Reducing Children’s Susceptibility to Commercials:  
Mechanisms of Factual and Evaluative Advertising Interventions

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Abstract

The aim of this study was to investigate how factual and evaluative interventions modify the effects of television advertising among children in early and middle childhood. First, a conceptual model of advertising intervention was developed, and then this model was experimentally tested drawing on a sample of 5- to 10-year-old children (N = 206). Structural equation modeling analysis confirmed that factual intervention reduced children’s susceptibility to commercials by stimulating their advertising knowledge and skepticism, while evaluative intervention reduced children’s susceptibility by influencing their attitudes toward commercials negatively. For children older than 6, both factual and evaluative interventions were successful in modifying the effects of advertising, whereas the younger children had difficulty processing any type of intervention.

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In both the public and academic domain, the topic of advertising aimed at children has traditionally been accompanied by concern and debate about the unfairness of such advertising and its possible adverse effects on children (Kunkel et al., 2004). While most research has focused on children’s responses to advertising, there is also an accumulating body of research investigating how parents, teachers, or others involved in the daily care of children can reduce children’s susceptibility to advertising (see Boush, 2001 for a review). These studies have rather convincingly shown that such advertising mediation or intervention can modify children’s responses to television commercials (Bijmolt, Claassen, & Brus, 1998; Roberts, Christenson, Gibson, Mooser, & Goldberg, 1980; Wiman, 1983).

Previous studies have primarily focused on the outcomes of the intervention and do not help us understand how different types of intervention can lead to reduced susceptibility to advertising. The aim of the present study is to reveal the mechanisms underlying intervention of advertising effects on children. In order to understand how different intervention styles can modify the effects of advertising, I propose a conceptual model of advertising intervention that combines theories of advertising processes and effects (e.g., Brucks, Armstrong, & Goldberg, 1988; John, 1999; Petty & Cacioppo, 1996) and television mediation and intervention (e.g., Nathanson, 2004). This model will be investigated using structural equation modeling, which has been shown to be a useful procedure for analyzing the processes underlying an intervention (Russell, Kahn, Spoth, & Altmaier, 1998).
Advertising Processes and Effects Among Children

The effects of television advertising on children have often been divided into two general types: intended and unintended effects. Intended effects studies concentrate on the effects that advertisers wish to achieve with their advertisements. These studies typically focus on children’s awareness of products and brands (e.g., Derscheid, Kwon, & Fang, 1996; Dubow, 1995; Fischer, Schwartz, Richards, Goldstein, & Rojas, 1991; Goldberg, 1990; Macklin, 1983), their preferences for products and brands (e.g., Derbaix & Bree, 1997; Moore & Lutz, 2000), and the extent to which they are persuaded to purchase or request advertised products or brands (e.g., Atkin, 1975; Buijzen & Valkenburg, 2000). Unintended effects studies focus on the secondary, often undesired, side effects of advertising. These studies may investigate, for example, whether advertising stimulates materialism, parent-child conflict, or bad eating habits (for reviews of these effects, see Buijzen & Valkenburg, 2003a; Kunkel et al., 2004).

The present study focused on an intended effect of advertising, that is the extent to which children are persuaded by commercials to request the advertised products. Children’s (intended) purchase request behavior is considered one of the most accurate indicators of persuasion, because they usually do not have the means to purchase products themselves (Gunter, Oates, & Blades, 2005; McNeal, 1992). Moreover, children’s advertised product requests are an important predictor of several unintended effects of advertising, such as parent-child conflict and bad eating habits. Several studies have demonstrated, for instance, that children’s advertising-induced product requests often result in parent-child conflict (Atkin, 1975; Buijzen & Valkenburg, 2003b; Robertson, Ward, Gatignon, & Klees, 1989; Ward & Wackman, 1972).
Most authors agree that young children are more susceptible to the intended and
unintended effects of advertising than older children and adults are (Blosser & Roberts,
1985; Buijzen & Valkenburg, 2000; Robertson & Rossiter, 1977). Children’s
susceptibility is largely determined by two types of intervening processes: (a) their
cognitions about advertising in general, often referred to as cognitive defenses (Brucks et
al., 1988; John, 1999; Gunter et al., 2005; Rossiter & Robertson, 1974), and (b) their
affective responses to commercials in particular (Derbaix & Bree, 1997; Moore & Lutz,
2000; Phelps & Hoy, 1996; Van Raaij, 1986). The present study investigates how different
types of intervention can influence children’s cognitive defenses and affective responses
during a particular exposure occasion. To be able to model how intervention can lead to
reduced advertised product requests, it is first necessary to review the literature on
children’s defenses and responses to commercials.

