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High on Attractiveness, Low on Nutrition: An Over-Time Comparison of Advertising Food Products on Israeli Television

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ASTRACT

This content analysis examines Israeli television food advertising. It compares 2008–2009 and 2012–2013, two periods immediately before and several years after regulatory, educational, and public-advocacy efforts have been advanced to raise awareness of and tackle the television–obesity link. Advertisements were drawn from a composite week sample aired on Israeli broadcast channels from 4:00 p.m. until midnight in each of the two periods. Nearly a quarter of ads were for food products, even after a significant drop over the years. The most common food categories included candies and sweetened drinks, whereas fruit and vegetables were among the least common products advertised. The most prevalent central message in food advertisements was that the product makes for an economically sensible purchase, with a much lower focus on the health qualities of the food products. Food advertisements were characterized by a very short duration and an increased reliance on emotional, rather than cognitive, appeal, especially in ads for low-nutrient foods. A significant increase was observed in 2012–2013 in the reliance on thin models in food advertisements, and these were most often associated with high levels of physical attractiveness, promoting the thin ideal. Findings are discussed in light of theory, previous research conducted worldwide, and audience effects. Implications are addressed for health and media industry regulation efforts.

In recent years, many countries have been experiencing an alarming increase in rates of obesity (National Center for Health Statistics, 2012). Growing public awareness of and concern over this situation have been expressed by governmental and health organizations (e.g., the World Health Organization; the U.S. Institute of Medicine). Although a multitude of biological and personal factors may contribute to obesity, scholars also have identified print and electronic media as potential risk factors. Television, especially food advertising, is suggested to contribute to an atmosphere conducive to obesity. Educational institutions and regulatory and public advocacy efforts have been targeted in changing the representation and outcomes of exposure to food and body images on television (Hawkes & Lobstein, 2011). These efforts intend to raise awareness of the issue and to influence media norms, including in marketing food products. Such efforts have been undertaken in different countries (e.g., the United States and Australia; Galbraith-Emami & Lobstein, 2013) and also, recently, in Israel.

The current study quantitatively characterizes the representation of food products in Israeli television commercials, comparing the televised landscape in 2008–2009 with 2012–2013. The over-time comparison allows testing of whether changes in public opinion and the social and educational environment, which have commenced and accelerated throughout this time period, have manifested themselves in the commercial content. The study also examines the characters and models used in food advertising in order to shed light on social learning and comparison processes, as suggested by media effects theories introduced in the following. In this, the study adds to the growing global literature and offers a comparison point with patterns of portrayals identified in other countries.

The worldwide picture of obesity

A World Health Organization (2013) report stated that 1.4 billion adults age 20 years and older and 40 million children under the age of 5 years were overweight; 11% of adults were obese. Many world regions, such as Australia, Mexico, and Canada, report similar trends (e.g., Organization for Economic Cooperation and Development [OECD], 2014). Israel too has been experiencing a rise in obesity, with one in five adults suffering from obesity and about half of women and men suffering from excess weight (Ng et al., 2014). A sharp rise in obesity rates has also been identified among children, with, more than 20% of elementary and middle school pupils suffering from obesity (OECD, 2014). Obesity is a concern in and of itself but also as it increases short- and long-term risks for related health and psychological problems (Ng et al., 2014).

Television's link to obesity

Many factors can contribute to the problem of obesity. Along with genetic and biological foundations, environmental and

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sociocultural factors can play a role in its development (Field et al., 2001). An accusing finger has been pointed at television, as it serves as a socializing agent and includes a large amount of relevant and attractive content that is not always responsibly depicted (Roberts & Pettigrew, 2007). Even in a world saturated with new technologies, recent years have seen an increase in food companies' advertising expenditures directed at TV (Kanter Media, 2013). The nature of TV viewing, which involves repeated exposure to consistent portrayals, increases its potential influence as a source for learning about foods (Harris & Bargh, 2009).

Television advertising of food products

The body of evidence accumulated from content analyses points to the fact that the televised marketing of food products, especially when targeted to youth, is a common occurrence worldwide and that the most frequent food categories advertised tend to be of relatively low nutrition value (e.g., fast foods, candies, sweetened beverages) as compared to the consumption recommendations of health organizations (e.g., Roberts, Pettigrew, Chapman, Quester, & Miller, 2013). Food ads in different countries (e.g., Mexico, Turkey, United States) rely heavily on appeals to emotions rather than to logic and often involve attractive, familiar personae and appealing premiums (e.g., Bakir, Palan, & Kolbe, 2013). These persuasive tactics are often used in the promotion of unhealthy food products, which are also mainly seen consumed in ads in the context of snacking and not as part of an organized meal. Harrison and Marske (2005) found that most characters in food ads were of average weight and females tended to be under- rather than overweight, though consuming amounts of fat and sugar equivalent to those advertised on TV is unlikely to result in thinness.

Effects of exposure to food advertising on television

Accumulating research indicates links of concern between exposure to televised food ads and a range of outcomes, including nutrition knowledge, beliefs, attitudes, eating behaviors, and body composition (Andreyeva, Kelly, & Harris, 2011; Harrison, 2005). Researchers have found a positive link between TV viewing and body weight among U.S. children and a small to moderate association between exposure to diverse media (e.g., TV, magazines) and lowered body satisfaction, increased internalization of the thin ideal, and unhealthy eating habits (e.g., Grabe, Ward, & Hyde, 2008).

