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Considering Children's Advertising Literacy from a Methodological Point of View: Past Practices and Future Recommendations

Abstract

Children's advertising literacy is a well-documented research area. Yet, the literature on how to measure advertising literacy is not straightforward due to conceptual and operational differences in the existing studies. This has led to inconsistent results with regard to the development, possession and application of advertising literacy. The aim of this article is to give an overview of the different measurement methodologies used in past research efforts to assess children's advertising literacy. Taking into account children's psychological development (cognitive, affective and moral), we formulate recommendations on which methods are most suitable to use in future advertising literacy research among different age categories.

Keywords: Advertising literacy – children - development - methods – measurement

Introduction

Children are daily exposed to a large amounts of advertising, making it an important source of persuasion in their daily lives. However, as children's mental skills and abilities are still developing, they have much more difficulties with consciously and critically coping with advertising than adults (John 1999; Rozendaal et al. 2011). Moreover, in the past decades, we have witnessed a rapidly evolving media landscape in which advertisers integrate subtle and embedded advertising forms (e.g. product placement or advergames), making it even more difficult for children to recognize advertising as such in the first place (Owen et al. 2013). This raises some serious concerns about children's limited ability to process advertising in a critical and elaborate way. Therefore, a substantial and growing body of research has emerged on the role of children's advertising literacy, or the knowledge, abilities and attitudes that may help them cope with advertising (Rozendaal, Oprea, and Buijzen 2016; Nelson 2016).

Yet, the results of these studies are far from univocal. Some studies found a negative relationship between advertising literacy and the desire for the advertised products (e.g. Robertson and Rossiter 1974; Rozendaal, Buijzen, and Valkenburg 2009), whereas other studies found a positive association (e.g. Christenson 1982; Fischer 1985) or no association at all (e.g. Mallinckrodt and Mizerski 2007; van Reijmersdal, Rozendaal, and Buijzen 2012). These inconsistencies may be due to different conceptual and operational definitions of advertising literacy (Rozendaal, Oprea, and Buijzen 2016). Existing studies have used a variety of methods and instruments to measure the same concepts, and the literature is not straightforward in which methods provide the most suitable measurement of this construct.

To address this methodological disparity, more initiatives are necessary to clarify the measurement of children's advertising literacy, starting from a clear conceptual definition (Kunkel 2010). In the present article, we take a first step to meet this challenge. Based on a

recent conceptualization of advertising literacy, which encompasses three dimensions (cognitive, affective and moral advertising literacy) (Hudders et al. 2017), we first offer an accessible and concise overview of the different methods used in past advertising literacy research, and thereafter, recommend suitable methods and instruments for future advertising literacy research among children and teenagers. All these recommendations will be based on children's psychological development, since an appropriate research method to undertake research with children primarily depends on their (cognitive, affective and moral) abilities (Borgers, Leeuw, and Hox 2000; Ólafsson, Livingstone, and Haddon 2013; Scott 2000). We will introduce different age categories that are often identified within the research involving advertising literacy, and represent meaningful transition points in its development (Carter et al. 2011). The age groups being addressed are preschoolers (3-5 year), elementary school children (6-8 year), tweens (9-12 year) and teenagers (13+ year). By presenting these recommendations, we aim to offer guidance to researchers and practitioners in their search for an appropriate research method.

Conceptualizing advertising literacy

Advertising literacy dimensions

As Kunkel (2010) asserted that advertising literacy should be defined more fully in order to measure it more comprehensibly, we first need to clarify this concept before discussing methodological considerations. Although a common and consistent definition of advertising literacy is lacking, it can be considered as a part of media literacy, which has been defined broadly as 'a set of perspectives that we actively use to expose ourselves to the mass media to process and interpret the meaning of the messages we encounter' (Potter 2016, p.24). Advertising literacy, then, is more narrowly delineated as the skills and abilities to recognize, analyze, interpret and evaluate advertising attempts (Hudders et al. 2017). It can be further

divided into several underlying subdimensions. The current article departs from the recent conceptual framework of Hudders et al. (2017), in which advertising literacy is considered a multidimensional construct consisting of a *cognitive*, *affective* and *moral* dimension (each of which can be further divided into *dispositional* and *situational* advertising literacy, see next section for a detailed account).

The *cognitive* dimension of advertising literacy corresponds largely with the concept of persuasion knowledge or people's personal knowledge about persuasion agents' goals and tactics (Friestad and Wright 1994). Cognitive advertising literacy, however, is limited to advertising in particular, thereby excluding other sources of persuasion. To date, most of the research on advertising literacy has focused on this dimension (Rozendaal et al. 2011). However, there is an ongoing debate on the underlying components that need to be measured to arrive at an accurate estimate of this construct. In the first place, it is measured as *advertising recognition*, defined as children's ability to differentiate advertising from other media content (Robertson and Rossiter 1974). In addition, advertising recognition has usually been coupled with *advertising understanding*. In this regard, an important distinction has been made, namely between the understanding of advertising's *selling intent* on the one hand, and its *persuasive intent* on the other (Moses and Baldwin 2005; Rozendaal, Buijzen, and Valkenburg 2010). Furthermore, other cognitive components have been proposed as well, yet they are adopted less frequently (e.g. *understanding persuasive tactics*, *recognizing advertising's source*) (Rozendaal et al. 2011).

In comparison with this *cognitive* dimension of advertising literacy, the *affective* (cf. Rozendaal et al. 2011) and the *moral* dimensions (cf. Friestad and Wright 1994) have received less scholarly attention in past advertising research.

