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Children's Advertising Exposure, Advertised Product Desire, and Materialism:
A Longitudinal Study

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Abstract

Previous studies have suggested that advertising exposure affects materialism among youth. However, this causal effect has not been investigated among children in middle childhood, who are in the midst of consumer development. Furthermore, the mechanism underlying this relation has not been studied. To fill these lacunae, this study focused on the longitudinal relation between children's television advertising exposure and materialism. We investigated advertised product desire as a mediating variable. A sample of 466 Dutch children (ages 8 - 11) was surveyed twice within a 12-month interval. The results show that advertising exposure had a positive longitudinal effect on materialism. This effect was fully mediated by children's increased desire for advertised products.

Keywords: children, advertising, materialism, product desire

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A Longitudinal Study

Today's Western children grow up in a heavily commercialized media environment. On average, children spend 7½ hours per day using media, at least three of which are spent watching television (Rideout, Foehr, & Roberts, 2010). Estimates of the number of television commercials that children are annually exposed to vary from 10,000 in Britain (Piachaud, 2007) to 40,000 in the United States (Kunkel, 2001). The increased expenditures on advertising have been paralleled by rising concerns about potential undesired side effects (Kunkel et al., 2004; Moore, 2004; Young, 2003). Advertising directed at children has become a sensitive subject, with one of the main concerns being that advertising might stimulate materialism in children (Johnson & Young, 2003; Schor, 2005; Strasburger, 2001). Materialism in children is a cause for worry, because it is considered a socially undesirable character trait that is associated with negative outcomes on both the individual and societal level (Roberts & Clement, 2007).

Most scholars treat materialism as a state rather than a trait, defining and operationalizing materialism as holding a set of materialistic values (Richins, 2004). According to widely adopted view of Richins and Dawson (1992), materialistic values are reflected by the degree to which possessions and the acquisition of possessions are central to a person's life, the degree to which people believe possessions and their acquisition bring happiness and life satisfaction, and the degree to which people assess the success of others in terms of possessions. Embracing this line of thought, Oprea, Buijzen, Van Reijmersdal and Valkenburg (2011) argued that materialistic values in children are reflected by the importance they attach to possessions, the satisfaction they get from obtaining new possessions, and the degree to which they like children with more possessions more than other children. At the individual level, materialism has been associated with lowered psychological well-being and

unwanted character traits such as self-centeredness, possessiveness, and disdain (Belk, 1985; Fournier & Richins, 1991; Kasser, Ryan, Couchman, & Sheldon, 2004). Although materialism could be argued to enhance economic prosperity on the societal level, it is commonly regarded as a threat to the welfare state (Piachaud, 2007; Preston 2004). Materialists generally show less concern for and involvement in social issues such as social security and environmentalism (Roberts & Clement, 2007).

As many as nine out of ten parents believe that exposure to advertising makes children materialistic (Smith & Atkin, 2003). Studies in developmental psychology have indicated that children start to develop materialistic orientations in middle childhood (see John, 1999). Between the ages of eight and eleven, children are in the midst of consumer development. By age twelve, children will have grown familiar with all aspects of consumer behavior. Children are then able to “(1) feel wants and preferences, (2) search to fulfill them, (3) make a choice and a purchase, and (4) evaluate the product and its alternatives” (Valkenburg & Cantor, 2001, p. 61). During middle childhood, children also become aware of the symbolic meaning of products. Unlike younger children, they may want to acquire products not only for the sake of having them but also for the purpose of increasing happiness and social status (Chaplin & John, 2007; John, 1999; Valkenburg & Cantor, 2001).

In short, if advertising exposure instills materialism, it may do so among children as young as eight years of age. However, the effect of advertising exposure on materialism has not been investigated among children in middle childhood (Buijzen & Valkenburg, 2003). For that reason, the aim of this study is to investigate whether and how advertising exposure affects materialism among eight- to eleven-year-olds. Our study is grounded in cultivation theory, which has been used to explain media effects on many kinds of social perceptions, including materialism (Morgan & Shanahan, 2010; Shrum, Lee, Burroughs, & Rindfleisch, 2011; Sirgy et al., 2012).

Cultivation of Materialism

The first aim of this study is to investigate *if* children's advertising exposure leads to materialism. According to cultivation theory, heavy television viewers "will be more likely to perceive the real world in ways that reflect the most stable and recurrent patterns of portrayals in the television world" (Signorelli & Morgan, 1990, p. 9-10). In the past decade, cultivation theory has been used in several studies to explain why television viewership and materialism are positively related (Morgan & Shanahan, 2010). Following cultivation theory, heavier viewers will be more likely to hold beliefs that are consistent with the material world portrayed on television than lighter viewers (Shrum et al., 2011). Empirical research confirms this assumption. When asked about prevalence, heavy viewers perceive luxury products and services to be more commonplace than they actually are (O'Guinn and Shrum, 1997; Shrum, Wyer, & O'Guinn, 1998). Yet, it is important to realize that material values are mainly spread through commercial television (Harmon, 2001), and primarily via advertising (Sirgy et al., 2012).

