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The impact of advertising on children's psychological wellbeing and life satisfaction

Children's
advertising
exposure and
wellbeing

1975

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Abstract

Purpose – It is generally believed that children's advertising exposure decreases life satisfaction. This paper aims to investigate whether and how it does by examining the relation between advertising exposure and life satisfaction (Aim 1), as well as the mediating roles of psychological wellbeing (Aim 2) and its underlying dimensions (Aim 3).

Design/methodology/approach – Three-wave panel data were collected among 1,133 8-12-year-olds. Psychological wellbeing was measured overall and per dimension (i.e. environmental mastery, personal growth, purpose in life, self-acceptance, autonomy and positive relationships with others).

Findings – The authors found a nonsignificant total effect of advertising exposure at Wave 1 on life satisfaction at Wave 3: The negative direct effect was annulled by the positive indirect effect via overall psychological wellbeing at Wave 2. Detailed analysis revealed that personal growth and autonomy functioned as positive mediators, and purpose in life as a negative mediator in the relation between advertising exposure and life satisfaction.

Social implications – This research informs the ethical debate surrounding child-directed advertising, showing it might stimulate children's sense of control over their environment, openness to new experiences, direction in life and sense of self-agency.

Originality/value – This study is the first to examine advertising's effect on life satisfaction and psychological wellbeing simultaneously. The study used a large sample and a longitudinal panel design, allowing conclusions about the specific effects of advertising exposure.

Keywords Children, Life satisfaction, Advertising exposure, Psychological wellbeing

Paper type Research paper



1. Introduction

Ethical concerns about the harmful effects of advertising on children have existed for a long time. In a seminal review, Pollay (1986) discussed the works of various significant humanities and social science scholars who claimed that advertising provides a distorted mirror. Advertising is believed to foster materialism by promoting goods and

objects and to create dissatisfaction by idealizing “the goods life” (Pollay and Gallagher, 1990). Research has indeed confirmed that being frequently exposed to advertising increases children’s materialism (Oprea *et al.*, 2014). Furthermore, advertising decreases children’s life satisfaction through the disappointment following parental denial of purchase requests (Buijzen and Valkenburg, 2003a, 2003b). Although these findings make it tempting to conclude that advertising jeopardizes children’s “good life”, we cannot do so without studying its effect on children’s wellbeing to the full extent first (Kunkel and Roberts, 1991).

There are two paradigms in wellbeing research (Ryan and Deci, 2001). The first and most popular is the hedonic paradigm, which pertains to the current state of happiness. This paradigm involves research into people’s subjective wellbeing, more particularly, their moods and life satisfaction. The second paradigm is the eudaimonic paradigm. This paradigm involves research into people’s psychological wellbeing, more particularly the cultivation of personal strengths and ability to reach one’s potential (Ryan and Deci, 2001). Psychological wellbeing consists of six dimensions: environmental mastery, personal growth, purpose in life, self-acceptance, autonomy and positive relationships with others (Ryff, 1989). According to Self-Determination Theory (Ryan and Deci, 2000, 2001; Waterman, 2008), these dimensions reflect the preconditions that need to be met for a person to be able to experience happiness. As such, psychological wellbeing precedes and predicts life satisfaction. This notion is observed among all ages, both in the context of school (Niemiec and Ryan, 2009) and work (Vansteenkiste *et al.*, 2007).

To gain a thorough understanding of the relation between children’s advertising exposure and wellbeing, this study will combine both theoretical perspectives. It is exploratory in nature because it is the very first to study the effect of advertising on psychological wellbeing. No such study has been conducted previously – among children nor adults. The aim of this study is threefold. First, we aim to verify whether children’s advertising exposure has a negative effect on life satisfaction. Second, we aim to determine whether psychological wellbeing functions as a mediator. Third, to obtain a more detailed insight into the mediating effect of psychological wellbeing, we aim to investigate the indirect effect of advertising exposure on life satisfaction via six separate dimensions of wellbeing.

2. Theoretical background

2.1 *Direct effect of advertising exposure on life satisfaction*

It is generally believed that children’s advertising exposure decreases life satisfaction. A literature review including eight studies investigating this relation identified three explanations (Buijzen and Valkenburg, 2003a). The first is based on social comparison. Advertising portrays an attractive world with a high prevalence of luxury items (Pollay, 1986). Social comparison could lead children to experience a discrepancy between this ideal world and their own surroundings, which expresses itself in disappointment and unhappiness (Buijzen and Valkenburg, 2003a). The second relates to consumption experiences. The products and brands in advertising are portrayed in very favorable manners; for example, toys look bigger or are animated with impressive movements or sounds. Often, the consumption of the advertised products cannot live up to children’s high expectations, resulting in disappointment and unhappiness (Buijzen and Valkenburg, 2003a). The third relates to more complex cause-and-effects chains.

Advertising stimulates materialism and children's purchase requests, which in turn could result in disappointment and unhappiness when children do not get the products they long for (Buijzen and Valkenburg, 2003a). Even though recent studies on the association between children's advertising exposure and life satisfaction among 8-12-year-olds did not find a direct relation (Buijzen and Valkenburg, 2003b; Oprea *et al.*, 2012), they do suggest that the two are related indirectly (e.g. via materialism, purchase requests and/or disappointment after parental denial of such requests). Thus, our first hypothesis predicts that:

H1. Advertising exposure has a negative effect on children's life satisfaction.