Cognitive defenses to advertising. Cognitive advertising defenses include
children’s knowledge of the advertisers’ persuasive intent and skepticism toward
Several studies have shown that children’s levels of advertising knowledge and skepticism
are negatively related to their trust and liking of advertising, and to their desires and
requests for advertised products (Robertson & Rossiter, 1977; Robinson, Saphir, Kraemer,
Varedy, & Haydel, 2001; Rossiter & Robertson, 1974).

The development of cognitive advertising defenses is not only a matter of
obtaining the necessary knowledge and understanding, but also of acquiring the
information-processing skills that enable the child to apply that knowledge while watching
a commercial (Brucks et al., 1988; Friestad, & Wright, 1994; John, 1999). Children in
early childhood (ages 2 to 6) lack the knowledge as well as the information-processing
skills to come up with critical thoughts and counterarguments while watching commercials (Brucks et al., 1988; Moore & Lutz, 2000; Roedder, 1981). Information-processing theories suggest that children in early childhood are not capable of using sophisticated information storage and retrieval strategies to process advertising (Roedder, 1981).

By the age of 7 or 8, most children are able to distinguish commercials from television programs and have at least a basic understanding of their persuasive intent (Bijmolt et al., 1998; Kunkel et al., 2004; Oates, Blades, & Gunter, 2001; Rossiter & Robertson, 1974; Ward, Wackman, & Wartella, 1977). In addition, by that age they begin to understand that commercials do not always tell the truth (Bergler, 1999; Gunter et al, 2005). However, they are not yet capable of spontaneously retrieving and applying that knowledge and skepticism while processing the commercial (Brucks et al., 1988; Moore & Lutz, 2000; Roedder, 1981). In an experiment by Brucks et al. (1988), cognitive defenses to commercials were only used by children who received cues prior to exposure to the commercials. In other words, although most children have acquired sufficient knowledge and understanding of advertising intent by the time they are 8, information-processing research suggests that they need to be prompted or cued to apply this knowledge until they are about 12.

Affective responses to commercials. A second intervening construct in children’s advertising processing involves their affective responses to commercials. Several studies have shown that children’s attitude toward commercials is an important predictor of their attitude toward the advertised products and brands (Atkin, 1975; Batra & Ray, 1986; Derbaix & Bree, 1997; Moore & Lutz, 2000; Phelps & Hoy, 1996; Roedder, Sternthal, & Calder, 1983), as well as their requests for the products advertised (Galst & White, 1976; Phelps & Hoy, 1996; Wiman, 1983).
As children mature, their attitudes toward commercials change as a function of (a) shifting program preferences and (b) increasing cognitive advertising defenses. In early childhood, children find advertising more interesting and attractive than older children do, often responding to commercials as a form of entertainment (Barling & Fullagar, 1983; Moore & Lutz, 2000). Typical features of commercials, including appealing (child) characters, attractive products, rhyme, catchy jingles, their short length, and even their repetitive character, correspond highly to young children’s preferences in television programs (Greer, Potts, Wright, & Huston, 1982; Valkenburg & Cantor, 2001). In middle childhood, children become progressively more critical about, and thereby less susceptible to, advertising messages (Austin & Johnson, 1997a, 1997b; Boush, 2001).

In addition, children’s affective responses to commercials are also determined by their level of cognitive advertising defenses. Several studies have shown that children’s knowledge and skepticism toward advertising negatively affect their liking of commercials (Chan & McNeal, 2004; Feshbach, Feshbach, & Cohen, 1982; Robertson & Rossiter, 1977). It should be noted, however, that even when a child has developed the necessary knowledge and skills to counter a persuasive message, a commercial can still be highly appealing (Prasad, Rao, & Sheikh, 1978; Riecken & Ugur, 1999; Valkenburg, 2004).

