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(2014)

Children's advertising literacy for advergaming : perception of the game as advertising.

Journal of Advertising, 43(1), pp. 63-72.

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<http://dx.doi.org/10.1080/00913367.2013.795123>

**Children's Advertising Literacy for Advergames:
Perception of the Game as Advertising**

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Paper published at *Journal of Advertising*, 2014

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Children's Advertising Literacy for Advergames: Perception of the Game as Advertising

ABSTRACT

Despite the prevalence of advergames, limited knowledge exists as to how well children understand their commercial nature and to what extent they can be aided in recognizing the persuasive attempt. The study examined whether children recognized advergames as a type of advertising and the efficacy of an advertising literacy program. Results indicated that without the advertising literacy education, about three-quarters of the children did not recognize the advergame as a type of advertising. However, those with the advertising literacy education showed a significantly enhanced understanding. Also, a series of mediation tests showed that recognition of advertising was an indirect only mediator between the advertising literacy and skeptical attitudes toward advertising. Only those who viewed the advergame as a type of advertising demonstrated more skeptical attitudes toward it.

Online advergames, which embed brand information within interactive games, are on the rise. Those advergames are largely operated by food companies and often filled with exaggerated brand claims featuring food products high in sugar and calories (Kaiser Family Foundation 2006; Lee et al. 2009). However, despite the increasing prevalence of advergames, limited knowledge exists as to how well children understand their commercial nature and, particularly, to what extent they can be aided in recognizing the embedded persuasive attempt.

Advergames epitomize the blurring of the line between entertainment and advertising. Due to the embedded messages within the game content, it may be much harder for children to understand the commercial nature. So far, most studies of advergames have focused on their content (Kaiser Family Foundation 2006; Lee et al. 2009; Moore and Rideout 2007; Quilliam et al. 2011; Youn and Lee 2008; Weber et al. 2006). When those content analyses point to potential harmful effects of advergames, more direct evidence is needed to document young children's comprehension (or lack thereof) of the embedded advertising messages. In fact, recent experimental studies found significant effects of advergames on children's food consumption (Dias and Agante 2011; Folkvord, Anschütz, Buijzen, and Valkenburg, 2013; Harris et al. 2011; Harnadez and Chapa 2010; Mallinckrodt and Mizerski 2007; Pempek and Calvert 2009). Children with exposure to advergames featuring unhealthy foods were more likely to choose foods high in sugar and fat after playing such games.

Notwithstanding the adverse effects of advergames, there are very few experimental studies demonstrating children's actual understanding of those games and testing the effectiveness of interventions to enhance their comprehension (see An and Stern 2011; Mallinckrodt and Mizerski 2007; Reijmersdal, Rozendaal, and Buijzen, 2012). Other experimental studies have investigated the effectiveness of advergames on advertising outcomes,

such as brand attitudes from a marketing perspective (Bailey, Wise, and Bolls 2009; Wise et al. 2008). More studies are needed to investigate ways to guard children from unfair commercial influences. Since children who are not aware of the commercial motives will be more vulnerable to advertising messages, scholars pointed out the need to develop and test various intervention programs or aids (see Reijmersdal, Rozendaal, and Buijzen, 2012; Rozendaal, Lapierre, Reijmersdal, and Buijzen, 2011).

Furthermore, existing experimental studies on advergimes are limited to children in the western culture such as the United States, Netherlands, and Australia. Studies from other parts of the world are necessary to see whether or not similar patterns can be observed across borders. Particularly, Internet effects are not restricted to the countries in which those commercial websites are located due to the transnational space of the World Wide Web. This study investigates the effect of advergimes on children in South Korea. The penetration of high speed Internet in South Korea is one of the highest in the world; children are reported to use the Internet for 1.5 hours per day, with online games being a popular activity (NIA, 2012). The results of the study should not only bring insights into the impact of advergimes on children in Asian countries, but also on children in countries around the globe with high Internet exposure.

