



Identifying determinants of young children's brand awareness: Television, parents, and peers

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Abstract

The aim of this study was to investigate the development of young children's brand awareness, and the relative influence of environmental factors (e.g., television, parents, peers) on brand awareness. We presented 196 two- to eight-year-olds with 12 brand logos. After exposure to these logos, we asked children to mention the brand name (brand recall), and to choose the right brand from a number of available visual options (brand recognition). Two- to three-year-olds recalled only 1 out of 12 brands, whereas they recognized 8 out of 12 brands. The results showed that exposure to television was significantly related to the brand awareness of even the youngest children. The findings are discussed in terms of contributions to national and international debates about the ethical aspects of a growing trend to consider infants and young preschoolers as a commercial target group.

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1. Introduction

The memory of each adult member of society holds an infinite number of brand representations. While there is a sizeable body of research into the brand awareness of adults, only little is known about how brand awareness develops in young children. A first aim of this study was to investigate when and how brand awareness emerges and develops in early childhood. A second aim was to determine the

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relative influence of several environmental factors (i.e., television, parents, peers) on young children's brand awareness.

Brand awareness is one's active and passive knowledge of a particular brand. Research on the brand awareness of young children has focused on two aspects of brand awareness: brand *recognition* and brand *recall*. Both brand recognition and recall have usually been operationalized by showing children a series of brand logos (e.g., Fischer, Schwartz, Richards, Goldstein, & Rojas, 1991), brand characters (Derscheid, Kwon, & Fang, 1996), or commercials (e.g., Goldberg, 1990; Macklin, 1983). In the case of brand recall, children were asked to name the specific brand when cued by the stimulus. In the case of brand recognition, they were invited to choose from a number of available visual options.

Both brand recognition and recall are important when making purchase decisions. For a decision for a particular brand in the retail environment, only recognition is necessary because the various alternatives are alongside one another on the shelf. For a decision to be made in another context, recall is necessary, because the various alternatives are not available at that time. In order to be able to function as a consumer, a child must therefore be capable of both brand recognition and recall (Macklin, 1996).

When one examines the scarce research into toddlers' and preschoolers' brand recognition (Derscheid et al., 1996; Fischer et al., 1991; Goldberg, 1990; Macklin, 1983; Mizerski, 1995) and brand recall (Macklin, 1983), it becomes clear that children's ability to recognize brands starts earlier in development than their ability to recall these brands. An observational study by Macklin (1983), for example, demonstrated that 4- to 5-year-olds had significantly more difficulty recalling a set of brand names than they had recognizing these names. This observation is in line with general research on young children's memory development (e.g., Kail, 1984; Siegler, 1998), which has found that preschoolers usually have an excellent recognition memory, whereas their recall memory performance is considerably weaker.

An explanation for this developmental difference between recognition and recall is that recall memory, in contrast to recognition memory, requires two cognitive steps. The first step is a mental search for a specific memory unit, and the second one is the determination of whether the activated memory unit is actually correct. Unlike recall memory, recognition memory requires only the second step. Although toddlers and preschoolers usually have a strikingly accurate recognition memory, they typically have difficulty undertaking a mental search for a particular memory unit (i.e., the first prerequisite for recall memory; e.g., Siegler, 1998).

Three developmental processes may account for the relative difficulty that preschoolers experience with recall memory. First, it is not until about 7 years of age that children start to develop sophisticated strategies to aid their recall memory, including rehearsal, categorization, visualization, and mnemonics. From this age, children use these types of strategies increasingly often, thereby helping to increase their recall memory (Roedder John, 1981, 1999; Siegler, 1998). Second, several basic memory processes, such as speed of information processing and the capacity to form associations, increase particularly during the preschool years. For example, speed of information processing (e.g., the rate with which children retrieve information from long-term memory) increases most rapidly between 4 and 8 years of age, with the pace of change slowing thereafter (Kail, 1991; Siegler, 1998).

Finally, older children have more content knowledge than younger children about almost everything. In general, new information is best learned and remembered when it can be related to existing knowledge in memory. If a young child has to remember an unfamiliar brand name, he or she has to

create an entirely new memory unit. An older child, in contrast, has the capacity to relate the unfamiliar brand name to existing content knowledge in memory, thereby helping to stimulate their recall memory (Siegler, 1998).