Advertising may promote materialism because it "concentrates on what we have, not who we are" (Sirgy et al, 2012, p. 80). In general, luxury products and services are overrepresented in advertising. Moreover, advertising promotes the ideology that possessions are important and that desirable qualities such as beauty, happiness, and success can be obtained by acquiring material possessions (Belk & Pollay, 1985; Pollay, 1986; Richins, 1995; Wulfemeyer & Mueller, 1992). Therefore, children who are frequently exposed to television advertising could have an increased belief that goods and services bring happiness and success. However, the effect of advertising exposure is not instantaneous. If advertising exposure has an effect on materialism, it will be subtle and long-term (Harmon, 2001). Exposure to one single advertisement will not make people more materialistic, but repetitive exposure to advertising might.

Previous studies have confirmed that young people's advertising exposure and materialism are positively related (for a review, see Buijzen & Valkenburg 2003). However, until now, only three studies have examined the causal effect of youth's advertising exposure on materialism. Goldberg and Gorn (1978) studied this effect in an experiment by showing four- to five-year-old preschoolers a toy commercial. They found that exposure to the commercial increased the likelihood that children would prefer to play with the toy rather than with their peers. Moschis and Moore (1982) investigated the effect of advertising exposure on materialism by means of a longitudinal survey among twelve- to eighteen-year-olds. They found that television advertising viewing time was correlated to materialism one year later. Finally, Greenberg and Brand (1993) conducted a quasi-experiment to study the effect of exposure in the classroom to the "Channel One" program, consisting of ten minutes of news and two minutes of advertising, on materialism among 10th graders. Teenagers who watched "Channel One" were found to be more materialistic than teenagers who did not watch it.

In brief, there is some evidence indicating that advertising exposure has a causal effect on materialism among youth. However, because the studies of Goldberg and Gorn (1978) and Greenberg and Brand (1993) were conducted in a controlled setting, their results may not be generalizable to a more naturalistic setting. Furthermore, because previous studies were conducted among preschoolers and adolescents, their results may not apply to 8- to 11-year-olds. Previous findings nevertheless inspired us to investigate the following main hypothesis:

H1: Advertising exposure has a positive causal effect on materialism among children in middle childhood.

Mediating Effect of Advertised Product Desire

The second aim of this study is to investigate *how* advertising exposure affects materialism. We believe that advertising exposure might have an effect on materialism via

children's increased desire for heavily advertised products (i.e., *advertised product desire*, see Rozendaal, Buijzen, & Valkenburg, 2009). Advertising aims to increase children's desires for the advertised products, and this desire for advertised products may transcend to more general materialistic orientations. Although the concept of advertised product desire might overlap with materialism, the two are distinct. Materialism implies a longing for all types of products, and is thus much broader than advertised product desire. In addition, materialism implies a certain psychological mindset towards products, anticipating them to provide fulfillment, happiness, and success (Richins, 2004). We expect that advertising exposure positively affects advertised product desire, and that advertised product desire in turn leads to an increased general desire and focus on products (i.e., materialism).

Numerous studies have indicated that exposure to advertising increases children's desire for advertised foods, toys, cereals, candy, and fast-food. This notion has been confirmed in both survey and experimental research (for an overview, see Smith & Atkin, 2003). Within experimental settings it has been found that children who are exposed to a certain advertisement have a higher preference for the advertised product than children who were not exposed to that specific commercial (e.g., Auty & Lewis, 2004; Borzekowski & Robinson, 2001). Moreover, quasi-experiments within more natural settings have indicated that commercials aired during the holiday season directly affect children's Christmas wishes (e.g., Buijzen & Valkenburg, 2000; Pine & Nash, 2002; Pine, Wilson, & Nash, 2007).

Although there are no studies explicitly testing the effect of advertised product desire on materialism, several studies have shown that advertised product desire and general product desire are related (for an overview, see Coon & Tucker, 2002). Studies have shown that children's exposure to advertising is positively and significantly related to their consumption of advertised brands as well as to their overall consumption of the advertised product types. Interpreting an increase of overall consumption as an indicator for materialism, it seems

plausible that advertising exposure, advertised product desire, and materialism indeed are interrelated. For that reason, we formulated the following mediating hypothesis regarding the effect of advertising exposure on materialism:

H2: The effect of children's advertising exposure on materialism is mediated by advertised product desire: children's advertising exposure leads to an increase in advertised product desire (H2A) that, in turn, enhances materialism (H2B).

