

# Brand Prominence in Advergames: Effects on Children's Explicit and Implicit Memory

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## 1 Introduction

Increasingly, advertisers use techniques that integrate persuasive messages into editorial content, resulting in blurred boundaries between advertising, entertainment, and information (Raney et al., 2003). Many of these techniques aim to reach children: Advergames, branded websites, and brand placements have invaded media targeted toward children (Calvert, 2008; Moore, 2004).

This study focuses on advergames, a popular form of non-traditional marketing. An advergame is a custom-built online game designed to promote a company's brand (Lee et al., 2009; Lee and Youn, 2008). Content analysis of the top 100 advertisers' websites showed that 29 of these companies had a total of 294 advergames on their websites (Lee and Youn, 2008).

It is generally assumed that children have difficulty recognizing the commercial nature of advergames, which may make them more susceptible to persuasion (Livingstone, 2009; Nairn and Fine, 2008; Rozendaal et al., 2011). Moreover, these games are often highly entertaining, interactive and immersive, which makes them very attractive. Children spend a lot of time playing online advergames (Kaiser Family Foundation, 2006). During game play, they are constantly exposed to the integrated brands. Advergames are therefore assumed to be very effective in increasing explicit brand memory.

In addition, children's immersion in the game is likely to trigger automatic processing. This type of processing is characterized by a minimal level of cognitive elaboration. It occurs automatically and without active attention (Auty and Lewis, 2004; Buijzen et al., 2010; Yang et al., 2006). Advergames may thus be effective, also when children may not be devoting their full attention to the (subtly) embedded brands.

Some studies have shown that advergames and brand placement in movies are indeed effective among children. Exposure to these advertising formats increased children's brand awareness and preferences (Auty and Lewis, 2004;

Mallinckrodt and Mizerski, 2007; Van Reijmersdal et al., 2010). However, very little is known about the effects of these marketing techniques on children's brand memory. Insights are lacking as to how a defining characteristic of these techniques - that is the prominence of brands within the game - affects children's processing. These insights are important for our theoretical understanding of this increasingly popular phenomenon. Therefore, the present study examined the effects of brand prominence in an advergame on children's (7-12 years old) explicit and implicit brand memory.

## **2 Effects of brand prominence**

A brand is prominently placed in a game when it is made highly visible by virtue of size or position on the screen or its centrality to the action in the scene (Gupta and Lord, 1998). Thus, the size or position of the brand, or its importance for the story determines its prominence, which may determine its effects. The brand is placed subtly when it is small in size or provides a background prop outside the main field of visual focus (Gupta and Lord, 1998). The effects of brand prominence on children's brand memory of non-traditional marketing techniques, such as advergames, have not yet been studied.

Borrowing from the adult literature may help predict the effects of prominence on children's brand memory. Adult research has shown that prominence of placements positively affects explicit memory of both the placement and the brand. Prominent placements capture audience attention, providing an information processing advantage for prominent compared to subtle placements, making the brand more likely to be seen, stored, and retrieved from memory (Nelson, 2002; Schneider and Cornwell, 2005; Yang and Roskos-Ewoldsen, 2007).

The effects of prominence in terms of the brand's importance to the narrative can be explained using the landscape model (Van den Broek et al., 1999; Yang and Roskos-Ewoldsen, 2007). Audiences are continually trying to understand the narrative by focusing on information that is central to the story. In order to comprehend the narrative, this information is activated in the brain and processed. Due to limited attentional resources, other information receives less attention. This means that not all information is processed and activated to the same extent. If the brand is central to the scene, this information is activated and elaborated at the highest level, resulting in greater brand memory. Other information in the scene receives a lower level of activation as it is not necessary to comprehend the narrative.

The landscape model has been applied to adults' processing of brand placements in movies (Yang and Roskos-Ewoldsen, 2007), but it may also explain the effects of brand prominence in advergames. Similar to movies, advergames con-

tain a narrative. Moreover, when playing an advergence, the child must take action to achieve certain goals. If the brand is an integral part of this action, game comprehension can be achieved only via a strong focus on the brand, leading to the activation of brand information in the brain.

The question remains whether brand prominence has the same effect on children as adults. From the extensive literature on the effects of traditional advertising targeted at children, it is apparent that children process persuasive information fundamentally different than adults, on account of their immature social and cognitive development (John, 1999; Rozendaal et al., 2010). The landscape model assumes an adult level of cognitive abilities. However, children's limited working memory capacities and attention directing skills may affect the way they process prominent placements. Keeping track of the narrative by focusing on relevant information assumes that attention is deliberately directed toward important information. But, children may lack the ability to distinguish between relevant and irrelevant information. When playing an advergence, children may be so distracted by the game itself that even prominent placements go unnoticed.

