person shooter game that included billboards for fictional products (e.g., soda, pizza, digital camera) placed by the researcher. Each ad appeared once in separate high action areas of the game environment. After 15 minutes of play, participants completed unaided recall measures. Even though players remembered

seeing ads, half could not remember any specific products or brands, and only one participant remembered all of the information. The authors attribute this recall inability to the players' allocation of their mental resources to the game instead of peripheral details, which could be a function of limited information processing capacity and/or entering a "flow" state. Open-ended comments from players seem to support the latter explanation more than the first. Reasons for not remembering uncovered in this study included "too busy killing," "too focused," and "in the zone." Overall, these findings suggest a lack of recall effectiveness of in-game ads in atypical genres such as FPS games, where product placement may seem forced and unnatural.

In the most ambitious scholarly study of memory and in-game advertising to date, Yang, Roskos-Ewoldsen, Dinu, and Arpan (2006) examined the effectiveness of in-game ads in sports and racing titles. The researchers had 153 participants play either a soccer game (*FIFA 2002*) or driving game (*Formula 1 2001*) with comparable numbers of embedded ads for 20 minutes. Participants then completed either an implicit (word fragment task) or explicit (recognition task) memory measure. The implicit memory measure was a novel contribution of this study and was designed to get at unintentional or unconscious recognition of in-game advertising. Results indicated that participants had low levels of explicit memory but relatively high implicit memory of brands. This is important considering that prior research on in-game advertising had only used explicit measures. Yang et al.'s findings suggest that, although the interactive nature of games may distract players from explicitly remembering ads, they may still be remembered implicitly and have an effect on implicit brand attitude and later purchasing decisions. This obviously has important implications for scholars and practitioners and suggests the value of adding both explicit and implicit memory measures in future studies.

Recently, Skalski and Bracken (2008) adapted the above methodology and examined how implicit memory would be impacted by media *vividness*, defined as "the ability of a technology to produce a sensorially rich mediated environment" (Steuer, 1995, p. 41). Vividness (also called *media richness*) has already received attention in research on 3-D Web advertising (e.g., Li, Daugherty, & Biocca, 2003) and was examined in the context of video games by Skalski and Bracken by having ad content displayed in High Definition (HD) or Standard Definition (SD). Specifically, they had 110 participants either play or watch a basketball game (*NBA 2K8*) or a hockey game (*NHL 08*) in either HD or SD and then take an implicit recall test. Results indicated there was a difference in the raw number of ads recalled, as hockey players/viewers remembered significantly more ads. When the findings were broken down by the proportion of ads recalled, however, participants in the basketball condition remembered a higher percentage than those in the hockey condition (30% versus 21%). This is interesting considering the hockey game had more ads than the basketball one. It suggests that not only genre (e.g., sports) but type of game within a genre (e.g., basketball vs. hockey) can affect reactions to in-game advertisements. Having too many ads, as the hockey game perhaps did, may decrease the probability of a given ad being remembered. Contrary to predictions, however, experiencing a game ad in HD had no effect on recall beyond that of SD.

In sum, the scholarly research in this area reveals low to moderate but still noteworthy effects of in-game advertising on memory, and these findings parallel those of the game industry. A phone survey by Nielsen Entertainment and Activision, for example, indicated that more than a quarter (27%) of active male gamers could recall in-game advertising from the last game they played (Activision, 2004). The studies reviewed above identify several variables that may moderate this general effect, including interactivity, brand type, and game type. Two other variables of potential

importance from research will also now be considered—attitudes toward in-game advertising and the experience of presence.

ATTITUDES TOWARD IN-GAME ADVERTISING

Both Nelson (2002) and Chaney, Lin, and Chaney (2004) asked participants about their attitudes toward product placement in games. Nelson's findings indicated that players were generally favorable toward the practice of product placement in games, noting that it could add to realism. Open-ended comments showed these positive attitudes may not extend to certain genres and situations, however, such as having real brands in a fantasy world. While ads along a racetrack or in a stadium make sense, they do not make sense in a medieval forest, for example. As one gamer in the Nelson study put it: "Sports are ok—but it would be weird to see a Pepsi in *Mario Brothers*." Findings from the Chaney, Lin, and Chaney study on billboards in a first person shooter game (atypical genre) echo this sentiment. The vast majority of participants who recalled any products or brands were either neutral or unfavorable toward the idea that billboards enhanced the experience of a game. The results of these studies have clear implications for practitioners and underscore the importance of exercising caution in deciding what games to place ads in.