The Present Study

Our study contributes to the existing literature on youth's advertising exposure and materialism in three important ways. First, the study investigates 8- to 11-year-olds who are in the midst of consumer development, whereas previous studies have focused on either preschoolers or adolescents. Second, unlike most previous studies, it focuses on the longitudinal rather than the cross-sectional relation between advertising exposure and materialism. Third, in addition to investigating the direct effect of children's advertising exposure on materialism, our study examines the mediated effect through advertised product desire.

Method

Sample

For this study, we collected longitudinal survey data among 466 Dutch children between 8 and 11 years of age (55% girls). A research company specialized in studying children and adolescents was responsible for the data collection. The respondents were recruited through an existing online youth panel that is representative of the Netherlands in terms of age, gender, and geographical distribution. The children were informed that the survey was about advertising and belongings, and that they could end their participation at any time they wished. The questionnaire took 15 to 20 minutes to complete, and the children received a small incentive for their participation. Prior to the implementation of the survey,

informed consent from both parents and children was obtained. The data collection was granted IRB approval.

During the first wave of data collection in October 2006, 1,001 8- to 11-year-olds (50% girls) filled out our questionnaire. Of these children, 603 children also participated in the second wave (50% girls), which took place one year later. Despite two reminders and the offer of an extra incentive, panel attrition could not be further reduced. Because they did not fully complete both questionnaires or their demographic information did not match between waves, we removed 137 children from our data set, leaving a final sample of 466 children. We checked whether the children from the original sample who failed to complete both questionnaires differed systematically from the children who did complete both questionnaires. There was no association between drop-out and gender ($\chi^2(1, n = 995) = .42, p = .52$), age ($F(1,993) = 1.35, p = .25$), and the time it took children to complete the first survey ($F(1,993) = 2.40, p = .12$). Our final sample consisted of 112 8-year-olds (24.0%), 131 9-year-olds (28.1%), 129 10-year-olds (27.7%), and 94 11-year-olds (20.2%).

Measures

Advertising exposure. To assess children's television advertising exposure, we followed Slater's (2004) strategy to improve the quality of self-reported exposure by performing the following actions: (a) increasing the specificity of the media content exposure measure and (b) providing more detail about the exposure measure based on media content data. Rather than asking general questions such as 'How often do you watch advertising?' or 'Do you frequently watch programs on commercial networks?', we specifically asked children about their viewing frequency with respect to nine television shows. The selection of shows was based on viewing and advertising broadcast data. First, we determined which shows were most popular among 8- to 11-year-olds by studying data from the Dutch National Audience Research Foundation. Then, based on data from Nielsen Media Research on the

spring of 2006, we studied the amount of advertising aired prior, during, and after the shows. Based on the Nielsen data, we selected the nine shows that scored highest on advertising density and could therefore be considered an accurate proxy for children's advertising exposure. These shows were the children's series *SpongeBob SquarePants*, *Totally Spies*, *Danny Phantom* and *The Tofus*, the Dutch family series *Skating With Celebrities*, *Good Times Bad Times*, *Flodder*, and *Kees & Co*, and the news entertainment show *RTL Boulevard*.

For each of these nine programs, children were asked to indicate how often they watched that particular program. Response categories ranged from 1 (*never*) to 4 (*very often*), with a fifth option of 'I don't know.' If a child chose 'I don't know' for an item, his or her score on that particular item was replaced by his or her mean score on the other advertising exposure items. The number of missing values replaced using this procedure was 67. At Time 1, 30 children had one missing data point, 11 children had two missing data points, and 5 children had three missing data points. At Time 2, 22 children had one missing data point, 11 children had two missing data points, three children had three missing data points, and one child had eight missing data points. There was no significant difference in the number of missing data points between younger and older children ($t(464) = -.20, p = .84$ at Time 1; $t(464) = -.20 p = .85$ at Time 2).

Principal components analysis on the data of Time 1 showed that the nine exposure items loaded onto three different factors, each representing a different TV genre (Eigenvalues 2.35, 1.79, and 1.05, respectively). All children's television series loaded onto the first factor, which explained 26.1% of the variance (factor loadings .67, .64, .77, and .68, respectively). All family shows loaded onto the second factor, which explained an additional 19.8% of the variance (factor loadings .54, .61, .49, and .70, respectively). The news entertainment show loaded on a third factor, which explained yet another 11.6% of the variance (factor loading .59). It was expected that not all programs would load onto one factor, because children

might have a preference for a specific genre. Yet, we wanted to create a cumulative score for advertising exposure in order to make full use of the data. Hence, we used the mean score over all nine items as a proxy for advertising exposure.