A Conceptual Model of Television Advertising Intervention

There is an impressive body of research on adult intervention of children’s responses to the media (see Austin, 2001). These studies show that parents and other caregivers can prevent children from unwanted media effects—including media-induced aggression, fear, and alcohol use—by talking with children about the media content (e.g., Austin, 1997a, 1997b; Cantor, Sparks, & Hoffner, 1988; Nathanson, 1999, 2004; Nathanson & Cantor, 2000; Wilson, 1989).
A number of studies have investigated the effectiveness of intervention on children’s susceptibility to commercials (Bijmolt et al., 1998; Buijzen & Valkenburg, 2005; Donohue, Henke, & Meyer, 1983; Feshbach et al., 1982; Roberts et al., 1980; Prasad et al., 1978; Robinson et al., 2001; Wiman, 1983). These studies demonstrated that advertising intervention can increase children’s understanding of the persuasive intent of advertising (Bijmolt et al., 1998; Wiman, 1983), knowledge of special camera and editing techniques (Roberts et al., 1980), skepticism about commercials (Wiman, 1983), and preferences or requests for advertised products (Prasad et al., 1978; Wiman, 1983). Thus far, no study has investigated how different intervention styles can lead to reduced advertising effects.

In the present study, I investigated how children’s susceptibility to commercials can be reduced by interventions that influence their cognitive defenses and affective responses to commercials. In the literature on adult mediation of media violence, two intervention styles have been identified that relate to these defenses and responses (Nathanson, 2004). The factual approach provides children with information about the media content. The purpose of factual intervention is to enhance children’s cognitive defenses and, thereby, facilitate the production of counterarguments. The evaluative approach relates to children’s affective responses to commercials and provides children with (negative) evaluative comments about the message, in order to inhibit the production of favorable thoughts toward the message (Nathanson, 2004).

In order to reflect intervention more directly relevant to television advertising, the factual and evaluative intervention approaches used in media violence research (Nathanson, 2004) were adapted based on academic knowledge of children’s advertising processing. Drawing on theories and research on children’s cognitive advertising defenses,
the factual intervention style is aimed at increasing children’s knowledge of and skepticism toward the commercial and the advertised products. Similarly, drawing on theory of children’s affective responses, the evaluative intervention style is aimed at negatively influencing children’s attitudes toward the commercial and the advertised products.

The different paths leading from the two intervention styles to reduced susceptibility are modeled in Figure 1. In this conceptual model of television advertising intervention, three paths to reduced product requests are hypothesized: Two explaining factual intervention and one explaining evaluative intervention. The first factual intervention path is mediated by children’s cognitive advertising defenses (i.e., knowledge and skepticism). The second factual path is mediated by cognitive defenses as well as affective responses to commercials, since cognitive defenses can influence children’s susceptibility not only directly, but also indirectly. Finally, the evaluative path is only mediated by children’s affective responses to commercials.

---Please Insert Figure 1 About Here---

Testing the model. The first aim of this study was to investigate how factual and evaluative intervention styles can lead to reduced advertising susceptibility. To this end, the different paths modeled in Figure 1 were tested drawing on a sample of children in early and middle childhood (ages 5 to 10). In an experiment, I investigated the extent to which children who received factual or evaluative intervention, or none at all, were susceptible to commercials for toys. During children’s exposure to commercials, factual and evaluative comments were made about the commercials and the advertised products.
Susceptibility to advertising was conceptualized as children’s intent to request their parents to purchase the advertised products. Three hypotheses were investigated, each representing one of the hypothesized paths in the model:

H1: Factual intervention positively influences children’s knowledge of and skepticism toward advertising, which, in turn, reduces their intended product requests.

H2: Factual intervention positively influences children’s knowledge of and skepticism toward advertising, which, in turn, negatively influences their attitude toward the commercials, which then reduces their intended product requests.

H3: Evaluative intervention negatively influences children’s attitude toward the commercials, which, in turn, reduces their intended product requests.

Testing age differences. The second aim of this study was to investigate how factual and evaluative interventions lead to reduced advertised product requests among children in different age groups. As discussed above, children develop the most important defenses, critical attitudes, and information-processing skills in early and middle childhood. It is important to investigate the mechanisms of advertising intervention among children who are still in the process of developing such knowledge and skills (Austin & Johnson, 1997b). Therefore, the present study included children in early childhood (ages 5-6), children on the threshold between early and middle childhood (ages 7-8), and children in middle childhood (ages 9-10).