2.2 Direct effect of advertising exposure on psychological wellbeing

Advertising mirrors both consumer and psychological values. Consumer values reflect the thought that possessions are important; psychological values that possessions are a means to obtain happiness, status and other desirable qualities (Ewen *et al.*, 2002). Examples of such qualities are pride and independence (Kunkel and Roberts, 1991). Below, we first discuss a series of content analyses investigating the psychological appeals depicted in advertising. Then, we link these appeals to the various dimensions of psychological wellbeing to explain how advertising could affect children's environmental mastery, personal growth, purpose in life, self-acceptance, autonomy and positive relationships with others.

2.2.1 Psychological appeals in advertising. Content analyses of child-directed advertising can be divided in three groups. The first involves content analyses of general child-directed advertising (i.e. advertising on all sorts of product categories such as foods, beverages, toys and games). These studies have found that general child-directed advertising relies mostly on the appeals of fun/play, fantasy/imagination, action/adventure, trickery/deceit and parental approval/disapproval (Buijzen and Valkenburg, 2002; Page and Brewster, 2007; Warren *et al.*, 2008). The appeal of play/fun can be defined as a display of fun or play in the advertisement (Page and Brewster, 2007). Similarly, the appeal of fantasy/imagination entails the use of imaginary characters or situations, or the use of words like "fantasy" and "imagination" (Page and Brewster, 2007). With the appeal of action/adventure, the product or brand is associated with daring activities, thrill-seeking and excitement (Warren *et al.*, 2008). The trickery/deceit appeal includes story lines in which adults are being fooled and ridiculed (Folta *et al.*, 2006). The appeal of parental approval/disapproval refers either to a parent or other authority figure approving consumption, or to an absence of negative consequences of undesirable actions, such as the aforementioned trickery (Warren *et al.*, 2008).

The second group of content analyses of child-directed advertising focuses on food advertisements only. In addition to the appeals observed in the first category of research, these studies have reported the frequent use of achievement/enablement and athletic ability appeals (Connor, 2006; Folta *et al.*, 2006; Fosu *et al.*, 2013; Kim *et al.*, 2016; LeBlanc Wicks *et al.*, 2009; Lewis and Hill, 1998; Roberts and Pettigrew, 2007). With the appeal of achievement/enablement, consumption of the advertised product is linked to the ability to obtain a desired goal or to gain control over undesirable aspects of the self or the environment (Warren *et al.*, 2008). The appeal of athletic ability refers to a story line in which the use of the product leads to enhanced physical performance (Lewis and Hill, 1998).

The third and final group of content analyses of child-directed advertising involves studies comparing appeals in child-directed advertising to appeals in advertising aimed at a general audience (Buijzen and Valkenburg, 2002; LeBlanc Wicks *et al.*, 2009; Lewis and Hill, 1998; Warren *et al.*, 2008). Many children like to watch television shows for a general audience (Valkenburg and Cantor, 2000) and, as a consequence, are exposed to general-audience advertising. In this type of advertising, the themes of happiness and achievements are dominant too, but in addition, there is a strong focus on physical attractiveness and “having the best”. With the appeal of physical attractiveness, the consumption of the product is associated with an improvement in overall beauty (Lewis and Hill, 1998). The appeal of having the best is about owning high quality products and being admired for it (Buijzen and Valkenburg, 2002).

2.2.2 Linking appeals to psychological wellbeing. The previous section resulted in a list of nine appeals that children frequently encounter while being exposed to advertising: play/fun, fantasy/imagination, action/adventure, trickery/deceit, parental approval/disapproval, achievement/enablement, athletic ability, physical attractiveness and having the best. Each dimension of psychological wellbeing can be linked to one or more of these appeals, allowing the formulation of separate hypotheses.

The first dimension of psychological wellbeing, environmental mastery, involves people’s ability to manage their environment by creating contexts suitable for their needs (Ryff and Singer, 2008). The appeal of achievement/enablement is frequently used in both child-directed food advertising and general-audience advertising. Advertisements using this appeal suggest that it is possible to gain control over the undesirable aspects of oneself and those of one’s environment. By promoting this thought, advertising may stimulate children’s perceived environmental mastery:

H2. Advertising exposure has a positive effect on children’s environmental mastery.

The second dimension, personal growth, relates to people’s feelings of continued personal development and is closely linked to self-actualization (Ryff and Singer, 2008). Young children are not yet capable of in-depth self-reflection. Therefore, personal growth is defined and measured as openness to new experiences in the Psychological Well-Being scale for children (PWB-c) (Oprea, 2012). The appeal of action/adventure is frequently used in both general child-directed advertising and food advertising for children. Advertisers try to make their product or brand more appealing by linking it to thrill-seeking and excitement. By stimulating children’s sense for adventure, these appeals may also enhance children’s openness to new experiences and, thus, personal growth:

H3. Advertising exposure has a positive effect on children’s personal growth.

The third dimension, purpose in life, refers to people experiencing a sense of directedness in their lives and having goals in their life (Ryff and Singer, 2008). Because general child-directed advertising and children’s food advertising frequently use the appeal of fantasy/imagination, they might encourage children to fantasize about their lives and their future. In line with previous studies indicating that the fantasy/imagination appeal in general television content stimulates daydreaming (Valkenburg and Van der Voort, 1994), we expect that the fantasy/imagination appeal in advertising increases children’s contemplation about future opportunities (i.e. daydreaming about a future house or profession), leading to an increased sense of directedness and, hence, purpose in life:

H4. Advertising exposure has a positive effect on children’s purpose in life.

Fourth, self-acceptance is defined as having positive feelings about oneself (Ryff and Singer, 2008). In both children's food advertising and general-audience advertising, the appeals of athletic ability, physical attractiveness and having the best are frequently used, implying that just being oneself is not good enough; one needs certain products to be successful. Although previous studies have yielded mixed results, it is generally believed that advertising lowers people's self-perceptions (Buijzen and Valkenburg, 2003a):

H5. Advertising exposure has a negative effect on children's self-acceptance.

