Chapter 15
Exploring Marketing Targeted at Youth in Food Stores

Diana S. Grigsby-Toussaint, Kristen Harrison, Michelle R. Nelson, Barbara H. Fiese, and Mary J. Christoph

Overview

Childhood obesity is a major public health problem in the USA, with youth at all stages of development at increasing risk (Health, 2008). Between 1976 and 2004, increases in overweight prevalence ranged from 5.0% to 12.4% for 2-to-5-year olds, 6.5% to 17% for 6-to-11-year olds, and 5.0% to 17.6% for 12- to– 19-year olds (Ogden, Carroll, &, Flegal, 2008; Ogden et al., 2006; Ogden & Carroll, 2010). These statistics are particularly alarming as overweight youth disproportionately suffer from chronic conditions such as hypertension and diabetes, thus resulting in

D.S. Grigsby-Toussaint (✉)
University of Illinois at Urbana-Champaign, Department of Kinesiology and Community Health and Division of Nutritional Sciences, 2019 Huff Hall, 1206 S Fourth Street, USA
e-mail: diana.grigsby@gmail.com

K. Harrison
University of Michigan, Department of Communication Studies,
5389 North Quad, 105 South State Street, Ann Arbor, MI 48109-1285, USA

M.R. Nelson
University of Illinois at Urbana Champaign College of Media,
810 South Wright Street, 102 Gregory Hall, Urbana, IL 61801, USA

B.H. Fiese
University of Illinois, Department of Human and Community Development,
Family Resiliency Center, 1016 B Doris Christopher Hall,
MC-81, 904 W Nevada Street, Urbana, IL 61801, USA

M.J. Christoph
University of Illinois at Urbana-Champaign,
Department of Kinesiology and Community Health,
80B Huff Hall, 1206 South Fourth Street, Champaign, IL 61820, USA

J.D. Williams et al. (eds.), *Advances in Communication Research to Reduce Childhood Obesity*, DOI 10.1007/978-1-4614-5511-0_15,

reduced quality of life at an early age (Anderson & Butcher, 2006). Overweight children are also at high risk for becoming overweight adults with the attendant comorbid conditions, including osteoarthritis and certain forms of cancer (Freedman, Dietz, Srinivasan, & Berenson, 1999; Dietz, 1998; Khaodhiar, McCowen, & Blackburn, 1999). As a consequence, a sense of urgency exists to disentangle the complex, multifactorial interactions between individual and environmental factors that lead to child weight imbalance and obesity (Johnson-Taylor & Everhart, 2006; Papas et al., 2007; Sallis & Glanz, 2006; Wang & Beydoun, 2007).

From the environmental perspective, exposure to food marketing and advertising has been identified as a major determinant of family food choices and habits that influence childhood obesity (Story & French, 2004; Institute of Medicine, 2006; Harris et al., 2009). Due to the ubiquitous marketing of high-sugar, high-fat obesogenic foods (Moore, 2006), it has become more challenging than ever for families to make informed and healthful choices that promote lifelong healthy eating and exercise habits among children (Harris et al., 2009). A study by the Kaiser Family Foundation (Moore 2006), for example, found that in the course of a year, an average American child will spend more hours watching television than in school, and the average 2-to-7-year old will be exposed to more than 4,000 food advertisements. Unfortunately, most of these advertisements are for high-calorie convenience foods, fast foods, and soda, with very few for fruits and vegetables (Harrison & Marske, 2005; Moore; Stitt & Kunkel, 2008). This trend is not likely to change as the budgets for food marketers dwarf those of government fruit and vegetable marketing programs such as "5-a-day"—$1.6 billion per year versus $2 million per year, respectively (FTC, 2008; USDA, 2010). As a result, youth are more likely to develop brand loyalty to nutrient-poor foods that influence family food purchasing and consumption behaviors (Robinson, Borzekowski, Matheson, & Kraemer, 2007; Dijksterhuis, Smith, van Baaren, & Wigboldus, 2005; Halford, Boyland, Hughes, Oliveira, & Dovey, 2007; Halford, 2004; Harris et al., 2009; Hastings, Stead, McDermott, Forsyth, et al., 2003; Institute of Medicine, 2006).