The purpose of this study is to examine the role of the perception of the game as advertising and particularly, to what extent an advertising literacy program can help them acquire critical attitudes toward advertising as an attitudinal defense toward embedded persuasive attempts. Children between the ages of 7 and 11 are generally known as having an understanding of the persuasive intent of traditional advertising, but little is known about how they cope with the immersive, embedded advertising messages in advergimes. The Persuasion Knowledge Model (PKM) is used as the theoretical framework in this study to illustrate the critical role of

children's recognition of advergames' persuasive intent as a way to improve critical thinking about advertising. The paper will first review children's advertising literacy, followed by the importance of skepticism toward advertising as an attitudinal defense and the mediating role of perception of the game as advertising between ad literacy and skepticism.

Children's Advertising Literacy and Persuasion Knowledge

The extant research primarily based on television commercials has shown that by about eight years of age, most children can differentiate advertising from television programs and understand the persuasive intent of advertising (Rozendaal, Buijzen, and Valkenburg, 2011; Rozendaal, Buijzen, and Valkenburg 2010; Young 2003). However, given the embedded nature of advergames, it remains unknown whether those eight-year-old children recognize advergames as a type of advertising. Despite the increasing use of online advergames, the issues involving children's understanding of advergames have only recently received scholarly attention (see An and Stern 2011; Folkvord, Anschütz, Buijzen, and Valkenburg, 2013; Mallinckrodt and Mizerski 2007; Reijmersdal, Rozendaal, and Buijzen, 2012).

Advertising literacy, defined as the ability to analyze, evaluate, and create persuasive advertising messages across a variety of media (Young 2003), does not seem to be high for children online (Fielder et al. 2007; Owen, Lewis, Auty, and Buijzen, in press; Wollslager 2009). Survey results indicate that children's comprehension of the persuasive intent of advergames may be quite limited. In a survey of 5,200 Canadian children from grades 4 to 11, over three-quarters responded that product-centered games are "just games," not "mainly advertisements." Awareness of the commercial nature of online games increased with age, from 18% of children in grade 4 to 31% in grade 11 (Media Awareness Network 2005). Similarly, regarding online advertising on Neopets, only 23% of children identified the purpose of the games as advertising

(Wollslager 2009). The fundamental question concerning the extent children consider advergames as advertising awaits systematic analysis. More importantly, how such perception affects children's attitudes toward advertising pertains to the issue of children's susceptibility toward advertising messages.

The PKM explains that the recognition of persuasive intent is a key to providing children with the necessary defense against commercial messages. Their persuasion knowledge, defined as realization of how, when, and why persuasion attempts are being made, shapes their attitudes and thoughts about influence agents (Wright, Friestad, and Boush 2005). That is, when a child recognizes the persuasive intent of an advertisement (i.e., that "commercials try to make you buy things"), the overall coherence and trust toward the message is undermined; this is the so-called "detachment effect" (Friestad and Wright 1994; Wright et al. 2005).

Studies on the detachment effect have shown that consumers' recognition of persuasive attempts leads to more skeptical attitudes toward advertising messages, reducing their persuasive effect (Brown and Krishna 2004; Campbell and Kirmani 2000; Main, Dahl, and Darke 2007; Morales 2005; Wei, Fischer, and Main 2008). As such, children's understanding of advertising's selling intent has been linked to less trust and increased dislike of advertising, as well as a diminished desire for the advertised products (Robertson and Rossiter 1974; Rossiter and Robertson 1974). Children's detection of advertising's persuasive intent raises critical thinking, i.e., skepticism toward advertising, as predicted by the detachment effect.