Fifth, autonomy relates to people's desire and ability to make independent decisions (Ryff and Singer, 2008). Children tend to make minor decisions by themselves but turn to their parents for guidance in big decisions (Fattore *et al.*, 2007). In the PWB-c, autonomy is therefore defined and measured as children's engagement in individual and shared decision-making (Oprea, 2012). In both general child-directed advertising and children's food advertising, adults are often fooled and ridiculed. Furthermore, in these types of advertising, ignoring one's parents' disapproval (i.e. being naughty) has no negative consequences. This may bring parents down from their pedestals and stimulate children to make their own decisions:

H6. Advertising exposure has a positive effect on children's autonomy.

The sixth and final dimension of psychological wellbeing, positive relationships with others, is defined as having warm and satisfying relationships (Ryff and Singer, 2008). It can be argued that general child-directed advertising and children's food advertising jeopardize children's relationships with their parents by ridiculing adults, taking away from children's admiration and idolization of their parents. Yet, the more profound assumption in the literature is that advertising leads to a decrease in positive relationships with others because it emphasizes the importance of possessions rather than interpersonal relationships (Chaplin and John, 2007):

H7. Advertising exposure has a negative effect on children's positive relationships with others.

As argued above, advertising might have a positive effect on some dimensions of psychological wellbeing (i.e. environmental mastery, personal growth, purpose in life, and autonomy), and a negative effect on others (i.e. self-acceptance and positive relationships with others). Because these effects may not only differ in direction but also in strength, it is impossible to predict whether the overall effect of advertising on psychological wellbeing is positive or negative. Hence, we formulated the following hypothesis for the effect of advertising on overall psychological wellbeing:

H8. Advertising exposure has an effect on children's overall psychological wellbeing.

2.3 Direct effect of psychological wellbeing on life satisfaction

Each dimension of psychological wellbeing separately as well as overall psychological wellbeing have been found to predict life satisfaction positively (Ryff and Keyes, 1995). We therefore expect that:

H9. Environmental mastery, personal growth, purpose in life, self-acceptance, autonomy and positive relationships with others are each positive predictors of children's life satisfaction.

H10. Overall psychological wellbeing is a positive predictor of children's life satisfaction.

3. Method

3.1 Sample and procedure

Our study focused on 8-12-year-olds. Children in this age group have already acquired quite some insight into the persuasive appeals in advertising. However, because they will not activate this knowledge unless stimulated to do so (Rozenaal *et al.*, 2012), they are relatively vulnerable to advertising effects (Buijzen *et al.*, 2010). We collected short-term longitudinal survey data (three measurement waves with six-week intervals) among 2,987 children aged 8 to 12 years (53.2 per cent boys; mean age 9.93 years) between January and April 2013.

The respondents were recruited through an online panel for adults. Parents of children within the desired age range were approached. If parents would allow their child to participate, they could forward an invitation. Like their parents, children were informed that the study was about children's television use and general happiness and that each questionnaire would take 20 min to complete. At each wave, both parents and children were reminded that participation was voluntary and that they could withdraw from the study at any time. The study was granted IRB approval by the university's ethical committee.

The children received 50 euro cents worth of credit points for the research company's reward system for their participation in Wave 1 and Wave 2, and a 10 Euros worth gift voucher for an online Web shop for their participation in Wave 3. The first wave took place between January 21 and January 30 ($N = 2,987$), the second between March 4 and March 13 ($N = 1,877$) and the third between April 15 and April 24 ($N = 1,133$). Drop-out was unrelated to sex ($\chi^2(1, n = 2,987) = 0.00, p = 1.00, phi = 0.00$) and age ($\chi^2(4, n = 2987) = 4.64, p = 0.33, Cramer's V = 0.04$), suggesting that panel attrition was random.

The waves in this study were administered six weeks apart because previous studies have indicated that short time lags are appropriate for studying linear effects of advertising on general beliefs and sentiments (Slater, 2015; Schemer, 2012). In such cases, the observed change between Time 1 and Time 2 can be extended to, and used for predicting, the observed change between Time 2 and Time 3, or between Time 1 and Time 3.

3.2 Measures

3.2.1 Advertising exposure. We used exposure to commercial television as a proxy for children's advertising exposure (Opree *et al.*, 2012; Pine and Nash, 2002) because we wanted to capture the overall impact of children's exposure to television advertising regardless of specific formats or content. Previous research has shown that this measure – though simple in nature – is just as valid and reliable as diary measures and/or survey measures correcting for advertising density (Opree, 2013). We decided to focus on commercial television because – despite increasing marketing expenditures on the internet – television remains the leading medium for advertisers to reach consumers in The Netherlands (SPOT, 2015). To obtain our proxy for advertising exposure, we selected the most popular commercial television network among Dutch children aged 8 to 11 years (RTL4, SBS6, Disney XD, Nickelodeon;

Sikkema, 2012) and asked children to indicate for each network how often they watched it. The response categories were never, sometimes, often and very often. The four-item scores were averaged to create a scale score (Wave 1: $M = 2.30$, $SD = 0.51$; Wave 2: $M = 2.28$, $SD = 0.51$; Wave 3: $M = 2.24$, $SD = 0.52$).

3.2.2 Psychological wellbeing. Children's psychological wellbeing was measured with the 24-item PWB-c (Opree, 2012). This scale is an adjusted version of the original PWB scale (Ryff and Keyes, 1995). Below, we describe the items for each dimension of PWB-c. All items started with the words "How often [...]" and had identical response categories: almost never, sometimes, often and very often. For each dimension, a scale score was created by averaging the scores of the separate items.

