When persuasive intent and product’s healthiness make a difference for young consumers

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Abstract

Purpose – This study aims to fill in the above-mentioned gap by looking at both children’s understanding of advertising and product cues during decision-making. Currently, it is assumed that understanding of advertisements’ persuasive intent represents the sole factor that children consider during decision-making, which overlooks the role of intrinsic product cues (taste or healthiness) and more complex interaction between the latter and the perceived persuasive intent.

Design/methodology/approach – An experiment with children (of ages 7-13 years) and a survey of their parents were carried out.

Findings – When exposed to an advertisement, children exhibited less favorable food preferences when they grasped the advertisement’s intended persuasive intent and evaluated the product as less healthy. Participants who did not believe that the advertisement aimed to influence them and rated the product as healthy, exhibited more favorable intention to consume the advertised snack.

Research limitations/implications – This study shows that persuasive intent and healthiness product cues are used simultaneously by young consumers and need to be considered in future research to provide more in-depth understanding of children’s decision-making.

Originality/value – The findings highlight the importance of previously overlooked intrinsic product cues and the need to consider both persuasive intent and product cue evaluations to better understand why children may exhibit less healthy food choices.

Keywords Persuasive intent, Advertising, Taste, Food preference, Healthiness

Paper type Research paper

Introduction

Children nowadays are targeted by, and exposed to, a larger number of advertisements (Rozendaal et al., 2011), and food represents the second most advertised product category (Kelly et al., 2010). Children’s marketing environment has also diversified, reaching them across both traditional and digital channels (Verhellen et al., 2014). As a product, food has undergone profound transformations over the past decades to appeal to children through various commercial/persuasion messages (de la Ville et al., 2010). Food advertising is generally skewed toward less healthy options (Hingle et al., 2015) and because of the importance of children to both the industry and policy-makers (Cook, 2009), young consumers’ ability to understand advertising remains central to scholars’ investigation of the effects of marketing communications on children (McAlister and Bargh, 2016).

Past research has concentrated on the age at which children develop different skills in advertising comprehension (Nairn and Fine, 2008). As a result, current conceptualization of children’s understanding of advertising assumes a gradual developmental process whereby children first view advertising as a source of information (i.e. grasp informative intent), which then leads to an understanding of more complex selling or persuasive intents.
Although scholars agree that advertising serves multiple purposes (i.e. to sell, persuade, and inform) (Cotte et al., 2005), research has consistently attempted to single out one particular intent that children grasped in advertising (Wright et al., 2005). Although this approach has been criticized (Wright et al., 2005), multiple advertising intents have not been examined in children, precluding more detailed assessment of children’s consumer competencies.

Children’s understanding of advertising attracted scholars’ attention four decades ago (Robertson and Rossiter, 1974). Yet, scholars have never measured children’s ability to comprehend the affective intent of advertisements (intention to induce affective or emotional influences) despite the fact that advertising heavily relies on affective appeals (Rozendaal et al., 2016). Likewise, the role of informative intent has been largely ignored in the literature because it is considered to represent less critical, medium level awareness (Ward, 1972). Although previous qualitative research has shown that children can grasp both informative and selling intents simultaneously (Robertson and Rossiter, 1974), the potential mitigating effect of the informative intent on the more critical assessment of an advertisement (persuasive intent) has never been examined empirically.

Another gap relates to a potential interaction between the persuasive intent attributed to a commercial message and various product cues. Previous experimental studies have solely concentrated on children’s understanding of advertising (Hudders et al., 2015; Panic et al., 2013), ignoring how children evaluate products which they are exposed to in terms of their key intrinsic cues, or how these cues relate to decision-making alongside the evaluation of the persuasive intent. Although children reflect on the quality of food in terms of taste and healthiness (Nelson et al., 2015), the exclusion of product cues is surprising given that food is a highly palatable product. For example, it is still unclear whether persuasive intent can effectively attenuate the influence of product cues on food preferences.

Finally, faced with extensive food promotion aimed at children, parents are currently expected to regulate their children’s exposure to advertising and participate in their consumer education (Buckingham, 2009). Despite previous research (Vanwesenbeeck et al., 2016), parental advertising mediation has never been examined with data directly collected from young consumers aged 7-13 years in an experimental context.

To fill in the above-mentioned gaps, this study presents a conceptual framework that maps out the relationships between different advertising intents, food preferences, and intrinsic product cues in the non-advergames context. It also provides an empirical examination of the postulated framework.