Affective advertising literacy refers to children's conscious awareness of their initial emotional reactions toward advertising, and their skills or abilities to suppress or regulate these emotions. Put differently, when children have insight in the use of emotional appeals in advertising, they should more easily be able to detect their own emotional reactions as evoked by these appeals (Saarni 1999; Buckley and Saarni 2013). This should allow them to regulate these emotions better, consequently paving the way for a less biased processing of advertising, involving critical reflection. These affective skills become increasingly important as the contemporary advertising formats aimed at children (such as advergames) mostly involve fun and entertainment, thereby aiming to transfer the positive emotions generated to the brand or product (Nairn and Fine 2008). To illustrate, imagine a child playing an advergame made to promote a product from a cereal company. Initially, (s)he may only enjoy the immersive experience of game-playing. However, when the (affective) ad literate child becomes aware that this pleasant gaming environment is meant to induce a similar feeling toward the embedded cereal brand, (s)he may perceive the game in a new light. Consequently, the child may also revisit the initial emotional reaction, and gain control over it in such a way that there is room to think about it in a critical way.

Moral advertising literacy entails the skills, abilities and propensity to morally evaluate advertising, as expressed by the beliefs and judgments people develop about the appropriateness of its tactics. Although it has been more than two decades ago that Friestad and Wright (1994) addressed the importance of forming appropriateness beliefs in arriving at 'valid' judgments of persuasion tactics and well-substantiated consumer decisions, little empirical research has been devoted to investigate this facet of advertising literacy among children (some exceptions are: Wei, Fischer, and Main 2008; Hibbert et al. 2007; Nelson, Wood, and Paek 2009). However, we argue that the ability to evaluate advertising from a moral point of view and the possession of a set of moral dispositions toward advertising is

more relevant than ever, considering the fact that most of the contemporary advertising formats make use of ‘covert’ marketing tactics, in which marketers attempt to stealthily conceal the intent of an ad (Owen et al. 2013).

Dispositional and situational advertising literacy

Further, as implied by the theoretical framework of Hudders et al. (2017), it is also conceptually (and therefore methodologically) essential to differentiate *within* the dimensions of advertising literacy, and more specifically between *dispositional* and *situational* advertising literacy. The authors have based this dichotomization on Friestad and Wright’s (1994) persuasion knowledge model, which distinguishes between *declarative or factual knowledge* (i.e. about general market principles) on the one hand, and *procedural knowledge* (as learned through the application of declarative/factual knowledge on specific persuasion attempts) on the other. Correspondingly, dispositional advertising literacy refers to the *possession* of advertising literacy, or the knowledge, beliefs and abilities regarding advertising that people have formed throughout their lifetime. Situational advertising literacy refers to the actual *activation* of the associative network of dispositional advertising literacy. Put differently, it is about the retrieval and application of relevant knowledge, beliefs, and judgments during (and/or directly before or after) exposure to an advertisement, allowing children to recognize advertising and to critically reflect upon it.

From a methodological point of view, most studies seem to assess children’s situational advertising literacy (see below). That is, they are usually first presented with a specific stimulus (e.g. a commercial, a videogame) containing advertising, and consequently asked specific questions about the extent to which they have recognized the presence of advertising, and understood its commercial intent. Therefore, the findings generated by these measures indicate the extent to which children have succeeded in accessing, retrieving and

applying the relevant information to process a specific ad at the moment of exposure. In the few studies that assess dispositional advertising literacy (see below), children are not exposed to specific ads, but are immediately asked questions about advertising (formats, and tactics) in general. These measures may deliver useful insights about the current level of children's advertising knowledge and beliefs. This distinction is important as their conceptual underpinnings imply different interpretations of the findings they generate. Moreover, it is equally important for the sake of guarding the possibility to compare these findings across studies. Unfortunately, the choice for measuring advertising literacy in a dispositional and/or situational manner has rarely been motivated in past empirical research. More so, this meaningful distinction has often been neglected by using both concepts and their measures interchangeably (Hudders et al. 2017). Acknowledging these issues, the current article will have special attention for this distinction when addressing the methods used in existing advertising literacy research.

Overview of the different methods according to age groups

Having outlined the conceptual foundations of advertising literacy, we will now face the challenge addressed by Hudders et al. (2017) to offer a thorough methodological account in order to disentangle the disparity in past advertising literacy research among children. The next sections will give an overview per age group of 1) the skills children may (or may not) have developed, relevant to the formation (and application) of the cognitive, affective and moral dimensions of advertising literacy; 2) how the advertising literacy dimensions were (or were not) operationalized in the available literature; and 3) what methods can be suggested to measure children's advertising literacy more consistently, considering their cognitive, affective and moral development (for a summary, see Table 1)..

Preschoolers (3-5-year)

Cognitive, affective and moral skills

Preschoolers are cognitively immature as their thinking and language skills are still very limited (Borgers, Leeuw, and Hox 2000). In this stage of life, children's symbolic thinking is based on incomplete concepts, and therefore it is not advisable to ask children questions about abstract concepts such as 'advertising' or 'commercials' in general (i.e. dispositional advertising literacy) (John 1999). However, as a child's first coping mechanism regarding advertising is a cognitive one (i.e. ad recognition) (Derbaix and Bree 1997; Friestad and Wright 1994), we argue that, if an appropriate method is used, cognitive advertising literacy can already be measured situationally among this age category (see Stephens, Stutts, and Burdick 1982; Stutts, Vance, and Hudleson 1981). With regard to affective skills, preschoolers still rely to a high extent on communication with others to become aware of (and evaluate) emotion-eliciting events and their own feelings (Buckley and Saarni 2013; Saarni 1999). Therefore, it seems only useful to measure their affective advertising literacy after certain interventions are implemented, such as training sessions in which they learn about advertising, its commercial intentions and strategies to evoke certain emotions, and in which they are stimulated to become aware of their own emotions as a reaction to such strategies.