3.2.3 Environmental mastery. Children's environmental mastery was measured with four items assessing the amount of control children have over their environment such as "How often do you yourself choose what you do after school?" and "[...] do you yourself choose what you do during the weekend?" (Wave 1: $M = 2.82$, $SD = 0.53$; Wave 2: $M = 2.81$, $SD = 0.52$; Wave 3: $M = 2.77$, $SD = 0.52$).

3.2.4 Personal growth. Children's personal growth was measured with four items assessing their openness to new experiences such as "[...] do you like to engage in new activities?" and "[...] do you like to meet new people?" (Wave 1: $M = 2.81$, $SD = 0.57$; Wave 2: $M = 2.82$, $SD = 0.59$; Wave 3: $M = 2.82$, $SD = 0.58$).

3.2.5 Purpose in life. Children's purpose in life was measured with three items assessing how often they contemplate about their future such as "[...] do you think about what you want to be when you grow up?" and "[...] do you think about where you want to live in the future?" (Wave 1: $M = 1.97$, $SD = 0.69$; Wave 2: $M = 1.99$, $SD = 0.68$; Wave 3: $M = 1.97$, $SD = 0.69$).

3.2.6 Self-acceptance. Children's self-acceptance was measured with five items assessing their self-esteem such as "[...] are you proud of yourself?" and "[...] are you happy with yourself?" (Wave 1: $M = 2.64$, $SD = 0.55$; Wave 2: $M = 2.69$, $SD = 0.56$; Wave 3: $M = 2.72$, $SD = 0.58$).

3.2.7 Autonomy. Children's autonomy was measured with three items assessing their amount of independent and shared decision-making such as "[...] do you make choices by yourself?" and "[...] do you ask your parents for help?" (Wave 1: $M = 2.64$, $SD = 0.48$; Wave 2: $M = 2.62$, $SD = 0.46$; Wave 3: $M = 2.61$, $SD = 0.47$).

3.2.8 Positive relationships with others. Children's positive relationships with others was measured with five items such as "[...] do you do fun things with your parents?" and "[...] do you argue with your parents?" (recoded) (Wave 1: $M = 2.87$, $SD = 0.41$; Wave 2: $M = 2.85$, $SD = 0.40$; Wave 3: $M = 2.84$, $SD = 0.40$).

3.2.9 Overall psychological wellbeing. A composite score for children's overall psychological wellbeing was created by averaging the scores of all 24 items (Wave 1: $\alpha = 0.81$, $M = 2.66$, $SD = 0.32$; Wave 2: $\alpha = 0.83$, $M = 2.67$, $SD = 0.32$; Wave 3: $\alpha = 0.84$, $M = 2.66$, $SD = 0.33$).

3.2.10 Life satisfaction. Life satisfaction was measured by posing eight questions (Buijzen and Valkenburg, 2003b; Opree et al., 2011, 2012). In the first seven, children were asked to indicate how happy they were with their lives, home, parents, friends, class, school and themselves. The eighth question was how happy they felt overall. The answer categories were 1 (not happy), 2 (not so happy), 3 (a little happy) and 4 (very happy). Again, the item scores were averaged to create a scale score (Wave 1:

4. Results

4.1 Zero-order correlations

To explore the patterns in our data, we assessed the bivariate correlations between children's advertising exposure, overall psychological wellbeing and life satisfaction (Table I), as well as the correlations between children's advertising exposure, the six dimensions of psychological wellbeing and life satisfaction (Table II). We found no significant correlation between advertising exposure at Wave 1 and life satisfaction at Wave 3, suggesting that these constructs are not related directly. However, advertising exposure at Wave 1 was positively related to overall psychological wellbeing and each of its six dimensions at Wave 2. Furthermore, overall psychological wellbeing and the dimensions of environmental mastery, personal growth, self-acceptance, autonomy and positive relationships with others at Wave 2 were positively related to life satisfaction at Wave 3.

4.2 Latent variable modeling

Structural equation modeling was used to determine the direct and indirect effects of children's advertising exposure on life satisfaction. All hypotheses were tested using the models presented in Figures 1 and 2[1]. Both models included latent variables for advertising exposure, overall psychological wellbeing and life satisfaction. We tested two variations of the model. In both variations, the advertising exposure scale was used as a manifest indicator for the latent variable advertising exposure (AE), and the scale scores for the six dimensions of the PWB-c were used as manifest indicators for the latent variable psychological wellbeing (EM, PG, PL, SA, AU and PR). Furthermore, in both variations, parcels were created using the factorial algorithm of Little *et al.* (2002) to group the eight items for life satisfaction into three item parcels (parcels A, B, and C; labelled PA, PB, and PC) that

Measure	Advertising exposure			Psychological wellbeing			Life satisfaction		
	Wave 1	Wave 2	Wave 3	Wave 1	Wave 2	Wave 3	Wave 1	Wave 2	Wave 3
<i>Advertising exposure</i>									
Wave 1	1								
Wave 2	0.68***	1							
Wave 3	0.70***	0.73***	1						
<i>Psychological wellbeing</i>									
Wave 1	0.18***	0.11***	0.11***	1					
Wave 2	0.17***	0.16***	0.15***	0.68**	1				
Wave 3	0.14***	0.10***	0.17***	0.66***	0.76***	1			
<i>Life satisfaction</i>									
Wave 1	0.02	0.01	-0.02	0.57***	0.46***	0.47***	1		
Wave 2	0.03	0.03	0.03	0.47***	0.58***	0.50***	0.70***	1	
Wave 3	0.02	-0.02	0.03	0.46***	0.51***	0.62***	0.69***	0.75***	1

Notes: $N_{\text{Wave1}} = 2,987$; $N_{\text{Wave2}} = 1,877$; $N_{\text{Wave3}} = 1,133$; *** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$

Table I.