Further, if prominent placements do successfully attract their attention, children's limited working memory capacity may prevent the brand from being processed while simultaneously playing the game (Luciana and Nelson, 1998). The game play may take up all available mental resources leaving little cognitive capacity remaining to process and store brand information (Buijzen et al., 2010). Therefore, prominence may exert differential effects on children than adults.

As the effect of brand prominence in advergimes on explicit brand memory has not been studied among children, we base our expectation on adults' processing of brand placement. We expect the prominence of brands in advergimes to have a positive effect on children's explicit brand memory.

With respect to implicit memory of the brand, prominence is not expected to play a role. Implicit memory relates to unintentional and unconscious recollection of an event (Schacter, 1987; Yoo, 2008). Implicit memory is not affected by variations in the level or type of processing. Whereas explicit memory increases when the level of processing increases, for example due to the prominence of the brand, implicit memory remains unaffected. For example, Jacoby and Dallas (1981) showed that explicit memory of words that were elaborately processed was better than explicit memory of words that were not elaborately studied. However, implicit memory was equal in both conditions. Similarly, Yang and Roskos-Ewoldsen (2007) showed that students' explicit memory was positively affected by the brand's prominence in a movie, whereas their implicit memory, measured with a word fragment completion task, was the same for prominently and subtly placed brands. As implicit memory is independent of information

processing capacities and skills, the functioning of this memory system is alike among adults and children. Therefore, we presume to find the same effects as Yang and Roskos-Ewoldsen (2007) found on adults for advergames on children. Thus, we expect that prominence does not influence implicit memory, as implicit memory is not affected by the level of processing.

### 3 Method

#### 3.1 *Participants and procedure*

A total of 105 children of 7 to 12 years old ( $M = 9.49$ ,  $SD = 1.65$ ) participated in the research. Children were recruited from three elementary schools in different urban and suburban areas. Prior to participating, institutional approval, parental consent, and children's informed consent were obtained. Children were informed that they would be playing a game and that they could stop participating at any time they wished. A female researcher escorted the children to the school's computer room. The children played the advergame twice which took about 3 minutes. Then the researcher completed a computer-assisted online survey with the child.

Demographic questions were asked initially, followed by implicit brand memory, and brand recognition. The children were told not to talk to any other children in their class about the research.

#### 3.2 *Stimulus materials*

Two versions of an advergame were designed by professional game designers based on existing online games. The aim of both games was to catch falling bags of chips and cans of soft drink in a basket. The speed with which these fell increased during the game. The brands in the game were Lays and Pepsi. In the prominent condition, bags of Lays chips and Pepsi cans were to be caught. Next to the falling branded products, large logos of both brands were displayed centrally in the background. Thus, in line with the definition of prominence, the brands were both highly visible by virtue of size and position and by their centrality to the action in the scene (Gupta and Lord, 1998). In the subtle placement version, the chips bags and soft drink cans contained no logos or brand identifiers. Instead, the words 'chips' and 'cola' were written on them. In the Netherlands, 'chips' and 'cola' are the generic terms used to describe salty potato snacks and cola type soft drinks. A small Lays logo was displayed on the left side and a small Pepsi logo was displayed on the right side of the screen. The

brands were small in size and outside the main field of visual focus, thus adhering to the definition of subtle brand portrayal (Gupta and Lord, 1998).

### 3.3 Measures

Explicit brand recognition was measured by presenting the children with the logos for Pepsi and Lays and four other cola and chips brands (Russell, 2002; Van Reijmersdal et al., 2007). Children were asked to indicate, for each brand, whether they remembered it from the game. The recognition measure was coded as 2 (*both Pepsi and Lays recognized*), 1 (*recognition of either Pepsi or Lays*), 0 (*no recognition of Pepsi and Lays*)  $M = 1.17$ ,  $SD = .78$ ).

Implicit recognition was measured based on the fragmented logo implicit recognition task (Owen, 2008; Snodgrass et al., 1987). The children were shown a series of six increasingly less blurred Pepsi and Lays logos and were asked to identify the brand. In addition, children were asked to identify logos of competing brands (Coca Cola and Pringles) to be able to conclude that the implicit memory was really a result of exposure. Ease of recognition was taken as a measure of implicit memory on a scale ranging from 6 (correct recognition from the first (most blurred) picture) to 0 (no correct recognition after the sixth (not blurred) picture). Higher scores mean better implicit memory. The logos were blurred using Photoshop with scores 45, 36, 27, 18, 9 or 0 in the box blur function.

In addition, children's age, gender and game playing experience were ascertained. Game playing experience was measured with the question "How often do you play games on the Internet?" on a scale ranging from 1 (*never*) to 4 (*very often*) ( $M = 2.48$ ,  $SD = .70$ ).

## 4 Results

The experimental groups did not differ with respect to age, sex, or their game playing experience ( $p > .10$ ). To test the hypotheses, a MANCOVA was conducted with prominence as independent variable, explicit and implicit memory as dependent variables, and age as a covariate.