From the advertising literacy perspective, cultivating skeptical attitudes toward advertising is an ultimate goal of encouraging children not to believe advertising messages at their face value. Skepticism toward advertising, an important outcome of recognition of persuasive attempt, is of the utmost importance to young children. Skepticism, defined as a

negatively valenced attitude toward the motives and claims of advertising (Boush, Friestad, and Rose 1994), serves as an attitudinal defense, helping children question and discount advertising claims the way adults often do. Skepticism (Mangleburg and Bristol 1998) enables children to be cognizant of advertising's biased viewpoint (Boush et al. 1994; Brucks, Armstrong, and Goldberg 1988). Therefore, skepticism should be a critical outcome of any intervention that enables children to acquire or activate it when playing advergimes. Having skeptical attitudes, such as "advertised products are not always the best products to buy" or "advertising tries to make us buy things we don't really need," will help children realize advertising's partial viewpoint. Accordingly, this critical thinking toward advertising will make children less vulnerable and more conscious of the ongoing persuasive attempt embedded in advergimes.

In addition to skeptical attitudes toward advertising itself, negative attitudes about the featured brand and product will be an ancillary goal to achieve. As the detachment effect explains, teaching children about the commercial nature of advergimes will not only cultivate skeptical attitudes toward advertising itself, but also make them disengaged from the advertised brand and product. Although dissuading children from the featured brand and product is not a primary goal and not addressed by the advertising literacy program, we can expect such detachment effects in terms of brand attitude and product purchase intention.

Perception of Advergimes as Advertising

Although extant research based on traditional advertising has found significant association between the recognition of selling intent and increased skepticism toward advertising, as well as diminished desire for the products, recent advergame studies have not found such an association (An and Stern 2011; Mallinckrodt and Mizerski 2007; Reijmersdal, Rozendaal, and Buijzen 2012). An and Stern (2011) examined the effect of an "ad break," a

notice that the advergaming contained commercial content, and found that those who played the advergaming with the ad break did not show better cognitive understanding about the selling intent of the advergaming than those without the ad break. Similarly, Mallinckrodt and Mizerski (2007) did not find a causal link between recognition of the selling intent and decreased brand preference. Those who understood the commercial nature of the advergaming did not necessarily have less preference for the advertised product than those who did not understand. Reijmersdal et al.'s study (2012) also revealed that knowledge of the commercial source of the game and its persuasive intents did not influence cognitive or affective responses to the brand.

Given the above results not finding significant detachment effects based on advergaming, a fundamental question needs to be answered: Do kids recognize advergaming as a type of advertising? Because advergaming do not look like typical advertisements, considering advergaming as advertising may not be an easy task for children. Such awareness will serve as a precursor to detachment effects. In fact, two crucial components of advertising literacy are the ability to distinguish advertising from program content and to recognize the persuasive intent of advertising (Livingstone and Helsper 2006). Distinguishing advertising from programs is a necessary condition for understanding the persuasive intent underlying advertising, since the latter requires more complex skills that develop later (Kunkel and Wilcox 2001). If a child fails to recognize the advertising component embedded in advergaming, detection of the persuasive attempt that would lead to the detachment effect is unlikely to occur. That said, recognition of ads should be examined as a precursor to skeptical attitudes toward advertising.

Especially given the embedded and immersive nature of commercial messages in advergaming, it is critical to check whether children consider advergaming as advertising. Although children over eight years old generally understand what advertising is, we are uncertain

how they view this new type of advertising, particularly in the highly interactive Internet environment. By introducing the mediating factor (recognition of the advergame as a type of advertising), the causal link between intervention and detachment effect could be more clearly delineated.

In fact, Mangleburg and Bristol (1998) pointed out the mediating role of adolescents' marketplace knowledge on skepticism toward advertising. Specifically, interactions with three socialization agents—parents, peers, and the mass media—led to increased skepticism toward advertising, while the teens' marketplace knowledge mediated the effects of socialization on this skepticism. The teens' marketplace knowledge was an important precursor in promoting adolescents' skepticism toward advertising. Greater knowledge provided teens a “basis by which to evaluate the motives of and claims” of advertising, serving as an “informational foundation for skepticism” (Mangleburg and Bristol 1998, p. 16).

In the current study, perception of the game as advertising is examined as a mediator between advertising literacy and skepticism toward advertising. Considering advergames as a type of advertising is a critical component of persuasion knowledge, which, in turn, serves as a precursor to critical thinking about advertising in general.