It was expected that children in early childhood benefit more from evaluative intervention, while children in middle childhood benefit more from factual intervention. I expected that factual intervention would be too complex for very young children, because it requires two cognitive steps: The child should be capable of (a) understanding and processing the intervention comments and (b) applying these while processing the
commercial. Earlier media intervention (Lang, 2000; Nathanson, 2004) and information-processing studies (Brucks et al., 1988; Roedder, 1981) suggest that up to the age of 7 or 8, children are unlikely to process and apply the factual intervention comments while watching commercials, whereas older children are progressively able to do so.

On the other hand, earlier research also suggests that evaluative intervention is less difficult to process than factual intervention (Lang, 2000; Nathanson, 2004). In the present study it was therefore expected that children in early childhood do benefit from evaluative comments while watching commercials. However, because children in middle childhood are assumed to hold more stable and critical attitudes toward advertising (Valkenburg, 2004), it was expected that older children would not be affected by evaluative comments. The following hypotheses were investigated:

H4: Children in early childhood (ages 5-6) are likely to follow the evaluative intervention path.

H5: Children on the threshold of early and middle childhood (ages 7-8) are likely to follow both the evaluative and factual intervention paths.

H6: Children in middle childhood (ages 9-10) are likely to follow the factual intervention paths.

Method

Sample and Design

A total sample of 206 children (54% male) were recruited from three elementary schools in urban and rural districts in the Netherlands. The sample consisted of 72 preschoolers (ages 5-6), 64 second graders (ages 7-8), and 70 fourth graders (ages 9-10).

The experiment used a 3 (intervention condition: factual intervention, evaluative intervention, and no intervention) x 3 (age group: 5-6-year-olds, 7-8-year-olds, and 9-10-year-olds) design.
year-olds) factorial design. Thirty-four percent of the participants received factual intervention, 34% received evaluative intervention, and 32% received no intervention.

Procedure and Experimental Manipulation

Children in each classroom were randomly assigned to one of the three conditions. A female experimenter brought the children in groups of 1 to 8 (Mdn = 5) to an empty classroom in which a television and video recorder were located. To make the children feel at ease, the experimenter offered them some lemonade and chatted with them for a while.

Then, the participants watched a three-minute edited compilation of six toy commercials that were selected to appeal to both boys and girls, and to children of different ages. The commercials were videotaped from various children’s networks two years prior to the investigation and were no longer being broadcast. The compilation consisted of commercials for Playmobil Pirate Lagoon, Dream Telephone, Maggie Raggie dolls, Lego Jack Stone, Playmobil Horse & Pony Ranch, and the Top Secret game. After every set of two commercials, a short pause was inserted to allow for the intervention comments. To avoid order effects, the sets of commercials were rotated, resulting in three different video compilations. To control for children’s prior knowledge of the commercials, they were asked which commercials they had seen before. Because half of the children (50.5%) recognized three commercials or more, this variable was controlled for (see Table 1).

In all conditions, the experimenter watched the commercials together with the children. During each pause a statement was made that was directly relevant to the commercials the children had just viewed. The list of comments was inspired by Nathanson’s (2004) statements pertaining to violent program content and adapted to
advertising-related intervention based on the advertising literature (e.g., Brucks et al., 1988; Roberts et al., 1983; Rossiter, 1979). In the factual intervention condition, the experimenter provided facts about the commercials and the products advertised, in the evaluative intervention condition, the experimenter casually expressed negative evaluations of the commercials and the products advertised, and in the no intervention condition, the experimenter did not give comments on the commercials shown. The Appendix contains a complete list of the comments that were administered.

After viewing the commercials, the children completed a 20-minute questionnaire about the commercials they had just viewed. The experimenter read each question and its response options to the children, who circled their answers. Before the questionnaires were administered, the experimenter emphasized that the test had nothing to do with formal grades or testing. At the end of the session, the children were brought back to their classroom.