Despite growing concerns about the rising level of brand awareness of young consumers (see Bachmann Achenreiner & Roedder John, 2003, for examples), research into the development and determinants of brand awareness in preschoolers is still very scarce. To our knowledge, no prior research has investigated and compared developmental differences in brand recognition and brand recall among preschoolers and early elementary school children. Our aim was to examine how brand recognition and brand recall emerge and develop among a sample of 2- to 8-year-olds. Based on earlier theories on children's memory and brand awareness, we anticipated that children's brand recognition would already be fairly developed among the 2- to 3-year-olds. Brand recall, however, was expected to be most discernable at around 7 years of age.

Most earlier research into children's brand awareness has not yielded gender differences in brand recognition and recall (Fischer et al., 1991; Goldberg, 1990). However, a study by O'Cass and Clarke (2001) suggests that, although boys and girls do not differ in the *number* of brands they are able to recognize or recall, they do differ in the *types* of brands they recognize or recall. Brand logos that were more appealing to girls were better recalled by girls, whereas logos that better suited the taste of boys led to superior recall memory in boys. To be able to discern potential gender differences, we investigated changes in brand recognition and recall separately for boys and girls. To do so, we formulated the following two hypotheses:

Hypothesis 1. Children's ability to recognize brands is already present at age 2, whereas their ability to recall the same brands will be most discernible at around age 7.

Hypothesis 2. Boys and girls will not differ in their ability to recall and recognize brand logos.

1.1. Environmental determinants of children's brand awareness

Theories of consumer development (e.g., Roedder John, 1981, 1999; Valkenburg & Cantor, 2001) and consumer socialization (e.g., Moschis, 1987) assume that—apart from age and gender—several environmental factors may determine young children's brand awareness. These factors include television advertising exposure, family characteristics, and peer influence (Moschis, 1987; Moschis & Churchill, 1978; Roedder John, 1999).

1.1.1. Television advertising exposure

In earlier research, the effects of television advertising have often been divided into two general types: unintended and intended effects. Studies of unintended effects focus on the 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, 2003; Kunkel et al., 2004.) Intended effects studies concentrate on the effects that advertisers wish to achieve with their advertisements. These studies typically focus on three kinds of intended effects: cognitive, affective, and behavioral.

Studies of cognitive effects focus on children's recall or recognition of commercials or brands (e.g., Derscheid et al., 1996; Dubow, 1995; Fischer et al., 1991; Goldberg, 1990; Gorn & Goldberg, 1980; Macklin, 1983; Ward, Wackman, & Wartella, 1977). Affective effects studies concentrate on children's

liking of commercials and brands (e.g., Derbaix & Bree, 1997; Moore & Lutz, 2000; see Valkenburg, 2004, for a review). Finally, studies of behavioral effects investigate the extent to which children are persuaded by advertisements. Because young children usually do not have the means to purchase products, behavioral advertising effects are usually measured by means of children's product requests (Buijzen & Valkenburg, 2003).

The study presented in this paper fits within the cognitive advertising effects tradition. Brand awareness is an important intended effect of advertising. It is a necessary condition for affective (i.e., brand liking) and behavioral advertising effects (i.e., purchase requests). Several earlier studies, correlational as well as experimental, have investigated the effects of advertising on children's brand recognition and brand recall. The correlational studies into children's brand *recognition* have consistently demonstrated a significant relationship between television exposure and brand recognition. The correlations reported in these studies have ranged from $r = .18$ (Goldberg, 1990) to $r = .30$ (Derscheid et al., 1996; Fischer et al., 1991). These correlational results were confirmed in a number of experiments, which further demonstrated that children's exposure to commercials had a considerable influence on their brand recognition (Goldberg, 1990; Gorn & Florsheim, 1985; Gorn & Goldberg, 1980; Macklin, 1983).