Correlations between children's advertising exposure, overall psychological wellbeing and life satisfaction

Measure	Advertising exposure			Life satisfaction			Children's advertising exposure and wellbeing 1983
	Wave 1	Wave 2	Wave 3	Wave 1	Wave 2	Wave 3	
<i>EM</i>							
Wave 1	0.19***	0.13***	0.16***	0.18***	0.13***	0.11***	
Wave 2	0.18***	0.16***	0.17***	0.12***	0.20***	0.16***	
Wave 3	0.19***	0.14***	0.21***	0.11***	0.12***	0.16***	
<i>PG</i>							
Wave 1	0.07***	0.03	0.04	0.41***	0.33***	0.33***	
Wave 2	0.07***	0.06**	0.07*	0.35***	0.44***	0.38***	
Wave 3	0.05***	0.01	0.08**	0.36***	0.38***	0.48***	
<i>PL</i>							
Wave 1	0.14***	0.13***	0.10***	0.05**	0.02	0.03	
Wave 2	0.16***	0.16***	0.15***	0.01	0.03	-0.02	
Wave 3	0.10***	0.13***	0.11***	0.00	-0.03	0.01	
<i>SA</i>							
Wave 1	0.04*	0.01	0.00	0.52***	0.44***	0.44***	
Wave 2	0.05*	0.05*	0.04	0.46***	0.52***	0.50***	
Wave 3	0.04	0.01	0.03	0.52***	0.55***	0.63***	
<i>AU</i>							
Wave 1	0.14***	0.07**	0.07*	0.30***	0.23***	0.22***	
Wave 2	0.14***	0.13***	0.10***	0.22***	0.30***	0.27***	
Wave 3	0.09**	0.07*	0.15***	0.20***	0.21***	0.30***	
<i>PR</i>							
Wave 1	0.09***	0.05*	0.04	0.53***	0.45***	0.44***	
Wave 2	0.07**	0.07***	0.07*	0.42***	0.55***	0.52***	
Wave 3	0.05***	0.03	0.08**	0.44***	0.47***	0.58***	

Table II.

Correlations between the six dimensions of psychological wellbeing, and children's advertising exposure and life satisfaction

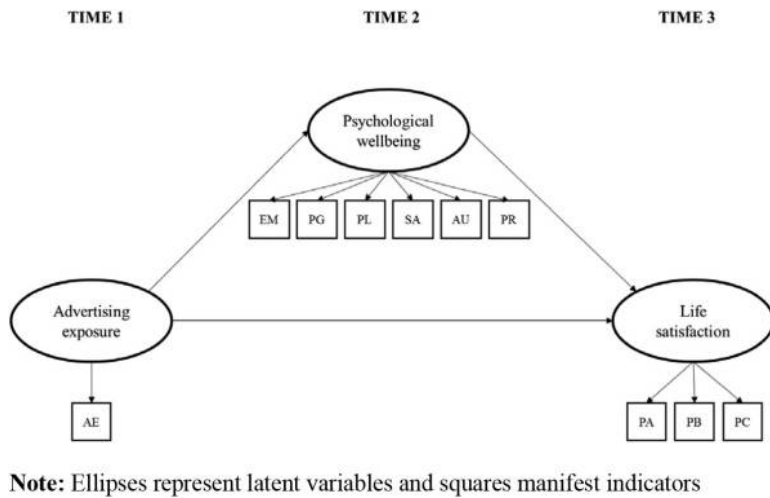
Notes: EM = Environmental mastery; PG = Personal growth; PL = Purpose in life; SA = Self-acceptance; AU = Autonomy; PR = Positive relationships; $N_{\text{Wave1}} = 2,987$; $N_{\text{Wave2}} = 1,877$; $N_{\text{Wave3}} = 1,133$; *** $p \leq 0.001$; ** $p \leq 0.01$; * $p \leq 0.05$; **** $p \leq 0.10$

were used as manifest indicators for the latent variable life satisfaction. Item parceling reduces the number of indicators, leading to more parsimonious models and increased statistical power (Kline, 2005). Ideally, between two to four parcels should be used per latent variable (Little *et al.*, 2002).

The first version of the model (Figure 1) was used to test the hypotheses on the direct relations between children's advertising exposure, overall psychological wellbeing and life satisfaction (*H1*, *H8* and *H10*). It contained causal paths from the latent variable advertising exposure at Wave 1 to the latent variable psychological wellbeing at Wave 2 and life satisfaction at Wave 3, and from the latent variable psychological wellbeing at Wave 2 to the latent variable life satisfaction at Wave 3.

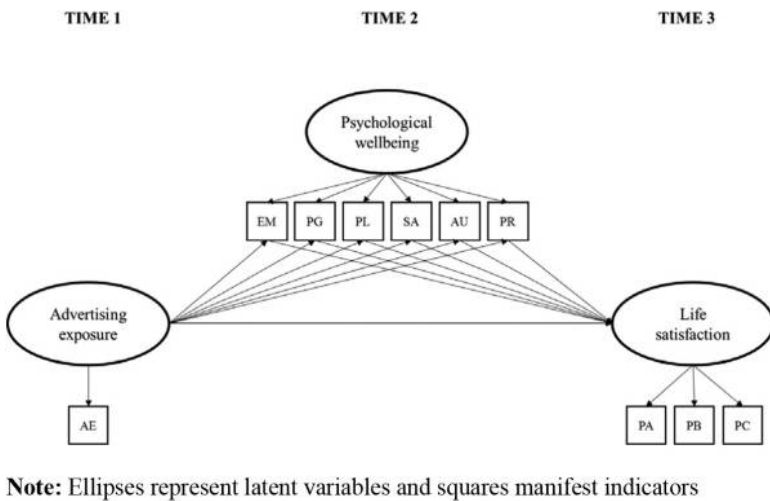
The second version of the model (Figure 2) was used to test the hypotheses related to the six dimensions of psychological wellbeing (i.e. *H2* to *H7*, and *H9*). It contained the same causal path from the latent variable advertising exposure at Wave 1 to the latent variable life satisfaction at Wave 3. With regard to