Theoretical frameworks guiding research on food advertising and effects

Several theories are especially relevant in the context of television advertising and obesity. Priming theory claims that external stimuli such as media content serves as cues triggering related cognitions, which, in turn, can trigger motivations and behavioral tendencies (Berkowitz, 1986). Information obtained from the media is thought to be stored in the mind in nodes that link in an associative network to other, related nodes. The activation of one node stimulates other cognitions, with more recent and intense primes having a more meaningful impact (Roskos-Ewoldsen, Roskos-Ewoldsen, & Dillman Carpentier, 2002). Food advertisements are especially likely to prime food-related word accessibility and unhealthy eating choices (e.g., Harris, Bargh, & Brownell, 2009).

Also among the leading theories guiding research in this area is social learning theory (SLT; Bandura, 2001). SLT considers television as a source of social information and observational learning for viewers. Viewers pay attention to its content, cognitively store and rehearse the lessons learned from it, and decide whether to adopt the learned behaviors and their underlying norms and social rules in their personal lives according to experienced reinforcements. Many aspects associated with televised food advertising make this content attention-grabbing and increase the motivation to learn from it, including the mention of promotions and the reliance on emotionally charged messages about happiness and success (Harris, 2004). Social learning is especially likely with regard to food-related behaviors and body image, as TV characters tend to be presented as beautiful, popular, and thin—highly desirable states that motivate imitation—making it logical that the viewer will aspire to be like them, including with regard to physical appearance (Lopez-Guimera, Levine, Sanchez-Carracedo, & Fauquet, 2010). But as TV rarely depicts realistic ways of achieving such body shape and often depicts uncontrolled snacking and the consumption of high-fat, high-calorie foods, viewers are not exposed to healthy models of eating, enhancing the risks of exposure.

In addition, social comparison theory (SCT) considers television as a site for viewers to engage in comparisons with mediated personae (Harris & Bargh, 2009). People often engage in social comparison with others—including in the mediated environment—in order to evaluate themselves, enhance their self-perceptions, and improve (Krayer, Ingeldew, & Iphofen, 2007). Many U.S. adolescents have admitted to making efforts to be like media models, who usually encourage upward social comparisons and pressure to conform to idealized thinness and beauty standards; such imitative behavior predicts the development of body image concerns and diet-associated behaviors (Field et al., 2001; Hesse-Biber, Leavy, Quinn, & Zoino, 2006).

Regulation and educational efforts to minimize obesity

The growing body of evidence and the increased awareness of the worrying relationship between exposure to television advertising and audience's health and body-related outcomes have sparked a heated public debate worldwide. In Israel, too, the parliament has held hearings regarding children's and adolescents' eating habits. The 2008 Israeli State Comptroller and Ombudsman (2008) report referred to the phenomenon of excessive weight as a growing concern for Israeli society. Different countries, including Israel, have adopted national educational programs for youth for a healthier lifestyle, strongly emphasizing more nutritious food choices (e.g., Israeli Ministry of Health, 2014).

Specifically targeting the media as a possible culprit in this situation, many countries have taken formal regulatory steps

to constrain advertising efforts (Galbraith-Emami & Lobstein, 2013).

In Israel, a relevant law also has been passed restricting advertising models' body mass index and requiring the disclosure of digital editing in all media. As of 2012, 36 countries worldwide created specific regulations with regard to the advertising of food products, across different media and most uniquely on television (Stohl, 2012). Though regulation specifically addressing food advertising in Israel has not yet been formalized, efforts have begun involving the Second Authority for Television and Radio to advance self-regulatory steps to restrict advertising for unhealthy foods and create more responsible norms and standards in food advertising guidelines.

Despite these efforts, studies from several countries have found that advertising of food products, especially to child audiences, fails to meet the criteria of regulation (e.g., Bernhardt et al., 2013), but the situation in Israel is still unknown. Television is clearly one of the targets of regulatory, educational, and public awareness-increasing efforts with regard to obesity and healthier food choices. Thus, it is important to study whether changes in food advertising—both in frequency and nature—have taken place in Israel in response to such social efforts.

Study goals and research questions

The goals of this study are to quantitatively characterize the presentation of food in Israeli television ads and to examine changes in this landscape following regulatory, social, and educational efforts targeting the media–obesity link. The time periods compared are 2008–2009 (immediately before the extensive efforts in this realm) and 2012–2013, a few years into these trends, which allowed time for the industry to adjust its practices in line with emerging social norms and standards. As in other TV content analyses (e.g., Kunkel, Eyal, Biely, Finnerty, & Donnerstein, 2005), this study relies on theory to guide its rationale. In this, the content-analytic findings are relevant for audience effects and serve as a baseline from which effects investigations can proceed.

Specifically, priming theory places the focus on the quantity of food ads. Repeated exposure to food advertising is likely to strengthen scripts associated with these products and increase chances that such scripts will be activated in viewers' minds upon encountering them on TV. Social learning theory guides the study's choice of contextual variables in food ads, as specific portrayals have been suggested to link with audience effects (Harrison & Marske, 2005). For example, a clear central message about the product in the ad can play a role in each of the social learning model steps; as a result, consumer learning of brand information and brand positioning is enhanced (Shimp, 2007). Further, the content of the central message—whether focusing on fun and excitement or on nutrition information—is important from an audience effects perspective and can impact food consumption choices (Harris et al., 2009).

