CAN EVERY BRAND WIN WITH IN-GAME ADVERTISING?
THE ROLE OF BRAND FAMILIARITY

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ABSTRACT

An online experiment was conducted to study the effects of brand placements in computer games on brand attitude as well as game attitude (N = 521; between subject design: familiar vs. unfamiliar brands vs. no brand). Results show that particularly unfamiliar brands can achieve a better attitude, while the attitude towards the familiar brand worsens as a result of ad placements. In any case, the game will lose as a result of the integration of advertising: the attitude towards the game worsens due to ad placements. However, these effects were not moderated by ad skepticism.

INTRODUCTION

In the last decade, computer games have been discovered for marketing purposes, with a steady rise in the number of companies placing their brands, products or advertising messages in computer games (Nelson 2005; Nelson, Keum, and Yaros 2004; Schmieder 2005; Wan and Youn 2004). Analysts assume that hundreds of millions of dollars were already earned in 2004 with advertising and product placements in computer games (Leeper 2004; Nelson et al. 2004). There are two kinds of advertisements in computer games: ad-games and in-game advertising. Ad-games are primarily developed with the aim of mediating advertising messages and brand data (Mallinckrodt and Mizerski 2007). In the process, the brand or product takes center stage in the game and the game rules are structured around the advertising message (Chen and Ringel 2001). By contrast, for in-game advertising the products and brands recede behind the game play, e.g. advertising boards in a stadium (Nelson 2005). The game and its intrinsic activities remain the main focus. This kind of advertising is not unlike the product placement in films or television programs. In fact, certain similarities can be found between the two forms of communication (cf., Yang et al. 2006 for a more detailed discussion).

In recent years several studies have been published on the acceptance of advertising in computer games (in-game advertising) and their impact on the recall of brands (Hernandez, Chapa, Minor, Maldonado, & Barranzuela, 2004; Nelson, Keum, & Yaros, 2004; Schneider & Cornwell, 2005). Although the results of these studies provide insights into how in-game advertising works, still very little is known about how consumers process brands in computer games and which impact in-game advertising can have on the attitude towards the brand advertised (Daugherty, 2004; Nelson, Keum, & Yaros, 2004; Nelson, Yaros, & Keum, 2006; Yang, Roskos-Ewoldsen, Dinu, & Arpan, 2006). Consequently, this study will examine the impact of in-game advertising on the attitude towards the advertised brand and the attitude towards the computer game. Besides this, we are interested in the impact of brand familiarity on the effects of in-game advertising.

HYPOTHESES DEVELOPMENT

Brand memory

The majority of the studies addressing the impact of in-game advertising examine effects on brand memory. Recently, Yang, Roskos-Ewoldsen, Dinu, and Arpan (2006) succeeded in demonstrating that the participant’s implicit and explicit memory for brands was influenced by in-game advertising. For explicit memory, it emerges that, on average, about one-third of the brands in computer games can be recalled immediately after playing the game (almost 25 percent,
Hernandez & Minor, 2006; almost 30 percent, Nelson, 2002). Five months after playing, however, only 10-15 percent of the brands can still be recalled (Nelson, 2002). In response to the question as to the extent to which the recall of an advertised brand depends on the brand’s familiarity, the results are inconsistent. In her exploratory study Nelson (2002) found that local brands are recalled more easily than national brands. She explains the result with the novelty of local brands. They arouse more attention and therefore can be recalled more easily (Rothermund & Wentura, 2004). However, another study by Nelson, Yaros, and Keum (2006) suggests that more familiar brands can be recalled more easily than their less well-known counterparts. Here, the authors found differences in the recall of real and fictitious brands: well-known brands can be recalled more easily than fictitious ones. They surmise that well-known brands are accessible attitude objects which automatically attract attention and can thus be recalled more easily than fictitious brands (Nelson, Yaros, & Keum, 2006). Furthermore, better recall for familiar brands could also be explained with models of cognitive psychology: a popular memory model suggests that memory content is stored in the form of mental networks (Raaijmakers & Shiffrin, 1992; Rumelhart, Lindsay, & Norman, 1972). The retention of two familiar objects already existing in this network should thus come more naturally than the retention of unknown brands. For these brands, not only does the connection between the game and the brand have to be established, but also data for the brand. This leads us to the following hypothesis:

**H1**  
Familiar brands are recalled to a greater extent than unfamiliar brands.

**Attitude toward the advertised brand**

In addition to the generation of brand awareness, the improvement of the brand attitude is frequently the aim of brand placement in computer games (Nelson, 2005). Indeed, the results of some studies also indicate that brands are perceived more positively through their placement in computer games. For example, Glass (2007) recorded implicit brand attitudes by way of an implicit association test directly after playing a computer game with advertising. As a result, the participants evaluated the brands advertised in the game more positively than the brands not advertised in the game.