**Measures**

The six variables in the model involved two independent (i.e., factual and evaluative intervention), three mediating (i.e., advertising knowledge, advertising skepticism, attitude toward commercials) and one dependent variable (i.e., intended product requests). The intervention conditions were recoded into categorical variables, one for factual (1 = factual intervention, 0 = no intervention) and one for evaluative intervention (1 = evaluative intervention, 0 = no intervention), to correspond to the proposed model (cf., Russell et al., 1998). To construct the mediating and dependent variables, the questionnaire contained questions about advertising in general and the commercials shown in the video. For each of the questionnaire items, children responded on a 4-point scale ranging from 1 = no, not at all to 4 = yes, very much.
Advertising knowledge. To measure children’s knowledge of advertising, children were asked two questions that were derived from earlier studies on children’s cognitive defenses to advertising (Bijmolt et al., 1998; Donohue et al., 1983; Feshbach et al., 1982). The questions were as follows: (1) Do you think commercials try to sell things to people? and (2) Do you think commercials use special tricks to make the toys look better than they really are? Total advertising knowledge scales were constructed by averaging the scores on the two items ($r = .30$; factual intervention: $M = 3.36$, $SD = .76$; evaluative intervention: $M = 3.08$, $SD = .81$, no intervention: $M = 2.91$, $SD = .76$).

Advertising skepticism. Advertising skepticism was defined as a tendency toward disbelief in advertising (Boush, Friestad, & Rose, 1994; Obermiller & Spangenberg, 2000). To measure children’s skepticism toward advertising, two items were adopted from previous studies of advertising skepticism (Roberts et al., 1980; Rossiter, 1979; Wiman 1983). The questions were: (1) Do you think television commercials tell the truth? (2) Do you think you can believe what the people in the commercials say or do? Total advertising skepticism scales were constructed by averaging the scores on the two items ($r = .42$; factual intervention: $M = 3.24$, $SD = .66$; evaluative intervention: $M = 2.92$, $SD = .77$; no intervention: $M = 2.73$, $SD = .78$).

Attitude toward commercials. To measure children’s attitudes toward the commercials, they were asked to indicate how much they had liked each commercial in the video. The total attitude toward the commercials variable was constructed by averaging the scores on the six items ($\alpha = .53$; factual intervention: $M = 2.22$, $SD = .62$; evaluative intervention: $M = 2.06$, $SD = .69$; no intervention: $M = 2.32$, $SD = .61$).

Intended product requests. To measure the persuasive impact of advertising, children were asked to indicate whether they intended to ask their parents to purchase the
product advertised in each commercial. A total intended product request scale was constructed by averaging the scores on the six items (α = .56; factual intervention: \( M = 1.92, SD = .59 \); evaluative intervention: \( M = 1.77, SD = .66 \); no intervention: \( M = 1.95, SD = .69 \)).

Results

Preparatory Analyses

To investigate whether the pattern of results was as expected, correlations were computed between the variables in the model. In addition, first-order correlations were computed, controlling for the number of commercials recognized. All zero- and first-order correlations are depicted in Table 1. As anticipated, the factual intervention enhanced children’s skepticism and knowledge, and the evaluative intervention negatively influenced children’s attitude toward the commercials. No direct relations were found between the two interventions and children’s intended product requests. As expected, children’s knowledge, skepticism, and attitude toward the commercials were significantly related to their intended requests.

These preliminary results indicate mediated relationships between the interventions and children’s requests for the products advertised, as anticipated in H1-H3. In addition, conform theories of age differences in advertising processes and effects, age was related positively to knowledge and skepticism (although it should be noted that the latter relation only approached significance), and negatively to attitude toward the commercials and intended product requests. Finally, Table 1 shows that children’s prior knowledge of the commercials did not affect any of the relationships and further analyses were conducted without controlling for that variable.
Structural Equation Modeling Analyses

The mediated paths between factual and evaluative intervention and children’s intended product requests (H1-H3) were investigated with the use of the structural equation modeling program AMOS 5 (Arbuckle, 2003). The structural equation analysis was based on two independent variables (factual and evaluative intervention), three mediating variables (advertising knowledge, advertising skepticism, and attitude toward commercials) and one dependent variable (intended product requests). To indicate the fit between the data and the specified model, three model fit indices were used: The $\chi^2$-test, the comparative fit index (CFI), and the root mean square error of approximation index (RMSEA). The model would be supported with a nonsignificant $\chi^2$, a CFI value of .95 or more, and a RMSEA value of .05 or less, with $p$-close > .05 (cf., Browne & Cudeck, 1992).

The hypothesized model fit the data very well, $\chi^2(6, N = 206) = 5.75, p = .45$, CFI = 1.00, RMSEA = .00 with $p$-close = .72. Of the eight causal paths specified in the hypothesized model, six were found to be statistically significant. These paths represented the relations between (1) factual intervention and knowledge ($\beta = .21$), (2) factual intervention and skepticism ($\beta = .25$), (3) evaluative intervention and attitude toward commercials ($\beta = -.17$), (4) knowledge and attitude toward commercials ($\beta = -.18$), (5) skepticism and attitude toward commercials ($\beta = -.19$), and (6) attitude toward commercials and intended product requests ($\beta = .64$).