Advertised product desire. To measure children's desires for advertised products, children were presented with a list of five product types that had been selected to appeal to both boys and girls, as well as younger and older children (i.e., toys, CDs, DVDs, computer games, ringtones) (see Buijzen and Valkenburg, 2000). The data from Nielsen Media Research indicated that commercials for these types of products were frequently aired at the time of data collection. Hence, desire for these products was a good proxy for advertised product desire in general. For each product type, the children were asked to indicate how often they desired the particular product when they saw it advertised. Items were measured on a four-point scale ranging from 1 (*almost never*) to 4 (*very often*). In both waves, the five items loaded on one factor, explaining 52% of the variance at Time 1 and 54% of the variance at Time 2.

Materialism. We measured materialism with the Material Values Scale of Richins and Dawson (1992), which was adapted to create items appropriate for children (Oprea et al., 2011). The Material Values Scale consists of three subscales: material centrality, material happiness, and material success. We measured material centrality with six items on children's tendency to place possessions and their acquisition at the center of their lives (e.g., 'Do you think it's important to own expensive things?'). Material happiness was measured with six items on the degree to which children believe (expensive) possessions and their acquisition bring happiness (e.g., 'Does buying expensive things make you happy?'). Finally, material success was measured with six items on the degree to which children like other children more if they have more (expensive) possessions (e.g., 'Do you think children who have expensive things are more fun than other children?'). Response categories on all materialism items

varied from 1 (*no, not at all*) to 4 (*yes, very much*). In line with common practice, we combined the three subscales into one overall scale (Richins, 2004). The means of the three subscales loaded on one factor, explaining 83% of the variance of materialism at Time 1 and 82% of the variance at Time 2.

Data Analysis

We used structural equation modeling to test our hypotheses. We used path analyses with latent variables because although we used reliable scales, no psychological measure is without error. In addition, measuring the same constructs using the same scales twice means that shared method variance is inevitable. Latent variable modeling can solve both problems because error terms can be attached to the manifest indicators, and error terms of repeated measures can be allowed to correlate (Cole & Maxwell, 2003). We used the overall advertising exposure scale and the subscales material centrality, material happiness, and material success as manifest indicators for the latent variables advertising exposure and materialism, respectively. For advertised product desire we constructed the parcels using the factorial algorithm suggested by Little, Cunningham, and Shahar (2002). With this technique, each parcel takes up the items with the highest to lowest factor loadings, ensuring that item-specific components are distributed evenly across parcels (Matsunaga, 2008).

All models were tested using the standard maximum likelihood procedure in Amos 17.0. We evaluated the fit of our models with the root mean square error of approximation (RMSEA) and the comparative fit index (CFI). We prefer these indices over the chi-square statistic, as the latter is often unreliable with large samples (Byrne, 2001). A good model fit is indicated by a RMSEA value smaller than .05, with *p*-close larger than .05 and a CFI value larger than .95. Further, RMSEA values between .05 and .08 and CFI values between .90 and .95 indicate acceptable model fit (Browne & Cudeck, 1992; Byrne, 2001).

Cross-lagged panel model. The first aim of this study was to resolve the question of whether children's advertising exposure leads to materialism. The longitudinal relations between children's advertising exposure and materialism were explored in a cross-lagged panel model (Figure 1). The cross-lagged paths in Figure 1 represent the two potential causal longitudinal relationships between children's advertising exposure and their materialism. According to our first hypothesis, we expected children's advertising exposure at Time 1 to have a positive causal effect on materialism at Time 2 (arrow H1).

Explanatory causal model. Assuming that children's advertising exposure has an effect on materialism, the second aim of this study was to determine whether this effect was mediated by advertised product desire. Our mediational hypothesis was tested with the model presented in Figure 2, in which the advertised product desire was added to the cross-lagged model. We first estimated the model *without* the dashed arrow to determine whether advertised product desire mediated the relation between children's advertising exposure and materialism. Then, we tested the model *with* the dashed arrow to see if full mediation took place, in which case the arrow from children's advertising exposure to materialism would be non-significant. We expected children's advertising exposure at Time 1 to have a positive effect on advertised product desire at Time 2 (arrow H2A). Furthermore, we expected that advertised product desire at Time 2 positively affected materialism at Time 2 (arrow H2B). Finally, we expected that the direct positive effect of children's advertising exposure at Time 1 on materialism at Time 2 (dashed arrow) was not significant when advertised product desire was included in the model.

Results

Descriptive Statistics and Zero-Order Correlations

Table 1 provides the descriptive statistics for all main variables in our study. All main scales had a satisfactory Cronbach's alpha (Nunnally & Bernstein, 1994). On average,

children reported to 'sometimes' watch advertising and desire advertised products. Furthermore, they indicated that they were 'not really' materialistic. Although these last statistics are suggestive of a floor effect of advertising exposure on materialism, the information about the percentiles is not. As many of 50% of the children in our sample scored higher than 2 on the advertising exposure measure, which is indicative for them being exposed to advertising on a regular basis. Also, at least 25% of the children in our sample scored higher than 2 on advertised product desire. Thus, one in four children desire advertised products. Lastly, at least 50% of the children in our sample scored higher than 2 on the materialism measure, meaning that they were materialistic.