Findings from industry and commercial sources seem to conflict somewhat with the scholarly research above, however, and suggest that players are much more accepting of in-game ads. A 2006 advice column by a market research professional advises that players are tolerant of in-game advertising when the brand placement enhances the gaming experience by being both relevant and a part of the game experience (Kennish, 2006). While this seems to support academic knowledge, more recent industry research does not. Nielsen Games, for example, reported that 82% of 1,300 gamers reported that the gaming experience was as enjoyable with ads as without (Sandburg, 2008). While this may indicate that gamers are becoming more accepting of in-game ads, some question the validity of industry-commissioned reports, which are typically communicated through short press releases that do not include a full reportage of methods or results. As Anderson (2006) points out, "statements such as 'gamers like the realism advertising brings' are [often] trotted out uncritically, usually by those with ads to sell." As evidence for this claim, he examined a report by comScore Media Metrix that seemed to indicate that gamers don't mind in game ads and found that, actually, the findings showed that 63 percent of hard core gamers and 73 percent of casual gamers disagreed with the statement that "ads make games more realistic." Despite bold claims by industry sources, there appears to be resistance to at least some forms of in-game advertising among gamers, and a number of critics are suggesting that industry research be treated with a degree of skepticism (e.g., Sandburg, 2008).

THE ROLE OF PRESENCE

The psychological experience of presence (the "perceptual illusion of nonmediation," Lombard & Ditton, 1997) may also be an important determinant of the effectiveness of in-game advertising. Presence does positively influence outcomes associated with persuasion in general (Daugherty, Gangadharbatla, & Bright, in press) and 3-D advertising specifically (Li, Daugherty, & Biocca, 2002), and this effect should extend to games. In the previously described Nelson, Yaros, and Keum (2006) study, telepresence (specifically the sensation of "arrival" in the media environment) was found to positively mediate the relationship between game liking and perceived persuasion. Another study by Grigorovici and Constantin (2004) exposed participants to a game-like virtual environment with 3D billboards and product place-

ments and found that presence (engagement) was negatively associated with brand recall. This finding echoes those of the Chaney, Lin, and Chaney (2004) study reported earlier, which looked at experience of flow, and suggests that states such as presence and flow may distract from memory of certain content, which has also been shown in evidence from non-gaming contexts (e.g., Skalski, Tamborini, Glazer, & Smith, 2009). This does not mean that persuasion is negatively affected by those states, however—it may simply be that persuasion works through different mechanisms when users are highly immersed. Given that video games are perhaps the most likely of all popular media to create a sense of presence due to the combination of interactive control and increasingly realistic graphics and sounds they offer players (Tamborini & Skalski, 2006), telepresence and related concepts such as flow seem to be especially important considerations for future research on in-game advertising.

FUTURE DIRECTIONS FOR SCHOLARSHIP ON IN-GAME ADVERTISING

The above review of research literature on in-game advertising suggests several directions for future scholarship, and these and other considerations will be elaborated upon in this final section, including the value of using more direct outcome measures, the potential for modifying or "modding" game environments, and the importance of considering multiple forms of in-game ads and related technological changes.

Outcome Measures

As the above review suggests, most research thus far has focused on recall as the primary dependent variable. While recall is important, it does not exactly get at what ultimately interests many advertisers, i.e., persuading consumers to purchase products or at least have more favorable brand and product attitudes. Few investigations to date have considered outcomes beyond memory of products in games, however. The Nelson, Yaros, and Keum (2006) study did ask participants about "perceived persuasion," or the extent to which they believed each brand in the game affected their own brand attitudes, and their findings revealed greater perceived persuasion from real brands than fictitious brands. Yet this type of outcome measure only scratches the surface of what can and should be done in future research on in-game advertising effectiveness. The promise of implicit memory measures points to one intriguing avenue for future research. Yang, Roskos-Ewoldsen, Dinu, & Arpan (2006) point out that implicit memory can lead to implicit attitudes, which have been shown to be a good predictor of the related behavior (Fazio & Olson, 2003). Measuring and accounting for these attitudes will help in predicting behavior. The attitude-behavior relationship has been the subject of numerous theories and models in the persuasion literature, and as Perloff (2007) points out, the more researchers know about when and how attitudes influence behavior, the more useful their recommendations can be to real-life persuaders, including advertisers. The rise of online gaming has opened up the possibility for even more direct assessment of outcomes, such as "click throughs" based on user behavior toward ads (similar to what has been done in Web research), and these and other effectiveness measures should all be considered by researchers.