Because the hypothesized relations between knowledge and product requests and skepticism and product requests were nonsignificant, I also tested an alternative--more
parsimonious--model without these two relations. This model would be preferable to the initial one, because it explains the underlying mechanisms of television advertising intervention better. A model comparison analysis showed that the model fit did not significantly decrease by dropping the two parameters: $\chi^2(8, N = 206) = 9.62, p = .29$, CFI = .99, RMSEA = .03 with $p$-close = .62 ($\Delta \chi^2 = 3.87, p = .14$). Therefore, the second model, describing only the mediated paths leading from children’s knowledge and skepticism to their product requests via attitude toward the commercials, was accepted as the most accurate one. This model is represented by the solid arrows in Figure 2.

---Please Insert Figure 2---

**Testing for Age Differences**

In order to investigate whether the intervention paths to reduced advertising persuasion would differ for younger and older children (H4-H6), the observed model depicted in Figure 2 was also tested within three different age groups. Structural equation modeling analyses indicated that, although the model provided an accurate fit for each of the three age groups, the strength of the relations varied for children of different ages.

Among 5-6-year-olds ($\chi^2(8, N = 72) = 7.78, p = .46$, CFI = 1.00, RMSEA = .00 with $p$-close = .58), the relations differed from the relations observed in the total sample. Factual intervention was only weakly related to advertising knowledge ($\beta = .09$), and moderately to advertising skepticism ($\beta = .18$). In turn, advertising knowledge related positively ($\beta = .16$) and skepticism negatively ($\beta = -.11$) to attitude toward the commercials. Contrary to expectations, evaluative intervention hardly affected young children’s attitudes toward the commercials ($\beta = .07$). Finally, as was found in the total
sample, attitude toward the commercials were related to intended product requests ($\beta = .49$).

Among 7-8-year-olds ($\chi^2(8, N = 64) = 6.30, p = .61, \text{CFI} = 1.00, \text{RMSEA} = .00$ with $p$-close = .71), all intervention paths were found to be significant. Factual intervention enhanced advertising knowledge ($\beta = .39$) and skepticism ($\beta = .35$). In turn, knowledge and skepticism were negatively related to attitudes toward the commercials ($\beta = -.18$, and $\beta = -.14$, respectively. Evaluative intervention affected children’s attitude toward the commercials negatively ($\beta = -.28$), which in turn was related to their intended product requests ($\beta = .69$).

Among 9-10-year-olds ($\chi^2(8, N = 70) = 7.24, p = .51, \text{CFI} = 1.00, \text{RMSEA} = .00$ with $p$-close = .63), factual intervention increased advertising knowledge ($\beta = .24$) and skepticism ($\beta = .24$), which in turn influenced attitudes toward the commercials ($\beta = -.08$ and $\beta = -.26$, respectively). In addition, evaluative intervention influenced the eldest children’s attitude toward the commercials negatively ($\beta = -.41$), which in turn was related to their intended product requests ($\beta = .64$).

Discussion

The aim of this study was to (a) investigate how factual and evaluative interventions can lead to reduced susceptibility to advertising, and (b) compare the various intervention paths for younger and older children. I developed and tested a model explaining how factual and evaluative intervention styles can reduce children’s susceptibility to commercials, by enhancing their cognitive defenses to advertising and negatively influencing their affective responses to the commercials.

*The Mechanisms of Factual and Evaluative Advertising Interventions*
The first three hypotheses predicted that the advertising interventions would influence children’s cognitive defenses positively and affective responses negatively, in turn reducing their susceptibility to advertising effects. Two of the three hypothesized paths were confirmed in the structural equation modeling analysis. In accordance with the second hypothesis, factual intervention (a) increased children’s advertising knowledge and skepticism, which (b) influenced their attitudes toward the commercials negatively, which then (c) reduced their intention to request the advertised products. In accordance with the third hypothesis, evaluative intervention (a) influenced children’s attitudes toward the commercials negatively, which (b) reduced their intended product requests.