Advertising Literacy Education

Various media literacy programs or simple comments by parents and teachers have been shown to help children think more critically about television and advertising, so-called “active mediation” (Nathanson 2001). In fact, Buijzen (2007) found that factual interventions by adults increased children's advertising knowledge and skepticism, which negatively influenced their attitudes toward television commercials and in turn reduced their intention to request the advertised product. Similarly, an educational computer game to teach advertising literacy can

function as an active mediation tool to raise awareness about the commercial nature of advergames. Playing a short educational game as a form of active mediation can highlight the fact that advergames contain promotional messages as a type of advertising. In fact, Campbell and Kirmani (2000) showed that understanding of an ulterior motive was an antecedent to the activation of persuasion knowledge. By making the ulterior motive of advergames more obvious and accessible, a brief advertising literacy game can help children infer the selling/persuasive intent (i.e., “the game is trying to make me want the product”) in addition to or beyond the informational/assistive intent (i.e., “the game is trying to tell me about things”). Subsequently, that awareness can lead to heightened skepticism toward advertising and marketing practices.

Because children and adolescents are the main target of educational games (Ratan and Ritterfeld 2009), a series of studies have investigated the effects of educational games on children (Goodman et al. 2006; Klawe 1998). For example, Goodman et al. (2006) found that a game designed to teach adolescents about concussion symptoms significantly increased related knowledge among children between 11 and 17 years old. Lieberman (1997, 2001) showed that children ages 8 to 14 tried to avoid fat and eat more fruits and vegetables after playing a game designed to provide obesity education. For branded games on Neopets, recognition of branded advergames as advertising increased 26% after a brief media literacy session (Wollslager 2009).

In this study, persuasive intents of advergames will be explained by an interactive game. To explain that advergames are a type of advertising, using a similar game format would be effective to get children’s attention and comprehension. In particular, this study investigates children between the ages of 7 and 11 years old who often experience difficulty in recognizing and evaluating advertising information without a timely cue (Brucks et al. 1988; John 1999;

Moore 2004). Since those children are most likely to benefit from advertising literacy education, we examine the efficacy of an advertising literacy game.

Research Question and Hypotheses

This study examines recognition of advertising as a mediator between advertising literacy education and skepticism toward advertising. In addition, we examine the effect of advertising literacy on brand attitude and product purchase intention as ancillary effects. The specific research question and the hypotheses are:

RQ1: To what extent do children consider advergimes as a type of advertising?

H1: Those who play an advertising literacy game before exposure to an advergime will be more likely to view the advergime as a type of advertising than those who do not play an advertising literacy game.

H2: Perception of the game as advertising will act as a mediating variable in the relationship between ad literacy education and ad skepticism.

H3: Those who play an advertising literacy game before exposure to an advergime are less likely to prefer the featured brand and product than those who do not play an advertising literacy game.

Method

Study Design

To examine the efficacy of advertising literacy games, this study conducted an experiment where the experimental group played an advertising literacy game while the control group had a science game before exposure to an advergime. To represent cued processors between 7 and 11, the current study took a sample of children between 8 and 9 years old. Since age can be a significant factor determining children's understanding of advertising, this study

used a similar age group of children to examine the efficacy of advertising literacy education. The experiment was held in a computer lab where all children played two Internet games: an educational game (either an advertising literacy game or a science game) and an advergaming. In between the two games, children were told to play a simple hidden catch game (finding differences between two pictures by locating hidden objects in one picture) as a distractor. Aside from the different educational games, all the participants were exposed to the identical distractor, advergaming, and questionnaire. All the games were played via computer.