Similarly, from an SCT perspective, depictions of eating behaviors in food ads can provide role modeling for viewers, suggesting acceptable patterns of food consumption. The emphasis placed on the presentation on health messages, especially in relation to low- and high-nutrient foods, is also of importance from this perspective. As learning can be impacted by the clarity of the mediated message, ads that juxtapose physically appealing personae with fattening or otherwise nutrient-low foods can be associated with nutrition confusion or unhealthy behaviors.

Finally, social comparison theory places the focus on the characters in ads. Using attractive models, and those that conform to the thin ideal, can effectively serve to increase interest in the ad and increase the desire for the product (e.g., Buunk & Dijkstra, 2011). Past studies have also linked between social comparison tendencies, nutrition knowledge or confusion, and a healthy diet choice (e.g., Luszczynska, Gibbons, Piko, & Tekozel, 2004).

Although public pressures and regulatory and educational efforts would suggest a shift toward less food advertising and healthier presentations of food products in ads, worldwide content analyses have found that such a shift did not manifest itself in televised food ads to date (e.g., Bernhardt et al., 2013). As market pressures and the extending food industry needs are strong, it is not clear that public and regulatory sanctions will be met by the Israeli food advertising industry as well. Thus, this study poses questions to examine the situation in light of these contradictory forces:

RQ1: What is the amount of food advertising on Israeli commercial television and which food products are advertised in 2008–2009 versus 2012–2013?

RQ2: What is the context of presentation of food products (variables identified in past research as being important in media effects, such as the inclusion of a central message, promotion, and portrayal of eating behavior) on Israeli commercial television in 2008–2009 versus 2012–2013?

RQ3: To what extent do food ads emphasize issues of health/nutrition in 2008–2009 versus 2012–2013?

RQ4: Who are the characters used to promote food products on Israeli commercial television? What is their body shape and how attractive are they in 2008–2009 versus 2012–2013?

Methodology

Sample

For each period (2008–2009, 2012–2013), the sample of advertisements was derived from the two commercial broadcast stations in Israel, channels 2 and 10. The sampling timeframe was September–February in each periods, from 4:00 p.m. to midnight daily, representing shows targeted at the entire family (Second Authority for Television & Radio, 2002). The construction of the composite week sample followed a model used in previous large-scale content analyses (Kunkel et al., 2005). Throughout the sampling period, hour-long time slots were randomly selected and all shows aired during that hour,

or a part of it, were recorded. The sample covered 112 hours in each period: 146 programs with 3,678 ads in 2008–2009 and 154 programs with 3,417 ads in 2012–2013.

Units of analysis

The central unit of analysis in this study was the advertisement. In accordance with previous research (Chapman, Nicholas, & Supramaniam, 2006), any advertisement that appeared during the official commercial breaks during the shows was coded, excluding promotions for in-channel programs. Within each advertisement, major characters served as a second unit of analysis.

Coding and intercoder reliability

Five undergraduate students (three females and two males in 2008–2009; five females in 2012–2013) served as coders for this study. They underwent extensive training over several weeks with ads not included in the sample. Then the sample was coded throughout several weeks. All the ads aired during a single program were coded by one coder. Throughout each coding period, the evaluation of intercoder reliability was done regularly, using 16 randomly selected programs. Each reliability test involved two to five coders in different combinations. Coders' decisions were compared using the Scott's pi formula, as in past large-scale studies (Potter & Levine-Donnerstein, 1999). Each variable's final reliability was calculated by averaging the scores for all reliability tests. Reliabilities appear in parentheses by each measure below for 2008–2009 and 2012–2013, respectively.

The advertisement unit of measurement

Unitizing agreement (recognizing each ad vs. non-ad content in the program) was calculated using the Close Interval Around the Agreement Mode (CIAM) (Kunkel et al., 2005) and was high (.94; .96). Then coders indicated whether each ad promoted a food product or not (Scott's pi = .96; .96) and its length in seconds (% agreement = .92; .88).

The second stage of coding focused solely on ads that promoted food products. Coders noted the types of food products based on categories suggested in previous research (e.g., Harrison & Marske, 2005) (Scott's pi = .99; 1.00). When more than one food product was promoted, the first four food products in the ad were coded. The categories of food products included fruit; vegetables; meat, poultry, or fish; prepared food; carbohydrates (e.g., rice, pasta); spreads and sauces; soups; breads; dairy products; infant/baby food; morning cereals; ice cream; sweets (e.g., chocolate, candy); energy snacks; salty snacks (e.g., pretzels); cakes, cookies, and pastries; coffee, tea, and hot chocolate; soft drinks; alcoholic beverages; water; fast food establishments; coffee shops and restaurants; and supermarkets. Food products not within these categories were coded as "other."

Also, coders indicated whether the food ad contained any health message about the product (Scott's pi = .97; .98). An ad can contain more than one appeal to health. Non-mutually exclusive categories included general health statements; the product's caloric value; the product's influence on the digestive system; the product's promotion of weight control; the product's fat or sugar values; a doctor's recommendation; natural ingredients (e.g., fiber); and "other" (Harrison & Marske, 2005).

