



## Attitudes toward TV advertising: A measure for children

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### ABSTRACT

A new self-report measure of children's attitudes toward TV advertising is described. The self-report scale was administered to 300 8- to-10-year-old children, and their parents completed a questionnaire evaluating socioeconomic status, educational level, and peer influence. Results of a factor analysis supported three identifiable factors reflecting theoretically based constructs of children's attitudes toward TV advertising: enjoyment, credence and behavioral-intention. The scale showed good convergent validity and internal consistency. Credence of TV advertising decreases significantly across age groups. Environmental factors also are significant predictors of children's attitude toward TV advertising. The implications of the findings for future theoretical and empirical development of research in this field are discussed.

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## 1. Introduction

### 1.1. General background

Communication researchers (Roedder John, 1999; Valkenburg & Cantor, 2001) consistently have tried to answer two principal questions pertaining to children's attitudes toward TV advertising: a) program/commercial discrimination: at what point children perceive advertising as a category of message that is separate and diverse from TV programs; b) recognition of persuasive intent: when children begin to apply a degree of scepticism to their understanding of advertising claims and appeal. Classical theories of developmental psychology, Theory of Mind, contemporary accounts of cognitive development, and socialization theories have been used to examine these issues.

Roedder John (1999) proposed a model for characterizing children's responses to advertising that is based on Piagetian models of general development. According to this model, it is possible to distinguish a *perceptual* stage (3- to 7-year-olds), *analytical* stage (7- to 11-year-olds) and *reflective* stage (11- to 16-year-olds) in the understanding of media content. Children discriminate advertising from programs based on persuasive intent only from the age of 7–8 (i.e., from the beginning of the analytic stage). During an *analytical* stage children may recognize that commercials are intended to sell, but may not realize that they are biased messages. Children at this age may understand that advertising does not always tell the truth and are more likely to express sceptical views toward the institution of advertising (Moore & Lutz, 2000). The emergence of this attitude is chiefly the result of the development of cognitive capacity rather than a consequence of the experience of watching television advertising (Comstock & Scharrer, 1999).

Ideas from the more recent formulations of the Theory of the Mind model (TOM, Baron-Cohen, 1991; Wellman, 1990) have shown that children's ability to attribute intentions and desires to others precedes their ability to attribute beliefs (Wellman, 1990). Children recognize that the mind is separate from and differs from the physical world. They realize that a person can think about an object even though the object is not physically present. Children learn that the mind can represent objects and events accurately or inaccurately. Applied to advertising, this suggests that children do not develop a coherent and precise understanding of mental

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events such as intentions, wishes and beliefs until at least the age of 6. This attitude is a fundamental prerequisite for the development of children's comprehension of advertising message. Contemporary cognitive development accounts suggest that there are two processes occurring in the elementary school years that may be relevant for understanding advertising, the development of metacognition and the development of multiple perspectives. Metacognition applied to advertising messages can explain a child's ability to reflect both on one's own cognitive processes during the spot viewing and on mental properties/activity of characters presented on TV. Advertising can enable a child to relate knowledge already assimilated to new information, make inferences beyond the facts presented, and draw conclusions based on these identified relationships. The meta-cognitive process deals with all those materials children categorize as knowledge or outcomes through a continual, mutual relation. At age 8, children begin to be able to adopt multiple perspectives toward the same object (Flavell, 2000; Kuhn, 2000). Applied to advertising, one would predict that a child can form an opinion about a commercial through a "realistic" weighing of the evidence provided, and can simultaneously judge it for its pleasantness or esthetic qualities. Children at this age are familiar with the role of advertising and they have already developed some disposition to incredulity and are somewhat critical. Children believe that the prime role of advertising is to inform about a new product and to give details about the existing goods, but at the same time they are aware that advertising is present to sell products (ChildWise, 2004).

According to Solomon (1999), due to the influence of parents, peers and TV, children can be considered "independent consumers" from the age of 8: (1) children learn from their parents and marketers in a number of situations, places, and circumstances in which actions occur providing opportunity for learning; (2) the quantity and quality of learning is determined by how a child interprets given situations child's interpretation of situations will depend upon his cognitive abilities, or cognitive stage. Despite the developmental nature of understanding advertising, relatively little attention has been given to the measurement of children's attitudes toward TV advertising. Thus, the primary goal of the present study was to examine a newly developed measure of children's attitude towards TV advertising.

### 1.2. Assessing children's attitude toward TV advertising

There are only two published instruments that specifically assess children's attitude towards TV advertising: the Rossiter (1977) and Derbaix and Pecheaux' scale (2003). Each of these scales shows some problems with regard to construct definition, reliability, and validity.