The educational program for advertising literacy, “Co-Co’s Adversmarts,” was obtained from the Media Awareness Network, a nonprofit organization in Canada. The Media Awareness Network has created a series of educational programs for children, among which “Co-Co’s Adversmarts” (<http://www.media-awareness.ca>) is targeted to young children, particularly to help them understand the persuasive intent of online advergaming. In the game, children are told to help Co-Co Crunch, a cereal brand, build a new website by selecting various special features. Those features are marketing tactics commonly used by online advergaming. Throughout the game, Co-Co explains how advertisers utilize such features to make kids like the brand and increase brand loyalty. In the end, it explains that such games are a type of advertising. The words in the game were translated into Korean by two bilingual researchers (see Figure 1 for the Korean version and the original English version). All of the visuals and features of the game stayed the same, including simple commands such as “start” or “play,” which are typically found in Korean games. We used the existing Canadian game in Korea in an attempt to increase external validity (using a professionally made game) and control for any pre-exposure.

<<PLACE FIGURE 1 ABOUT HERE>>

Another educational game for the control group explains the solar system and was developed by Kebikids (<http://conone.kebikids.com>), which is an online site providing educational content for elementary school students in South Korea. The game (see Figure 2) was chosen because it does not involve any marketing-related contents and is about the same length and method of play as Co-Co's Adversmarts: listening and clicking. After playing the first game, either the advertising literacy game or the science game, all the participants played the hidden catch game (see Figure 3) as a distractor.

<<PLACE FIGURES 2 AND 3 ABOUT HERE>>

Finally, children were exposed to an advergame as shown in Figure 4. The advergame was for a well-known Korean ice cream brand. Instead of using a fictitious brand, we used a well-known brand to increase external validity, since brand loyalty or attitude toward the brand or the game, typical advertising outcomes, was not a focus of the study. The purpose of making them play the advergame was to closely simulate their actual experience of playing such games on the Internet prior to checking their recognition of the game as a type of advertising and attitudes toward advertising in general.

<<PLACE FIGURE 4 ABOUT HERE>>

In the game (<http://www.ibravo.com>), children were told to drag an ice cream called "Bravo Con" into an icebox to get points, so they were naturally exposed to the ice cream brand while they were playing the game. If they dragged a different object, such as a piece of plain ice, they would not get points. Each ice cream object was clearly labeled as "Bravo Con," the well-known ice cream brand. The advergame showcased typical characteristics of advergames: constantly showing the brand as part of the game and not requiring particular skills or training to

get points. At the end of the experiment, we asked whether participants had played any of the games before; no participants reported any pre-exposure.

Procedure

A total of 129 children attending second and third grade of a public elementary school in a suburb of Seoul participated in the experiment. When students came to the computer lab, they were randomly assigned to either the experimental or the control group; 66 students ended up being in the experimental group and 63 students in the control group. Participants were told that they would play three different Internet games so they would not pay special attention to a particular game. Children played the games with headsets on so they could not hear what other children were doing. The first step involved playing the educational game for five minutes. Then, each group played a hidden catch game for another five minutes. They then played the advergaming for about five minutes. Finally, participants filled out a paper and pencil questionnaire. Participants were told to ask any questions during any stage of the experiment, especially during the survey time. If they were not familiar with any terms, i.e., advertising, or not sure about the questions, they could directly ask the researcher. All the question wordings appeared to be easy to comprehend with no particular questions asked during the survey time. The whole procedure took about 30 minutes. Finally, a debriefing session about the real purpose of the experiment and a brief advertising literacy education session about advergaming were provided.

Results

Sample Characteristics

Among the 129 children who participated in the study, there were 63 girls and 65 boys in the experiment; one child did not identify gender. The group consisted of about 50% second-

graders and 50% third-graders; 53% were eight years old and 47% were nine years old. The sample was evenly balanced in terms of gender, grade, and age. Their average daily television watching was 1.84 hours ($SD = 3.22$) and daily Internet usage was 1.67 hours ($SD = 4.35$). Their average likability toward the advergaming was 4.26 ($SD = .96$) on a scale of 1 (not at all) to 5 (totally), based on the question, “How much did you like the ice cream game that you just played?” Likability toward the educational game for advertising literacy (experimental group) was 3.87 ($SD = 1.22$), while the likability toward the science educational game (control group) was 4.0 ($SD = .98$). There was no significant difference between the two educational games in terms of likability ($t = -1.525$, $df = 119$, $p > .05$), providing a good starting point to compare their effects. Six children (two from the experimental group and four from the control group) did not answer the likability questions, so the mean comparison was based on 123 children.