In other words, the relation between children’s cognitive defenses and their susceptibility to advertising effects was not direct, but mediated by their affective responses to the commercials. Children’s liking of commercials was the most important determinant of their intention to ask for the advertised products. This finding corroborates earlier advertising research findings, which showed that the relations between attitude toward the commercial and attitude toward the brand and purchase intent are even stronger and more direct among children than among teenagers and adults (Derbaix & Bree, 1997; Moore & Lutz, 2000; Phelps & Hoy, 1996). It has been suggested that young children are more easily swayed by an attractive commercial, because they are less able than older children and adults to relate new information to existing attitudes toward the advertised product or brand (Valkenburg, 2004).

The second aim of this study was to examine the hypothesized intervention paths in different age groups (H4-H6). Although the model of factual and evaluative intervention held for each of the three investigated age groups, results among the youngest children were less unambiguous than among older children. Unexpectedly, the 5- to 6-
year-olds did not benefit from evaluative intervention. Children who received negative evaluative comments were as positive about the commercials as children who did not receive those comments. However, the youngest children did benefit, to some extent, from factual intervention, which positively affected their skepticism toward advertising. Skepticism, in turn, was negatively related to their attitude toward the commercials. This observed path calls for further investigation. Although it is often assumed that young children find advertising more trustworthy than older children and adults do (Boush, 2001; Gunter et al., 2005), most previous research has focused on teenagers’ and adults’ advertising skepticism (Boush et al., 1994; Obermiller & Spangenberg, 2000). The results of this study suggest that skepticism can play a mediating role in young children’s advertising processing, a role that can be further investigated in future research.

Among the older children in the sample, both types of intervention were effective in reducing advertising susceptibility. As expected in the fifth hypothesis, the intervention paths were found to be most robust among 7- to 8-year-olds. At the threshold of early and middle childhood, the development of cognitive defenses and critical attitudes is at its peak, and the interventions enhanced and activated this process. Finally, partly in line with our sixth hypothesis, 9- to 10-year-olds did not only benefit from factual, but also from evaluative intervention. It was not expected that the older children in the sample, who are assumed to have already developed a critical attitude toward advertising, would be affected by negative evaluative comments about commercials.

There are two possible explanations for this unexpected finding. First, although previous information-processing studies generally have used factual intervention to activate children’s knowledge, Brucks et al. (1988) have argued that even a simple non-specific but directive cue could be enough to activate advertising knowledge and skills. It
is conceivable that the evaluative comments, just like the factual comments, activated these children’s cognitive defenses. However, if this had been the case, evaluative intervention should have been positively related to children’s knowledge and skepticism. As can be seen in Table 1, evaluative intervention was unrelated to children’s knowledge and skepticism, which rules out this possible explanation.

A second explanation why evaluative intervention still had an effect on these children could be the appeal of the commercials used in the experiment. The finding that older children were less positive about commercials than younger children does not imply that these children held negative attitudes toward the commercials. Turning back to the data set, the mean attitude score among 9- to 10-year-olds who did not receive intervention was $M = 2.10$, which is still relatively positive on a scale from 1 to 4. Several authors have argued that although children develop a more critical attitude toward advertising from around age 7 or 8, this does not imply that they become critical about all commercials (Prasad et al., 1978; Riecken & Ugur, 1999; Valkenburg, 2004). It seems likely that the evaluative comments counteracted the appeal of the commercials.

**Implications, Limitations, and Suggestions for Further Research**

The results of this study help us understand and predict how different intervention styles modify advertising effects among younger and older children. Such theoretical insights can contribute to the public debate about child-directed advertising, which often focuses on how children can be protected from unintended advertising effects, such as materialism and bad eating habits (Kunkel et al., 2004). In many Western societies, public and political attention is increasingly drawn toward methods reducing children’s susceptibility to advertising, such as school-based instructional programs aimed at
increasing children’s general advertising knowledge and consumer skills (cf., Donohue et al., 1983; Feshbach et al., 1982; Roberts et al., 1980; Robinson et al., 2001).

This study demonstrated that intervention during exposure to commercials effectively reduces children’s advertising susceptibility, and that evaluative comments can be equally effective as factual comments. These findings are of interest to parents and other caretakers, who are able to apply both types of direct intervention. Children usually watch television in a family context, largely provided by their parents (Dorr, 1986; Gunter & Furnham, 1998; Robertson, 1979). Several studies have shown that many parents provide their children with comments while watching television (Boush, 2001; Buijzen & Valkenburg, 2005). Policy makers and designers of instructional programs could use these insights and focus not only on educating children about advertising, but also on raising parental awareness and knowledge about modifying advertising effects.