The Rossiter scale (1977) comprises 7 items on a four-point Likert scale (YES—I agree very much, yes—I agree, no—I disagree, NO—I disagree very much) and has been used with 9- to 12-year-old children. Rossiter (1977) defines attitude toward TV advertising as a mono-dimensional construct even if the instrument created by the author seems to describe different aspects. The scale measures a single dimension that can be interpreted as a measure of children's attitude toward television advertising and a moderate reliability (test–retest reliability of .67 and Cronbach's coefficient alpha of .69). The intercorrelations of the seven items show that two items, one referring to credibility (e.g., "You can always believe what the people in commercials say or do") and another referring to the persuasive power of TV commercials (e.g., "Television commercials try to make people buy things they don't really need"), are not correlated with other items and show a low correlation with the total scale score (.49 and .55 respectively). In this scale, only two items measure the enjoyment dimension (e.g., "I like most television commercials"). The authors did not report data regarding convergent validity of the instruments. If we observe the content of the items, we can easily understand that three items out of seven describe the credibility dimension, two items the likeability of commercials and the last two the persuasive power of TV advertising (i.e., advertising can persuade to buy and is intended to indicate the best products to buy). The low intercorrelations between items that describe different aspects of TV advertising can support this interpretation. Then Rossiter himself (1979) examines three categories of specific effects of TV advertising on children: 1) cognitive effects, focusing on children's ability to understand commercials, 2) attitudinal effects, focusing on children's feelings towards TV advertising; and 3) behavioral effects, focusing on the extent to which children are persuaded to desire and ask for advertised products. Riecken and Samli (1981) applied Rossiter's scale to three product classes (cereals, toys and medicines). The reliability obtained for the scales applied to the specific products were relatively high (from .69 to .76), but the alpha obtained for the scale assessing attitude towards TV advertising in general was rather low (.60). No data regarding factorial structure, convergent validity, or predictive validity of this scale have been reported in the literature as of yet.

The Derbaix and Pecheux (2003) scale consists of 7 items measuring 8- to 12-year-olds' global attitude toward TV advertising. Children were asked to rate their responses on a four-point Likert scale ranging from "Yes—I agree very much" to "No—I disagree very much". Confirmatory factor analyses displayed two main factors: the first (five items) referring to the entertaining dimension of TV advertisements (e.g., "I think TV advertisements are great") and the second (two items) to credibility towards TV commercials in general (e.g., "I believe what they show in TV advertisements"). Test–retest reliability was not particularly high for either dimension (from .65 to .66). The authors verified that children with high levels of global attitude towards TV advertising (measured with their scale) evaluate particular commercials more favourably than children scoring low on the scale. According to many methodologists (Cronbach & Meehl, 1955; Kline, 1995) a theoretical construct should be measured using as few items as possible but at least three items. The credibility dimension of the Derbaix and Pecheux scale (2003) consists of just two items. The authors comment that five items out of seven are related to entertainment because this is the backbone of children's attitude toward TV advertising. The weakness of the scale, according to us, is due to the "credibility dimension" consisting of two items only and the absence of a dimension concerning the effect of advertising on behavior, which is, in our opinion, a relevant element of attitude towards TV advertising. The instruments we have just described present some methodological weaknesses. Nonetheless, they remain the only suitable ones to measure children's attitude toward TV advertising.

### 1.3. Aims of the study

The present study is chiefly aimed at describing a new scale to assess children's attitudes toward TV advertising that measures 3 dimensions, credence, enjoyment and purchase-intention, as well as demonstrating its psychometric reliability and validity. A secondary aim is that of addressing the relative influence of age, sex, parent and family characteristics, and television advertising exposure on children's attitude toward advertising.

We predicted that when applied to 8–10 year old children, a number of differences would emerge:

**Hypothesis 1.** According to the cognitive-developmental models, 8-year-old children will demonstrate a more positive attitude toward advertising, will be more likely to believe its claims (credence), will like TV advertising better (enjoyment), and will be more influenced in their purchase decisions than 9- to 10-year-old children. In addition, older children will have a better recognition of the persuasive intent of TV commercials.

**Hypothesis 2.** Children who own or consume more brand-name products will express a stronger influence of TV advertising as assessed by the behavioral-intention dimension than children who use or consume fewer brand-name products. This hypothesis is consonant with studies that found a relation between being exposed to advertising and having a tendency to adopt materialistic values (Kasser, Ryan, Couchman, & Sheldon, 2004).

**Hypothesis 3.** Given that the period of 8–10 years is one of identity formation (Kuhn, 2000), we predict that many children feel a need to conform to the values of the group in order to fit in with the group and that this can be reflected in their purchasing decisions (Chan & Prendergast, 2007; McNeal, 1992). There is a significant relationship between the pressure to conform to group standards and children's need to use television and advertising as an useful tool to define their identity. Thus, children who are more influenced by the consumer behavior of their friends (they want to have the same brand as their friends or they want to know the better brand name for a particular product) will report a more positive attitude about advertising, will be more likely to believe its claims, will like TV advertising better, and they will be more influenced in their purchase decisions.

## 2. Methods

### 2.1. Preliminary stages

Following Spector (1992) we constructed our measure of children's attitudes toward TV advertising (Children's Attitude toward Advertising Scale; CAAS) in a series of steps including: (1) defining the construct, (2) designing the scale, (3) pilot testing of the scale, (4) administering the scale and purifying the measure, and (5) verifying the construct validity.