Ad "Modding"

Video games also open up unprecedented possibilities for researchers to manipulate how ads appear. Many titles now come with tools for "modding" or changing aspects of the game, and this can be accomplished with relative ease. The first author of this chapter, for example, modded the first-person shooter game *Unreal* for a summer grant project (Skalski, 2007). In a short time and

with no experience, he successfully added several realistic-looking signs onto the walls to one of the game's 3-D environments (including for Mountain Dew and his host university) using standard images found online (e.g., .jpg, .bmp files). Importantly, the signs responded realistically to actions in the game world due to the game's extant "engine" or core software—shooting a gun or firing a rocket at the signs, for example, left marks on them in expected ways without having to do any new programming. Chaney, Lin, and Chaney (2004) used a similar procedure to add the billboards in their study, and there are many other exciting possibilities for this type of modding. Researchers could, for example, manipulate brand frequency (e.g., placing different numbers of ads within a game environment) or type (e.g., changing a sign in a game to one of several different versions), to address issues raised in existing research as well as to explore new possibilities for advertising. As Blascovich et al. (2002) argue, virtual environment technology can overcome many deficiencies of traditional experiments, including lack of control. Video games are currently the most popular form of virtual environment technology and they open up a world of possibilities for advancing scholarship on advertising even beyond the video game context.

The Role of Types and Technologies

The review of types of in-game ads from earlier in this chapter calls attention to one obvious gap in the research literature: the lack of studies on new forms of advertising in games. The research thus far has followed the approach of studies on movies and television focusing on product and brand placement, but what about advergames or interactive in-game products or dynamic ads? These new forms of advertising have been given scant attention in the literature to date, but there are some signs that they are capturing the attention of scholars. Garau (2008), for example, did an experiment on the influence of advergames on player behavior and found a relationship between flow experienced during play and frequency of brand purchases as well as communicating about the advergame to others. Issues related to specific forms of in-game advertising should continue to be addressed.

Finally, the importance of considering technology in in-game advertising research cannot be understated. The history section in this chapter highlights advances that have occurred in in-game advertising over time due largely to technology, and these should continue into the future. Specific technologies to look out for, both at the hardware and software level, include:

- ***HDTV*:** The ongoing diffusion of High-Definition Television (HDTV) promises to bring highly vivid visuals to viewers and players. Microsoft has even dubbed the newest generation of gaming the "HD Era" (Cross, 2005). Although Skalski and Bracken (2008) found HD to have no effect on recall of brands in sports games, there is some evidence of its potential. In a study of television ads, Bracken (2007) found that viewers had more favorable attitudes towards brands presented in HD than the same brands presented in standard definition. This suggests that HD can increase ad effectiveness, and future work on HD games should focus on outcomes beyond recall (such as attitude and purchase intention) as well as ad placement in other game genres.
- ***3-D*:** Just as they came to movie theaters in the 1950s, stereoscopic 3-D visuals are coming to a game console near you. Sony recently announced that 3-D PlayStation 3 games will be released in 2009, and film director James Cameron has stated that he believes true 3-D is the future of gaming (Faylor, 2008). The implication for game advertising is that players may soon have brands and products seemingly jumping

off the screen and into their living rooms (with the help of special glasses, of course). Research into this development can extend existing work on 3-D interactive advertising effects (e.g., Li, Daugherty, & Biocca, 2002) by examining the additional impact of stereoscopy, which creates an even greater illusion of depth than conventional 3-D graphics.