Figure 1. Mediation model used to estimate the causal relations between children's advertising exposure, overall psychological wellbeing and life satisfaction



Note: Ellipses represent latent variables and squares manifest indicators

Figure 2. Mediation model used to estimate the causal relations between children's advertising exposure, the six dimensions of psychological wellbeing (i.e. environmental mastery, personal growth, purpose in life, self-acceptance, autonomy and positive relationships with others) and life satisfaction



Note: Ellipses represent latent variables and squares manifest indicators

psychological wellbeing, however, the previous paths to and from its latent variable were replaced by causal paths from the latent variable advertising exposure at Wave 1 to each manifest indicator of psychological wellbeing at Wave 2 (i.e. the six dimensions), and by causal paths from each manifest indicator of psychological wellbeing at Wave 2 to the latent variable life satisfaction at Wave 3.

The fit of the models was evaluated using the root mean square error of approximation (RMSEA) and comparative fit index (CFI). A good model fit is indicated by an RMSEA value lower than 0.05 and a CFI value higher than 0.95. If the RMSEA value lies between 0.05 and 0.08 and/or the CFI values lies between 0.90 and 0.95, model fit is perceived acceptable (Kline, 2005).

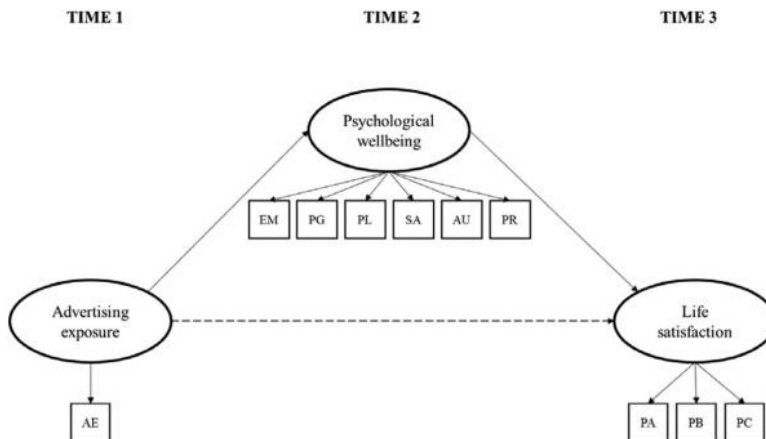
4.3 Mediation model for overall psychological wellbeing

The first version of the model (Figures 1 and 3) yielded an acceptable fit to the data: $\chi^2(DF = 33, N = 1,133) = 298.79, p = 0.00, CFI = 0.92, RMSEA = 0.08$ with p -close = 0.00[2]. In contrast to the correlations, the complete causal model supported the direct negative effect of children's advertising exposure on life satisfaction ($H1; \beta = -0.07, p = 0.011$). Furthermore, it supported the indirect path via psychological wellbeing. As expected, advertising exposure predicted overall psychological wellbeing ($H8; \beta = 0.12, p = 0.001$), and overall psychological wellbeing predicted life satisfaction ($H10; \beta = 0.75, p = 0.000$). Bootstrap analyses ($N = 1,000$) indicated that the total (i.e. combined direct and indirect) effect of children's advertising exposure on life satisfaction was not significant ($\beta = 0.02, 95$ per cent CI $[-0.05, 0.08], p = 0.513$).

4.4 Mediation model for the six dimensions of psychological wellbeing

The adapted model in which the dimensions of psychological wellbeing were used as mediator variables (Figures 2 and 4) had a good fit to the data: $\chi^2(DF = 23, N = 1,133) = 126.63, p = 0.00, CFI = 0.97, RMSEA = 0.06$ with p -close = 0.02[3]. The direct effect of children's advertising exposure on life satisfaction was not significant ($H1; \beta = -0.01, p = 0.695$). Our results confirmed the hypotheses that advertising exposure was a positive predictor for environmental mastery ($H2; \beta = 0.19, p = 0.000$), personal growth ($H3; \beta = 0.07, p = 0.020$), purpose in life ($H4; \beta = 0.15, p = 0.000$) and autonomy ($H6; \beta = 0.12, p = 0.000$). Contrary to expectations, advertising exposure did not predict self-acceptance ($H5; \beta = 0.04, p = 0.146$) or positive relationships with others ($H7; \beta = 0.04, p = 0.205$).