#### 2.1.1. Construct definition

Social psychologists define attitude as a psychological tendency that is expressed by evaluating a particular entity with some degree of favour or disfavour. The function of attitudes is that of guiding the formation of behavioral intentions. Allport (1967) introduced the classic definition of attitude as a mental and neural state of readiness, organized through experiences, exerting a direct or dynamic influence upon the individual's response to all objects and situations with which it is related. According to Rosenberg and Hovland (1960), attitudes are predispositions to respond to some class of stimuli with certain classes of responses and designate the three major types of response as *cognitive*, *affective*, and *behavioral*. The cognitive element of attitude concerns perceptions, concepts, and beliefs regarding the attitude object. The second affective component includes feelings toward the object of the attitude. Cognition and affect are not necessarily in harmony with one another. That is, a person may express a positive attitude toward advertising, but may covertly have negative feelings toward it. The third factor is the action or behavior component. This aspect of attitude concerns a predisposition or intention to behave in a certain way.

Fishbein and Ajzen's Theory of Reasoned Action (1975) considered five constructs: beliefs, attitudes, intentions, subjective norms, and behaviors. Beliefs represent the information an individual has about an object. Attitude refers to a person's degree of evaluative affect toward a target behavior. Intention is the subjective probability that an individual will perform a specified behavior; it is considered a type of belief in which the target is always the individual and the attribute is always some behavior. Subjective norm is a person's perception of the social pressures applied to perform or not perform the behavior in question by important referents. Behaviors are specific observable acts of the subject. Behaviors may be defined with respect to the action performed, a specific target, the context, and the timeframe of interest. Starting from theoretical perspectives and previous research on this topic (D'Alessio & Laghi, 2006; Rossiter, 1979), we define attitude toward TV advertising as a multi-factorial construct composed of three fundamental aspects: credence, enjoyment and behavioral-intention.

With the term "credence" we intend an *enduring propensity to believe advertising claims and to understand the nature and purpose of TV commercials*. The concept of credence is close to that of scepticism towards TV advertising in general (high levels of credence indicate a low level of scepticism towards commercials), because it implies the consumers' recognition that advertisers have specific motives and that their communications may be biased and varied in their truthfulness. Obermiller and Spangenberg (2000) defined the consumer scepticism as the general tendency toward disbelief of advertising claims. Scepticism is a basic "marketplace belief" that varies across individuals and is related to general persuasability. We prefer to use

the term credence because it can be assumed that scepticism is a construct more related to accumulated experiences and more developed inferential skills.

A second dimension is enjoyment. We define “enjoyment” as the *propensity to like TV advertisements*. It refers to explicit evaluation that children give in terms of acceptance/rejection of TV advertisements. This is also related to intensity and direction of children's feelings. Research has demonstrated that heavy viewers and young viewers tend to have more favourable attitudes toward television commercials (Austin, Chen, & Grube, 2006; Rossiter, 1979).

The third dimension is behavioral-intention. We define “behavioral-intention” as the *subjective perception of the persuasive power of TV advertising, the perceived evaluation of the effect on desire for the advertised products and the effect on their request to parents to buy these products*. Although some authors tried to integrate cognitive and affective factors in a common framework (Derbaix & Pecheux, 2003; Olney, Holbrook, & Batra, 1991) and consider attitude towards TV advertising as a summary construct of beliefs, about purposes, qualities and shortcomings, and affective reactions toward advertising in general (Durvasula, Andrews, Lysonski, & Netemeyer, 1993), they did not consider the behavioral-intention as the subjective probability that an individual will perform a specified behavior. Commercials can instill a desire for a particular product and affect both the actual and intended behavior (Rossiter, 1979). Rossiter (1977) included this dimension in his final scale (comprised of 7 items) even though only one of the items was meant to assess it (“Television commercials try to make people buy things they don't really need”). Some authors observed an inverse proportionality between children's understanding of the persuasive intent of advertising (cognitive dimension) and their desire for the advertised products (Robertson & Rossiter, 1974) while others (Christenson, 1982) showed that a more critical view about advertising does not prevent children from requesting the advertised products.

### 2.1.2. Design scale

In order to refine our definition of the construct before actually developing the items for the scale, we carried out interviews and discussions with some experts in the target field (university researchers and professors in developmental psychology and education). Once a definition had been outlined, the content validity judgment criterion for the items was that they be consistent with the conceptual proposed definition of children's attitude towards TV advertising. We began with an initial pool of 30 items (10 items for each dimension), that is three times the number of items ultimately desired for the final scale (at least 3 items per dimension). As in most prior studies, we used a five-point Likert scale (1 = Very False to 5 = Very True) as response options. All items underwent the judgment of experts who were given the definition of the proposed construct and were asked to identify: (1) any ambiguity in the wording of the items; (2) any incompatibility between an item and the dimension it is supposed to measure. Taking into account the comments and preferences received from the experts, 25 items were selected (five items were deleted because of their conceptual ambiguities) that could be reliably categorized into one of the three dimensions. Experts judged these remaining items from 1 (least wrong) to 5 (most wrong). The Kuder–Richardson reliability of the judgments by experts was .90. This reliability coefficient is sufficiently high to indicate stable judgments.