While the research literature supports the association between exposure to food marketing and increases in childhood obesity (Harris et al., 2009; Kunkel et al., 2004; Wiecha et al., 2006), empirical attention has focused on television as a vehicle of marketing to children in the home, with limited attention to the broader nutrition environment in which families are embedded (Connor, 2006; Institute of Medicine, 2006; Story, Kaphingst, & French, 2006; Crespo et al., 2001; Elliott, 2007; Fiese & Schwartz, 2008). The focus on children's direct exposure to television does not take into account the various social contexts in which children and families are exposed to food marketing and promotion, thus limiting the potential for effective interventions in multiple spaces and places that shape family purchasing and dietary behaviors. One critical social context that has received limited attention in the documentation of food marketing on childhood obesity is the retail food store environment. While an emerging body of literature suggests that improving the availability and accessibility of healthful food options via the retail food environment has great potential for creating sustainable dietary change in

communities (NAEYC & SRCD 2008), few studies have explored how food marketing mediates this relationship. Previous studies report that shopping at or living in close proximity to a large supermarket or grocery store is associated with increased fruit and vegetable intakes while convenience store proximity is negatively associated with fruit and vegetable consumption, even after controlling for individual- or family-level characteristics (Rose & Richards, 2004; Morland, Wing, & Diez-Roux, 2002; Zenk et al., 2005; Zenk et al., 2009; Pearce, Hiscock, Blakely, & Witten, 2008). Most of these studies, however, have not included food marketing as an explanatory variable. Due to the increasing amount of time children spend shopping with their parents (~3 h per week for 3-to-8-year olds) (O'Daugherty, Story, & Stang, 2006; Hofferth & Sandberg, 2001) and the influence of children's requests on family purchasing habits (O'Daugherty et al.; Atkin, 1978; Galst & White, 1976), it is clear that this omission constrains a more complete understanding of the role the retail food environment plays in shaping dietary behaviors. A study by O'Dougherty et al. (2006) found that 50% of children shopping in supermarkets with their parents initiated a request for specific foods, and that the majority of these requests were for sweets or snacks influenced by brand loyalty and marketing techniques. The authors noted effective refusal strategies by parents most of the time, but found that the shopping experience was not used to educate children about food and nutrition, and that in some instances, parents initiated the purchase of nutrient-poor foods (O'Dougherty et al.). This illustrates the importance of the retail food store environment as a setting where families negotiate the influence of food and beverage marketing on purchasing practices that influence dietary behaviors. Additionally, this also suggests that retail food stores might be an important component of novel and systematic approaches for tackling childhood obesity in the USA.

The focus on the retail food environment is also important for addressing the disproportionately higher rates of overweight and obesity among low income and racial/ethnic minority groups. From an environmental perspective, these groups are at elevated risk for obesity due to higher media use (e.g., TV viewing) and residence in neighborhoods saturated with commercial food advertising and limited healthy food options (Strum, 2005; Yancey et al., 2009; Larson, Story, & Nelson, 2009; Zenk et al., 2006). As low-income families may have inadequate resources to overcome the environmental barriers that contribute to poor dietary choices, studies examining how marketing influences these choices in the retail food environment will be critical for developing effective interventions and advocating for policy changes that reduce childhood obesity rates.