- ***New interfaces*:** The controllers players use to interact with games have recently become a major focus of the game industry due to the success of the Nintendo Wii, the *Guitar Hero* series, Sony EyeToy games, and other titles controlled using lifelike movements. These types of interfaces hold tremendous potential from an advertising standpoint. It is not difficult to imagine future game experiences being designed around realistic control devices with a marked effect on performance, such as a branded Wiimote or club interface that positively affects a player's golf swing. At a more fundamental level, game controllers give players the ability to interact with objects in the game, possibly including brands and products. The extent to which games do this and the persuasive effects of this type of interaction is an important consideration for researchers.
- ***Custom characters and virtual products*:** A key development highlighted in the types section of this chapter is the ability of games to not only show products but to have consumers actually experience them in virtual form, through the types of interfaces just discussed. Gaudiosi (2006) speculates about the persuasive effects of driving the latest Porsche, outfitting one's character in Rocawear, or even wearing a real brand of sneakers in a game that increases the dexterity of one's avatar. These are empirical questions, and avatar creation programs are diffusing widely, both in games and at the console level. Sony's PlayStation Network and Microsoft's Xbox Live service recently added customizable avatars, for example, to compete with Nintendo's popular Miis, and both plan to make branded clothing available for outfitting the characters (Lovison, 2009). Future research should examine the effectiveness of these types of initiatives along with the persuasive effects of virtual product use.
- ***Virtual reality (VR)*:** The technology with the ultimate telepresence-inducing potential is undoubtedly virtual reality (VR), which promises to completely isolate media users from their surrounding environment using goggles, gloves, and other immersive hardware (Tamborini et al., 2004). Although VR was a buzzword in the early 1990s, the hype surrounding it has been tempered by the poor performance and failure of VR initiatives (Ebersole, 1997). Even if it never diffuses widely, VR still represents a way for game and advertising researchers to create a strong manipulation of "being there" for theory testing. And if VR does take off, it has the potential to make players feel closer than ever to brands and products.
- ***Mixed reality (MR)*:** Mixed reality systems are emerging technologies that combine virtual images with images of the real world (Freeman, Steed, & Zhou, 2005). As with VR, MR users typically wear goggles, but instead of only seeing a virtual environment they see virtual objects in their physical environment. In other words, MR goggles are like eyeglasses with the capability of displaying computer imagery in selected areas. A gaming application of this technology developed at the University of Singapore is *Human Pacman,* which superimposes graphics from the classic arcade game *Pac-Man* (such as dots and power-ups) onto city streets and buildings.

Players then choose to be either Pac-Man or a ghost and physically walk the streets playing the game (Sandhana, 2005). The potential for these games is both amazing and frightening (imagine, for example, seeing gamers running around the streets "shooting at" virtual foes that only they can see), but it has obvious benefits for advertisers. It would allow them to place gamer-targeted messages such as virtual billboards in real-world settings.

- ***Mobile devices*:** Gaming on cell phones and other mobile devices is expected to grow rapidly in coming years, due to factors such as the increasing technological ability of phones to deliver quality games and the general affordability of mobile titles (Perez, 2008). Mobile games have the potential to deliver advertisements "on the go," and the vast capabilities of contemporary cell phones are being put to even more innovative advertising uses. One example is a game called *Zhouma 101* developed by researchers in Taipei. To take part in this multiplayer experience, gamers with a camera phone stand outside of a large city building with video screens at a specified time and are given a topic to photograph. They then have a set amount to rush around the city and shoot the best image they can find of it. The results are displayed prominently on the building when time is up, and both players and spectators are given the opportunity to vote on a winner (Jehmlich, 2007). The advertising connection is that players are given brands to shoot (e.g., 7-11 in one contest), which forces them to attend to ads and then engagingly shows their photos of the ads or brands to a mass audience at the end. This type of "pervasive gaming" experience could be extended to getting players to go to particular stores or to take part in other behaviors beneficial to advertisers.
- ***Online gaming*:** Gaming over the Internet, finally, intersects with many of the new advertising technologies previously discussed. It can be used to dynamically update ads in a game, as mentioned earlier, and also to bring players together online in social and collaborate ways, perhaps even through the types of custom avatars discussed in this section. The *Second Life* community illustrates much of the potential inherent in online advertising. Virtual stores with regularly updated merchandise and the capability for users to purchase virtual and real products may be incorporated into games just as they are in *Second Life*. The continuing diffusion of broadband Internet access will only increase the advertising possibilities inherent in online gaming as well as its importance to gaming in general.

All of the above innovations hold great promise for future advertising and promotion. They are looming on the horizon, if not here already, and demand the attention of researchers. This chapter has reviewed the history and types of advertising in games along with study findings and considerations for future research. There is still much to be learned about this burgeoning area and researchers must answer the call, to increase understanding and aid future development. As Nike's famous slogan says, "Just Do It."

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ENDNOTE

[1] For a more exhaustive history, see the advergames chapter in *Persuasive Games: The Expressive Power of Video Games* (Bogost, 2007).