Preschoolers also have an underdeveloped Theory of Mind (ToM) – this refers to the ability to attribute mental states (such as intentions, motivations and attitudes) to the self and others, and to comprehend that others can have mental states that are different from their own (McAlister and Cornwell 2009; Premack and Woodruff 1978). This skill enables children to take the perspective of advertisers or companies and their intentions to persuade others (Lapierre 2015; McAlister and Cornwell 2009; Moses and Baldwin 2005). As children's moral reasoning has been linked to the ability of perspective-taking (cfr. ToM) (Chandler, Sokol, and Wainryb 2000; Krcmar and Cooke 2001), it can be argued that most preschoolers

lack the ability to imagine that advertisers may use inappropriate tactics to reach their commercial goals. Therefore, the moral dimension of advertising literacy should not yet be measured among this young group.

Past research methods

In the literature, we found four main methods used to measure cognitive advertising literacy among preschoolers. First, a significant amount of studies – the majority of them two to three decades old – measured this concept mainly dispositionally by using individual interviews or small focus groups (Blosser and Roberts 1985; Carter et al. 2011; Macklin 1983; Stephens, Stutts, and Burdick 1982; Stutts, Vance, and Hudleson 1981). In this respect, researchers set up an ‘interrogatory’ setting in which they encouraged children to talk freely about advertising (Woodhead and Faulkner 2000). Second, some studies have measured advertising literacy – mainly situationally – by using visual self-reports (Carter et al. 2011; Donohue, Henke, and Donohue 1980; Macklin 1985, 1987; McAlister and Cornwell 2009; Wilson and Weiss 1992) in which preschoolers are presented a closed, standardized questionnaire with illustrated answer options that contain the ‘correct’ answer among a number of bogus answers (see next section for more information, as this is the predominant method among elementary school children). Third, a limited number studies have made use of interactive game-playing methods, in particular to measure preschoolers’ situational recognition of TV commercials, whereby children were asked to keep their hands in their laps as long as they do not see an ad, and to put their hands on a red square of a cardboard from the moment they recognize an advertisement. Fourth, we found one study that has used information from proxy respondents. In this study, Cornish (2014) interviewed parents about how advertising is targeting their children, and how they react to such persuasion attempts. To

the best of our knowledge, there are no studies having measured affective and moral advertising literacy among preschoolers.

Future recommendations

Keeping in mind preschoolers' psychological skills discussed earlier, we suggest to measure only cognitive (i.e. situational ad recognition) and affective advertising literacy (i.e. after intervention) among this age group. Considering their limited thinking capabilities and language skills, it can be argued that past research relying on interviews or visual self-reports have overestimated preschoolers' advertising literacy (Borgers, Leeuw, and Hox 2000). In any case, we propose that only situational measures should be used when directly measuring advertising literacy among preschoolers, as their symbolic thinking is too incomplete for them to answer questions about abstract advertising concepts. The use of proxy information might be an alternative, in that parents or other daily caretakers may describe how (they perceive that) their children think about and emotionally react to advertising when exposed to certain formats. However, one should consider a possible disparity between proxy estimation of the child's perspective and the child's actual, personal viewpoint (Ólafsson, Livingstone, and Haddon 2013; Scott 2000).

Bearing the latter in mind, it may be more fruitful to measure preschoolers' advertising literacy using game-play methods (Ólafsson, Livingstone, and Haddon 2013). This is a common technique employed by researchers in the area of psychological child development, since young children are more competent at expressing their ideas and feelings by playing simple games than they are at verbalizing them (Stephens, Stutts, and Burdick 1982). Moreover, a game environment can simulate phenomena of everyday life in a context children are already familiar with (Schousboe and Winther-Lindqvist 2013). This method has already been proven effective to measure preschoolers' cognitive advertising literacy, and in

particular their situational recognition of an advertisement (Stephens, Stutts, and Burdick 1982; Stutts, Vance, and Hudleson 1981).

Future research could also extend the game-play method to measure preschoolers' understanding of an advertisement's commercial intent. For instance, preschoolers could be shown a TV commercial and then (after measuring recognition) be asked to re-enact that commercial (eventually by using dolls or puppets), in which one child is the seller of the advertised product, and another one the buyer; the ease with which this role-play acting occurs should be an indication of their cognitive advertising literacy (see Henriksen 1996). However, it should be noted that such methods pose a real challenge for future studies that want to assess preschoolers' understanding of embedded advertising formats (e.g. product placement, advergames). In addition, a whole array of other qualitative, projective, 'playful' techniques could be used as well to uncover the beliefs, feelings, attitudes and motivations of those consumers who have difficulties with articulating them (such as making a drawing about an advertisement) (e.g. Donoghue 2000).

Furthermore, as mentioned earlier, it should be possible to measure preschoolers' affective advertising literacy, after they are externally stimulated to identify an advertisement's attempt to evoke certain emotions, and to become aware of their own emotional reactions to that attempt. This could be achieved directly by observing these reactions (such as body gestures, facial expressions) during advertising exposure (e.g. when, after intervention, they do not automatically exhibit the feelings anymore the advertisement wants them to experience, this may indicate the activation of affective advertising literacy), or even by measuring psychological-biological indicators (Adrian, Zeman, and Veits 2011). Finally, the *think-aloud* method may be used (Rozendaal, Buijzen, and Valkenburg 2012), whereby children are asked to verbalize their emotional reactions (which may also help them

to become more aware of them, as an intervention on its own) during ad exposure, assuming that this is easier for them to articulate their beliefs about how the advertisement functions.