Theoretical background and hypotheses

Children’s understanding of advertising intents and food preferences

At the core of children’s comprehension of advertisements lies the assumption that knowledge about advertising takes time to develop and is contingent on cognitive maturation and experiences with advertising (personal observations or observation of other people) (Friestad and Wright, 1994). This knowledge is expected to assist consumers during the recognition, interpretation, and evaluation of persuasion instances, and the execution of subsequent coping strategies (Friestad and Wright, 1994). When consumers are capable of recognizing and comprehending the persuasive attempt, they may experience “detachment”, where the realization of the fact that someone is using a tactic to influence you can be deemed as “off-putting” (Friestad and Wright, 1994).

Children's overall understanding of advertising becomes more advanced as children mature cognitively and socially (Moses and Baldwin, 2005). First, children learn to distinguish advertisements from programs at around five years of age (John, 1999). Only once this ability has been acquired can commercial intent be discerned (John, 1999).
example, between eight and nine years, children perceive advertising as a source of information, attributing informative intent to the viewed commercial content (Carter et al., 2011; Moses and Baldwin, 2005). Between 9 and 10 years, young consumers start to understand that advertising aims to influence people and thus start discerning the selling intent (Carter et al., 2011; Moses and Baldwin, 2005). Understanding that advertisements also aim to influence children (persuasive intent) emerges at around 10 years and becomes more advanced as children continue to grow (Carter et al., 2011).

This approach to children’s comprehension of advertising has been criticized and calls have been made for more comprehensive studies of how advertisers’ techniques affect comprehension and subsequent behavior (Blumberg et al., 2014). We start our discussion with informative intent, which is conceptualized as a technique (informative value) used by marketers to influence children. We then extend our theory by integrating additional advertising intents as recommended in previous research (Wright et al., 2005).

Comprehension of informative intent was first detected among children through qualitative research (Ward, 1972) and subsequent studies showed that children’s ability to detect informative intent declines by 9-10 years to be replaced by the comprehensions of selling and persuasive intents (Carter et al., 2011). The ability to grasp informative intent is treated as less critical comprehension designating a medium level awareness (Ward, 1972) and is typically disregarded in empirical studies. Current conceptualization also assumes that as young consumers grow older, their perceptions of informative intent diminish (John, 1999). However, previous qualitative research also suggests that children can grasp both informative and selling intents simultaneously: when children view advertisements as sources of information, they tend to trust advertisements more, while the opposite was reported for persuasive intent (Robertson and Rossiter, 1974). Robertson’s and Rossiter’s (1974) study has not received further empirical validation, and because informative intent entails that advertisements are viewed as a source of information (John, 1999; Moses and Baldwin, 2005), it is possible that such perceptions could result in more favorable predispositions toward commercial content, inhibiting the attribution of persuasive intent. In this case, advertisements would be viewed as serving a useful purpose of providing handy information about products. Hence, it is hypothesized that attributing informative intent to advertising can result in more benign perceptions and less critical evaluations of persuasive intent (Figure 1):

**H1.** Children who view an advertisement as a source of information will report lower scores on persuasive intent.
In addition to informative intent, children can also simultaneously grasp its selling or persuasive intents. Consumers who grasp selling intent are expected to be aware of the advertisers’ imbedded intention to generate profit and sell products to mass consumers (Moses and Baldwin, 2005). Because the understanding of selling intent precedes the development of, and represents the first step for, the awareness of persuasive intent (Carter et al., 2011), the ability to recognize selling intent can serve as a precursor for the necessary social perspective-taking skills and an understanding that advertisers pursue their own motives (John, 1999). Hence, it is expected that selling intent positively relates to persuasive intent:

H2. Children who grasp selling intent in an advertisement will report higher scores on persuasive intent.

Contemporary advertisements frequently use affective rather than factual appeals while advertising to children (Nairn and Fine, 2008). Understanding how advertisements can elicit certain emotions represents important beliefs that adult consumers accumulate over time (Friestad and Wright, 1995), which have never been assessed among children. Affective intent represents an important motive that young consumers need to discern to effectively process commercial content and could represent another cue to grasp commercial bias. In particular, such an ability would entail that in addition to their own perspectives, children would also comprehend marketers’ intended influence on an affective level (Selman, 1980), which could be potentially off-putting. Hence:

H3. Children who grasp the affective intent of an advertisement will report higher scores on persuasive intent.