It was also important to ascertain the central persuasive message in each ad (Scott's pi = .80; .77). In addition to determining whether there is one clear central message in the ad, it is also important to identify the content of the central message. The main message in the ad is one way to uniquely differentiate the product from others and it is what audience members are expected to most associate with the brand and to serve as the main reason to choose this brand for future and repeated consumption (Boulding, Lee, & Staelin, 1994). Options included a central message about the product: being healthy or nutritious; making one happy; having a good taste or smell; being unique; providing physical strength; being preferred among people (e.g., "everyone wants this product"); and being financially worthwhile or inexpensive. The centrality of the message was determined based on the length of its appearance within the ad, the extent to which it was repeated (visually, verbally, or both), and the clarity with which the message was identified and differentiated from other arguments. When a central message was not detected, the coders indicated this.

The coders identified whether the food advertisements mentioned any sales or promotions, using several non-mutually exclusive options such as general sales, price cuts, free gifts, and so on (Scott's pi = .96; .97). For each ad, coders identified if it included a representation of consuming the product, by identifying the nature of eating behavior (Scott's pi = .96; .98). Portraying eating behavior on television communicates messages about the importance of eating as an everyday activity and one that carries long-term health implications. The nature of food consumption differentiated being part of an organized meal versus an unorganized occasion such as snacking.

The character unit of analysis

Any advertisement that included human characters (including cartoon or animated characters) was coded for up to four main characters (see Harrison & Marske, 2005). Main characters were those who played a central role or had a unique position in the advertisement, with either verbal or visual focus. Viewers pay attention to salient characters, identify with them, and examine them to learn important social information. There was good agreement among the coders in unitizing the advertisements' main characters (CIAM = .80; .87).

Every main character in the ads was coded for its gender (Scott's pi = .94; .99) and age (categories: babies/infants/toddlers, elementary school children [6–13 years old], teenagers [13–18 years old], emerging adults [18–25 years old, coded in two collapsed categories: general population and soldiers], young adults [25–40], adults [40–65], and retirees [65 years and older]) (Scott's pi = .88; .83). The body size of the character was coded using Thompson and Gray's (1995)

pictorial measure of nine increasing body shapes. Each character was coded for being underweight (shapes 1–3), average weight (shapes 4–6), or overweight (shapes 7–9) (Scott's pi = .91; .66). The character's physical attractiveness was coded, considering the character's face and body appearance, aesthetics, and symmetry (Eyal & Finnerty, 2009). Features used to determine attractiveness included extent of grooming, a healthy appearance and skin, and how pleasing it is to look at this person. The four levels of this measure ranged from "very unattractive" to "very attractive" (Scott's pi = .87; .83).

Results

One hundred and thirty-five shows in 2008–2009 and 141 shows in 2012–2013 included food ads. The sample encompassed 3,678 advertisements in 2008–2009 and 3,417 ads in 2012–2013. In both periods, food products were widely present: About 40% of the ads included some food products, even in the background, when the promoted product was not food related. Of all ads, 1,052 ads (28.60%) in 2008–2009 and 783 in 2012–2013 (22.90%) specifically promoted food products. Though still a meaningful part of the advertising landscape, there was a decrease in the percentage of food ads across the periods ($t[274] = 3.47$, $p < .001$). TV shows averaged 7.79 food ads in 2008–2009 (SD = 5.45, range: 0–26) and 5.55 (SD = 5.11, range: 0–25) in 2012–2013. The average length of food ads in both periods was nearly identical, at 17 seconds. Almost three-quarters of the food ads (2008–2009: 73.00%, 2012–2013: 74.00%) lasted 20 seconds or less; nearly a quarter lasted 5 seconds.

The frequency of food products promoted in advertisements

To continue answering RQ1, the two most common food categories in 2008–2009 were candy/sweets (n = 158, 15.02%) and dairy products (n = 147, 13.97%). In 2012–2013, candy remained a top category (n = 126, 16.09%) but was joined by soft drinks (n = 112, 14.30%). Dairy products dropped to third place in 2012–2013 with 12.00% of ads (n = 94) (see Table 1 for a complete list of food categories). Several other food categories appeared in more than 10% of food ads: soft drinks, supermarkets, and spreads/sauces in 2008–2009 and water in 2012–2013. The following categories were in less than 15 ads each in 2008–2009: fruit and vegetables, prepared food, coffee shops/restaurants, alcoholic beverages, and breads. In 2012–2013, these were cereals, soups, fruit and vegetables, carbohydrates, alcoholic beverages, energy bars, coffee shops/restaurants, and bread. Overall, despite some differences across the two periods in distinct food categories, results indicate stability in the food categories most and least likely to be promoted on TV. The top three most common categories—dairy products, candy, and soft drinks—remained largely the same; the least common promoted categories continued to include breads but also fruits and vegetables in both samples.

Table 1. RQ1: Categories of food ads.