Elementary School Children (6-8-year)

Cognitive, affective and moral skills

In terms of cognitive abilities, elementary school (ES) children are thinking increasingly logical about social phenomena, and are ceasing to make inferences which are exclusively bound to one specific situation (Piaget 1929). Consequently, they start to acquire a more thorough understanding of abstract concepts (such as ‘advertising’) (Jansson-Boyd 2010; John 1999). This implies that the cognitive dimension of advertising literacy – dispositional and situational – can be measured by using more direct methodologies than game-play or proxy-information. As concerns emotional development, ES children are still looking for external support to cope with emotionally charged events, but they are increasingly conscious about their own emotions, which they are now able to regulate in coordination with others’ emotions (Saarni 1999). Furthermore, they start to understand the emotional ‘scripts’ society has consensually agreed upon (Buckley and Saarni 2013). Therefore, it seems justifiable to measure ES children’s affective advertising literacy without implementing an intervention, as was the case with preschoolers.

ES children are also developing a more comprehensive ToM, which means that they begin to get a notion of ‘false-belief’, i.e. to understand that the mental states and beliefs of others may differ from their own beliefs and from reality in general (Perner, Kloo, and Stoettinger 2007; Premack and Woodruff 1978). In other words, they are becoming more adept at taking the perspective of advertisers and their intentions, and may now understand that advertisers can use morally inappropriate techniques to reach their commercial goals (e.g. by making unrealistic or false claims and representations). Moreover, it is generally assumed

that during this period, children start to develop moral reasoning skills (i.e. moral realism) (Kurtines and Pimm 1983; Piaget 1929). Therefore, ES children should be able to morally judge advertising practices.

Past research methods

A literature search identified two common methods for measuring cognitive advertising literacy among ES children. First, a couple of studies used interviews (mostly dispositional) (e.g. Oates, Blades, and Gunter 2002; Ward 1972; Owen et al. 2013; Spielvogel and Terlutter 2013; Bijmolt, Claassen, and Brus 1998; Wilson and Weiss 1992) . Second, and most important, ES children’s advertising literacy has frequently been measured (situationally) by using visual self-reports (i.e. visual questionnaire), with Donohue and colleagues (1980) being the first to introduce this method within advertising literacy research, and since then adopted by many authors (e.g. Bijmolt, Claassen, and Brus 1998; Grohs, Wagner, and Steiner 2012; Macklin 1985). With this method, children are asked questions from a standardized survey, upon which they are shown a set of images representing the answer options. Out of these depictions (usually of certain activities) they have to pick the ‘correct’ one instead of having to rely on verbalizations. In the study of Bijmolt et al. (1998), for instance, ES children were shown a TV commercial and then asked “What does the boy in the commercial want you to do?”. To answer this question, each child had to choose one picture out of three possible options (of which the sketch of the shopping scene was the correct one). A similar setup has also been used for newer advertising formats, such as advergames (e.g. Mallinckrodt and Mizerski 2007; Panic, Cauberghe, and De Pelsmacker 2013; Rifon et al. 2014).

Furthermore, some studies have also used these visual methods to assess ES children’s mere recognition of advertising, e.g. by showing them a website and asking them to point at

the advertisement(s) (Ali et al. 2009); by presenting them with illustrations from both the advertisement and the television program in which it was inserted, and asking them to point at the advertisement scenes (Oates, Blades, and Gunter 2002; Wilson and Weiss 1992) or by exposing them to sponsors in a theme park, and consequently asking them to pick the brands they have seen from a list of logos (Grohs, Wagner, and Steiner 2012). Finally, as was the case with preschoolers, no studies were found investigating affective and moral advertising literacy among ES children. Concerning the former, however, it should be noted that there is one study which combined face-to-face interviews (incl. standardized questions) with the observation of children's emotional reactions to an advergaming based on facial expressions (to determine how challenged they were by the game) (Waiguny, Nelson, and Terlutter 2012).

Future recommendations

Although past research only focused on cognitive advertising literacy among ES children, we argue that (based on their psychological skills discussed earlier) their affective and moral advertising literacy can be measured too. However, this should perhaps not be done with typical structured, standardized questionnaires, as children younger than seven years are believed to lack the reading and writing skills necessary to be directly questioned in an effective and systematic manner (de Leeuw 2011; Scott 2000). Similarly, as they can be considered premature in linguistic abilities and verbal comprehension (Borgers, Leeuw, and Hox 2000), they may not be fully capable of participating in (semi-)structured interviews (Scott 2000). Borgers et al. (2000) do believe that it is possible to interview ES children, but only with the utmost care. The 'safest' method they recommend is a short, qualitative open interview (e.g. a small focus group), preferably presented as a game or incorporating 'playing' tasks. However, measuring advertising literacy with visual self-reports seems to be a good practice as they have many advantages. For children, a visual representation will concretize

the verbally formulated questions and answer options and make the data collection more interesting for children. Consequently, there will be more cognitive resources left, which children can use to focus their limited attention on the survey (Borgers, Leeuw, and Hox 2000; Ólafsson, Livingstone, and Haddon 2013; Scott 2000). For researchers, visual self-reports are quick, easy and cost-effective and may also allow for the generalization of results and their comparison across studies (Poels and Dewitte 2006).

To measure cognitive advertising literacy using visual self-reports, the many studies referred to in the previous section can serve as an example, especially when it comes to advertising or brand recognition (situational). However, one should also be cautious for some disadvantages of visual self-reports. As children are given the choice between a small number of pictures, it may appear that they perform quite well because they are likely to pick the correct picture by mere guessing (chance effect) (Gunter, Oates, and Blades 2005). As a result, children's advertising literacy may be overestimated (type II error). Furthermore, studies generally focus on the amount of children that choose the picture that the researcher considers to be correct (subsequently, all the other pictures are incorrect). This is, according to Wright et al. (2005), "a narrow and highly questionable normative stance that leads to little reporting of and discussion about the broader aspects of children's choices" (p. 225). The other pictured activities also represent possible advertising goals, but are unfortunately not taken into account since most scholars only focus on one particular goal (Wright, Friestad, and Boush 2005).