The correlational research into the relation between television viewing and the brand *recall* of young children has yielded less clear results. In a study by Ward et al. (1977), children of 4 to 12 years of age were asked to name as many brands as possible from a particular product group. Although most brands named were those that were advertised regularly on television, the relationship between watching television and brand recall was not significant. Two other correlational studies focusing on children between 4 and 14 years also yielded nonsignificant relationships between advertising and brand recall (Atkin, 1975; Ward & Wackman, 1971). In addition, two experimental studies revealed that exposure to advertising affected young children's brand recall less than it affected their recognition (Macklin, 1983, 1994). It must be noted, however, that when older adolescents (15- to 18-year-olds) were investigated, television advertising did seem to be significantly related to brand recall (Ward & Wackman, 1971). A possible explanation for this developmental difference is that most recall tasks, particularly those in which children have to come up with the brand names themselves, are too difficult for younger children; perhaps such tasks are so difficult that advertising has no or little effect on their brand recall.

The results of earlier studies suggest that the influence of advertising on young children's brand recall is smaller than its influence on brand recognition. The hypothesis that television advertising affects young children's recognition and but not their recall has never been raised or tested in the research literature, leading to

Hypothesis 3. Television exposure will be more strongly related to the brand recognition of 2- to 8-year-olds than to their brand recall.

1.1.2. Family influence

Families are an important influence in consumer socialization of children in many ways. First, socioeconomic status of the family may affect children's awareness of their consumer environment, and affect their opportunities for consumption (Gunter & Furnham, 1998), and therefore, their brand awareness. Some studies suggest that children from high socioeconomic status families have a better brand awareness because they have greater exposure to the economic world than children from low

socioeconomic status families (Moore & Moschis, 1978; Moschis & Churchill, 1978; Ward, 1974). Other studies, in contrast, have found that children from low socioeconomic status families are better aware of brands, because they are exposed to the market-place earlier and more extensively than high socioeconomic status children (Gunter & Furnham, 1998). Based on this mixed research evidence, we formulated the following research question:

Research Question 1: How is socioeconomic status related to children's brand awareness?

In addition to socioeconomic factors, parents can also directly influence their children's consumer behavior through modeling, reinforcement, and social interaction (Moschis, 1987). In the case of brand awareness, parents probably fulfill all three functions. They serve as an example and as a source of information about the range of brands (McNeal, 1999). Parents and young children frequently visit supermarkets or department stores together, often on a daily basis (Valkenburg & Cantor, 2001). Parent-child interactions in these environments often involve the child's learning of product names and brands (McNeal, 1999). Parental brand awareness may be an important predictor of children's brand awareness. Therefore, we hypothesized that:

Hypothesis 4. Parents' brand awareness will be a significant predictor of children's brand awareness.

1.1.3. Peer influence

In the development of brand awareness, the peer group functions as an important source of information about certain products and brands. There is evidence that children frequently talk with their friends about brands and advertisements (Greenberg, Fazal, & Wober, 1986). When children interact with their peers about consumption matters, they learn about their peers' brand favorites and take these into account when evaluating brands. Although it is generally assumed that conformity to the peer group peaks between the ages of 11 and 13 years (Boush, 2001; Costanzo & Shaw, 1966), evidence is cumulating that susceptibility to peer influence has already started during early childhood (McNeal, 1992). We therefore expect that:

Hypothesis 5. Peer influence will be a significant predictor of children's brand awareness.

2. Method

2.1. Sample

In the fall and winter of 2002, we conducted interviews with 234 two- to eight-year-olds from two daycare centers and two combined kindergarten and elementary schools situated in urban districts in the Netherlands. After the interview, children were given a parent questionnaire to take home. A total of 196 questionnaires (84%) were returned. This resulted in a sample of 196 parent-child dyads. The sample of children consisted of 88 boys (45%) and 108 girls (55%). For reasons of analysis, the children were grouped into four age ranges: 2- to 3-year-olds ($n = 37$), 4- to 5-year-olds ($n = 59$), 6- to 7-year-olds ($n = 64$), and 8-year-olds ($n = 36$). The parent sample consisted of more mothers (87%) than fathers (12%). In the families, all educational levels were represented: 35% of mothers and fathers had some or completed high school; 18% were college graduates, and 32% had master's degrees.