### 2.1.3. Pilot test

We administered this 25-item scale to a small group of 8- to 9-year-old children ( $N = 80$ ) as a means to further select the items, deleting those with redundancy and comprehension problems. During this phase we carried out some interviews and discussions with children and eliminated 8 items that showed comprehension problems or conceptual ambiguity for at least 5% of children. Seventeen items were then retained to assess three dimensions: enjoyment (6 items), credence (5 items) and behavioral-intention (6 items).

### 2.1.4. Administration of the scale and item purification

The 17-item attitude scale was administered to a group of children ( $N = 120$ ; 51% male and 49% female) ranging from 8 to 10 years of age (the children were not the same who participated in the pilot test). We identified the factor structure of the scale through factor analysis. Inspection of the scree plot and the eigenvalues initially suggested a three-factor solution (total percentage of variance explained by the three factors = 48.1%). Items that did not have loadings of at least .40 on any scale were dropped individually from the data set. Next, we removed items loading on multiple factors, defined as higher than .40 on a second factor (Kline, 1995). The scale ultimately used in this research was comprised of 12 items and included 5 items for the enjoyment subscale, 3 items for the credence dimension and 4 items for the behavioral-intention subscale. The psychometric properties of the CAAS (i.e., three-factor structure, reliability and construct validity) were supported by other studies (D'Alessio & Laghi, 2006).

## 2.2. Construct validity

### 2.2.1. Participants

In January 2005, we administered our scale to 340 8- to 10-year-old pupils from three primary schools in Rome urban district (Italy). Children were also given a parent questionnaire to take home. A total of 300 parent questionnaires (88.3%) were returned. Preliminary analyses on CAAS's dimensions did not reveal significant differences between children whose parents returned questionnaires and children whose parents did not it. The final sample includes 300 parent–child dyads: 150 boys and 150 girls. The children were grouped into three age ranges: 8-year-olds ( $n = 100$ ), 9-year-olds ( $n = 100$ ), 10-year-olds ( $n = 100$ ). The parent

sample consisted of more mothers (67%) than fathers (33%); 70% of mothers and fathers had completed high school; 20% were college graduates, and 10% had master degrees.

### 2.2.2. Procedures

The children completed the questionnaires in their classrooms during school hours. The study procedures were explained, questions were answered, and participants were given a questionnaire packet. All children responded to the same questionnaire packet. The questionnaire session took about 20–25 min. Children were asked to respond to questions concerning their attitudes toward advertising, TV viewing time, and consumption of brand names, whereas parents were asked to complete a questionnaire evaluating socioeconomic status, educational level, and peer influence.

### 2.2.3. Measurement

**2.2.3.1. Children's Attitude toward Advertising Scale (CAAS; D'Alessio & Laghi, 2006).** The scale consists of 12 items rated on a five-point Likert scale, ranging from 1 = Very False to 5 = Very True. Three different areas are measured: *enjoyment*, *credence* and *behavioral-intention*.

**2.2.3.2. Derbaix and Pecheux's Scale (DPS; Derbaix & Pecheux, 2003).** This scale is a measure of children's attitude toward TV advertising. Seven items are rated on a four-point scale, ranging from 1 = Yes—I agree very much to 4 = No—I disagree very much and evaluates two main dimensions: *credibility* (2 items;  $M = 5.1$ ;  $SD = 1.9$ ) and *enjoyment* (5 items;  $M = 12.9$ ;  $SD = 2.7$ ).

**2.2.3.3. Television viewing.** Children were asked about their television viewing time with an open question. They had to indicate the number of hours usually spent watching TV during the weekdays and the weekends ( $M = 23.0$ ,  $SD = 7.0$ ).

**2.2.3.4. Children and the number of brand-name products they use or consume.** We utilized a graphic test used in previous research (D'Alessio & Laghi, 2006) to ask children about different brand-name products they use (backpacks, shoes, shirts, jackets, toys) or consume (foodstuff: breakfast products and snacks). Children had to write brands on a schematic silhouette representing a child dressed in a simple way. We have two different versions of the silhouette according to the sex of the respondent. The total number was computed by totalling the different brand-names products reported by children ( $M = 12.0$ ,  $SD = 5.6$ ).

**2.2.3.5. Peer influence.** We measured peer influence through four items addressed to parents, such as “Does your child ask for the same brand-name products his/her friends have?” and “Does your child ask their friends which is the better brand for each individual product?” Parents responded on a five-point Likert scale ranging from 1 = Very False to 5 = Very True ( $M = 14.3$ ,  $SD = 6.4$ ).