Persuasive intent is currently considered to represent a more sophisticated form of understanding (Roberts, 1983) as children grasp marketers’ commercial motive and understand that advertising aims to influence them as well (Carter et al., 2011). Although it has been noted that consumers may not always use their knowledge to resist advertising (Friestad and Wright, 1994), the beneficial effect of the comprehension of persuasive intent was expected to emerge in this study in relation to children’s food preferences. In particular, realization that someone is trying to exert a persuasive influence was expected to change individuals’ responses, corresponding to a “detachment effect” (van Reijmersdal et al., 2015; Friestad and Wright, 1994). Discerning persuasive intent is expected to lessen trust in the message (Soontae et al., 2014; Friestad and Wright, 1994) through the activation of a defense mechanism (Knowles and Linn, 2004) and skepticism, which has been previously observed among adults (Brown and Krishna, 2004) and children who played an advergame (Soontae et al., 2014). Hence:

H4. Children who grasp persuasive intent in an advertisement will report lower preferences for an advertised product.

Parents’ mediation of advertising and children’s ability to grasp persuasive intent

Parents are typically expected to take on the role of educators explaining the purpose of advertising (Gunter and Furnham, 1998). The importance of parental mediation for reducing media effects on young consumers has been reported in relation to media violence exposure (Gentile et al., 2012), as well as food consumption (Buijzen and Valkenburg, 2005). Two types of parental mediation styles have been distinguished in the literature – active mediation, when parents make deliberate and proactive comments about advertising to educate their children about the intended commercial intent; and restrictive mediation, when parents restrict the amount of advertising children are exposed to through viewing time rules (Buijzen and Valkenburg, 2005).

Restrictive mediation mostly applies to traditional television advertising because of the historical dominance of this marketing channel and appears ineffective in reducing
children's purchase requests (Buijzen and Valkenburg, 2005). Because restrictive mediation does not account for more diverse contemporary media channels targeting children (Newman and Oates, 2014), it was not included in this study. Active mediation, on the other hand, is not limited to any specific advertising channel and instead measures parents’ or carers’ proactive attempts to explain the purpose of advertising to their children (Buijzen and Valkenburg, 2005). Active advertising mediation has been shown to moderate the association between children’s exposure to advertising and purchase requests for commonly advertised products (Buijzen and Valkenburg, 2005) and also to relate positively to children’s understanding of persuasive intent (Vanwesenbeeck et al., 2016). Given that active mediation reflects parents’ proactive effort to enhance children’s knowledge and develop their understanding of advertisements (Newman and Oates, 2014), it is presumed that children whose parents practice active advertising mediation should be more capable of discerning persuasive intent when they are exposed to advertisements (Figure 1):

\[ H_5 \] Parental active advertising mediation is positively associated with children’s ability to grasp persuasive intent.

**Persuasive intent and intrinsic food cues**

Consumers generally tend to evaluate products in terms of key attributes or cues prior to consumption (Olson and Jacoby, 1972). For example, while speed and safety may be relevant for the evaluation of cars, the most typical cue evaluated in the case of food is likely to be intrinsic in nature (Olson and Jacoby, 1972), such as an expected palatable pleasure derived from taste. As children develop as consumers, they become exposed to multiple food options and form certain taste expectations about different foods. Overall, the literature supports the importance of taste and of the pleasure that food provides for the formation of food preferences (Birch and Fisher, 1998). Although food decision-making process may appear highly irrational dominated by taste expectations, it may, in fact, be very evaluative on the consumers’ part. For example, consumers may expect a pleasurable taste from cookies, but a less appealing taste from broccoli. Because, it is highly improbable that consumers, children or adults, would select foods they dislike, taste is expected to be used in food decision-making:

\[ H_6 \] Favorable evaluation of taste will relate to higher preferences for an advertised product.

In addition to taste, consumers may also use nutritional information as another cue to evaluate food products and form food preferences. Healthiness as a product attribute, however, is not consistently used by children because of the distracting presence of characters on products’ packaging (Nelson et al., 2015) or still developing nutritional knowledge, as the latter increases gradually with age (Wiman and Newman, 1989). As a result of still developing nutritional competencies, not all children may be able to accurately assess the healthiness of foods, incorrectly attributing “healthy” labels to less healthy advertised items. For example, junk food healthiness evaluations have shown to relate positively to their consumption frequency in a cross-sectional study with 10-11-year-olds (Dixon et al., 2007). Because a similar effect was expected in this study, it was hypothesized that more favorable healthiness evaluations would result in higher preferences for advertised foods, as these products would be deemed acceptable:

\[ H_7 \] Favorable evaluation of healthiness will relate to higher preferences for an advertised product.