Nelson, Yaros, and Keum (2006) recorded the explicit perceived persuasion and additionally distinguished between the effects on real and on fictitious brands. Their results show that the participants recorded a similarly high perceived persuasion for both real and fictitious brands. Nelson, Yaros, and Keum (2006) refer to the mere exposure effect as an explanation; this signifies an attitude improvement towards an object due to the sheer, repeated perception of the object (cf., Fang, Singh, & Ahluwalia, 2007). As the contacts with the unfamiliar brands in the game represented the participants’ first experiences with the brands in question, their influence could thus have been stronger than for the well-known brands. Furthermore, one can assume that a stable attitude towards the brand already exists for familiar brands before playing the game. Thus, the influence of additional information through further advertising contacts tends to be low. This points to a weak influence of in-game advertising on familiar brands (Machleit & Wilson, 1988; Moore & Hutchinson, 1983). In contrast, for unfamiliar brands the attitude prior to the contact with the advertising is less stable. Consequently, the advertising contacts for unknown brands are an important source of information and a basis for attitude formation (Machleit, Madden, & Allen, 1990; Mitchell & Olson, 1981). From this follows our assumption that the effect of in-game advertising is greater for unfamiliar brands than for familiar.
**H2**  Consumer’s attitude towards the advertised brand after playing the game will improve more strongly in the case of the unfamiliar brand than in the case of the familiar brand.

**Attitude toward the computer game**

Ads embedded in computer games could lead to reactance and hence the rejection of the game by the players (Nelson, Keum, & Yaros, 2004). In simple terms, reactance denotes a negative reaction to persuasion and coercion that restricts a person’s freedom, although that person expects a degree of freedom (Brehm & Brehm, 1981). The attempt to convince people by means of ad placements can be interpreted as such a restriction and consequently trigger negative reactions (Edwards, Li, & Lee, 2002; Robertson & Rossiter, 1974). Just which reactions the ad placements provoke depends amongst other things on whether the brand placement offers value to the game (Nelson, 2002) and the extent to which the brand placement disrupts the flow of the game (Hernandez, Chapa, Minor, Maldonado, & Barranzuela, 2004). In this study, billboards that do not make a substantial contribution to the course of the game are embedded in a computer game. As a result, we expect that:

**H3**  Brand placement will decrease the consumer’s attitude towards the game.

**METHOD**

The study was arranged as between subject design with the factor brand placement (familiar brand vs. unfamiliar brand vs. no brand placement/control group). The first-person shooter game “Counter Strike” was chosen for this study as this genre is the most popular in multiplayer games (Chaney, Lin, & Chaney, 2004). Cola brands were selected as familiar and unfamiliar labels. This resulted from the consideration that there is a functional affiliation between cola drinks and the game Counter Strike (Dahlen, 2005): preliminary talks with Counter Strike players revealed that they often drink cola whilst playing. We chose Coca-Cola as familiar brand: it ranks among the most well-known brands. We can assume that most people have a strong (positive or negative) attitude to this brand. The contrary applies to Jolt Cola, which we chose as unfamiliar brand. Most people (in Germany) have never tried Jolt Cola which leads us to assume that only very few firm memory content have been embedded with regard to Jolt Cola and only weak attitudes. As the stimulus, a frequently used Counter-Strike map was modified (six billboards were inserted, see figure 1). By this means, three variants of the map to be played emerged: game environments were created with Coca-Cola or Jolt Cola advertising for both treatment groups. A map without any advertising was arranged for the control group.

The participants were solicited through an online forum for counter strike players ($N = 521$). The sample reflects the typical players of first-person shooter games (Fattah & Paul, 2002): Only 1.4% were women, participants were rather young ($M = 19.9$ ($SD = 4.9$)) and had a high level of education. A link on the sites directed them to the questionnaire. Participants were assigned randomly to the experimental groups (familiar brand: $n = 179$; unfamiliar brand: $n = 152$; control group: $n = 190$) and then answered a questionnaire. Afterwards, they could download the modified map and play. Upon completion of the game, the players filled out a final questionnaire. We controlled for repeat visits via recording the IP addresses of the participants. All attitudinal measures were based on Batra and Ahtola (1990). The factor analysis across all eight items extracted for all attitudinal measures produced one factor according to the Kaiser criterion (at least 67.8% explained variance; all Cronbach’s $\alpha \geq .89$). Brand imagery was recorded by three
items according to Ruge (1988). Additionally, ad skepticism was recorded based on Obermiller and Spangenberg (1998) (one factor, 50.14 % explained variance; Cronbach’s $\alpha = .85$).

RESULTS

Manipulation Check. As expected, Coca-Cola was more familiar in our sample and is consumed more often than Jolt Cola. Furthermore, the participants’ brand imagery of Coca-Cola is significantly clearer, more distinct and more easily accessible than that of Jolt Cola. Hence, the manipulation of brand familiarity was successful.