**2.2.3.6. Socioeconomic status.** The family's socioeconomic status was defined through family income and educational level. Family income was defined on an 8-point scale, ranging from 1 = 700 euro or less to 8 = 4000 euros or more per month. To assess family educational level, we asked the parents to indicate the highest level of schooling they had completed on a 7-point scale, ranging from 1 = elementary school to 7 = master's degree. Since the correlation between parents was high ( $r = .72$ ), we created a single measure of educational level calculating the mean value of mothers' and fathers' educational levels.

### 2.2.4. Data analysis

The Statistical Package for the Social Science (SPSS) was used to conduct bivariate and multivariate analyses. Group differences were analyzed using Multivariate Analysis of Variance (MANOVA). Post hoc analyses following MANOVAs were carried out using Duncan's test to detect group differences ( $p < .05$ ). A principal component analysis was performed, using

**Table 1**

Rotated factor loadings of the CAAS and Cronbach's alpha coefficients for the three dimensions.

No.	Item	F1	F2	F3
8	I never get tired of commercials.	<b>0.77</b>	0.29	– 0.05
1	When commercials are on, I change the channel.	– <b>0.66</b>	0.20	0.05
10	Commercials are funny.	<b>0.66</b>	0.18	0.17
2	I like watching commercials.	<b>0.64</b>	– 0.13	0.21
5	Commercials are boring.	– <b>0.49</b>	0.30	– 0.02
9	I don't believe everything commercials tell me.	0.03	<b>0.76</b>	– 0.13
12	Nothing in commercials is true.	– 0.19	<b>0.72</b>	– 0.16
4	Commercials lie.	0.08	<b>0.62</b>	0.22
6	I trust commercials.	– 0.09	– 0.10	<b>0.83</b>
3	I ask my parents to buy what I see in commercials.	0.02	– 0.07	<b>0.78</b>
7	The things they buy me are as good as they look on TV.	0.02	0.22	<b>0.65</b>
11	Commercials show me good things to buy.	0.21	– 0.08	<b>0.65</b>
Explained variance		31.5%	14.6%	9.0%
Cronbach's alpha		0.71	0.70	0.74

Note. CAAS = Children's Attitude toward Advertising Scale. Values > .45 are in bold font.

**Table 2**

Pearson correlations between CAAS and the DPS's scale.

	Children's Attitude towards Advertising Scale (CAAS)			Derbaix & Pecheux Scale (DPS)	
	Enjoyment	Credence	Behavioral-intention	Credibility	Enjoyment
Enjoyment (CAAS)	1	0.17*	0.53**	0.26**	0.60**
Credence (CAAS)		1	0.10	0.61**	0.25**
Behavioral-intention intention (CAAS)			1	0.19**	0.52**
Credibility (DPS)				1	0.44**
Enjoyment (DPS)					1

\* $p < .05$ , \*\* $p < .01$ .

Kaiser's criterion (eigenvalue > 1), followed by an oblimin rotation. The corresponding subscores were calculated by summing the items within each dimension. The internal consistency of the overall scale and subscales was measured by Cronbach's alpha coefficient. Pearson correlation coefficients were calculated to assess the convergent validity of the scale. Step-wise regression analyses were conducted to investigate the relevance of child and environmental factors to predict the three CAAS subscales.

### 3. Results

#### 3.1. Psychometric characteristics of the CAAS

Means for the 12 items ranged from 2.40 to 3.86 (possible range 1 to 5). Standard deviations indicate adequate variability for all items from 1.01 to 1.34. Attitudes toward advertising were computed by summing the items for each dimension (higher numbers denoting stronger attitudes). A factor analysis using oblimin rotation was used to analyse data. The scree plot suggested that three factors should be extracted (Kline, 1995). The dimensions formulated to define the construct of attitude towards TV advertising were confirmed after factor analysis and accounted for 55.1% of the post-rotational variance: all of the items of each dimension loaded on the same factor with a correlation of at least 0.49. All of the items of the enjoyment dimension loaded on Factor 1 (31.5% variance); the items that describe the credence of commercials loaded on Factor 2 (14.6% variance), and behavioral-intention's items loaded on Factor 3 (9.0% variance). A cross-loading problem ( $r > 0.25$ ) only existed with item number 8 ("I never get tired of commercials") and number 5 ("Commercials are boring"). According to our original hypothesis, they belong to the enjoyment dimension, but they showed a positive correlation with the credence factor too. Table 1 illustrates factor loadings, eigenvalues, explained variance and reliability for each factor.

#### 3.2. Internal consistency of the three subscales

Measures of internal consistency (Cronbach's alpha) were used to examine the reliability of the three subscales. The internal consistency was relatively high for the three subscales (range .70 to .74; see Table 1). Nunnally (1978) has suggested that self-report scales with internal consistencies in the .70–.80 range are acceptable for research purposes. The CAAS subscales meet this criterion.

#### 3.3. Convergent validity

Pearson correlations were performed to examine the convergent validity of the CAAS and the two dimensions (enjoyment and credibility) of Derbaix and Pecheux's scale (DPS, 2003). Table 2 displays the results of these analyses. Significant correlations between the two scales ranged from .19 to .61.