Persuasive attempts and advertising overall represent complex consumer experiences. When exposed to advertising, consumers respond based on available situational
information (Friestad and Wright, 1994), which would not only encompass the evaluation of product cues, but also of the persuasive nature of the viewed content. While it is logical to expect that a more critical evaluation of an advertisement in terms of persuasive intent could result in the “detachment effect” (Soontae et al., 2014; Friestad and Wright, 1994), product cues have not yet been considered alongside perceived advertising intents in research with children. In particular, when children experience exposure to food advertising and evaluate the advertised product, both intrinsic product cues and evaluation of the persuasive intent may be assessed simultaneously as incoming information. Understanding of the persuasive intent might give young consumers a more critical comprehension of commercial bias, and as such could attenuate the positive effect of intrinsic product cues on behavioral intentions. Previously, children who identified the commercial content of an advergame also exhibited less positive evaluations of a brand, highlighting the potentially negative effects of the ability to identify the commercial content on brand attitudes (Waiguny et al., 2012). A similar negative effect was expected in relation to product cue evaluations in this study in the non-advergames context:

H8. Persuasive intent will moderate the relationship between taste evaluation and food preference, reducing the positive effect of an intrinsic product cue.

H9. Persuasive intent will moderate the relationship between healthiness evaluation and food preference, reducing the positive effect of an intrinsic product cue.

The assessment of the above-mentioned relationships was carried out while controlling for children’s gender, age, and socio-economic status (Figure 1), as these are known to relate to children’s food- and health-related behaviors. For instance, younger children tend to know less about food and nutrition compared with older children (Zeinstra et al., 2007), whereas females tend to exhibit healthier eating patterns (Ambrosini et al., 2009). Higher socio-economic background, on the other hand, is associated with lower consumption of less healthy foods (Kopelman et al., 2007).

Method

Design

The data for this study were collected at an annual agricultural event traditionally visited by families representative of the South Australian population. Parents and their children aged 7-13 years passing by the researchers’ stand were invited to take part in the study. Children under 7 years were excluded to make sure the participants could distinguish advertisements from programs and could process advertisements (Carter et al., 2011). Participants were told that the purpose of the study was to examine how easy internet surfing is for children and that they needed to spend 10 min on the websites of their liking. They were not told that they would be exposed to a snack advertisement and asked about their food preferences, as this could undermine the validity of this study and affect participants’ responses. This limited disclosure was unlikely to affect participants adversely and after completing all tasks, both the children and their parents were fully debriefed about the genuine purpose of the research and were shown the advertisements that the children saw. In compliance with the National Statement on the Ethical Conduct in Human Research (National Health and Medical Research Council, Australian Vice-Chancellor’s Committee, 2007), after the debriefing, participants were asked if they would allow the researchers to retain the data. All participants who took part in this study gave permission for the data to be used for research. To avoid recruitment self-selection bias, overall remuneration was kept low and children were told that they would be rewarded for their time with only $10 and/or a toy, depending on their preference. The research protocol was approved by the Human Research Ethics Committee of authors’ institution.
Three researchers were present on the ground:

1. Researcher 1 recruited the participants;
2. Researcher 2 supervised children’s internet surfing; and
3. Researcher 3 administered questionnaires to parents and debriefed the participants.

The children were instructed to go about their typical internet surfing activities for 10 min using the laptops provided by the researchers. During the 10 min of internet surfing, children were exposed to an advertisement for a cookie snack which was available on the market at the time of this research. The advertisement showed the cookie outside its packaging, with a slogan emphasizing its taste. Preference was given to an existing product to ensure children could assess the intrinsic cues of taste and healthiness, which would be impossible for a fictitious product. At the time of data collection, no advergame existed for the product chosen for this study, which prevented potential confounding effects of participants playing this advergame during the allocated internet surfing time. The selected cookie advertisement did not display any characters to rule out potential bias (Nelson et al., 2015). Because of copyright, the images are available upon request.

The advertisement was programmed to appear in a separate pop-up window three times (during the second, fifth, and eighth minutes), which temporarily paused participants’ internet surfing. The children had to close the pop-up advertisement before they could resume their activity, approximating real life internet surfing and ensuring that they viewed the advertisement. The advertisement did not display any clickable invitations which could re-direct participants to another page. If the children could not close the pop-up advertisement or experienced any technical problems, they were assisted by researcher 2. The netbooks that children used were programmed to obstruct any incoming advertising to ensure the participants viewed only the intended pop-up. The content of the visited websites was monitored with K9 software at all times to ensure the content was child-appropriate. Every child had a separate desk, was seated away from other participants, and was given a set of noise reduction headphones to minimize distraction from other participants.