A potentially confounding effect may be the different types of parenting strategies effective in low-income families as compared to strategies used in middle class families. If parents are to be empowered to be effective gatekeepers of the food that comes into their home, it is important to recognize that there are cultural variations in how families interact around food choice and manage eating behaviors. Although there is a longstanding tradition in developmental science that parents that are highly involved, provide considerable verbal reasoning to their children about their

parenting decisions, and encourage autonomy will have children who fare better both emotionally and physically (Petit, Bates, & Dodge, 1997). However, recent research suggests that there is considerable variation across ethnic groups in parenting practices such that some groups may take more permissive or authoritarian approaches and their children still fare well (McWayne, Owsianik, Green, & Fantuzzo, 2008; Rodriquez, Donovick, & Crowley, 2009). When considering guidance for parents to take charge of their food environment, it will be important to consider not only the marketed environment but also how they connect with food and their families.

A particular concern is the omnipresence of televisions in the areas where children eat. Families who routinely watch television during their mealtimes have children and adolescents who tend to consume less nutrient-rich foods (Coon, Goldberg, Rogers, & Tucker, 2001; Feldman, Eisenberg, Neumark-Sztainer, & Story, 2007). There are several possible explanations for this relation. First, sheer exposure to food advertisements while eating may promote choice of less healthy foods even at an early age (Borzekowski & Robinson, 2001). Over time, the combination of television during meals and exposure to food advertising may create menus dense in fast foods, sweetened beverages, and lean in vegetables. A second possible mechanism is that the presence of television detracts from positive forms of interaction during meals. Emerging research indicates that families that are able to communicate positively during meals are less likely to have children who are overweight or obese (Jacobs & Fiese, 2007). Although the precise mechanism has not been fully explicated, it is possible to speculate that meals that include measured conversation are also more evenly paced and less likely to include rushed eating habits. Finally, it is important to consider why families find it necessary or soothing to have the television on during meals. Embedded in a survey conducted by the Centers for Disease Control and Prevention, mothers with young children who reported that they had the television on during meals said they often did so to reduce conflict at the table (Centers for Disease Control and Prevention, 2007). Thus, as a behavior management strategy, television becomes a distractor and rather than having parents monitor children's behavior (and perhaps their eating behaviors), the television is the center of attention.

In sum, while the literature demonstrates an association between food and beverage marketing and dietary behavior (Kunkel et al., 2004), most studies have been limited to the role of the television inside the home (Institute of Medicine, 2006; Fiese & Schwartz, 2008; Harrison & Marske, 2005; Elliott, 2007). Little is understood, however, about how food and beverage marketing to children and their families in the broader nutrition environment shapes purchasing behavior and ultimately, dietary intake. In this chapter, we hope to address this gap in the literature by (a) examining mechanisms used by marketers to influence food preferences among children, including exposure to food marketing via television and digital media; (b) exploring the reinforcement of marketing exposure via visual cues in food stores, and (c) exploring options for policy and environmental interventions/solutions.

Mechanisms of Persuasion

Theoretical Framework

While several theories have been used to explain the mechanisms through which marketing influences children, social cognitive theory (SCT), with the emphasis on triadic reciprocity, seems to best capture the interaction between environmental stimuli ("marketing") and children's cognitive ability to process their exposure. The mechanisms behind this relationship require some elaboration. Jordan and Robinson (2008) compared research on four different mechanisms proposed to link television viewing to child obesity (i.e., metabolic slowdown, displacement of physical activity, excessive energy intake due to eating while viewing, and excessive energy intake due to advertising of obesogenic foods) and concluded that the strongest and most consistent evidence to date exists for advertising obesogenic foods, followed by excessive energy intake due to eating while viewing. Regarding advertising effects, social cognitive theory (Bandura, 2002) offers a description of how observational learning via exposure to rewarded or unpunished behaviors on the part of media characters or models may encourage modeling of the depicted behaviors. In the case of food advertising, plentiful and visually appealing depictions of delicious-looking foods enjoyed by happy, satisfied people present an alluring vision of the rewards to be had by consuming advertised foods. Content analysis shows that even in advertisements aimed at children, foods are depicted as having addictive properties (i.e., producing exaggerated pleasure sensations and dependency), especially high-sugar foods (Page & Brewster, 2009). Further, preschool children are developmentally limited in their ability to distinguish commercials from program content (Kunkel et al., 2004), so they are unlikely to view food advertising with a critical eye. Even for those who do have some sense of advertising's purpose, it is the rare preschooler who can buy his or her own food. Rather, preschoolers exert their power over their dietary intake primarily in the form of refusals and requests (a.k.a. the "nag factor," see Morton, Stanton, Zuppa, & Mehta, 2005). These requests are not inconsequential; the national purchase influence of 2- to 14-year-old children is estimated at $500 billion annually (Institute of Medicine, 2006). Still, it is the parents and other caregivers who stock the pantry and provide the universe of foods from which young children may choose.