2.2. Stimulus materials

The 12 logos used in the study were: McDonald's (fast food restaurants), Lay's (potato chips), Mercedes (cars), Nike (sports wear), Heineken (beer), Wall's (ice cream), Shell (gas station), Camel (cigarettes), Snuggle (fabric softener), Duplo (toys), M&Ms (candy), and Cheetos (snacks). The logos used were copied from the Internet. In the case of Heineken, Duplo, Lay's, and M&Ms, the brand names were removed from the logo using the computer program Adobe Photoshop. The logos were printed on 3.95×5.90 in. cards.

2.3. Procedure

The children were interviewed individually in a quiet area away from the classroom during school hours. Each interview began with a brief introduction about the nature of brands and logos: "I'm going to show you a few pictures. All these pictures have a name, just like your name is [name child] and my name is [name researcher]".

After this introduction, 12 logos were presented in a random order to the children. There was only one logo on the table at a time. First, to measure brand recall, children were asked to mention the name of the brand that the logo represented. Some children stated the brand name immediately. To measure brand recognition, children were presented with three cards representing various products in random order. One of the three cards was the product matching the brand logo. The children were asked to pick the card that matched with the logo.

2.4. Measures

A parent-child sample was chosen because many variables in our study could not be measured among 2- to 8-year-olds. When children are too young to provide reliable self-reports, it is necessary and common to use parent reports (Borgers, De Leeuw, & Hox, 2001). Therefore, children's responses provided the measures of brand awareness, whereas parental reports provided measures of the remaining variables (i.e., television viewing, parental brand awareness, socioeconomic status, and peer influence).

2.4.1. Children's brand recognition and brand recall

The brand recognition variable was constructed by totaling children's recognition responses to the 12 logos (range: 0–12; $M = 10.4$; $SD = 2.12$; $\alpha = .78$). Children's brand recall was constructed by totaling their recall scores (range: 0–12; $M = 2.80$; $SD = 2.22$; $\alpha = .73$).

2.4.2. Television viewing

Estimates of children's viewing time were obtained by two questions: (1) How long does your child usually watch TV on weekdays? (Monday through Friday), (2) How long does your child usually watch TV on weekend days? (Saturday and Sunday). Children's viewing time was calculated by summing their total viewing time during weekends and weekdays (range: 0–21; $M = 7.77$; $SD = 4.17$).

2.4.3. Socioeconomic status

The family's socioeconomic status was defined by family education and family income. To measure family education, parents were asked to indicate both the mother's and the father's highest level of

education on a 7-point scale, ranging from 1 = *elementary school* to 7 = *master's degree*. Mothers' and fathers' educational levels correlated highly ($r = .65$), and were therefore averaged to create a measure of family education ($M = 5.20$; $SD = 1.52$). To measure family income, parents estimated the family's net monthly income on an 8-point scale, ranging from 1 = *850 euro or less per month* to 8 = *4200 euro or more per month*. Sixteen percent ($n = 31$) of the parents did not report their monthly income. Because this would lead to a significant decrease of our sample size, we decided to replace their missing values with the mean score of the income variable ($M = 5.78$; $SD = 1.61$).

2.4.4. Parental brand awareness

To determine parental brand awareness, the parent questionnaire included a list of the same brand logos that were presented to the children. The questionnaire asked parents to write down the correct brand name for each logo. All of the parents mentioned the correct brand name for the logos of Shell and McDonald's. These two logos only added two constants to the scale and were therefore excluded from further analyses. Parental brand awareness was computed by totaling the responses to the remaining ten logos (range: 0–10; $M = 9.45$; $SD = 1.77$; $\alpha = .67$).

2.4.5. Peer influence

Susceptibility to peer influence was measured by six items addressed to parents, such as “Does your child think it is important to have the same brands as his or her friends?” and “Does your child notice the brands that his or her friends appreciate?” Parents responded to these questions on a 4-point scale ranging from 1 = *not at all* to 4 = *very much*. The average of the parent's responses to the six items served as the measure of peer influence ($M = .90$; $SD = .58$; $\alpha = .84$).