Food categories (n, %)	2008–2009	2012–2013
Sweets and candy	158 (15.02%)	126 (16.09%)
Dairy products	147 (13.97%)	94 (12.00%)
Soft drinks	116 (11.03%)	112 (14.30%)
Supermarkets	114 (10.84%)	65 (8.30%)
Sauces and spreads	104 (9.89%)	53 (6.80%)
Coffee/tea/hot chocolate	70 (6.65%)	65 (8.30%)
Other	61 (7.80%)	11 (1.40%)
Cereals	52 (4.94%)	11 (1.40%)
Salty snacks	50 (4.75%)	51 (6.51%)
Meat/poultry/fish	40 (3.80%)	28 (3.57%)
Soups	39 (3.71%)	11 (1.40%)
Fast food	38 (3.61%)	31 (3.96%)
Water	36 (3.42%)	84 (10.73%)
Carbohydrates (e.g., rice, pasta)	31 (2.95%)	9 (1.15%)
Energy bars	28 (2.66%)	6 (0.76%)
Infant food	25 (2.38%)	21 (2.68%)
Prepared food	14 (1.33%)	30 (3.83%)
Fruit and vegetables	14 (1.33%)	9 (1.15%)
Restaurants/coffee shops	7 (0.07%)	3 (0.38%)
Alcohol	4 (0.04%)	8 (1.02%)
Bread	2 (0.02%)	0 (0.00%)

The nature of presentation of food products in advertisements

Above and beyond examining the frequency of appearance of foods in advertisements, it is important to consider the context of the portrayals. In answering RQ2, results showed a significant increase in the incorporation of a clear main message in food ads, from 51.40% in 2008–2009 to 84.30% in 2012–2013 ($\chi^2[9] = 442.31$, $p < .001$). In both periods, when a message was clearly conveyed, the most common main message was that the product is financially sensible. This message focuses on the fact that the product provides good value for its money; it is not too expensive but rather affordable. But it is important to note that in 2012–2013, the message about the financial quality of the food product was much more dominant in over half the ads with a clear message (see Table 2). Whereas in 2008–09, the second most common main message was that the product is health-promoting, in 2012–13 the

Table 2. RQ2: The context of presentation of food ads.

	2008–2009	2012–2013
Main message, when clearly identified in the ad (n, %):		
The product is financially sensible	146 (27.91%)	376 (57.85%)
The product is health-promoting	141 (27.00%)	49 (7.54%)
The product tastes/smells good	99 (18.93%)	102 (15.69%)
The product will make you happy	67 (12.81%)	64 (9.84%)
The product will make you strong	47 (8.99%)	1 (0.00%)
The product is popular among the public	15 (2.86%)	22 (3.38%)
The product is unique	7 (1.34%)	36 (5.54%)
Main message appeal (n, %):		
Cognitive appeal	717 (79.80%)	218 (53.70%)
Emotional appeal	181 (20.02%)	188 (46.30%)
Inclusion of promotion in ad, when identified:		
General sale	51 (37.50%)	65 (47.45%)
Discount	28 (20.59%)	30 (21.90)
Participation in a prize-offering raffle	19 (13.97%)	14 (10.22%)
Another product with purchase	8 (5.88%)	7 (5.11%)
Consumption of food in ad:		
As part of an organized meal	125 (28.03%)	61 (20.90%)
As a snack	321 (71.97%)	231 (79.11%)

Note. There was a significant difference in the appeal to cognition versus emotion between the periods: $\chi^2[1] = 94.23$, $p < .001$. There was a significant difference in the consumption of the food product advertised across the periods: $\chi^2[1] = 8.25$, $p < .01$.

second most common message was that the product has good taste/smell; the main message that the food product promotes health has nearly disappeared.

The main message categories above were grouped so as to indicate an appeal to cognition versus emotion (see Table 2). Messages considered as cognitive appeals were: the product is financially sensible, promotes health, is unique, and promotes physical strength. Messages grouped as emotional appeals included: the product tastes/smells good, promotes happiness, and is popular. Significantly more ads appealed to cognition in 2008–09 than in 2012–13 ($\chi^2[1] = 94.23$, $p < .001$).

A second important contextual variable was the inclusion of promotions in the food ads (see Table 2). In 2008–09, 12.90% of the food ads ($n = 136$) and 14.89% of ads ($n = 137$) in 2012–2013 mentioned promotions with product purchase. The types of promotion were largely the same in both periods, mostly general sales, a discount with purchase, participation in a prize-offering raffle, and receiving another product upon purchase. An additional contextual variable that was examined in relation to RQ2—and was specifically based on SCT's tenets of observational learning—was the portrayal of product consumption (see Table 2). In total, 446 ads portrayed the consumption of the food product in 2008–2009 (42.39%) and 292 did so in 2012–2013 (37.29%). About three-quarters of all food consumption in ads in both periods happened outside of organized meals, in snacking. There is a significant difference across the periods, with a smaller likelihood of portraying eating foods in organized meals in 2012–2013 ($\chi^2[1] = 8.25$, $p < .01$).

Messages about dietary health and nutrition in food advertisements

A crucial contextual element in food advertising is the inclusion of messages about health, especially considering the TV–obesity link. In answering RQ3, about one-third of all food ads made at least a minor and brief visual or verbal mention of dietary health or nutrition (2008–2009: $n = 402$, 38.21%; 2012–2013: $n = 256$, 32.69%) (see Table 3). Of these ads, the most common message in both periods, appearing in nearly half of the ads, was that the product includes natural ingredients, fiber, vitamins, or minerals. Following this was a message about low fat or sugar values.