Recognizing the Advergaming as a Type of Advertising

Recognition of advertising was measured by the question: “Do you think that the ice cream game you just played is a type of advertising? 1) yes, 2) no.” Overall, three-quarters of the children without the advertising literacy education did not recognize the advergaming as a type of advertising. Among the control group who played the science educational game, 27% responded that the advergaming they just played was a type of advertising. By contrast, 78.8% of the children who played the educational game for advertising literacy, Co-Co’s Adversmarts, correctly identified the advergaming as a type of advertising. The difference was statistically significant ($\chi^2 = 34.77$, $df = 1$, $p < .001$). The short educational program significantly increased the children’s recognition of the advergaming as a type of advertising: 78.8% vs. 27%. Hypothesis 1 was supported.

Since the group consisted of second- and third-graders, additional analysis was done to see whether there was any difference in outcome based on age. However, no difference was found in light of their view of the advergaming. Also, gender was checked, but there was no difference between boys and girls when it came to their understanding of the advergaming as a type of advertising. To see whether those who spent more time on the Internet or watching television demonstrated better recognition, children's daily television watching and Internet usage were analyzed, but none of the factors were significantly associated with their understanding of the advergaming as a type of advertising.

Skepticism toward Advertising

To measure skepticism toward advertising, three items were adapted from Boush et al. (1994): (1) the advertised products are always the best products to buy ($M = 2.73$, $SD = 1.02$); (2) you can depend on getting the truth from most advertising ($M = 2.96$, $SD = .88$); (3) advertising tries to make people buy things they don't really need ($M = 2.98$, $SD = 1.17$). These items were measured on a scale of 1 (not at all) to 5 (totally). To create a scale for the skepticism toward advertising, items one and two were reverse-coded to indicate that higher scores are equal to more skepticism. An average score of the three items ($\alpha = .71$) was used.

When the skepticism scale was compared between the groups who had received and had not received the educational game for advertising literacy, there were no differences between the groups ($t = .46$, $df = 113$, $p > .05$). Regardless of the type of the educational game, their attitudes toward advertising hovered around the neutral point; that is, those who had received an advertising literacy education ($M = 3.04$, $SD = .76$) were not necessarily demonstrating more skeptical attitudes toward advertising than those who had not received the education ($M = 3.08$, $SD = .52$).

Mediating Role of Perception of the Game as Advertising on Skepticism

Figure 5 shows a mediation model in which advertising literacy education (X) is causally linked to skepticism toward advertising (Y) via the perception of the game as advertising (M) as a mediating variable. In order to test mediation, we employed the recommendation by Iacobucci (2012) since the mediator variable was a dichotomous variable. To examine whether there is a significant mediation effect, $Z_{\text{mediation}}$ was computed by the following formula (Iacobucci 2012, p. 593):

$$Z_{\text{mediation}} = \frac{\frac{a}{S_a} \times \frac{b}{S_b}}{\sqrt{Z_a^2 + Z_b^2 + 1}}, \text{ where } Z_a = \frac{a}{S_a} \text{ and } Z_b = \frac{b}{S_b}$$

From the model, $M = b_1 + aX + e_1$, we collected the parameter estimate, a and its standard error, S_a via a logistic regression. And, the parameter estimate b and its standard error, S_b were obtained from the model, $Y = b_2 + c'X + bM + e_2$. Because the dependent variable (Y) is a continuous variable, we ran regression. Note that b and e in the equations are intercepts and error terms.