3. Results

To investigate our first two hypotheses, we conducted a 3 (Age) \times 2 (Child gender) MANOVA on children's brand recognition and brand recall scores. The analysis revealed main effects for age (recognition: $F(3, 188) = 50.37$, $p < .001$, $\eta^2 = .45$; recall: $F(3, 188) = 45.33$, $p < .001$, $\eta^2 = .42$) and gender (recognition: $F(3, 188) = 5.74$, $p < .05$, $\eta^2 = .03$; recall: $F(3, 188) = 8.94$, $p < .01$, $\eta^2 = .05$). In addition, the analysis yielded a significant age \times gender interaction effect for brand recall ($F(3, 188) = 5.74$, $p < .05$, $\eta^2 = .03$), but not for recognition. The means and standard deviations for the brand recognition and recall of boys and girls in the four age groups are presented in [Table 1](#).

Consistent with our first hypothesis, younger children's mean brand recall was considerably lower than their mean brand recognition. Post hoc Scheffé tests revealed that (a) brand *recognition* increased significantly among children in the youngest three age groups, but not between the oldest two age groups and (b) brand *recall* differed significantly among children in the oldest three age groups, but not between the youngest two age groups.

Contrary to our second hypothesis, boys showed a higher brand recall and recognition than girls did. Post hoc Scheffé tests revealed that the gender difference for recognition held only for 6- to 7-year-olds, while the gender difference for recall pertained only to 4- to 5-year-olds and 6- to 7-year-olds. Additional analyses on the level of the individual brand logos showed that the observed gender differences held only for two logos: Mercedes and Shell. For the remaining 10 brand logos, we found no gender differences.

Table 1
Mean (and *SD*) brand recognition and brand recall by age group and gender

Age group	Brand recognition		Brand recall	
	<i>M</i>	(<i>SD</i>)	<i>M</i>	(<i>SD</i>)
<i>2- to 3-year-olds</i>				
Boys (<i>n</i> = 18)	8.06	(2.62)	1.00	(1.09)
Girls (<i>n</i> = 19)	7.47	(2.32)	0.89	(0.74)
Total (<i>n</i> = 37)	7.76 ^a	(2.45)	0.95 ^a	(0.91)
<i>4- to 5-year-olds</i>				
Boys (<i>n</i> = 25)	10.84	(1.43)	2.60 ^y	(1.80)
Girls (<i>n</i> = 34)	9.88	(2.13)	1.32 ^x	(0.98)
Total (<i>n</i> = 59)	10.29 ^b	(1.91)	1.86 ^a	(1.51)
<i>6- to 7-year-olds</i>				
Boys (<i>n</i> = 30)	11.83 ^y	(0.38)	4.43 ^y	(2.11)
Girls (<i>n</i> = 34)	10.91 ^x	(1.14)	2.70 ^x	(1.77)
Total (<i>n</i> = 64)	11.34 ^c	(0.98)	3.52 ^b	(2.11)
<i>8-year-olds</i>				
Boys (<i>n</i> = 15)	11.60	(0.63)	4.87	(2.75)
Girls (<i>n</i> = 21)	11.81	(0.40)	5.05	(1.60)
Total (<i>n</i> = 36)	11.72 ^c	(0.51)	4.97 ^c	(1.98)

^{a,b,c}Age groups with different superscripts differ from each other at $p < .001$.

^{x,y}Differences between boys and girls are significant from each other at least at $p < .05$.

3.1. The influence of environmental factors

The second aim of our study was to investigate the relations between environmental factors and children's brand awareness. To do so we conducted two hierarchical regression analyses, one with brand recognition as the dependent variable and one with brand recall as the dependent variable. Child variables (age, gender, and age \times gender interaction) were entered in the first block, and environmental variables (television viewing, family income, family education, parental brand awareness, and peers) were entered in the second block.

The first block accounted for 45% of the variance in brand recognition, $F(3, 192) = 52.55, p < .001$; and 46% of the variance in brand recall, $F(3, 192) = 54.45, p < .001$. The addition of the second block resulted in a significant increase in the variance explained for both brand recognition and brand recall. Environmental factors added 4.5% to the variance explained in brand recognition, leading to $F(8, 187) = 23.00, p < .01$ and 4.4% to the variance in brand recall, leading to $F(8, 187) = 23.71, p < .001$. Table 2 provides the summary of the hierarchical regression predictions of brand recall and brand recognition.

As Table 2 shows, age and gender remained significant predictors of brand recognition and brand recall, when environmental variables were controlled. However, the age \times gender interaction term, which was found to be significant in the MANOVA, did not remain significant in the regression analysis.