To further explore the messages about health in ads, food categories were grouped to discern those high in nutrition quality from foods considered to have a lower nutrition value. The categorization of foods to these groups mirrors the "Go, Slow, and Whoa Food Chart" of the National Institutes of Health (2013). The chart divides foods into three groups, with the two extreme ones being "Go" foods, which are low in fat, sugar, and calories and rich in vitamins and minerals (e.g., fruits and vegetables, water), and "Whoa" foods, which should be rarely eaten and only in small portions, as they are fat, sugar, and calorie dense and low in nutrients (e.g., ice cream, candy, fast foods such as fried hamburger and chicken nuggets). Accordingly, in this study, high-nutrient foods included fruit, vegetables, meat/poultry/fish, dairy products, baby food, and water. Low-nutrient foods were ice cream, candy/sweets, salty snacks, cakes, alcohol, soft drinks, and fast food. As can be seen in Table 3, in 2008–2009, nearly one-fourth of ads were for high-nutrient foods and about one-third were for low-nutrient foods. In 2012–2013, 29.50% of ads were for high nutrient foods but more than 40% for low-nutrient foods. The 2012–2013 period included significantly more ads for low-nutrient foods than 2008–2009 ($\chi^2[1] = 16.07$, $p < .001$).

Ads promoting high-nutrient foods differed across the two periods in their use of promotions ($\chi^2[1] = 8.17$, $p < .01$). In 2012–2013, ads for high-nutrient foods included more promotions than in 2008–2009. There were no differences between the periods in the inclusion of health messages and in the ads' appeal to cognition versus emotion. Ads promoting low-nutrient food products also differed across the periods in their appeal ($\chi^2[1] = 79.89$, $p < .001$). In 2012–2013, these ads appealed more to emotion relative to 2008–2009. There were no differences between the periods in the extent to which ads for low-nutrient food products included health messages and promotions.

Table 3. RQ2: Messages about dietary health and nutrition in food ads.

	2008–2009	2012–2013
Health messages in ads:		
The product includes natural ingredients, fiber, vitamins, or minerals	187 (46.52%)	168 (65.63%)
The product has low fat or sugar values	87 (21.64%)	28 (10.94%)
Nutrition value of advertised foods:		
High-nutrient foods	260 (43.05%)	231 (41.40%)
Low-nutrient foods	344 (56.95%)	327 (58.60%)

Note. There was a significant difference between the periods in the nutrition value of the advertised foods: $\chi^2[1] = 16.07$, $p < .001$.

The characters promoting food products in advertisements

Altogether, 1,240 main characters were coded in food ads in 2008–2009 and 1,059 in 2012–2013. There was a near-equal gender split (Table 4). Nearly half of characters were coded as being 25–40 years old in 2008–2009 and more than one-third were in this age bracket in 2012–2013. The greatest change was observed in the 18–25 years group—emerging adults—in which there were less than 10% in 2008–2009 but one-fourth of the characters in 2012–2013. Characters were divided into

Table 4. RQ3: Characters in food ads (2008–2009, $n = 1,240$; 2012–2013, $n = 1,059$).

	2008–2009	2012–2013
Gender:		
Males	641 (51.90%)	577 (54.50%)
Females	596 (48.10%)	482 (45.50%)
Age:		
25–40 Years old	553 (44.74%)	339 (35.69%)
Over 40 years old	339 (27.43%)	175 (16.46%)
Under 18 years	231 (18.69%)	246 (23.14%)
18–25 Years old	106 (8.58%)	260 (24.46%)
Attractiveness:		
Very unattractive and unattractive	268 (21.61%)	315 (29.75%)
Very attractive and attractive	772 (78.39%)	744 (70.25%)
Body size:		
Underweight	72 (5.97%)	441 (41.80%)
Average	963 (79.85%)	526 (49.86%)
Overweight	171 (14.18%)	88 (8.34%)

Note. There was a significant difference between the periods in character attractiveness: $\chi^2[1] = 19.9$, $p < .001$. There was a significant difference between the periods in character body size: $t[2,29] = 18.9$, $p < .001$.

three body size groups: underweight, average, and overweight. In 2008–2009, there were very few thin characters (5.97%), a large majority of average-weight characters (79.85%), and nearly 15% overweight characters (see Table 4). In 2012–2013, the characters were split nearly equally with slightly more average-weight characters (49.86%) and fewer underweight characters (41.80%); only 8% of characters were overweight. In 2012–2013 there were significantly more thin characters and significantly less average and overweight characters in food ads than in 2008–2009 (t[2,259] = 18.49, $p < .001$).

Body size was found to be related to the health quality and health message associated with food products promoted in televised food ads. First, high-nutrient food products were related to body shape in 2008–2009 (χ^2[2] = 13.13, $p < .001$). Foods with higher nutrition value were presented more often in ads with average-body-size characters and less in ads with overweight characters. For food products with low nutrition value in both periods, ads included thinner characters (2008–2009: χ^2[2] = 31.55, $p < .001$); 2012–2013: χ^2[2] = 44.65, $p < .001$). In 2008–2009, low-nutrient foods were also more prevalent in ads with overweight characters. Second, in 2012–2013 health messages were more frequent in food ads with thin characters and less with overweight or average ones (χ^2[2] = 42.53, $p < .001$); the same association was not significant in 2008–2009 (χ^2[2] = 0.24 $p = .89$).