Bearing the above in mind, future research could explore possible transformations of the available basic standardized questionnaires into simplified visual self-reports. In such method, the questions could be adapted to the linguistic and symbolic competences of the children, and Likert and semantic differential scale answer options could be verbally and structurally simplified and clearly visualized with playful images. For instance, to measure

understanding of advertising intent, one could adapt and transform the items from the validated CALS-c (Rozendaal, Oprea, and Buijzen 2016; see more in next section on tweens). With regard to the answer options, Scott (2000) advises to use ‘memory aids’ to deal with young children’s difficulties to remember even a small battery of answer options, for instance by first breaking down the classic 5- or 7-point Likert scales into two or three response options, eventually followed by asking the children to indicate the strength of their previous answer. Krcmar and Cooke (2001) found that this deconstruction allowed even children as young as five years old to respond meaningfully to an otherwise complex 5-point Likert scale. These answer options can also easily be visualized (for instance by accompanying ‘strongly agree’ with two thumbs up, ‘agree’ with one thumb up, etc.).

As concerns the other two dimensions of advertising literacy, there are currently no validated, standardized scales available. To measure ES children’s moral judgment of advertising, however, one could adapt (in the same way as described in previous paragraph) existing items of studies among adults, in which the respondents are generally asked how ‘appropriate’, ‘fair’ or ‘manipulative’ the used (covert) marketing tactic seems to them (Wei, Fischer, and Main 2008). As young children will most likely not comprehend such overly abstract concepts, and may not have a complete conception of (contemporary and new) marketing tactics (John, 1999), these items may perhaps be modified along the lines of Krcmar and Cooke’s (2001) study on children’s moral reasoning. These authors reminded children of an aggressive act, and asked them whether the act was right, wrong or in between (see scale deconstruction above). Similarly, one could show them an advertisement (if situational) and offer them a simple explanation of the used advertising tactic (e.g. brand placement as ‘hiding brands in TV series or films’) and ask them how ‘right’ or ‘wrong’ they think this practice is. However, note that such items primarily express people’s advertising-

related moral judgments, which are not directly indicative of the possession and actual use of moral advertising literacy. A possible way to investigate whether children have (dispositional) and use this ‘moral radar’ (situational) when judging advertising could be to have them envision ‘moral dilemmas’(e.g. Bandura and McDonald 1963; Miller et al. 1996), focusing on the actions of the advertiser toward the consumer, and eventually supported with visual stimuli (e.g. Kurtines and Pimm 1983). The way children solve these dilemmas should clarify whether their reasoning strategies are of a moral nature or not.

The greatest challenge is perhaps to measure affective advertising literacy with visual self-reports. Inspiration to construct such a measure could be found in the literature on emotion regulation. Adrian et al. (2011) argue that when children are able to be aware of their emotions, to monitor them, and to report them, self-reports are the best way to assess the widest range of information on these emotions – this is also the method used most frequently to measure emotion regulation among ES children. In their 35-year review article, the authors list 28 studies using the self-report methodology among this age group, which future studies may adapt to measure emotion regulation in the context of advertising.

Tweens (9-12 year)

Cognitive, affective and moral skills

Between the ages of 9 and 12 years, crucial developmental changes take place (John 1999). More specifically, children’s thinking, language and reading skills develop towards an advanced level (Borgers, Leeuw, and Hox 2000; Jansson-Boyd 2010). Furthermore, as they address their memory more efficiently, tweens start to process information much more fluently. This allows them to reflect about consumer related affairs at a more complex and abstract level (Jansson-Boyd 2010; John 1999). With regard to emotional development,

tweens' now acquire the ability to be aware of the multiplicity of emotions they can have toward the same stimulus. Moreover, they also gain the skill to express behaviors that are not in accordance with how they feel (Buckley and Saarni 2013; Saarni 1999), e.g. showing happiness when receiving a disappointing gift, or, in the context of persuasion, acting neutral when initially feeling highly aroused by an advertisement.

Finally, as tweens are shifting toward an 'interpretative' ToM, they get more skilled in identifying the influence of preference, bias and other aspects of subjectivity of people's thinking (Moses and Baldwin 2005; Pillow and Weed 1995). The latter implies a better assessment of the possibility that advertisers' use inappropriate or manipulative tactics to reach their commercial goals. Moreover, they should be more proficient in judging these tactics morally, as they start to develop a well-defined sense of value judgments such as fairness and justice (Kurtines and Pimm 1983; Piaget 1929). In other words, it should be possible to measure most aspects of advertising literacy (incl. dispositional ad literacy) among tweens, with fewer methodological restrictions and necessary adaptations (as was the case for previous age categories).

Past research methods

The extant literature has mainly applied two methods to assess tweens' cognitive advertising literacy. First, studies have used interviews to measure this concept (both situational and dispositional) (e.g. Blosser and Roberts 1985; Christenson 1982; Waiguny, Nelson, and Terlutter 2012; Wilson and Weiss 1992; Owen et al. 2013; Spielvogel and Terlutter 2013; Nelson 2016). The bulk of – generally recent – studies have used verbal self-reports (mainly classic, self-administered questionnaires), usually within a classroom context. In general, these studies have asked tweens to indicate their advertising knowledge by means of a battery of items, using semantic differentials or Likert scales with a predefined set of

response options. These questionnaires have been employed to measure – mostly situational – cognitive advertising literacy (e.g. Hudders, Cauberghe, and Panic 2015; Rozendaal, Buijzen, and Valkenburg 2009; Rozendaal et al. 2013; van Reijmersdal, Rozendaal, and Buijzen 2012; An, Jin, and Park 2014; Zarouali et al. 2016). This method has not been used to directly assess affective and moral advertising literacy, though related measures exist indicating tweens’ affective attitudes toward advertising (e.g. Hudders, Cauberghe, and Panic 2015; Oprea and Rozendaal 2015) and moral judgments of advertising (e.g. Rose, Merchant, and Bakir 2012).