In accordance with our third hypothesis, children's television viewing frequency was a significant predictor only of children's brand recognition and not of their brand recall. Partly consistent to our fourth

Table 2
Summary of regression analyses predicting children's brand recognition and recall

	Brand recognition			Brand recall		
	<i>B</i>	<i>SE B</i>	β	<i>B</i>	<i>SE B</i>	β
<i>Step 1: Child factors</i>						
Age	.67	.06	.60***	.74	.06	.63***
Gender (0=boys; 1=girls)	-.48	.23	-.11*	-.79	.24	-.18**
Age \times gender	.01	.12	.00	-.07	.12	-.03
<i>Step 2: Environmental factors</i>						
TV viewing time	.08	.03	.16*	.01	.03	.01
Family income	.00	.08	.00	-.03	.08	-.02
Family education	.25	.09	.18**	.08	.10	.05
Parental brand awareness	.04	.07	.03	.24	.07	.19***
Peers	.47	.20	.13*	.34	.21	.09
Total R^2	.50 ^a			.50 ^b		

* $p < .05$. ** $p < .01$. *** $p < .001$.

^a $R^2 = .45$ for Step 1; $\Delta R^2 = .05$ for Step 2 ($p < .01$).

^b $R^2 = .46$ for Step 1; $\Delta R^2 = .04$ for Step 2 ($p < .01$).

hypothesis, parental brand awareness was related only to children's brand recall. Family education was related only to brand recognition and family income was unrelated to both dependent variables. Finally, susceptibility to peers significantly predicted brand recognition.

4. Discussion

The first aim of this study was to investigate how children's brand recognition and brand recall develop in early childhood. The second aim was to determine the relative influence of several environmental factors on young children's brand recognition and recall. As predicted in our first hypothesis, children's brand recognition followed a different developmental path than their brand recall did. While the 2- to 3-year-olds recognized 8 out of 12 brand logos, most 8-year-olds were able to recognize 100% of the logos. However, young children's brand *recall* was significantly weaker. Two- to three-year-olds could hardly recall any of the brand logos. Although children's recall increased significantly with age, the 8-year-olds still only recalled fewer than 50% of the brand logos. Finally, the most significant increase in brand recognition occurred between 3 and 5 years of age, whereas the most significant increase in brand recall occurred between 7 and 8 year of age.

Our finding that the highest increase in recognition occurred between 3 and 5 years could be explained in two ways. First, the development of speed of information processing is highest during these years (Kail, 1991). Second, the attention span of children in this age group becomes considerably larger. Whereas a typical 3-year-old is able to concentrate on a single task for an average of only 18 min, and is easily distracted during this time, a 5-year-old is often able to work on a task for more than 1 h (Ruff & Lawson, 1990). We believe that both developments could account for the relatively rapid increase in brand recognition between 3 and 5 years of age.

Our finding that increases in recall are most discernable between 7 and 8 years of age could be attributed to two factors that were already discussed in our introduction. First, only as of 7 years of age, children start to develop sophisticated strategies to aid their recall memory. Second, older children have more existing content knowledge than younger children, which may stimulate their recall memory of unfamiliar brand logos. Our developmental findings on recall and recognition are in accordance with general theories and research on memory development (e.g., Kail, 1984), and earlier research on children's brand recognition and recall (e.g., Macklin, 1983).

In contrast to our second hypothesis, boys displayed a superior brand recognition and brand recall. This unexpected finding is in contrast to earlier studies into brand awareness of children, in which no gender differences were found (Fischer et al., 1991; Goldberg, 1990). To search for a possible explanation, we conducted some analyses on the individual brand logo level. These analyses revealed that our gender difference held only for the logos of Shell and Mercedes. These logos relate to cars and engines and are therefore probably more appealing to boys than girls. In the choice of our brand logos, we failed to control for the possible influence of gender-specific product preferences. Future research should take into account that recall and recognition tasks may be influenced by gender-related preferences.