Upon completion of the internet surfing exercise, children were taken to a different section of the research stand to complete a food preference exercise with researcher 1. Every child was shown a 32 x 42 cm box which contained a snack shown in the pop-up advertisement amidst two other distractor snacks (an apple and another cookie variety). After the children’s food preferences were noted, researcher 1 asked the children if they could complete either a short online or paper-based questionnaire to help the researchers “understand their media usage and attitudes about food”. Children who opted for the online survey were taken back to their netbook where researcher 2 directed them to a Qualtrics survey. Children who did not feel confident enough to complete online surveys filled in paper-based questionnaires. During the fieldwork, parents and children were separated by a screen wall to avoid any interference with the study. While the children were surfing the internet and completing the survey, their parents filled in paper-based questionnaires, which collected data about their advertising mediation, age, gender, and family socio-demographic background.

**Measures**

Children rated their preference for the snack they were exposed to during the internet surfing activity using a five-point Likert-type smiley scale (one – “not at all!” to five – “definitely”). Preferences were measured hypothetically for tomorrow’s lunch to reduce potential influence of hunger at the point of data collection. Two intrinsic product cues were evaluated for the viewed snack (taste and healthiness) using the measure adapted from Pettigrew’s et al. (2013) study with children (“Do you think this food [cookie] is tasty?” and
“Do you think this food [experimental cookie] is healthy?”). Answer options ranged from one (“not at all”) to five (“definitely”).

After the evaluations of intrinsic product cues, children saw a still image of the cookie pop-up that they were exposed to in the questionnaire and were asked to evaluate it in terms of its perceived informative (“It gives information about things to buy”), affective (“It wants you to think that having this food will make you feel good”) (adapted from Boush et al. (1994)), selling (“It wants people to buy this food”), and persuasive intents (“It tries to make you want this product”) (adapted from Carter et al. (2011)). Answer options ranged from one (“not at all”) to five (“definitely”) with an additional “don’t know” option, which was assigned a value of zero. Finally, the information about children’s age and gender was collected. The children’s questionnaire was pilot tested two times prior to the main data collection to ensure reliability and validity of the instruments, as well as overall question comprehension.

Parents’ propensity to exercise active advertising mediation was assessed using the scale developed by Valkenburg et al. (1999) and modified by Buijzen and Valkenburg (2005). The scale consisted of five items asking parents/carers to self-rate the frequency of their active mediation in relation to the child who participated in this study (Cronbach’s alpha = 0.93) (one – “never or only rarely true of me” to five – “always or almost always true of me”, including “not applicable” which was treated as a missing score).

Families’ socio-economic background was assessed by matching the residential postcodes provided by parents with the Australian Bureau of Statistics census database of the Index of Relative Socio-economic Disadvantage (IRSD). The latter represents a socio-economic index, which summarizes 17 measures of relative disadvantage, such as low income, low education, high unemployment and unskilled occupations based on economic and social resources of households located within a specific geographic area in Australia (Pink, 2006). The IRSD index ranges from one to ten, where higher scores designate a relative lack of disadvantage (Pink, 2006). Prior to main data collection, the parents’ questionnaire was pilot tested twice to confirm acceptable reliability and validity of measures.

Results

Sample

One hundred seventy-five children aged 7-8 years (17 per cent), 9-10 years (35 per cent), and 11-13 years (47 per cent) took part in this study (see Table I). Participants were evenly split between females (51 per cent) and males (49 per cent). The parents’ ages ranged from 23 to 59 years with an overrepresentation of females (82 per cent). The majority of parents had tertiary qualification (“some tertiary education (universities, colleges, and TAFE)”) = 22 per cent, “finished tertiary education” = 33 per cent, and “higher degree or higher diploma (e.g. PhD, Masters)” = 25 per cent), and were married (84 per cent). There was a good distribution across different socio-economic backgrounds in the sample (Table I).

Estimation method

Partial least squares (PLS) analysis with SmartPLS 2 software (Ringle et al., 2005) was used to assess the relationships postulated in the conceptual framework. PLS analysis represents an alternative to traditional Structural Equation Modeling (SEM) suitable when sample size is small (Hair et al., 2010). Similar to SEM, PLS can perform regression-type estimations and factor analysis for complex constructs. It can model single-item constructs, exhibits robustness toward model complexity, and applies minimal assumptions about the characteristics of data (Hair et al., 2010).
To determine whether the postulated conceptual framework needed to be assessed separately for different age groups, ANOVA tests were performed for all variables of interest. As shown in Table II, children of all ages expressed high preference for the advertised snack ($M_{food\ preference}$: 7-8 years = 3.57, 9-10 years = 3.27, and 11-13 years = 3.50; ANOVA: $F(2, 172) = 0.94$, $p = 0.392$) and viewed it as highly palatable – a finding which was consistent across all age groups ($M_{tasty}$: 7-8 years = 3.62, 9-10 years = 3.63, and