Table 2 provides the zero-order correlation matrix of the main variables in this study. As Table 1 shows, advertising exposure at Time 1 was positively related to materialism at Time 2, and advertising exposure at Time 2 was positively related to materialism at Time 1 and Time 2. Additionally, advertising exposure at Time 1 and Time 2 were positively related to advertised product desire at Time 1 and Time 2. Finally, advertised product desire at Time 1 and Time 2 were positively related to materialism Time 1 and Time 2.

Testing the Hypothesized Models

Cross-lagged panel model (H1). Our hypothesized model from Figure 1 yielded a good fit to the data, $\chi^2(DF = 13, N = 466) = 16.06, p = .25, CFI = 1.00, RMSEA = .02, p\text{-close} = .92$. The model confirmed our first hypothesis that children's advertising exposure would have a positive causal effect on materialism. The path from advertising exposure at Time 1 to materialism at Time 2 was positive and significant ($\beta = .09, p < .05$). The path from materialism at Time 1 to advertising exposure at Time 2 was not significant ($\beta = .04, p = .44$). Multiple group analyses confirmed that results were similar, regardless of the child's sex (boys versus girls) and age (8- and 9-year-olds versus 10- and 11-year-olds): $\chi^2(3, N = 466) = 3.86, p = .28, TLI_{\text{change}} = .00$.

Explanatory model including advertised product desire (H2A, H2B). Next, we estimated the model from Figure 2 (without the dashed arrow) (see Figure 3). This model also had a good fit to the data, $\chi^2(DF = 42, N = 466) = 111.28, p = .00, CFI = .98, RMSEA = .06, p\text{-close} = .11$. To speak of a mediating effect of product desire, advertising exposure must have an effect on advertised product desire and advertised product desire must affect materialism. As expected, advertising exposure at Time 1 had a positive effect on advertised product desire at Time 2 ($\beta = .09, p < .01$). Furthermore, we found a positive effect of advertised product desire at Time 2 on materialism at Time 2 ($\beta = .36, p < .001$). Multiple group analyses confirmed that the mediating effect of advertised product desire was not contingent upon the child's sex and age: $\chi^2(6, N = 466) = 9.29, p = .16, TLI_{\text{change}} = .00$.

Based on the model from Figure 3, we conclude that advertised product desire mediates the effect of advertising exposure on materialism. However, to test the robustness of our findings, we conducted some additional analyses. With the models that follow, we tested the following: (1) whether advertised product desire had a longitudinal effect on materialism, and (2) whether advertised product desire fully mediated the relation between children's advertising exposure and materialism. To test whether advertised product desire had a longitudinal effect on materialism, we replaced the path from advertised product desire at Time 2 to materialism at Time 2 in the model from Figure 2 with a path from advertised product desire at Time 1 to materialism at Time 2. This new model had a good fit: $\chi^2(DF = 42, N = 466) = 153.05, p = .00, CFI = .97, RMSEA = .08, p\text{-close} = .00$. Again, advertising exposure at Time 1 had a positive effect on advertised product desire at Time 2 ($\beta = .08, p < .01$). Also, advertised product desire at Time 1 was found to have a positive effect on materialism at Time 2 ($\beta = .18, p < .001$).

Second, we tested whether the direct effect of advertising exposure at Time 1 on materialism on Time 2 was still significant once advertised product desire was introduced as

a mediating variable. We estimated the model from Figure 2 (with the dashed arrow) with advertised product desire as the mediating variable under two conditions. In the first model the path from advertising exposure at Time 1 to materialism was allowed to vary, whereas in the second model this path was constrained to zero. The model with the constrained path did not fit the data significantly worse than the model in which the path was allowed to vary: $\chi^2(1, N = 466) = 0.00, p = .98, \text{TLI}_{\text{change}} = .00$. In conclusion, the path from advertising exposure at Time 1 to materialism at Time 2 was not significantly different from zero, implying that the relation between the two variables was fully mediated by advertised product desire.

The significance of the indirect effect was formally tested with a bootstrap procedure suggested by Preacher and Hayes (2004). We used this procedure (1,000 samples, $N = 466$) to generate a 95% bias-corrected and accelerated confidence interval for the indirect effect of children's advertising exposure at Time 1 on materialism at Time 2 through advertised product desire at Time 1. The indirect effect of advertising exposure at Time 1 on materialism at Time 2 through advertised product desire at Time 1 was significant ($\beta = .10, p < .05$). The 95% bias-corrected and accelerated confidence interval for this indirect effect was .05-.16. Because 0 is not in this confidence interval, it is safe to conclude that the indirect effect was significantly different from 0 at $p < .05$ (Preacher & Hayes, 2004).