Finally, about three quarters of the characters in food ads were considered attractive or very attractive (see Table 4). The two periods significantly differed (χ^2[1] = 19.96, $p < .001$) with a greater proportion of attractive relative to unattractive characters in 2008–2009, though in both periods the difference between attractive and unattractive characters was extremely large. In 2008–2009, thinner and heavier characters were coded as less attractive than average characters (χ^2[2] = 182.01, $p < .001$). In 2012–2013, thinner characters were coded as more attractive (χ^2[2] = 156.41, $p < .001$).

Discussion

The study found that in both time periods food products appeared in about 40% of all ads on Israeli television's main commercial channels during the hours dominated by family programming. More than one-fourth of ads promoted food products in 2008–2009. This number dropped in 2012–2013 to slightly less than one-fourth of ads, still a meaningful part of the advertising landscape. Three-fourths of the ads lasted no more than 20 seconds and almost one-fourth were only 5 seconds long. This short duration severely restricts the nature of portrayals, as there is little time to emphasize important messages or develop complex ideas about dietary health.

There was largely a consistency across the two periods in the frequency of advertised food categories. The most prevalent categories were candy/sweets, soft drinks, and dairy products. The least prevalent categories included fruit and vegetables, coffee shops/ restaurants, and bread. In contrast to past research (e.g., Harrison & Marske, 2005), food categories found to be highly prevalent in TV ads worldwide—morning cereals, breads, and fast food restaurants—make up only less than 5% of Israeli food ads. However, consistent with past research, Israel too includes a very small proportion of ads for fruit and vegetables, the most nutritious categories. Advertising of unhealthy food products increases automatic generalized consumption behavior (Harris et al., 2009). From a priming perspective, the frequent depiction of less nutritious food categories in ads is likely to make them highly salient for viewers. The repetitive nature of exposure may result in clear scripts associated with often-advertised foods, whereas foods that appear less often in ads likely have less stable scripts, and few healthy scripts, associated with their consumption.

Important findings also emerged in examining the context of presentation in food ads. In 2012–2013 there was a significant increase in the use of a central, clear message relative to 2008–2009. This may be explained by the recent extended adoption of the integrated marketing communication approach by advertisers, which recognizes the need for a consistent and coherent message for consumers, distinguishing the ad and brand from others (Shimp, 2007). Past studies have identified the most prevalent message in food ads to be an emotional appeal to happiness (e.g., Lewis & Hill, 1998). But the current study found that at least half of Israeli ads that include an identifiable main theme in both periods focus on the product's financial worthiness—a cognitive appeal. This may be because the 2008–2009 sample was collected at a time of a worldwide economic crisis (Spivak, 2009), and the second sample was collected following the intense social protest in Israel (in the summers of 2011–2012) over the cost of basic food products. Perhaps the public and press debate made advertisers more responsive to local public concerns and the financial argument more central in ads.

The second most frequent central message in Israeli food ads in 2008–2009 focused on products' health-related qualities. These messages tend to appeal to reason, a fact with potentially important implications for audience effects (Warren, Wicks, LeBlanc Wicks, Fosu, & Chung, 2008). However, in 2012–2013 this central message dropped to fourth place, following more emotional messages about the product's taste/smell and happiness. This finding is in line with Warren et al. (2008), which found that only 10% of food commercials made any reference to the product's nutrition value. This can be important for audiences, as Harris et al. (2009) found that ads with a nutrition message had an inhibitory effect on postexposure automatic consumption behaviors as compared with ads that emphasized a "fun and excitement" message, which led to greater food consumption.

Promotions were mentioned in about 14% of ads and were mostly general sales notices, receiving a free product, or a discount upon purchase. Promising promotions is a common tool in advertising food products, especially when targeting young audiences. Yet it seems that such a persuasive device is not very prevalent in Israeli ads, which may appeal to a more general audience. More consistent with past research is the fact that most Israeli food ads tend to present food consumption as snacking outside of an organized meal, with a slight increase in 2012–2013 (Roberts & Pettigrew, 2007). From a social cognitive perspective, such portrayals may serve as learning models, especially for younger audience members. Future research should examine what messages children

learn and whether their real-life eating habits mirror those depicted on TV.

An important contextual element in light of the obesity trend is the inclusion of health messages in food ads.[1] More than one-third of food ads made at least a minor reference to dietary health. The most common health-focused message referred to the product's ingredients, followed by low fat or sugar values. Categorizing food products according to their nutrition value showed that in 2012–2013 there was a significantly higher prevalence of foods with low nutrition value relative to 2008–2009. Several changes in 2012–2013, including the increased use of promotions in ads for high-nutrient foods and the greater appeal to emotion in ads for low-nutrient foods, may be explained by the needs of advertisers. Healthier products may be less attractive than less nutritious foods such as sweets, so it may be beneficial to sell them along with a promised promotion. For lower nutrient foods, a focus on substantial attributes may be less desirable, rather preferring an appeal to emotion.