<table>
<thead>
<tr>
<th>Measures</th>
<th>7-8 years ($n = 30$)</th>
<th>9-10 years ($n = 62$)</th>
<th>11-13 years ($n = 83$)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Children’s food preference</td>
<td>3.57 (1.28)</td>
<td>3.27 (1.11)</td>
<td>3.50 (1.16)</td>
</tr>
<tr>
<td>Children’s evaluation of intrinsic product cues:</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Tasty</td>
<td>3.62 (1.18)</td>
<td>3.63 (1.16)</td>
<td>3.69 (1.09)</td>
</tr>
<tr>
<td>Healthy</td>
<td>2.07 (1.28)*</td>
<td>1.79 (0.63)</td>
<td>1.65 (0.63)*</td>
</tr>
<tr>
<td>Children’s understanding of advertising: Informative intent</td>
<td>3.00 (1.31)</td>
<td>2.81 (1.59)</td>
<td>2.68 (1.52)</td>
</tr>
<tr>
<td>Selling intent</td>
<td>4.28 (0.00)</td>
<td>4.31 (1.11)</td>
<td>4.43 (0.91)</td>
</tr>
<tr>
<td>Affective intent</td>
<td>3.59 (1.38)</td>
<td>4.02 (1.30)</td>
<td>3.88 (1.24)</td>
</tr>
<tr>
<td>Persuasive intent</td>
<td>4.18 (1.25)</td>
<td>4.49 (0.95)</td>
<td>4.18 (1.05)</td>
</tr>
<tr>
<td>Active parental mediation: I tell my child that</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>... advertising depicts products as better than they really are</td>
<td>3.76 (1.15)</td>
<td>3.44 (1.22)</td>
<td>3.55 (1.23)</td>
</tr>
<tr>
<td>... advertising does not always tell the truth</td>
<td>4.00 (1.17)</td>
<td>3.64 (1.15)</td>
<td>3.81 (1.05)</td>
</tr>
<tr>
<td>... the purpose of advertising is to sell products</td>
<td>4.17 (1.21)</td>
<td>3.97 (1.10)</td>
<td>4.14 (0.96)</td>
</tr>
<tr>
<td>... not all advertised products are of good quality</td>
<td>4.17 (1.15)</td>
<td>3.63 (1.27)</td>
<td>3.76 (1.23)</td>
</tr>
<tr>
<td>... some advertised products are not good for children</td>
<td>4.03 (1.19)</td>
<td>3.68 (1.25)</td>
<td>3.96 (1.03)</td>
</tr>
</tbody>
</table>

Note: *ANOVA $p < 0.05$
The snack was rated less positively in terms of healthiness – favorable ratings generally declined with age (M_{healthy}: seven-eight years = 2.07, 9-10 years = 1.79, and 11-13 years = 1.65; ANOVA: F(2, 173) = 3.16, p = 0.045) (Table II) and varied between genders (independent samples t-test: M_{females} = 1.68, M_{males} = 1.92, t(172) = -2.46, p < 0.05). Hence, during the PLS estimation, a path from age and gender was regressed only on healthiness evaluation. Because there were no gender differences in food preferences (independent samples t-test: t(173) = -1.58, p = 0.116), gender was not regressed on food preference as was originally postulated in the conceptual framework.

Across all ages, the advertisement was not rated as very informative (M_{informative intent}: 7-8 years = 3.00, 9-10 years = 2.81, and 11-13 years = 2.68; ANOVA: F(2, 158) = 0.49, p = 0.614). In contrast, the ratings for selling, affective, and persuasive intents attributed to the viewed advertisement were higher across all age groups with no statistically significant differences as a result of age (ANOVA: p > 0.05) (Table II). Parental active mediation was slightly more frequent among younger children (7-8 years), but no statistically significant differences were observed as a result of children’s age (ANOVA: p > 0.05) (Table II). No differences were detected in children’s and parents’ responses because of SES background (ANOVA: p > 0.05). As a result, the conceptual framework was assessed using the total sample of children inclusive of all ages.

Two models were estimated during the PLS analysis:

1. An inner model, which specified the relationships between independent and dependent variables; and

2. An outer model, which estimated the relationship between latent variables and their corresponding indicators (manifest variables) (Wong, 2013).