Brand memory. In all, 68.3 % of all participants could recall the brand correctly. For the familiar brand, 71 % of the participants recalled the brand Coca-Cola correctly. In contrast, only 60.4 % could recall the brand Jolt Cola correctly. The result of comparing the recall values of both conditions supports hypothesis 1 ($\chi^2 (1) = 3.98, p = .046$).

Attitude toward the advertised brand. The following analysis only includes participants who recalled the advertised brand correctly. With regard to the attitude towards the advertised brand, in hypothesis 2 we surmised that unfamiliar brands benefit from in-game advertising to a greater extent than familiar brands do. However, both advertised brands should be perceived more positively after playing the game than before. In order to test this hypothesis, a repeated measurement ANOVA was conducted with the attitude towards the brand as a within-subject factor and familiar vs. unfamiliar brand condition as a between-subject factor (see figure 2). Contrary to our expectations, the main effect was not significant ($F (1, 295) = 1.01, p = .316$). However, the ANOVA revealed a highly significant interaction effect for the attitude toward the brand and brand familiarity ($F (1, 295) = 27.00, p < .001, \eta^2 = .085$): the effect of a positive attitude which we had expected after playing the game only became apparent for the unfamiliar brand. Instead, the familiar brand was perceived more negatively after contact with the in-game advertising (within-subject test: familiar brand $T (123) = 3.99, p < .001$, Cohen’s $d = 0.61$; unfamiliar brand $T (71) = 2.79, p = .007, d = 0.38$).

In order to examine whether these effects are possibly being modified by ad skepticism, a regression analysis was carried out for the unfamiliar and familiar brand with the brand attitude after playing the game as a dependent variable and the independent variables brand attitude prior to playing the game and the interaction of ad skepticism and brand attitude prior to playing the game (Baron & Kenny, 1986). The interaction proved not significant for both of the brands ($p \geq .637$). In other words, the general skepticism towards advertising does not moderate the influence of brand familiarity on attitude changes.

Attitude toward the computer game. In hypothesis 3, we surmise that the brand placement in a computer game will decrease the attitude toward the game. A repeated measurement ANOVA was conducted, with the attitude towards the game as a within-subject factor and the familiar brand vs. unfamiliar brand vs. control group condition as a between-subject factor (see figure 3). As expected, the ANOVA revealed a highly significant interaction effect for the brand placement condition and attitude toward the game ($F (2, 217) = 7.21, p < .001, \eta^2 = .062$). An additional within-subject comparison of the game attitude prior to and after playing the game for all three placement conditions (familiar brand vs. unfamiliar brand vs. no brand) reveals that the game attitude deteriorates significantly through both brand placements (within-subject test: familiar brand $T (170) = 11.08, p < .001, d = 1.136$; unfamiliar brand $T (140) = 7.77, p < .001, d = 0.70$). This effect is greater for the placement of the familiar brand than for that of the unfamiliar brand. Attitude did not change in the control group ($T (180) < 1, p = .604, d = 0.06$). These results thus support our hypothesis 3.
DISCUSSION AND IMPLICATIONS

The results of this study illustrate that brands do not benefit from the placement in computer games per se: whereas the unfamiliar brand is assessed as positive after playing the game, the players’ attitude towards the familiar brand deteriorates. This effect seems to be stable: the results of a follow up study with a different treatment revealed the similar attitudinal pattern. However, we exclusively recorded explicit attitudinal measures, which could consciously be influenced by people who reject in-game advertising. The finding that general ad skepticism did not influence the effects in our study argues against such an alternative explanation. However, to finally rule out reactance effects, the implicit measurement of brand attitudes would be useful (Glass, 2007). Furthermore, the results regarding the effects on liking the game seem conclusive: brand placement deteriorates players’ attitude towards the game. This is the case to a greater extent if a familiar brand is integrated into the game. Which other variables influence this effect, however, remains open. Nevertheless, we do know that the perceived congruence between the brand and the event influences the acceptance of the brand placement from the research on sponsoring (Cornwell, Humphreys, Maguire, Weeks, & Tellegen, 2006; Gwinner & Eaton, 1999).

As regards brand memory, the proportion of participants who were able to recall the advertised brands in this study correctly is considerably higher than in previous studies (Hernandez & Minor, 2006; Nelson, Yaros, & Keum, 2006). This is possibly an effect of the kind of computer game: the player in our study moved through the game environment from a first-person perspective. The game environment may have been perceived more intensively as a result.

What are the implications of our findings for the practical use of in-game advertising? Firstly, opportunities and risks become apparent for the communication of brands. Especially, brands for which there are no strong attitudes or images for potential consumers can particularly benefit from their placement in computer games. However, our results also suggest that primarily strong, well-known brands cannot readily expect positive effects. Secondly, it is also apparent that the manufacturers and publishers of computer games are also taking a risk with brand placements in that their game may be rejected by the target group. Whether this effect can be influenced by a specific selection in the placement of the brands as yet is unclear. The familiarity of the brand at least had only little influence on the negative effect of the brand placement on players’ opinion of the game.
REFERENCES