Accordingly, there are several ways parents may act as intermediaries between household media exposure and preschooler dietary habits. First, consistent with social cognitive theory (Bandura, 2002), parents also may engage in observational learning of eating behaviors via the advertisements they see when viewing child-oriented content with their children, or when viewing adult-oriented content with or without their children. In this case, one would expect exposure to stimulate increased parental purchasing of advertised foods, which are largely obesogenic and unhealthful. Second, regardless of the route by which unhealthful foods make their way into the family pantry, the mechanism described by Jordan and Robinson (2008) as "excessive energy intake due to eating while viewing" identifies a process by which screen media exposure may increase the likelihood that these foods are chosen by both parents and

children over healthier alternatives for consumption during and after viewing. Harris, Bargh and Brownell (2009) found support for TV effects on appetitive priming in a study showing that children exposed to snack food advertisements ate more of a non-advertised snack food while viewing the program in which the advertisements had been embedded than did children who had been exposed to nonfood advertisements embedded in the same program. A follow-up study with adults showed that those who had been exposed to snack food advertisements ate more of a variety of foods, especially obesogenic foods, during a post-exposure taste test than those who had been exposed to advertisements for healthful foods (who actually ate less than a no-advertising control group; Harris et al., 2009). Third, what appears to be a causal relationship between child media exposure and child consumption of unhealthful foods may in fact be a spurious one produced by a third factor, one we might call "parental indulgence." Parents who have trouble limiting their children's media consumption may also have trouble limiting their children's intake of sugar-sweetened beverages, snack foods, sweets, and other enjoyable but unhealthful foods. These effects may be compounded when education and race are taken into account. African-American children and children of parents who have a high-school education or less are more likely to watch four or more hours of television per weekday. (Trends, 2010)

In all likelihood, these mechanisms (and others) are operating simultaneously. The first two (social learning leading to increased parental food purchasing and appetitive priming leading to increased child food intake during and after media exposure) have been supported by ample research (see Institute of Medicine, 2006, and Jordan & Robinson, 2008, for summaries). The third mechanism is harder to isolate and observe. If "parental indulgence" was largely responsible for the link between child TV exposure and child consumption of unhealthful foods, then children's use of multiple media—not just TV—should be correlated with their dietary habits, because parents who are reluctant to set dietary limits should also be reluctant to set limits on *all* types of media use (e.g., DVD/VHS, video games, and computer/Internet). However, with the possible exception of video game playing, which has been correlated with BMI in children aged 1–12 (Vandewater, Shim, & Caplovitz, 2004), TV has been more strongly and consistently linked to child overweight than any other medium. However, the association between various forms of digital media and child weight status has not been explored as extensively in the literature. There is evidence to suggest, however, that the digital environment is increasingly serving as a medium for influencing food choices among children.