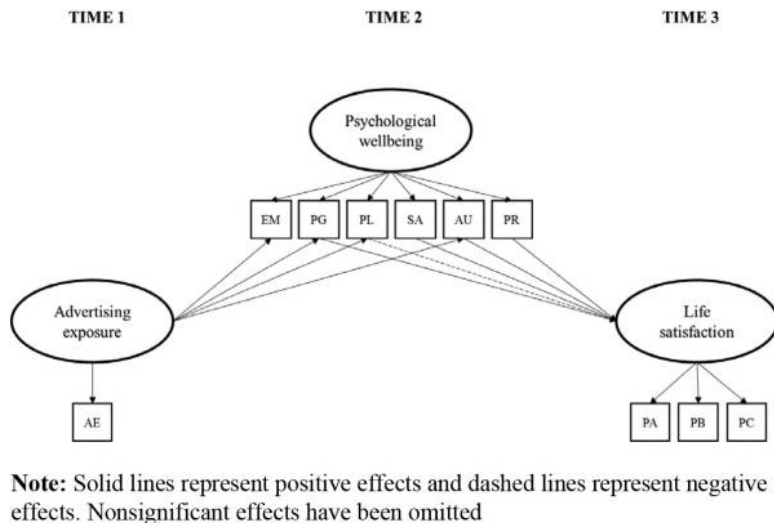
Regarding the relations between the wellbeing dimensions and life satisfaction, the results revealed that personal growth ($\beta = 0.13, p = 0.000$), self-acceptance ($\beta = 0.35, p = 0.000$), autonomy ($\beta = 0.07, p = 0.012$) and positive relationships ($\beta = 0.35, p = 0.000$) were positive predictors of life satisfaction. However, against expectations, the effect of environmental mastery was not significant ($\beta = 0.04,$



Note: Solid lines represent positive effects and dashed lines represent negative effects. Nonsignificant effects have been omitted

Figure 3.
Observed
mediation model
with overall
psychological
wellbeing

Figure 4.
Observed
mediational model
with the six
dimensions of
psychological
wellbeing



$p = 0.101$), and the effect of purpose in life was negative ($\beta = -0.15$, $p = 0.000$). Bootstrap analyses ($N = 1,000$) indicated that the total effect of children's advertising exposure on life satisfaction was nonsignificant ($\beta = 0.02$, 95 per cent CI $[-0.05, 0.08]$, $p = 0.515$).

5. Discussion

5.1 Conclusions

Children are exposed to great amounts of advertising, but the values promoted in advertising are questioned by many. Advertising is believed to stimulate materialism and all sorts of associated negative character traits, including disdain and self-centeredness (Piachaud, 2007; Strasburger, 2001). Yet, others believe that advertising also endorses positive character traits, such as pride and independence (Kunkel and Roberts, 1991). The overall objective of this study was to contribute to this debate by providing more insight into the relation between advertising and life satisfaction. Our first aim was to investigate whether children's advertising exposure directly affected life satisfaction. In line with other previous longitudinal studies (Oprea *et al.*, 2012), our study did not yield a significant relation. Second, we investigated the indirect effect via overall psychological wellbeing. Results showed that advertising exposure increased overall psychological wellbeing and, in turn, overall psychological wellbeing increased life satisfaction.

Addressing our third aim, we investigated the indirect effects via the six dimensions of psychological wellbeing. Our findings showed that the various dimensions mediated the relation between advertising exposure and life satisfaction in different ways. Children's advertising exposure positively predicted environmental mastery, personal growth, purpose in life and autonomy, but did not predict self-acceptance and positive relationships with others. As expected, personal growth, autonomy, self-acceptance and positive relationships with others were positive predictors for life satisfaction. Against expectations, environmental mastery did not predict life satisfaction, and purpose in life

was a negative predictor of life satisfaction. In short, some dimensions of psychological wellbeing (i.e. personal growth and autonomy) were positive mediators, whereas others (i.e. purpose in life) were negative mediators in the relation between advertising exposure and life satisfaction.

There are several possible explanations for the unexpected results for environmental mastery, purpose in life, self-acceptance and positive relationships with others. First, unlike research conducted among adults in which positive effects were found (Ryff and Keyes, 1995), we did not find a relation between children's environmental mastery and life satisfaction. These findings can be explained by the difference in the measurement of environmental mastery. Among adults, it has been assessed through questions on people's ability to manage their environment and create and seize opportunities (Ryff, 1989). Among children, the questions relate to small day-to-day decision-making (Oprea, 2012). Although both types of activities could impact life satisfaction, the ability to create a "full life" (i.e. to pursue a family, a proper education and/or a nice career) arguably matters more (Peterson *et al.*, 2005). Whereas adults can take satisfaction in their life choices, children cannot, given that their living conditions are the result of their parents' choices.

Second, the finding that children who scored higher on purpose in life scored lower on life satisfaction over time is not in line with the previous findings among adults either (Ryff and Keyes, 1995). However, in the original PWB, adults' purpose in life is measured as an abstract concept referring to people's tendency to create meaning and direction in their life (Ryff, 1989). In the PWB for children, purpose in life is measured in a more tangible way, by asking how often they contemplate about the future (Oprea, 2012). We could argue that by encouraging daydreaming about an ideal future, advertising could leave children dissatisfied with their current lives (Piachaud, 2007; Strasburger, 2001).

Third, with regard to self-acceptance, we did not find the expected negative relation between children's advertising exposure and self-acceptance. Importantly, however, prior studies in this realm looked at the effects of advertising on the physical self-perceptions of children, adolescents and emerging adults (Buijzen and Valkenburg, 2003a; Dittmar, 2008). The results from these studies were mixed: Negative effects were found, but only for adolescents and emerging adults. Effects seized to be significant when younger children were included too (Buijzen and Valkenburg, 2003a). In comparison to these younger children, older youth are more preoccupied with gaining popularity and fitting in with the peer group. The message that one needs certain products to do so may, therefore, resonate more with adolescents and emerging adults than with children in middle childhood – being our sample (Chaplin and John, 2010). Hence, the differences in findings may be attributed to a moderating effect of age.

Fourth, our finding that advertising exposure did not predict positive relationships with others is remarkable, given the predominant assumption that advertising teaches children to attach greater value to possessions than to people (Chaplin and John, 2007). A possible explanation for this finding is that advertising can cause children to attach more value to possessions, but not to attach less value to people. Children rely on their families both financially and emotionally. This strong family connection, often referred to as attachment security, tends to be stable over time (Solomon and George, 1999). Hence, our finding that positive relationships

with others are left unchanged by advertising supports previous notions from the field of developmental psychology.