Noteworthy is that, despite the extensive use of questionnaires among tweens, there is currently only one validated self-report measure of advertising literacy (not only among this age group, but in general), namely the recent ALS-c scale by Rozendaal et al. (2016) (see next section). Most often, researchers just used personally created (and unvalidated) items fitting the context of their specific studies. As Ham, Nelson and Das (2015) argue, the use of self-created can be considered as an advantage, as it allows to fully map the multi-dimensional nature of advertising literacy. However, the major disadvantage is that these items may not necessarily be valid and reliable because they are (usually) not created based on standard scale development measures. In addition, the use of ‘own’ operationalizations has – at least partially – led to disunity in the use of measurement methodologies and inaccuracy in study comparisons.

Future recommendations

In accordance with past research, we confirm the suitability of using interviews and verbal self-reports to assess tweens’ advertising literacy, as these methods align with their psychological skills and abilities. Interviews are an interesting method to investigate children’s knowledge, attitudes and evaluations in the context of advertising as they are rapidly acquiring the abilities needed for a successful verbal exchange (Borgers, Leeuw, and

Hox 2000; Scott 2000). Especially in case of qualitative, explorative research, interviews have the powerful asset of encouraging children to talk freely, hence allowing their (advertising-related) thinking to unfold and reveal itself (Woodhead and Faulkner 2000). With respect to verbal-self reports, it has been argued that tweens are indeed able to successfully process and respond to standard questions with a sufficient level of consistency (Ólafsson, Livingstone, and Haddon 2013; Scott 2000). Verbal self-reports have several advantages: the questions and items are generally user-friendly, completion usually demands little cognitive effort (i.e. easy formulated closed questions) and is less time-consuming (compared to interviews). Moreover, they also facilitate comparability between findings and are a quick and inexpensive method to investigate a phenomenon on a large scale (Poels and Dewitte 2006). However, one should still be careful with the formulation of questions and items because tweens' reading skills, language abilities, memory functioning and – perhaps most important – attention span should not be overestimated (Borgers, Leeuw, and Hox 2000; de Leeuw 2011). Therefore, the recommendations made previously for ES children (i.e. to visualize questionnaires as much as possible, and perhaps also using memory aids such as breaking down Likert scales) could also apply to tweens. Moreover, the latter allows for a smooth comparison of results between both age categories.

In this respect, the Conceptual Advertising Literacy Scale for Children (CALC-c) of Rozendaal et al. (2016) seems most eligible to employ (or adapt), as it was validated among 8- to 12-year-olds. This instrument contains various underlying dimensions of cognitive advertising literacy as identified in the literature. However, for future research, two adaptations may be needed for this instrument. First, as the authors argue themselves, researchers should meet the challenge to adapt the scale to measure advertising literacy for formats other than TV commercials. Second, as the scale mixes up situational (e.g. 'Is this a commercial?') and dispositional (e.g. 'Are TV commercials there to make you buy the

advertised products?') advertising literacy, researchers should consider whether they are interested in children's actual processing of a specific advertisement (situational) or their possession of knowledge and skills making the former possible (dispositional). Subsequently, the items can then be adapted accordingly.

It is worth mentioning that in addition to the CALS-c, Rozendaal et al. (2016) also developed the Attitudinal Advertising Literacy Scale for Children (AALS-c). This instrument consists of subscales that may have a significant impact on children's processing of advertising, such as 'disliking of advertising' (the affective evaluation of advertising) and 'skepticism toward advertising'. However, in order to measure affective advertising literacy (as conceptualized by Hudders et al. 2017), i.e. their conscious awareness of emotional reactions to advertising and their abilities to suppress or regulate them, we must refer to the recommendation in the previous section on ES children, namely to plunge into the emotion regulation literature for questionnaires that can be adapted to the context of advertising.

Finally, compared to ES children, tweens' (abilities for) moral reasoning may be assessed more accurately than by asking them if and how they reflect on advertising (formats or tactics) in terms of 'right' or 'wrong'. That is, tweens may now have a clearer conception of abstract concepts such as 'appropriateness', 'fairness' and 'manipulativeness'. Therefore, it seems useful to measure the valence of their moral judgments related to advertising by means of the 6-item Inference of Manipulative Intent scale (IMI) (Campbell 1995). More specifically, one could use Rose and colleagues' (2012) adapted version of this scale, created for 8 to 10 year old children to bypass literacy barriers, and including items such as "This ad was OK; it tried to get me to buy the product without trying to fool me" and "This ad was fair; It did not try to trick me". However, as these items indicate the specific direction of children's evaluation of an ad, rather than the possession or use of moral skills and abilities, future research should still come up with an actual measure for moral advertising literacy.

Teenagers (13+ year).

Cognitive, affective and moral skills

Around the age of 13, children start to have the cognitive capacity to process information in a more adult-like pattern. They can now engage in highly complex thinking and hypothetical reasoning, making them less bounded by concrete or observable aspects of a specific situation (Jansson-Boyd 2010). This also expresses itself in a more reflective way of thinking and reasoning about consumption (John 1999). Furthermore, their memory capacity is now nearly full-grown, and they are perfectly able to articulate their perceptions, opinions and beliefs on a wide range of (marketing related) topics (de Leeuw 2011; Scott 2000). As concerns emotional development, adolescents start to acquire a thorough comprehension of the different components of emotions (Pons, Harris, and Rosnay 2004). More precisely, they have developed the ability to engage in complex and sophisticated predictions of others' (subject or object) emotional responses based on both obvious and more subtle (inferred) cues (Rosenblum and Lewis 2003). Therefore, evaluating external stimuli (e.g. advertising) emotionally should pose no problems for them, even if the emotional appeal is characterized by a hidden and subtle nature (e.g. advergames).