Discussion

This study investigated whether and how advertising exposure leads to materialism. Our study was the first to investigate this relation among eight- to eleven-year-olds who are in the midst of consumer development, to determine whether advertising exposure has a causal effect on materialism, and to investigate the mediating effect of advertised product desire. Our results showed that advertising exposure increases materialism, and that this effect is fully mediated by advertised product desire.

In line with cultivation theory, our results showed that advertising exposure had a positive causal effect on materialism (H1). Children who were frequently exposed to television advertising became more materialistic than those who were less frequently exposed. Our results indicate that the effect of children's advertising exposure on materialism was fully mediated by advertised product desire (H2). Children who were frequently exposed to television advertising developed a greater desire for advertised products than children who were less frequently exposed to it (H2A). In turn, children who had a greater desire for advertised products became more materialistic than children with less desire for advertised products (H2B). As expected, the reverse effects of advertised product desire on advertising exposure and of materialism on advertised product desire were not significant.

For future research on the advertising-materialism relation, the question remains whether these results are generalizable to other age groups. Although there is research on adolescence that is consistent with our results (Moschis & Moore, 1982), there is hardly any media effects research on materialism among younger children (Chaplin & John, 2007). Theoretically, it is likely that our results also hold for younger children. Cultivation effects are most likely to occur when information is processed with moderate or minimal cognitive efforts (Shrum, 2001, 2004; Shrum, Wyer, & O'Guinn, 1998). Young children are considered particularly sensitive to low-effort processing mechanisms because of their limited cognitive abilities (Buijzen, Van Reijmersdal, & Owen, 2010; Livingstone & Helsper, 2006; Nairn & Fine, 2008). Young children may not recognize product symbolism and are therefore unlikely to believe that products bring happiness and success. However, that does not mean that possessions cannot take a central place in their lives. Advertising may have the potential to affect the importance young children attach to possessions and therefore affect their materialistic orientations. Yet, because the mediated effect of advertising exposure on

materialism has not been tested among children younger than eight years of age, it remains uncertain whether such an effect exists.

Previous studies have noted that it is not just children who can be susceptible to the media's cultivation of materialism, but that adults may be susceptible too (Shrum, Burroughs, & Rindfleisch, 2005; Shrum et al., 2011). Recent persuasion processing theories assume that, because of the amount and nature of modern advertising techniques, adults are also inclined to process persuasive messages through low-effort processing mechanisms (Petty, Briñol, & Priester, 2009). Cultivation of materialism through advertising is thus likely to be a phenomenon present in all age groups. Further research could use a developmental perspective to provide more thorough insight into the causal relation between advertising exposure and materialism across the life span.

By showing that children's advertising exposure affected advertised product desire and that advertised product desire affected materialism, this study provides important pointers for those wanting to take action to counteract advertising effects. Most parents and caretakers see advertising-induced materialism as an undesired trait and may wish to reduce the effect. Generally, there are two strategies caregivers can use to reduce advertising effects. First, they can remove the source and regulate children's exposure to advertising, though this restrictive mediation is a drastic measure and its effectiveness has been questioned (Buijzen & Valkenburg, 2005; Nathanson, 2002). Second, many studies have indicated that active mediation involving parental and school-based discussion and education about advertising can be an effective tool in reducing advertising effects among children. The effectiveness of such active mediation depends largely on the content and style of the adults' comments (Buijzen, 2007; Nathanson, 2004; Nathanson & Yang, 2003).

Our findings indicate that advertising-induced materialism may be reduced by mediation focusing on advertised product desire. Given that the effect of advertising exposure

is mediated by advertised product desire, materialism may be reduced by limiting the effect of advertising exposure on advertised product desire. This can be done by increasing children's understanding of the persuasive intent of advertising. Specifically, children need to learn that advertisers aim to influence their behavior by changing their state of mind, particularly their desires and beliefs about a product (Rozenaal et al., 2009). For children to correctly assess the factuality and realism of media messages, they need to be made aware of genre-specific forms and context markers (Wright, Huston, Reitz, & Piemyat, 1994). Children need to learn about the array of persuasive techniques advertisers use to influence them.

In conclusion, our study showed that children's advertising exposure affects their level of materialism. This effect is mediated by advertised product desire. Adult mediation to reduce materialism may therefore focus on decreasing children's advertised product desire. However, the effectiveness of these specific mediation strategies needs further investigation. Because today's children grow up in a fundamentally commercialized media environment, it is of vital importance not only to study whether and how advertising affects their well-being but also to understand how undesired effects can be reduced.