This study provided an initial exploration of the mechanisms underlying advertising intervention. In order to fully understand and predict the mechanisms of different interventions, further research is needed. First, it has to be noted that these findings result from post-hoc model modification, and need to be replicated in additional research for decisive conclusions about younger children’s processing of advertising interventions (Steiger, 1990). Second, future research should investigate the effectiveness of advertising interventions in different types of setting. In this study, both the intervention and the questionnaire were administered by the experimenter in a school setting. Although we took great care in creating a natural and friendly environment, this method has two limitations: First, it is difficult to generalize the results to the home environment, and second, there is a possibility that children give socially desirable responses, which they perceive to be in line with the intervention comments made by the experimenter. Future
research could replicate this study in a more naturalistic setting (e.g., the home setting) and have the intervention administered by an individual other than the experimenter, for instance one of the child’s parents.

Furthermore, there is a need for research to further explore the complex constructs of cognitive defenses and affective responses to advertising, and to determine their role in children’s advertising processing. For instance, this study focused on children’s advertising knowledge and skepticism, because these variables are considered important predictors of children’s advertising susceptibility. However, cognitive advertising defenses may also include more sophisticated elements of persuasion knowledge, such as understanding of advertisers’ tactics and appeals (Friestad & Wright, 1994; John, 1999), brand familiarity (Phelps & Hoy, 1996), and product experiences (Moore & Lutz, 2000). Further research needs to investigate the precise nature, development, and role of different aspects of persuasion knowledge in shaping the advertising defenses and responses of children in different age groups.

In conclusion, theoretical insights of advertising processes and effects among children are of great value to both the academic and public debate. Psychological insights of children’s advertising processing have often served a commercial aim, leading to concern and debate within academic circles about the ethics of child and advertising research. Questions were raised, for instance, about psychologists that help advertisers and marketers to target the child consumer more effectively (see http:\www.apa.org). The APA task force on children and advertising has recently emphasized the importance of and need for research that helps to minimize advertising's harmful effects (Kunkel et al, 2004). This study demonstrated that insights in children’s advertising processing can help explain how children’s susceptibility to advertising can be reduced.
Appendix

**Factual Intervention Comments**

1. These commercials are intended to sell. The makers want you to ask your parents for those [toys].

2. The commercials for [toys] we just saw aren’t real. The makers use special tricks to make the [toys] look better than they really are.

3. Those commercials aren’t telling the truth. These [toys] look different in reality.

**Evaluative Intervention Comments**

1. These commercials are stupid. Those [toys] aren’t any fun.

2. They’re stupid, those [toys].

3. The kids in those commercials for [toys] aren’t cool at all.
References


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Table 1.

Zero- and First-Order Correlations for all Variables Used in the Analyses (N = 206)

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<td>3. Advertising knowledge</td>
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<td>-.03</td>
<td>-</td>
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<td></td>
<td>(.21***)</td>
<td>(-.03)</td>
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<td>.02</td>
<td>-</td>
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<td>(-.05)</td>
<td>(.01)</td>
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<tr>
<td>5. Attitude toward commercials</td>
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<td>-.18**</td>
<td>-.19**</td>
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<td>(-.17*)</td>
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<tr>
<td>6. Intended product request</td>
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<td>-.22**</td>
<td>-.13*</td>
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<td>(-.40***)</td>
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</table>

\(^1\) First-order correlations controlling for children’s prior knowledge of the commercials

\(*\ p < .05. \ **p < .01. \ ***p < .001.\)
Figure Captions

*Figure 1.* Conceptual model of television advertising intervention.

*Figure 2.* Structural equation model of television advertising intervention. Solid arrows indicate the observed model, while broken arrows indicate nonsignificant relations in the initially hypothesized model. Coefficients represent standardized beta weights, all significant at least at $p < .05$. 
Mechanisms of Advertising Intervention

Type of intervention
- Factual intervention
  - Advertising knowledge: 0.21
  - Advertising skepticism: 0.25
  - Attitude toward commercials: -0.52

Affective responses
- Intended product request: -0.18
- Advertising skepticism: -0.19
- Attitude toward commercials: 0.64