Correlations were higher (from .60 to .61) for the subscales that measure the same construct in the two scales (CAAS and DPS) than across subscales. The CAAS's *behavioral-intention* subscale had high correlations with the dimension of *enjoyment* of the CAAS and DPS (.53 and .52). It should be noted that the CAAS subscales of enjoyment and behavioral-intention are both rather highly related to the enjoyment concept (5 items) of the Derbaix & Pecheux scale. This evidence, together with the fact that the reliability of this dimension in our sample is low ( $\alpha = .59$ ), might indicate that the DPS subscale encompasses two dimensions rather than one.

**Table 3**

Mean score on the CAAS subscales.

	8-year-olds ( $N = 100$ )	9-year-olds ( $N = 100$ )	10-year-olds ( $N = 100$ )	Total sample
Enjoyment	13.02 (4.66)	12.65 (4.13)	12.47 (4.26)	12.71 (4.35)
Credence	11.17 (2.60)	10.31 (2.80)	9.45 (2.96)	10.31 (2.87)
Behavioral-intention	11.01 (3.40)	11.28 (4.08)	10.31 (3.61)	10.87 (3.59)

Note: Standard deviations are in parentheses.

### 3.4. Age and sex differences in attitude toward TV advertising

To investigate our first hypothesis, we conducted a 3 (age: 8, 9 and 10)  $\times$  2 (sex) MANOVA on children's attitude towards TV advertising dimensions (enjoyment, credence, and behavioral-intention). The analysis revealed a significant main effect for age, Wilks's Lambda = 0.93;  $F(6, 584) = 3.58, p < .01$ , and sex, Wilks's Lambda = 0.94;  $F(3, 292) = 6.25, p < .001$ ; the age  $\times$  sex interaction effect for attitude towards TV advertising dimensions was not significant, Wilks's Lambda = 0.97;  $F(6, 584) = 1.58, ns$ . The means and standard deviations for the boys' and girls' subscales in the three age groups are shown in Table 3.

For the age variable, the three groups only differed on the credence dimension,  $F(2, 294) = 9.62, p < .001$ . Consistent with our first hypothesis, post hoc Duncan's test revealed that credence decreased significantly among children in the three age groups; specifically, 8-year-olds ( $M = 11.17; SD = 2.60$ ) reported higher levels of credence than 9-year-olds ( $M = 10.31; SD = 2.81$ ), and 9-year-olds showed higher levels than 10-year-olds ( $M = 9.45; SD = 2.96$ ).

Sex differences revealed that males showed a higher mean score on the credence,  $F(1, 294) = 6.56, p < .05$  (males:  $M = 9.94; SD = 2.94$ ; females:  $M = 8.96; SD = 2.92$ ) and behavioral-intention dimension,  $F(1, 294) = 4.73; p < .05$  (males:  $M = 10.42; SD = 3.88$ ; females:  $M = 10.20; SD = 3.61$ ) than females. Females had a higher mean score on the enjoyment subscale than males,  $F(1, 294) = 4.99, p < .05$  (males:  $M = 11.06; SD = 4.15$ ; females:  $M = 13.88; SD = 3.92$ ; see Table 3).

### 3.5. Predicting attitude toward TV advertising

To predict attitude toward TV advertising we conducted step-wise regression analyses (forward method) with the three CAAS subscales as dependent variables and child-related factors (age was included as continuous variable and sex was included as dummy variable) and environmental factors as predictors. The results for the regression analyses are summarized in Table 4. As Table 4 shows, the enjoyment of TV advertising (54% of the variance) is only predicted by *environmental factors*: the influence of peers, a great number of used or consumed brand-name products and a low family's socioeconomic status. Credence (39% of the variance) is only predicted by child-related factors: the children's TV viewing time, their age and sex. In addition, boys are more likely to believe in TV advertising than girls. Behavioral-intention of advertising (71% of the variance) can be predicted by the number of brand-name products which are used or consumed, children's TV viewing time and a high socioeconomic status of the family (Hypothesis 2).

## 4. Discussion

### 4.1. Psychometric characteristics of the CAAS

The methodological implication of the present study is that empirical support has been obtained for a new instrument (CAAS) that overcomes an important limitation in children and advertising research; the lack of a reliable and valid self-report measure has hindered the assessment of the role of this construct in children's consumer behavior. Results of the factor analysis revealed that the scale is composed of three identifiable factors (enjoyment, credence and behavioral-intention) reflecting the hypothesized construct. Moreover, results pertaining to internal consistency revealed acceptable Cronbach's alpha values. CAAS also exhibited inadequate convergent validity as evidenced by the correlation analyses with the two dimensions (credibility and enjoyment) of Derbaix and Pecheux's scale (DPS, 2003). As postulated, correlations were higher for the subscales that measure the same dimension in the two scales than across dimensions; the CAAS's behavioral-intention subscale had a higher correlation with the dimension of *enjoyment* on the DPS.