5.2 Future research Even with waves being spread only six weeks apart, we were able to detect significant effects of advertising exposure on psychological wellbeing, and of psychological wellbeing on life satisfaction. It should be noted that these effects were relatively small. The current study needs to be replicated over a longer period to gain a true understanding of advertising's accumulating effects. Furthermore, an increase in variability in change between respondents (i.e. those with low advertising exposure experiencing small effects, those with high advertising exposure medium or large effects) would allow to control for stability within measures and to control for children's natural baseline of psychological wellbeing and life satisfaction. Moreover, following the same group for a longer period would enable to determine whether different age groups vary in their likelihood to adopt values portrayed in advertising. Doing so would allow testing of the hypothesis that, unlike for the children in middle childhood in our study, advertising exposure would predict self-acceptance in adolescents.

In addition to studying differences in advertising effects on psychological wellbeing and life satisfaction between age groups, it may also be interesting for future research to examine differences within age groups. Children's disposition (e.g. personality and temperament), developmental stage (e.g. cognitive and emotional development) and social context (e.g. family and peers) predict both media use and media effects (Valkenburg and Peter, 2013). First, they are predictive of selective exposure. Different children may be exposed to different kinds of advertisements. Second, even children with the same media habits may be susceptible to different psychological appeals in advertising and, as a consequence, experience different effects. The extent to which children's interpretations of advertisements can differ may be assessed in an experiment using the think-aloud-method (Rozenaal *et al.*, 2012). By exposing children to advertisements and asking them to verbalize their thoughts, it is possible to gain additional insights into children's perceived psychological values in advertising.

5.3 Implications The findings of this study provide new insights for the ethical debate on the unintended effects of child-directed advertising. This debate traditionally revolves around potential negative consequences, such as materialism and dissatisfaction (Pollay, 1986; Pollay and Gallagher, 1990; Watkins *et al.*, 2016). As a consequence, both topics have been widely studied and are associated with a seminal literature stream (Buckingham, 2011; Dittmar, 2008; Kasser, 2002; Nairn and Mayo, 2009; Schor, 2005; and Tatzel, 2014). Several scholars have attempted to explain the negative consequences of advertising by studying its content. Though some inventories of appeals in child-directed advertising were available (Calvert, 2007; Oates *et al.*, 2004), we tried to give a full up-to-date overview by discussing ten contemporary content analyses – eight of which have been published in the past decade (Connor, 2006; Folta *et al.*, 2006; Fosu *et al.*, 2013, Kim *et al.*, 2016, LeBlanc Wicks *et al.*, 2009; Page and Brewster, 2007; Roberts and Pettigrew, 2007; and Warren *et al.*, 2008).

The aforementioned content analyses indicated that child-directed advertising frequently contains appeals of play/fun, fantasy/imagination, action/adventure, trickery/deceit, parental approval/disapproval, achievement/enablement, athletic ability, physical attractiveness and having the best. As this research shows, the use of these appeals can also lead to *positive* unintended effects: Advertising promotes environmental mastery, personal

growth, purpose in life and autonomy. These findings cannot be interpreted as an endorsement for child-directed advertising. However, they do show that advertising is not all bad and actually equips children with a sense of control over their environment, an openness to new experiences, a direction in life and a sense of self-agency.

Notes

1. In addition to the longitudinal models, we estimated cross-sectional models using the data from Wave 1. The results of these analyses are presented in the footnotes below. We did not run any models including the variables of all waves (i.e. advertising exposure, psychological wellbeing and life satisfaction at Waves 1, 2 and 3) and/or cross-lagged paths, to meet the desirable 20:1 ratio of the number of cases to the number of free parameters and optimize power (Kline, 2005).
2. Similar effects were found using the data from Wave 1. After controlling for shared measurement error (Kline, 2005) by allowing the error terms of personal growth and purpose in life to correlate, the model resulted in an acceptable fit: $\chi^2(DF = 33, N = 1,133) = 278.17$, $p = 0.00$, CFI = 0.92, RMSEA = 0.08 with p -close = 0.00. Advertising exposure predicted life satisfaction ($H1$; $\beta = -0.14$) and overall psychological wellbeing ($H8$; $\beta = 0.15$), and overall psychological wellbeing predicted life satisfaction ($H10$; $\beta = 0.91$). All the effects were significant at $p = 0.000$.
3. Similar effects were found using the data from Wave 1. Without alterations, the model resulted in an acceptable fit: $\chi^2(DF = 23, N = 1,133) = 183.08$, $p = 0.00$, CFI = 0.95, RMSEA = 0.08 with p -close = 0.00. Advertising exposure predicted life satisfaction ($H1$; $\beta = -0.07$, $p = 0.002$) and was a positive predictor for EM ($H2$; $\beta = 0.21$, $p = 0.000$), PG ($H3$; $\beta = 0.08$, $p = 0.009$), PL ($H4$; $\beta = 0.14$, $p = 0.000$), AU ($H6$ $\beta = 0.13$, $p = 0.000$) and PR (rejecting $H7$; $\beta = 0.07$, $p = 0.024$). No effect on SA was found (rejecting $H5$; $\beta = 0.05$, $p = 0.090$). Each dimension was found to predict life satisfaction (EM: $\beta = 0.07$, $p = 0.003$; PG: $\beta = 0.15$, $p = 0.000$; PL: $\beta = -0.07$, $p = 0.004$; SA: $\beta = 0.40$, $p = 0.000$; AU: $\beta = 0.13$, $p = 0.000$; PR: $\beta = 0.35$, $p = 0.000$).

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