4.1. Television viewing

As anticipated in our third hypothesis, television exposure was a stronger predictor of children's brand recognition than of their brand recall. An explanation for this differential effect is that most recall tasks, as used in our study and earlier studies, are too difficult for preschool children (see Valkenburg, 2004), perhaps so difficult that advertising has little or no effect on their brand recall. An explanation for our finding that television does influence children's brand recognition is that recognition, in contrast to recall, requires only an evaluation of whether a specific activated memory unit is the correct one. Such a task is probably more easily influenced by a visual medium than a recall task is. After all, television provides young children with a rich reservoir of visual images, from which they can draw during recognition tasks.

4.2. Family influences

Our first research question involved the relationship between socioeconomic status and brand awareness. Socioeconomic status was measured through family income and family education. Family income was not related to brand recognition and brand recall. Family education was related only to children's brand recognition, and not to their brand recall. These findings partly support the hypothesis raised in earlier research that children from higher socioeconomic status families show a better brand awareness, because they have greater exposure to the economic world (Moore & Moschis, 1978; Moschis & Churchill, 1978; Ward, 1974). The differential influence of family education on brand recall and brand recognition is difficult to explain. Our regression analyses suggest that children's brand recognition is more sensitive to external influences than brand recall. An explanation could be that the recall task that we used in our study was too difficult for younger children to allow for an influence of environmental factors. Even the 8-year-old children were only able to mention 5 out of 12 brand logos. Although the use of both tasks was useful, if only to demonstrate differences in the developmental course of recognition and recall, future research might reconsider the memory tasks used in our study.

Our fourth hypothesis also received only partial support. Although parental brand awareness significantly predicted children's brand recall, it had no effect on their brand recognition. An explanation could be that the parental measure that we used was similar to the recall task used for children and not to the recognition task. Parents who are better able to spontaneously mention brand names may more often communicate with their children about specific brands, which may reinforce their children's brand recall. In the case of recognition, parental reinforcement is not necessary. Exposure to visual images representing the brands is a sufficient condition for the development of recognition memory. Even after one exposure to a visual stimulus, young children are able to display an excellent recognition memory (Siegler, 1998). It is therefore plausible that television predominantly exerts its influence on recognition memory, whereas the reinforcing role of parents is most significant for the development of children's brand recall.

4.3. *Summary and policy implications*

In summary, our study showed that children's brand recognition starts earlier in development than their brand recall. By the age of 2, children were able to recognize 8 out of 12 brand logos and by the age of 8, they were able to recognize 100% of the logos. Although children's age is by far the most important predictor of their brand awareness, other characteristics, such as television exposure, parental brand awareness, and susceptibility to peers, also play an important role in the development of young children's brand awareness.

Another important finding is that young children's brand recognition seems to be significantly more sensitive to external influences than children's brand recall. It must be noted, however, that this result probably only pertains to children younger than eight. Although there is only limited evidence of the influence of environmental influences on older children's brand awareness, it is possible that the brand awareness of older children is more sensitive to external influences. A study by Dubow (1995), for example, suggests that television advertising has a large effect on the brand recall of 13- to 17-year olds, even greater than its effects on the brand recall of adults. It is therefore quite possible that the influence of advertising starts with its effect on recognition, which is extended to an influence on brand recall in later childhood. This developmental hypothesis should be further explored in future causal-correlational research that covers a broader range of age groups than our study did.

The current generation of children has been recognized as the most brand conscious ever (Bachmann Achenreiner & Roedder John, 2003). Our study has clearly shown that exposure to television has consequences for the brand recognition of even the youngest children. Our study is very opportune in a period in which infant and toddler marketing is a rapidly growing trend. Whereas only one decade ago, kids marketers used to limit their efforts to children older than 6, recently they progressively recognize infants and toddlers as a vital and undeniable target group. This trend has accelerated even more since the worldwide success of the tremendously popular toddler program, the Teletubbies.

Probably due to the success of recent entertainment programs designed for toddlers, advertisers have become even more aware of the accessibility and susceptibility of the youngest target groups. They have undoubtedly gathered valuable information about cognitive, affective, and behavioral advertising effects on young children. However, their research findings are, in most cases, not accessible to academics and policy makers. Our study is a first attempt to investigate advertising effects on the youngest age groups. We hope that our results may contribute to discussions about the ethical aspects of marketing towards infants and young preschoolers.

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