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Table 1

Descriptive Statistics

	Advertising exposure		Advertised product desire		Materialism	
	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2
<i>Cronbach's alpha</i>	.62	.59	.76	.78	.90	.89
<i>Mean</i>	2.07	1.94	1.97	1.89	2.15	2.15
<i>SD</i>	0.45	0.42	0.58	0.53	0.49	0.50
<i>Percentiles</i>						
25	1.78	1.67	1.60	1.60	1.86	1.83
50	2.00	1.89	1.80	1.80	2.17	2.11
75	2.33	2.22	2.20	2.20	2.44	2.44
<i>Minimum</i>	1.00	1.00	1.00	1.00	1.00	1.06
<i>Maximum</i>	3.38	3.22	4.00	4.00	4.00	4.00

Note. Advertising exposure represents the frequency with which children watch the programs on commercial networks that are most popular among their age group (1 = *never*, 4 = *very often*). Advertised product desire is the extent to which children desire for heavily advertising product types (1 = *almost never*, 4 = *very often*). Materialism reflects the degree with which children value material well-being and material progress (1 = *no, not at all*, 4 = *yes, very much*).

Table 2

Zero-Order Correlations Among Main Variables

	Advertising exposure		Advertised product desire		Materialism	
	Time 1	Time 2	Time 1	Time 2	Time 1	Time 2
Advertising exposure						
Time 1	—					
Time 2	.62***	—				
Advertised product desire						
Time 1	.22***	.19***	—			
Time 2	.21***	.26***	.66***	—		
Materialism						
Time 1	.07	.11*	.43***	.34***	—	
Time 2	.14**	.16***	.35***	.50***	.60***	—

Note. Advertising exposure represents the frequency with which children watch the programs on commercial networks that are most popular among their age group (1 = *never*, 4 = *very often*). Advertised product desire is the extent to which children desire for heavily advertising product types (1 = *almost never*, 4 = *very often*). Materialism reflects the degree with which children value material well-being and material progress (1 = *no, not at all*, 4 = *yes, very much*).

* $p < .05$. ** $p < .01$. *** $p < .001$ (two-tailed).

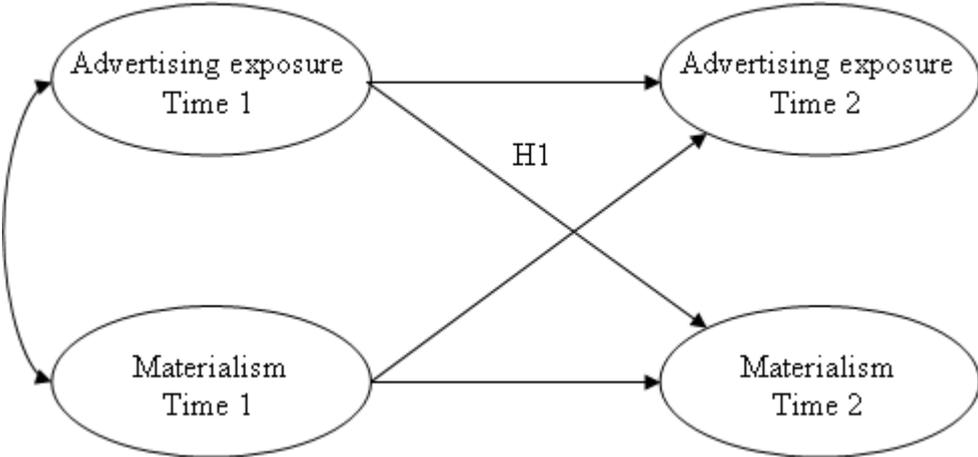


Figure 1. Hypothesized cross-lagged model on the relationship between children’s advertising exposure and their materialism.