### 4.2. Advertising and age differences

An ongoing scientific debate exists about children's ability to comprehend and evaluate advertising (Chan & McNeal, 2004; D'Alessio & Laghi, 2006; McNeal 1992; Valkenburg & Cantor, 2001) and about the impact of advertising on children's beliefs and values. Younger children are more vulnerable to TV advertising than older children as far as credence is concerned because they

**Table 4**  
Regression analyses predicting children's attitude toward TV advertising.

	Enjoyment			Credibility			Behavioral-intention		
	B	SE B	$\beta$	B	SE B	$\beta$	B	SE B	$\beta$
Age				− 0.64	0.16	− 0.18**	− 0.27	0.14	− 0.06
Sex (0 = girls; 1 = boys)	− 0.61	0.34	− 0.07	0.55	0.26	0.10*	0.43	0.23	0.06
TV viewing time				0.37	0.03	0.54**	0.35	0.03	0.40**
Number of trade	0.21	0.03	0.26**				0.37	0.02	0.57**
Peers	0.27	0.03	0.40**	0.03	0.02	0.06			
Family SES	− 1.98	0.22	− 0.37**	− 0.22	0.18	− 0.06	0.40	0.15	0.09*
Total R <sup>2</sup>	.54			.39			.71		

\* $p < .05$ , \*\* $p < .001$ .

have less specific knowledge and experiences to protect themselves and they are more susceptible to the seductive influences of commercials (Bijmolt, Claasen, & Brus, 1998; Buijzen & Valkenburg, 2000, 2003; Valkenburg & Buijzen, 2005). An understanding of TV advertising allows children to use cognitive defences and to produce counter arguments (Brucks, Armstrong, & Goldberg, 1988). Consistent with our first hypothesis, data revealed that the credence dimension decreased significantly among children in the three age groups. An explanation of the age differences in children's reactions to television advertising can be found in Piaget's theory of cognitive development (Piaget, 1970). No significant age differences were found on the subscales of *enjoyment* and *behavioral-intention*. These two dimensions concern the affective component (enjoyment) and purchase-intention reactions toward advertising which are less influenced by children's cognitive development (Durvasula et al., 1993).

#### 4.3. Advertising and sex differences

The analysis revealed a main effect for sex with boys having a higher mean score than girls on the *credence* and *behavioral-intention* dimension and girls having a higher score on the *enjoyment* subscale. The literature does not report significant differences between boys and girls in their ability to distinguish programmes and commercials or their comprehensions of the selling intent of TV commercials (Bijmolt et al., 1998; Butter, Popovich, Stackhouse, & Garner, 1981). However, data concerning children's brand recognition and recall are not univocal as most of the authors do not stress significant sex differences (Goldberg, 1990). O'Cass and Clarke (2001) suggest that although boys and girls do not differ in the number of brands, they do differ in the type of brands they recognize or recall. Boys' and girls' performance can be influenced by sex-specific products; car logos, for instance, are probably more appealing to boys than they are to girls. Valkenburg and Buijzen (2005) found that male respondents showed significantly higher levels of brand recall and recognition than female respondents. Some analyses on individual brand logo levels revealed sex-related preferences much in the same direction as the O'Cass and Clarke (2001) hypothesis.

A number of researchers have demonstrated sex differences in advertising response due to differences in values (Brunel & Nelson, 2003), self-construal (Wang, Bristol, Mowen, & Chakraborty, 2000), and processing style (Meyers-Levy, 1989). According to this body of work, males tend to respond better to messages that appeal directly to the viewer (rather than to others), while females prefer connected, other-focused messages. Also, males tend to process messages heuristically and females tend to adopt integrative processing strategies. Further, Austin and Johnson (1997) suggest that media messages play an important role in informing the decisions that children make regarding their involvement in at-risk behaviors (Fuller, Damico, & Rodgers, 2004). The relevance of the advertising message is related to sex; young girls, for instance, are more influenced by media messages concerning their body size, whereas boys are more inclined to be influenced by alcohol ads (Austin et al., 2006). As a general rule, data regarding sex differences, in children and adults alike, in the area of advertising response and attitude toward TV advertising can not be considered as conclusive. One of the most important aspect that has hindered the research on this topic is the lack of valid measures (in particular self-report) assessing this construct.

#### 4.4. Predicting attitude towards TV advertising

Data show that a number of predictors can explain the three dimensions of the scale (Table 4). The *enjoyment* dimension was most strongly influenced by the peer pressure variable (Hypothesis 3). Children who ask their friends which is the better brand for a certain product or who want to have the same brand-name product of their friends reported that they like to watch TV commercials better. Peers are primary socialization agents; they influence children through modelling and experiences. Advertising encourages children to use its information to communicate with peers and to share common experiences. The opinions of peers play an increasingly important role, especially from the age of 8 (i.e., from the beginning of the analytic stage), and the norms and values that are created in specific peer groups function as a filter to evaluate advertising (Valkenburg & Cantor, 2001). Austin (Austin et al., 2006; Austin & Knaus, 2000) explains that, if a TV message corresponds closely to a personally relevant reference group, children will be more likely to wish to emulate the portrayal because imitating the models' behaviors will bring positive results. Similar justifications can be used to explain the relevance of the number of brand-name products used or consumed by children to predict their results in the *enjoyment* dimension.