With advergames, for example, the persuasion effects of embedded brands in games are mainly based on two different processes. First, on conditioning, where the positive experience of the game is frequently combined with the brand. Therefore, evaluative (emotional) conditioning is happening (De Houwer, 2007; De Houwer, Baeyens, & Field, 2005; De Houwer, Thomas, & Baeyens, 2001; Kroeber-Riel, 1984), where an emotional stimulus (the enjoyable gaming situation) is combined with a neutral stimulus (brand). When conditioned, every time the brand is seen, the emotional experience will also be remembered and a positive feeling towards the brand increases. A separate but related process may occur when persons in a good mood or feeling positive tend to evaluate subjects and objects more positively (Bagozzi, Gopinath, & Nyer, 1999). As

the gaming situation usually is pleasing, game players will evaluate not only the game more positively, but they may also evaluate the embedded brand more positively. This classic affect transfer is also well known in traditional advertising research (e.g., Bagozzi, Gopinath, & Nyer, 1999; Batra & Stayman, 1990; Brown & Stayman, 1992; Lutz, McKenzie, & Belch, 1983; MacKenzie, Lutz, & Belch, 1986).

Another way that games may more implicitly persuade is related to the procedural rhetoric of the game (Bogost, 2007). The basic idea of this concept is that compared to explicit messages of traditional media, games offer the possibility of integrating the message less explicitly and in the winning conditions. In essence, the persuasive claims can be inserted into the games via interaction. For instance, Pringles promotes the flavors of the potato chips by asking players to collect ingredients (http://www.groovyglider.com), which is a winning condition, as the player gathers the most points when collecting the correct ingredients. Through this activity, the player learns the different flavors and establishes related brand beliefs (Waiguny, Nelson, & Terlutter, 2012).

Cartoon and Spokes-Characters

In order to engender brand loyalty among children, many advertisers use anthropomorphized cartoon and spokes-characters (Calcott & Lee, 1994; Phillips, 1996; Phillips & Gyoerick, 1999) that evoke positive emotions associated with various products. Briefly, branded spokes-characters can be defined as "fictional, animate beings or animated objects that have been created for the promotion of a product, service or idea"; Phillips, 1996, p.146. Popular cartoon characters such as Dora the Explorer or SpongeBob SquarePants® from children's television shows or movies are also licensed to market foods to children (Roberto, Baik, Harris, & Brownell, 2010). In commercial practice, original spokes-characters such as Tony the Tiger™ or licensed characters such as Spiderman® are used to attract attention and convey the unique attributes of the character to the brand. For instance, the Pillsbury Doughboy™ was found to be exciting, whereas Aunt Jemima™ was viewed as nurturing (LeBel & Cooke, 2008). Marketers carefully craft the image of the character with the attributes desired among the target audience. Research shows that such strategies impact memory and purchases. In a free recall task among children, the most frequently mentioned characters were for sugary cereals such as Tony the Tiger™, Toucan Sam®, and Captain Crunch (LeBel & Cooke, 2008). Some research with children in experimental studies shows additional impact of characters on health claims and perceived product taste. For example, children aged 5–7 who saw a character on the box liked the cereal more than the identical cereal in a box without a character (Lapierre, Vaala, & Linebarger, 2011). Further, Waiguny, Nelson, and Terlutter (2010) asked children aged 7–10 to play an advergame (custom-made digital games designed especially to promote a company's brand or products; Youn & Lee, 2005) for Nesquik cereal featuring a bunny spokes-character who gained power by collecting the cereal grain symbols. They found that liking the

advergame influenced children's attitude towards the Nesquik brand directly. The children also believed that the brand was healthy because the spokes character avatar became more powerful from the cereal which children attributed toward health in real life. In sum, research suggests that spokes characters can attract attention, convey, and transfer personality qualities to the food product, and influence perceived taste and product choice.