At last, adolescents are able to judge the morality of actions as conforming to the views, expectations and conventions of society (Kohlberg 1976). They possess an advanced intuition to judge the appropriateness of another's actions, and to evaluate people who engage in unfair or manipulative practices that are based on moral beliefs different from their own (Chandler, Sokol, and Wainryb 2000). In other words, it should definitely be possible to measure all dimensions of advertising literacy among teenagers (both dispositionally and situationally), with even fewer adaptations needed than was the case with tweens.

Past research methods

Our literature search for measuring adolescents' advertising literacy yielded little results. Nevertheless, a handful of studies were found using verbal self-reports (e.g. Boush, Friestad, and Rose 1994; Mangleburg and Bristol 1998; Nelson and McLeod 2005; Verhellen et al. 2014; Zarouali et al. 2017) and interviews (e.g. Sandberg, Gidlöf, and Holmberg 2011) to measure both dispositional and situational cognitive advertising literacy. Teenagers have received little scholarly attention in past advertising literacy research (compared to younger children) because they are considered less vulnerable and thus no priority group for academic exploration (Livingstone and Helsper 2006). Dorr (1986) argued that by adolescence, children possess a greater understanding of persuasive techniques that helps them "evaluate advertising claims sensibly and gain more control over the type and amount of influence commercials exert on them" (p. 52). However, we argue that this line of reasoning does not necessarily apply to new (online) advertising practices (see next section).

Future recommendations

To explore advertising literacy among teenagers one can use standardized questionnaires similar to those designed for adults, or verbal interviews (Scott 2000). However, it is still advisable to avoid complex question and item wording, as teenagers are still cognitively developing until they reach the age of around 16 (Borgers, Leeuw, and Hox 2000). This means that verbal self-reports and interviews may need some adaptations in order to avoid problems of literacy (de Leeuw 2011; Scott 2000). Although little empirical research has been conducted among teens, we can still make some suggestions in terms of possible measurement methods for the various dimensions of advertising literacy. Boush et al. (1994), for instance, introduced an instrument to measure adolescents' dispositional beliefs about why advertisers use particular tactics. As this scale measures several (positive or negative)

cognitive psychological aspects of persuasion (e.g. attention, cognition, memory, etc.), it is very suitable to measure cognitive advertising literacy.

Then, with regard to affective advertising literacy, Friestad & Wright (1995) studied consumers' beliefs regarding the emotional psychology of advertising persuasion and how this influences them. They introduced a dispositional measure that assesses seven beliefs about the various roles that emotions fulfill in advertising persuasion. These seven persuasion beliefs concern (1) the *difficulty* of eliciting emotions in advertising; (2) the *necessity* of emotions in the persuasion process; (3) the *influence* of emotions on affective and behavioral outcomes; (4) the *noticeability* of emotions as advertiser tactics; (5) the *effectiveness* of emotions as a psychological effect (6) the *sequence* (i.e. order) of emotional appeals during a persuasion episode; and (7) the *origin* of emotions in advertising. All the above mentioned beliefs have been formulated with bipolar labeled endpoints (see Friestad and Wright 1995). This instrument could be used for assessing the foundation of affective advertising literacy as it thoroughly assesses people's insights and beliefs in the working and influence of emotions in advertising. However, as this scale only assesses the beliefs about emotional psychology on which consumers may base their evaluation and not the regulation of emotions as such, future research may want to dig deeper into the emotion regulation literature to develop scales that create a more thorough picture of an individual's actual affective advertising literacy. Finally, to assess moral evaluations, the previously mentioned IMI-scale developed by Campbell (1995) is appropriate to use among adolescents. Major adaptations might not be necessary, given that this instrument was developed and tested among adolescents and young adults.

As a last and more general recommendation regarding the current age group, we want to encourage scholars to conduct more empirical research on adolescents' advertising literacy.

As mentioned earlier, it is generally assumed that younger children are more affected by and susceptible to advertising, while adolescents are supposedly less vulnerable to these persuasive effects. However, during adolescence, the persuasion related abilities of teenagers are still developing (Boush, Friestad, and Rose 1994; Friestad and Wright 1994). This means that their knowledge of advertising techniques and persuasion strategies are still not entirely matured (Rozendaal, Buijzen, and Valkenburg 2010). This is particularly the case for embedded advertising formats (e.g. advergames), as they may have limited knowledge about these novel techniques due to inexperience (Verhellen et al. 2014). This could lead to a scenario in which teenagers might be less able to critically reflect on advertising, making them more vulnerable to advertising effects. Therefore, we argue that they should certainly not be left aside in contemporary advertising research.

[INSERT TABLE 1 ABOUT HERE]

General discussion

As children are underdeveloped and relatively inexperienced as consumers, they are more susceptible to advertising influence compared to most adults. Therefore, it is important to investigate children's ability to recognize, understand and evaluate advertising, generally referred to as advertising literacy, as a way to help them cope consciously and critically with advertising. Following this line of reasoning, it is imperative to have a state-of-the-art overview that is transparent in the methods that should be used to arrive at a suitable measurement of advertising literacy. This all starts with defining this concept more fully (Kunkel 2010). Accordingly, the current paper is built upon the most recent conceptualization of advertising literacy (i.e. Hudders et al. 2017), to guide the following two goals: first, to give an overview of the different measurement methods used in previous research for several age groups, and second, to formulate recommendations in terms of which methods and instruments are appropriate to use for children, taking into account their psychological

development as defined by their age group. By addressing these two aims, we offer guidance to practitioners and scholars in their quest for a suitable method (for a summary, see Table 1).