Another relevant predictor of the *enjoyment* dimension is socioeconomic status; children who live in a family with a higher socioeconomic status report that they like to watch TV commercials less. Some researchers have related family communication patterns, parental attitudes toward TV advertising, parental involvement, and parenting style to children's exposure and susceptibility to media influence (Baiocco, D'Alessio, & Laghi, in press; Crosby & Grossbart, 1984). Studies have shown that families with a higher socioeconomic status have better parental guidance in television viewing, can facilitate a more realistic perception of commercials, as well as reduce the desirability, the identification with and the request for the advertised products (Austin et al., 2006; Austin & Knaus, 2000; D'Alessio & Laghi, 2006; Obermiller & Spangenberg, 2000; Obermiller, Spangenberg, & MacLachlan, 2005). Other studies (Donahue, Meyer, & Henke, 1978; Meyer, Donahue, & Henke, 1978) report that children from African American families are likely to be disadvantaged in their understanding of the advertising persuasive intent due to social class differences.

The *credence* dimension is best predicted by child-related factors: children's TV viewing time, age and sex. Data suggested that children who more often watch television believe more in TV advertising. According to cultivation theory (Gerbner & Gross, 1976), television "cultivates" a distorted worldview in which the individual's perception of social reality resembles reality as portrayed on TV: the larger the amount of media exposure, the stronger the credence that television shows reality as it is. Boys are more likely to believe in TV commercials than girls and younger children are more vulnerable to TV advertising



than older children. Data reveal that credence, the most cognitive of the variables measured by our scale, significantly decreases among children in the upper age groups. According to Piaget's theory of cognitive development (Piaget, 1970), as they become older, children develop a better ability to apply logical thought to concrete problems and therefore they believe less in TV commercials.

The behavioral-intention dimension is best predicted by the number of brand-name products used or consumed (Hypothesis 2), TV viewing time and family SES. Correlational studies of advertising exposure and purchase requests show that advertising exposure is positively related to children's purchase requests at the supermarket (Buijzen & Valkenburg, 2003). Buijzen and Valkenburg (2000) reported that Dutch children's requests for Christmas presents are significantly related to their television viewing. Data seem to suggest that on the one hand parents with a high SES can help to reduce their children's enjoyment of TV advertising, but on the other hand they can provide children with more opportunities to ask for the advertised products to buy them. The fact that different predictors can explain the three dimensions of the scale can be considered a preliminary indication that, even if correlated, the three dimensions of the scale are conceptually separate and can help to better understand children's attitude towards TV advertising.

#### 4.5. Summary and future studies

This study is mainly aimed at proposing a measure for children's attitude towards TV advertising in general (children's evaluation of TV advertising), and at verifying the relevance of some variables (child-related variables and environmental variables) to attitude development. The lack of valid and reliable measures of children's attitude towards TV advertising has hindered research on this topic so far. Furthermore, one answered question here is the validity of the CAAS; the three dimensions devised to define attitude towards TV advertising were confirmed after factor analysis and the internal consistency as well as the convergent validity with the Derbaix and Pecheux's scale were high. Our scale is not too long (12 items) and could be useful as a starting point for many studies concerning children and brand loyalty, the impact of advertisements' on children, advertisement-image studies, etc.

In summary, our study showed that credence of TV advertising significantly decreases among children in the upper age groups: the 8-year-olds displayed more credence than 9 and 10-year-olds. Hence, TV advertising directed towards young children requires special attention and should be more strictly regulated. Boys obtained a higher mean score than girls on both the credence and the behavioral-intention dimension, while girls were higher on the enjoyment subscale. Children are active explorers of what they see on television and the media effect is mitigated by what children make of the message. As Table 4 shows, enjoyment of TV advertising (54% of the variance) is only predicted by environmental factors (i.e., the influence of peers, a great number of brand-name products used or consumed and low family socioeconomic status). Credence (39% of the variance), on the other hand, is only predicted by child-related factors such as children's TV viewing time, age and sex. According to the literature, data suggest that children's attitude towards TV advertising increases significantly with TV viewing time and decreases with age. Boys are more likely to believe in TV advertising than girls. The behavioral-intention dimension (71% of the variance) is predicted by the number of brand-name products used or consumed, children's TV viewing time and a high family socioeconomic status. Of course our research is not exempt from limitations. One limit of this study is its small sample size, and further research is needed to replicate its findings with larger samples. Further, the generalizability of the scale is restricted to 8- to 10-year-old children and we do not know the robustness of the scale as far as children in non-western cultures are concerned. Studies may be conducted in the future to determine whether the CAAS is a good measure of children's attitude towards TV advertising, in general, as well as towards television commercials for specific types of products or brands.

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