The analysis yielded a significant overall effect of prominence,  $F(3, 100) = 8.56$ ,  $p < .01$ ,  $\eta^2 = .20$ , and showed that prominence influenced explicit brand memory,  $F(1, 102) = 21.33$ ,  $p < .01$ ,  $\eta^2 = .17$ . Children's explicit memory of prominently placed brands was significantly higher ( $M = 1.47$ ;  $SD = 0.70$ ) than of subtly placed brands ( $M = 0.84$ ,  $SD = .73$ ). Prominence had no significant

effect on implicit memory of Pepsi,  $F(1, 102) = 0.42, p = .52, \eta^2 < .01$ , or implicit memory of Lays,  $F(1, 102) = 2.40, p = .13, \eta^2 = .02$ .

To check whether implicit memory was affected by exposure to the game, the implicit memory scores of Pepsi and Lays were compared to implicit memory of similar brands, Coca Cola and Pringles. Repeated measures analyses showed that children's implicit memory was indeed affected by the game. Their implicit memory of Pepsi ( $M = 4.82; SD = 1.80$ ) was better than their implicit memory of Coca Cola ( $M = 3.90; SD = 1.59$ ),  $F(1, 104) = 23.27, p < .01, \eta^2 = .18$ . Similarly, children's implicit memory of Lays ( $M = 4.54, SD = 1.78$ ) was better than of Pringles ( $M = 3.23; SD = 2.03$ ),  $F(1, 104) = 56.71, p < .01, \eta^2 = .35$ .

## 5 Discussion

The aim of this study was to examine how brand prominence influences children's explicit and implicit memory of brands in an advergame. The first conclusion that can be drawn is that brand prominence within the game positively influences children's explicit recognition of the advertised brand. These findings are in line with adult studies showing that the more prominently a brand is placed, the better the brand is recalled explicitly (Gupta and Lord, 1998; Lee and Faber, 2007; Yang and Roskos-Ewoldsen, 2007). These effects can be explained by information processing theory and the landscape model. Prominently placed brands attract visual attention, which increases the change of processing the brand, which leads to better storage and thus memory of the brand. Similarly, the landscape model explains that if the brand is central to the scene (prominent condition), brand information is activated and elaborated at the highest level. This results in greater brand memory. Other information in the scene that is not central to the 'story' (subtle condition) receives a lower level of activation as it is not necessary to comprehend the narrative.

The second conclusion that can be drawn is that prominence of brands within an advergame does not influence children's implicit brand memory. However, children's implicit memory was affected by exposure to brands in the game. Previous research on brand placement in movies among adults did not find a relation between prominence and implicit memory either (Yang and Roskos-Ewoldsen, 2007). Implicit memory is not affected by the amount of attention that is paid to the brand. Based on the effects on explicit memory, we conclude that children did not direct their attention to the subtly placed brand as it was in the peripheral visual field. However, their implicit memory for the subtly placed brand was as good as their implicit memory for the prominent brand, which confirms that this memory mode is independent of attention. This finding implies that even when brands are subtly placed in advergames, that is when the brand is

small in size, in the background outside the main field of visual focus or not central to the action, they can evoke implicit memory in children.

More research on the effects of advergames on children is needed. Children are spending large amounts of their time playing these games. Therefore, it is vital to understand the impact of advergames on children. Especially the implicit effects need further attention as these effects are established without awareness. Future research should focus on implicit and explicit attitude change and on (implicit) behavioral effects to gain better understanding of advergence effectiveness among children.

Our study shows that advergames influence children's brand memory. For advertisers this means that advergames can be used to heighten brand awareness among children. Prominently placed brands are in particular effective to increase explicit brand recognition. Our study shows that on a less elaborate level advergaming can have an impact as well. Brands that were integrated into the game were more easily recognized in an implicit memory task than brands that were not present in the game. This effect held for both prominent and subtle brand portrayals. Thus to affect implicit memory, just the presence of the brand, regardless of its prominence is enough.

For child advocates and legislators, this study implies that children are vulnerable to commercial effects of seemingly innocent and entertaining games. Previous research has shown that children have difficulty understanding the commercial nature of advergaming as brands are embedded within an entertaining and interactive context (Mallinckrodt and Mizerski, 2007; Van Reijmersdal et al., 2011). It is widely assumed that exactly this characteristic of new embedded advertising techniques makes children highly susceptible to persuasion. Our study confirms that integrating brands into an entertaining and interactive game impacts upon children's explicit and implicit brand responses. To increase the fairness of these techniques, policies should focus on enhancing children's understanding and also stimulating and facilitating children's ability and motivation to use (i.e., retrieve and apply) this knowledge to critically process an advertising message (Rozendaal et al., 2011).

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