In the outer model, parental active advertising mediation was modeled as a latent construct consisting of five items. Other variables were modeled as single-item constructs. Prior to PLS estimation, selling, affective, persuasive intents, and active mediation were normalized, and all independent variables were centered to avoid multicollinearity. The interaction between persuasive intent and intrinsic product cues was calculated using the automatic moderation function with standardization available in SmartPLS 2.

**Hypotheses testing**

No statistically significant relationship was observed between informative and persuasive intents (H1: β = -0.02, n.s.) (Table III). A possible explanation is that children did not view this particular advertisement as very informative (Table II). In line with other hypotheses, children who attributed higher selling (H2: β = 0.52, p < 0.001) and affective intents (H3: β = 0.27, p < 0.01) to the advertisement they viewed, tended to agree more that the advertisement aimed to influence them. Contrary to expectations, the relationship between children’s evaluation of persuasive intent and their behavioral intention to consume the advertised snack was not significant (H4: β = 0.03, n.s.), suggesting that, at least in this sample, an awareness of persuasive intent did not reduce behavioral intentions.

Children whose parents exercised active advertising mediation more frequently – in other words, those who were proactively educated about commercial bias in advertising, reported more critical assessment of the advertisement in terms of its persuasive intent (H5: β = 0.15, p < 0.05). Higher preferences for the advertised snack were driven by favorable evaluations of the snack’s taste (H6: β = 0.59, p < 0.001) and healthiness (H7: β = 0.17, p < 0.01) (Table III). The relationship between intrinsic product cues and food preferences was positive, indicating that more favorable perception of taste and healthiness corresponded to higher scores on the food preference measure. As indicated by
standardized path coefficients, taste ($\beta = 0.59$) was more strongly related to food preference than healthiness ($\beta = 0.17$) (Table III).

Although the *moderating effect of persuasive intent* on the relationship between taste and food preference was negative, it did not reach statistical significance ($H8$: $\beta = -0.01$, n.s.). However, a statistically significant moderating effect was observed for persuasive intent on the path between healthiness evaluation and food preferences ($H9$: $\beta = -0.12$, $p < 0.05$). A more detailed assessment of this interaction carried out using the top and bottom responses (Figure 2) showed that children who did not believe the advertisement aimed to influence them, exhibited higher food preferences when they believed the snack was healthy. Children’s preferences were significantly lower when they grasped the intended influence over them and snack’s unhealthiness. There was a group of children who reported high food preference while grasping the persuasive intent and believing the snack was healthy (Figure 2).

The relationship between age and healthiness product cue was inverse, but did not reach statistical significance ($\beta = -0.12$, n.s.). A similar non-significant relationship was observed between gender and healthiness ($\beta = -0.14$, n.s.) (Table III). There seemed to be no significant relationship between respondents’ socio-economic background and food preference ($\beta = 0.01$, n.s.). All manifest variables loading on parents’ active advertising mediation were statistically significant ($p < 0.001$) (Table III). The percentage of variance explained in persuasive intent by parental active advertising mediation, selling and affective intents was high, reaching 50 per cent (Table III). Overall, the model explained 37 per cent of the variance in children’s stated food preferences (Table III).

**Discussion**

To date, the conceptualization of factors influencing children’s food preferences following exposure to food advertising has remained simplistic because of an assumption that persuasive intent represents the sole factor considered during decision-making. This study
has measured children's evaluation of multiple advertising intents and has additionally considered the role of intrinsic product cues to approximate real life decision-making dynamics. Several findings and implications emerged.

First, intrinsic cues of taste and healthiness related favorably to food preferences. The more children believed that the advertised product was tasty, the higher their preferences were for the advertised snack. From the marketing management perspective, this finding reinforces the industry's approach to advertise using taste appeals (Jenkin et al., 2014). However, from a social marketing and public health perspectives, the use of taste themes may appear manipulative because exercising self-restraint toward taste appeals may be challenging at a younger age (Harris and Graff, 2012). This cautions practitioners about more responsible approaches when advertising to children.

Second, the snack chosen for this study contained sugar and salt and children who believed that the advertised snack was healthy, reported more favorable preferences. The incorrect healthiness evaluations observed in this study are similar to the findings reported by Dixon et al. (2007) for junk foods, highlighting the importance of nutritional knowledge training among children. Knowledge about nutrition develops gradually (Zeinstra et al., 2007) and younger children may be especially vulnerable to food advertising until they develop greater knowledge. Hence, assisting children in developing nutrition competence and interpreting nutritional labelling should be viewed as an important direction for social marketing. The results observed for healthiness product cue further highlight challenges related to self-restraint (Harris and Graff, 2012) because at the moment some highly palatable foods are advertised alongside nutritional claims (Jenkin et al., 2014). Recent research specifically warns about favorable effects of on-pack nutrient claims that...
emphasize only a few selected nutritional attributes on pre-adolescents’ food choice (Dixon et al., 2014). Therefore, from the social marketing and consumer socialization perspectives, it is important that young consumers’ decisions are based on accurate and sufficient nutritional information, which calls for more responsible marketing practices. Further research is needed about the effectiveness of “Health Star Rating” system used in Australia similar to package labeling research conducted in other countries (Arrúa et al., 2017).