The results showed that a , S_a , b , and S_b were 2.38, .42, .36, and .14 respectively. The value of $Z_{\text{mediation}}$ was 2.31, indicating the mediation effect was significant at $\alpha = .05$. Therefore, the mediating role of the perception of game as advertising was established. Regression coefficients for $X \rightarrow M$ ($\beta = 2.38, p < .001$) and $M \rightarrow Y$ ($\beta = .36, p < .01$) were significant. However, the direct effect (c') of X on Y when M was included in the model was not significant ($\beta = -.24, p > .05$). The results suggest that the type of mediation was “indirect-only mediation” (see Zhao, Lynch, and Chen 2010).

In addition, a reverse model was tested in which ad skepticism was treated as a mediating variable (M) and the perception of game as advertising was considered the dependent variable

(Y). The model, $Y = b_2 + c'X + bM + e_2$ was tested by a logistic regression since Y was dichotomous whereas the equation, $M = b_1 + aX + e_1$, was ran by regression. The mediation effect was not significant ($Z_{\text{mediation}} = -.60, p > .05; a = -.054; S_a = .34; b = .87; S_b = .12$). The value of $Z_{\text{mediation}}$ did not exceed +/- 1.96 for a 2-tailed test with $\alpha = .05$. Thus, we ruled out the possibility that ad skepticism played a role as a mediator. As hypothesized, advertising literacy education does not have a direct effect on skepticism, but rather only an indirect effect through the mediation of the perception of game as advertising. Hypothesis 2 was supported.

Brand Attitudes and Product Purchase Intention

The effects of the advertising literacy game were examined in light of brand attitude and product purchase intention. When asked to choose a food type after playing the ice cream advergaming, 53.5% of children selected ice cream among other comparable snacks. However, there were no differences between those with the advertising literacy education and those without it in terms of choosing ice cream or others ($\chi^2 = .061, df = 1, p > .05$). Those who chose ice cream were 54.5% (with the advertising literacy) v. 52.5% (without the advertising literacy).

Similarly, when asked to choose a brand of ice cream after playing the ice cream advergaming, receiving the advertising literacy program did not make any difference ($\chi^2 = .016, df = 1, p > .05$). Among the compatible brands of ice cream with similar market shares, 18.6% of children chose Bravo Con. There were no differences between the two groups regarding their selection of the featured brand: 18.2% (those with the advertising literacy) v. 19% (those without the advertising literacy). Hypothesis 3 was not supported.

DISCUSSION

This study examined children's advertising literacy for advergaming and the efficacy of an educational game and determined to what extent providing such intervention could enhance their

advertising literacy when playing advergames. As the results show, those who had played a five-minute educational game for advertising literacy were significantly more likely to consider the advergame as a type of advertising than those who had not played the advertising literacy game. Furthermore, those who viewed the advergame as a type of advertising showed more critical attitudes regarding advertising in general than those who did not view the advergame as a type of advertising.

Consistent with the previous literature on cued processors (Brucks et al. 1988; John 1999; Moore 2004), children in this age group appear to need a cue in order to activate their existing advertising concept and, subsequently, skepticism toward advertising. In our study, the simple awareness of categorizing the advergame as a type of advertising seems to be triggered by having the short education right before the advergame. It is noteworthy that about three-quarters of the children in the control group did not categorize the advergame as a type of advertising.

The low advertising literacy for children online indicates a greater need for advertising literacy education as well as intervention mechanisms. As suggested by An and Stern (2011), providing an ad break telling children that advergames contain commercial messages is one way. As shown in our study, a short computer game is another alternative. That said, child advocacy organizations, such as Media Awareness Network, deserve recognition for their efforts to produce and promote such educational games for children. Recently, the Federal Trade Commission (FTC) launched an advertising literacy campaign and website (www.admongo.gov) to raise advertising literacy among children ages 8 to 12 (2010). More research is needed to examine the efficacy of such programs in triggering existing persuasion knowledge of cued processors.