With these recommendations, we contribute to theory and practice in three different ways. First, our starting point was a broader definition of advertising literacy, which reflects a more systematic and theoretically driven framework of studies that take into account the three dimensions of a child's advertising literacy. The important distinction between dispositional and situational advertising literacy was also included in the conceptual framework. We believe that this more elaborate conceptualization offers a stronger theoretical rationale on the nature of advertising literacy that is required to use appropriate measures. In addition, this multidimensional conceptualization should also lead to theoretical consistency and uniformity in the labelling of advertising literacy components. Second, our recommendations could enhance methodological unity in future research efforts, both among scholars and practitioners. As past operationalizations of advertising literacy are characterized by a limited consensus, we highlighted how this concept can be measured appropriately and in line with its theoretical structure by offering concrete, practical and hands-on suggestions. Furthermore, as we have taken into consideration children's psychological development, the suggested methodologies are more likely to capture children's advertising literacy in a valid manner. Third, and as a result of the prior argument, the recommendations might lead to more accurate findings and robust comparisons across different studies. These comparisons will allow researchers to set out to explore the results of two or more studies with respect to their similarities and differences in a more systemic way. By this means, researchers might arrive at a more accurate and better substantiated observation and explanation of children's advertising competency based on a wider base of knowledge, which will lead to more valuable contributions to public policy and debate.

Based on the aforementioned insights, we can draw some implications and suggestions for future research relevant to all age groups. Firstly, all the different recommendations addressed in the current manuscript are directly linked to the topic of investigation (i.e. advertising literacy). However, as they were based on a general developmental perspective, other related research topics concerning children and adolescents could also benefit from these insights, such as (media) literacy in general. Secondly, as the advertising landscape evolves rapidly, it is essential that researchers keep pace with new advertising practices since they are fundamentally different from traditional advertising (e.g. embedded nature, interactive, personalized, etc.). Subsequently, one should continue to reflect on effective ways to measure advertising literacy concerning these new advertising formats, for instance by adapting existing measures. Thirdly, we did not focus on how to attune the different methodological approaches for the different age groups. It would be interesting to investigate to which extent different methods build upon each other, and subsequently, if they can be used to track the development of children's advertising literacy over a longer period of time in order to compare the levels of advertising literacy at different ages.

Finally, as most of studies in the literature take a quantitative, we can only encourage scholars to conduct qualitative research on advertising literacy. The currently dominating focus does allow to identify the approximate ages at which children are able to understand advertising, but sheds little light on children's broader understanding and evaluation of advertising (Oates, Blades, and Gunter 2002). Therefore, a qualitative research approach (e.g. focus groups, unstructured interviews, etc.) can reveal insights into the ways children engage with advertisements, which allows researchers to explore the deeper and underlying meaning structures. This process is crucial to yield new and insightful –in depth- knowledge that will help researchers better understand the multidimensional topic of advertising literacy.

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Table 1: Summary of the recommended advertising literary measurement methods

	Cognitive AL	Affective AL	Moral AL
Preschoolers (3-5yo)	<ul style="list-style-type: none"> • Only situational (or proxy) • Game-playing <ul style="list-style-type: none"> – Good practice for ad/brand recognition • Qualitative, ‘playful’ techniques should be developed 	<ul style="list-style-type: none"> • Only situational • After intervention <ul style="list-style-type: none"> – Observe body language – Psychobiological indicators – Think-aloud 	/
ES children (6-8yo)	<ul style="list-style-type: none"> • Interview <ul style="list-style-type: none"> – Short, qualitative open interview (e.g. small focus group) – Incl. (game) playing tasks • Visual self-report <ul style="list-style-type: none"> – Include playful images – Illustrate scale items (e.g. smileys) – Optional: brake down scale 	<ul style="list-style-type: none"> • Visual self-report: <ul style="list-style-type: none"> – See emotion regulation literature 	<ul style="list-style-type: none"> • Visual self-report for moral judgment <ul style="list-style-type: none"> – E.g. evaluating stimuli as ‘right’ or ‘wrong’ • Moral dilemmas (illustrated) to determine moral AL <ul style="list-style-type: none"> – E.g. via reasoning strategies
Tweens (9-12yo)	<ul style="list-style-type: none"> • Interview • Verbal self-reports <ul style="list-style-type: none"> – Careful with formulation (adapt if necessary) – Limited attention span <p style="text-align: center;"><u>Measure(s)</u></p> <ul style="list-style-type: none"> • CALS-c (Rozendaal et al., 2016) to measure conceptual (or cognitive) advertising literacy <ul style="list-style-type: none"> – Adapt to (new) ad formats 	<p style="text-align: center;">[See cognitive AL]</p> <p style="text-align: center;"><u>Measure(s)</u></p> <ul style="list-style-type: none"> • AALS-c (Rozendaal et al., 2016) to measure ‘attitudinal AL’ • To measure affective AL: emotion regulation literature 	<p style="text-align: center;">[See cognitive AL]</p> <p style="text-align: center;"><u>Measure(s)</u></p> <ul style="list-style-type: none"> • IMI-scale (Campbell 1995; Rose et al. 2012) to measure appropriateness judgement • To measure moral AL: develop new measure
Teenagers (13+yo)	<ul style="list-style-type: none"> • Interview • Verbal self-reports <ul style="list-style-type: none"> – Questions similar to those designed for (young) adults – However, adaptation may still be needed (avoid complex wording) <p style="text-align: center;"><u>Measure(s)</u></p> <ul style="list-style-type: none"> • Cf. tweens • E.g. Boush et al. (1994): Persuasion tactic beliefs • See also Ham et al. (2015) 	<p style="text-align: center;">[See cognitive AL]</p> <p style="text-align: center;"><u>Measure(s)</u></p> <ul style="list-style-type: none"> • Cf. tweens • E.g. Friestad and Wright (1995): tactic beliefs regarding the use of emotions = foundation for developing measure for affective AL (combined with emotion regulation literature) 	<p style="text-align: center;">[See cognitive AL]</p> <p style="text-align: center;"><u>Measure(s)</u></p> <ul style="list-style-type: none"> • Cf. tweens