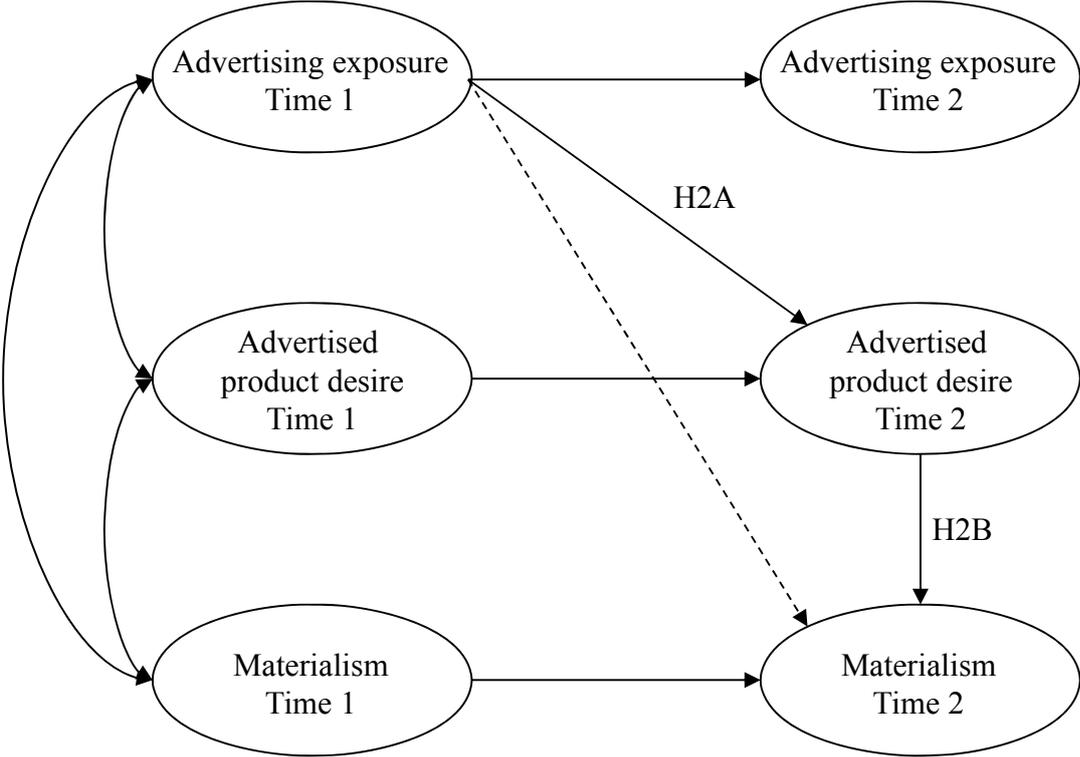


Figure 2. Hypothesized explanatory model on the relationship between children’s advertising exposure, the mediator variable advertised product desire (H2), and materialism.

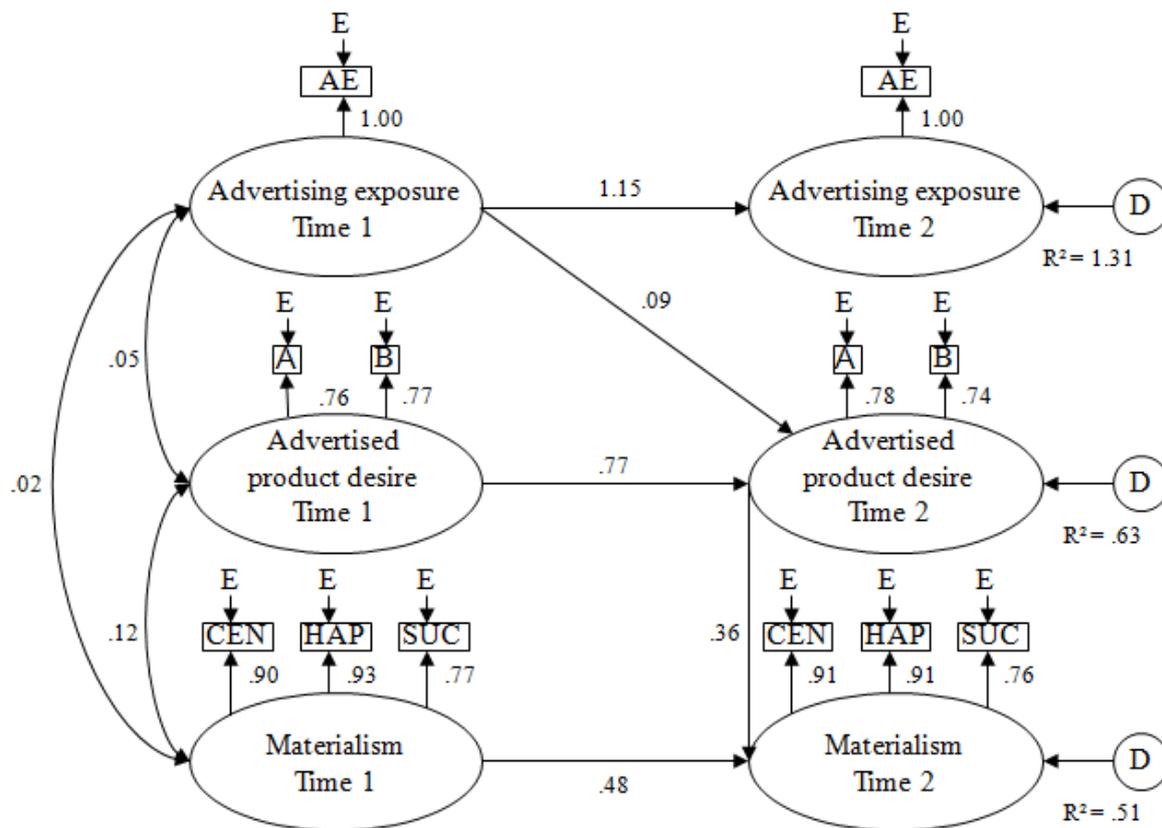


Figure 3. Observed structural model on the relationship between children's advertising exposure, advertised product desire, and materialism. Rectangles represent parcels and the letters 'D' and 'E' stand for disturbance and error terms, respectively. All path coefficients are standardized coefficients.