Our results based on Internet advergaming are consistent with the early studies on television commercials (Robertson and Rossiter 1974; Rossiter and Robertson 1974) in that children's detection of persuasive intention was strongly related to their distrust of advertising. However, in our study, recognition of advertising as a mediator, a brief advertising literacy game, induced more critical and skeptical attitudes toward advertising. Results point to the critical role of perception of the game as advertising to raise skeptical attitudes in advergaming. As the series of mediation tests confirmed, advertising literacy education does not have a direct effect on skepticism, but only through the mediation of the perception of game as advertising. The simple awareness that the advergaming are a type of advertising appears to be essential for children not to believe advertising claims at their face value.

In the current study, the advertising literacy education did not affect children's responses to the featured brand and product purchase intention. Because the contents of the particular advertising literacy game was mainly focused on the realization of advergaming as a type of advertising, and dissuading children from the featured brand and product was not addressed, it makes sense that such detachment effects were not observed. A future study is needed to see whether advertising literacy education specifically dissuading children from the featured brand will alter children's responses to the advertised brand. Unlike detachment effects found for adults, children's detachment effect for advertising itself might not be automatically extended to advertised brands unless told to do so.

The result not finding significant effect on attitudes toward the brand and product is somewhat in line with Reijmersdal et al. (2012) where persuasion knowledge did not influence memory and attitudes toward the advertised brand. Mallincrodt and Mizerski (2007) also found that persuasion knowledge was not associated with attitudes toward the featured brand. Those

studies did not examine the effect of persuasion knowledge on general attitudes toward advertising itself. Additional research is needed to clarify the differential effects for general attitudes toward advertising itself versus specific attitudes toward the featured brand or product.

The importance of skepticism toward advertising as an advertising literacy outcome has been recently articulated by Rozendaal and colleagues (2011). They argued that conceptualization of children's advertising literacy needs to be more focused on attitudinal advertising literacy rather than cognitive dimensions. Because children process advertising on a less elaborate level or peripheral level, the low effort, attitudinal mechanisms such as skepticism or disliking of advertising will be more successful in altering children's responses to advertising. In other words, children lack the motivation and ability to retrieve and apply their advertising-related knowledge (Rozendaal et al. 2011).

The association between recognition of advertising and skepticism underscores the importance of persuasion knowledge to trigger children's skepticism toward advertising. This result points to important policy ramifications. To protect children from undue and unfair commercial influences, helping them recognize persuasive attempts appears to be a must. Without this recognition, the ultimate goal of instilling critical thinking and skepticism toward advertising for mature comprehension of advertising will not be achieved. The current study highlights the key persuasion knowledge, perception of the game as advertising, when playing advergimes.

Limitations of the study should be acknowledged. This study tested one particular advertising literacy game, so conclusions are limited to the specific advertising literacy program that addresses the fact that advergimes are a type of advertising. Considering that the particular advergime used in this study scores haphazardly, generalization of the reported findings to

games that score based on skill is limited. Also, the current study only documents short-term effects, while the long-term effects using a panel of children await further study. The perception of the game as advertising was a single item measure that can be extended into multiple items to represent a full spectrum of persuasion knowledge. However, since the perception of the game as advertising is a concrete attribute, its predictive validity is expected to be similar to multiple item measures (see Bergkvist and Rossiter 2007). Because this study focused only on second- and third-graders, effects on other age groups warrant further study. Given that Korean children are quite accustomed to high-speed Internet and online games, further investigation should be conducted on children in other countries with different media environments.

In conclusion, given children's lack of awareness and the prevalence of advergaming on the Internet, it is time to configure the online environment in a way that helps children recognize the advergaming's persuasive intent. This study contributes to our fundamental understanding of the impact of such games on children and the efficacy of a short educational cue. Various forms of advertising literacy programs should be introduced to effectively trigger children's persuasion knowledge and skepticism to help them better cope with immersive marketing tactics.

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Figure 1
Advertising Literacy Game for the Experiment Group
(Korean and Original English versions)



Figure 2
Science Game for the Control Group



Figure 3
Hidden Catch Game as a Distractor



Figure 4
Advergame for an Ice-cream Brand



Figure 5
Recognition of Advertising as a Mediator to Advertising Skepticism