Third, while previously researchers tended to align children’s evaluations of advertising to one particular intent (Wright et al., 2005), this study shows that selling and affective intents are related to more critical evaluation of the persuasive intent, highlighting more complex conceptions about advertising on children’s behalf. Although informative intent did not reduce persuasive attributions, future studies need to examine which techniques (novelty or discount themes) can potentially undermine persuasive intent because of more favorable informativeness perceptions. In addition, future studies need to examine children’s perceptions of informative intent in more depth because the latter can also have some elements of persuasion (i.e. telling about the product to potentially induce favorable behavioral outcomes). Because the nature of advertising is complex, it may be preferable to incorporate multiple measures of advertising intents to enable a better understanding of children’s decision-making and their vulnerability to advertising.

Although understanding of persuasive intent did not directly reduce food preferences (similarly to Mallinckrodt and Mizerski (2007)), this study suggests more complex decision-making dynamics. It was observed that children who grasped persuasive intent and did not view the advertised product as healthy, reported less favorable behavioral intentions toward the snack compared to children who believed the advertisement did not intend to influence them. When participants misleadingly believed the product was healthy, they tended to report more favorable food preferences even when they believed that the stimulus wanted to influence them, suggesting that persuasive intent and healthiness evaluations are used simultaneously in decision-making. Although children’ application of their advertising knowledge has been inconsistent in the past, this study suggests that children’s ability to grasp persuasive intent may be beneficial when product healthiness is correctly assessed by young consumers. Not only does persuasive intent need to be activated to produce negative effects (Waiguny et al., 2012), but also their nutritional knowledge. Hence, future research should examine which cues (packaging or marketing information disclosure) can activate nutritional knowledge and critical evaluation of advertising more effectively.

The results of the current study argue in favor of consumer education and training to assist young consumers in developing various competencies. However, it is unlikely that very young children would be capable of discerning persuasive intent across all advertisements because of format variations, which calls for parental guidance especially at the early ages of consumer development. As shown in this study, parental active mediation was positively associated with more critical evaluation of persuasive intent in line with previous research (Vanwesenbeeck et al., 2016). Even though training and encouragement of parents to educate their children appear as valid recommendations, these initiatives should not be viewed as a quick fix for current advertising practices (Buckingham, 2009). The results of this study highly encourage more ethical marketing from the practitioners’ side. Because some parents may lack sufficient knowledge about advertising (Morley et al., 2008), social marketing initiatives aimed at parents are also recommended. Educating children about commercial bias and intents also needs to occur in schools, because delegating the educational role solely to parents may not be enough to equip children with sufficient consumer knowledge.

Limitations

There are several limitations in this research. First, children were exposed to an advertisement three times during their internet surfing activity, which may not be sufficient to
exert a substantial influence. Despite our best efforts, our scenario could not recreate a real-life decision-making situation or simulate more complex daily exposures to multiple advertisements. Second, some children in this study played games during the allocated 10 min. Although no advergames were released to promote the cookie used in this study at the time of our research, future studies need to examine whether playing an unrelated advergame can induce more favorable food preferences because of potential affect transfer. Furthermore, because children in this study experienced a disruption to their activity, irritability and its potential negative effects on product evaluations and activation of persuasion attribution represent another area for investigation.

Only two intrinsic product cues were assessed in the current study. Because current food advertising is complex, future studies should investigate other product cues which could influence consumers’ preferences (i.e. texture, smell/aroma, color, freshness). The pop-up advertisement did not contain any “fun” elements and this aspect needs to be explored in future studies because of its potential influence on children (Nelson et al., 2015). Because a non-fictitious product was used, pre-existing product attitudes, brand effects, prior consumption, and general attitudes about advertising (Cartwright and Opree, 2016) also need to be accounted for. Parents’ restrictions relating to the consumption of certain foods were not captured in this study. Potential over-reporting of active mediation because of social desirability represents another limitation. The last limiting factor lies in the fact that socio-economic status was assessed using the IRSD score (Pink, 2006) rather than participants’ income and education.

References


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