The study examined the characters in food ads, as social comparison theory considers them to serve viewers' social comparison goals. Characters similar to their audience on demographic and psychographic grounds, and characters that are attractive and successful, can increase viewers' attention to the ad and enhance its effect on viewers (Krayer et al., 2007). The main characters coded here included similar numbers of men and women and were mostly over the age of 25 years, likely appealing to the attractive 20- to 40-year-old target audience for food ads (Lazarevic, 2012).

A most important feature of characters in food ads is their body shape. By 2012–2013 significantly more characters were underweight. This trend means that Israel is moving closer to other countries that overemphasize thinner body shapes (Harrison & Marske, 2005). An accompanying disturbing trend is that underweight characters tended to be depicted as attractive. Linking attractiveness to body size may draw the audience's attention and support the thin ideal, linking thinness to beauty, popularity and success (Herbozo, Tantleff-Dunn, Gokee-Larose, & Thompson, 2004). Such attributes enhance the likelihood of upward social comparison and the desire to imitate these characters (Sohn, 2010).

Adding to the biased nature of presentation in food ads is the fact that ads for food with lower nutrition value were accompanied more often by thin characters. Moreover, in 2012–2013, a health message appeared more frequently in ads with thin characters. Overall, thin characters were presented more often in the context of less nutritious foods, such as candies and snacks, while at the same time including more health messages. This inconsistent presentation is likely to be confusing to viewers who try to appraise this message cognitively and make sense of its less than realistic picture. After all, if they were to consume the same products in real life, they would be less likely encounter to health benefits and would have a harder time maintaining a thin body than presented in the ads.

In examining the study's findings overall with a focus on the health value and messages of food products in television ads, it seems that these ads often present food products in a biased or inaccurate way relative to their actual ingredients or health implications and their likely contribution to a person's body size and image. Such biases (e.g., the juxtaposition of low nutrient foods with emotional appeals and highly attractive characters) may impact the public's level of knowledge of nutrition and shape their consumption in less than healthy ways.

Consistent with other studies, this study did not identify meaningful changes in food ads over the years that parallel changes in the regulatory arena and that are consistent with more ethical practices (e.g., Galbraith-Emami & Lobstein, 2013). It may be that such public debate and efforts increased awareness of the importance of dietary health, to which the industry responded by adding more health messages but not necessarily in an accurate or responsible manner. Regulators should be familiar with these findings when establishing and reinforcing future guidelines for ethical food advertising practices. Moreover, educational efforts targeting youth's contention with food advertising messages also should address ways to enhance the critical awareness of such practices.

Limitations and future research

In examining food representation on Israeli television ads, the study enables a comparison with past studies from around the world, as well as across two time periods that saw significant changes in public attitudes toward food marketing and its relationship with dietary health. The study's large sample did not focus on advertisements intended specifically for young audiences. This is because the children's television channels in Israel do not currently include ads. A second limitation is that the study only categorized food products' nutrition value broadly based on their fit within a healthy diet. These categories were considered as indicators of the health value of the food products they encompass. Future research should consider specific products within these categories (e.g., high- vs. low-fat milk) to create a more accurate nutrition scale. Third, the study's content-analytic method does not

[1]To ascertain whether the changes observed in the advertising messages are purely rhetorical or are based on actual changes in food composition across the years, an analysis was conducted of the actual energy composition of the advertised foods. In each sample, all identifiable food products advertised were recorded for their nutrition information (caloric value, far percentages, fiber, and sugar amounts) through visits to the supermarket. To ensure comparability, the analysis focused on products that either appeared identically in both years (n = 14) or for which there was a comparable, though not identical, product in both years (n = 35). These 49 food products covered 11 food categories, including spreads and sauces, soups, soft drinks, coffee/tea, water, alcoholic beverages, energy bars, cookies and cakes, candy/sweets, dairy products, and salty snacks. Paired-sample t-tests were conducted for the different nutrition values across the two samples and revealed no meaningful statistically significant differences in any of the recorded nutrition values (data available from the authors). Although the lack of statistically significant differences may be attributed to the relatively small samples size, the overall trend seems to indicate that little has changed over the years in the actual composition of the food products advertised on television. We can, therefore, cautiously support the argument that the change observed in the advertising is largely more a matter of rhetoric and form than a matter of actual nutrition shift.

enable drawing conclusions about audience effects. These can merely be predicted based on theoretical assumptions. Future research should examine the effects of exposure to specific food depictions in ads on viewers' ability to critically assess messages.

Fourth, the large majority of variables in this study were coded with high intercoder agreement. Only characters' body shape had a lower score (Scott's pi = .66) in 2012–2013. This variable should be considered with caution and examined with additional measures in the future. Future research should further examine this variable because its latent nature can interact with coders' personal standards (Potter & Levine-Donnerstein, 1999).

Fifth, this study only examined Israeli food ads. Though limited in scope, the study adds a new country to those previously examined. Research in other countries can use the template offered by this study to examine the presentation of low- versus high-nutrient food products and to link exposure to ads with health indicators in the population. Moreover, many food products today are internationally available and marketed by global companies (e.g., Nestle, Unilever); it will be interesting to examine how the same products are advertised in different countries vis-à-vis the regulatory and social environments.

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