Exposure

Television

Although young children today are inundated with various forms of media in the home, the television remains the primary medium through which they are exposed to marketing messages (Roberts & Foehr, 2004). This is not surprising, as almost all children in the US live in a home with a television, with approximately 71% of them having access to one in their bedrooms (Rideout, Vandewater, & Wartella, 2003; Anderson & Butcher, 2006). As a consequence, the average American child spends more hours watching TV than in school, with the youngest children (aged 0–6) spending as much time watching TV (73%) as they do reading or being read to by an adult or other caregiver (79%) on a typical day (Rideout et al., 2003). While a reduction in the exposure to food advertisements to children and adolescents decreased between 2003 and 2009, most advertisements are still for high-calorie convenience foods, fast foods, and soda, with very few for fruits and vegetables (Powell, Schermbeck, Szczypka, Chaloupka, Braunschweig, 2011; Harrison & Marske, 2005; Stitt & Kunkel, 2008). In a content analysis of food advertisements that aired during television shows heavily viewed by children, Harrison and Marske (2005) found that convenience foods and sweets comprised 83% of all advertised foods. Additionally, "snacking" was the most common "meal" depicted in most ads, with few for ads breakfast, lunch, or dinner (Harrison & Marske, 2005). Most disconcerting, however, was the finding that if children were to consume the foods most commonly advertised to them, they would exceed USDA recommended daily values (RDVs) of sodium, and add up to a cup of sugar to their daily diets (Harrison & Marske, 2005).

In addition to marketing nutrient-poor foods, TV also provides an opportunity for food and beverage companies to introduce cartoon and spokes characters, as well as company logos to children (Institute of Medicine, 2006; Kinsky & Bichard, 2011). Since most young children cannot read, the television allows companies to use symbolism to educate children about their brands and ingrain a sense of loyalty at an early age (Institute of Medicine, 2006; Kinsky & Bichard, 2011). This may occur through product tie-ins with television shows or movies, as well as product placement (Moore, 2006; Speers, Harris, & Schwartz, 2011). A recent analysis by Speers et al. (2011) of food and beverage product placement on television in 2008 showed that over the course of the year, Cocoa Cola products were seen almost 200 times by young children.

Digital Media

Increasingly, food marketers are looking to digital environments to promote their products. One popular way to do so is by sponsoring games. Advergames are specially designed to promote a company's brand or products (Youn & Lee, 2005), which combine two key elements: the brand and entertainment (Kretchmer, 2004). The main aims of advergames are to deliver a message for the advertised brand and to achieve higher traffic on brand websites (Santos, Gonzalo, & Gisbert, 2007). Advergames are usually offered free of charge and are downloadable from the company's website. They are "casual games": easy to learn, simple to play, offering quick rewards with forgiving game play, which makes for a quick, fun experience (Kuittinen, Kultima, Niemelä, & Paavilainen, 2007). Hence, advergames are branded casual games, which can be downloaded or played for free from a company's website or a high-traffic website.

An analysis of websites of the top 100 companies in the US revealed that more than half of the games featured food products (Lee & Youn, 2008). Other content analysis studies have reported that advergames on food brand websites (Lee, Yoonhyeung, Quilliam, & Cole, 2009; Moore, 2006; Moore & Rideout, 2007) are primarily targeting children with "less healthy" foods. Most of these games are created with fun as the main objective to build consumer relationships with the game and the brand (Lee & Youn; Santos et al., 2007). Critics and regulators have placed increased attention on the use of advergaming to promote (unhealthy) food products to children (Institute of Medicine of the National Academies 2006; Moore, 2004; Thomson, 2010).

From Television and Digital Media to Food Stores

Although food marketing targeted at children has been more extensively studied via television and the internet, there are several reasons to conduct extensive marketing evaluations of the retail food store environment. First, children are exposed to marketing in food stores at a very young age. According to John (1999), children begin:

> their exposure to the marketplace…as soon as they can be accommodated as a passenger in a shopping cart at the grocery store. ….infants and toddlers are exposed to a variety of stimuli and experiences, including aisles of products, shoppers reading labels and making decisions, and the exchange of money and goods at the checkout counter. These experiences, aided by developing cognitive abilities that allow them to interpret and organize their experiences, result in an understanding of marketplace transactions (John, 1999, p. 192).

In fact, several studies suggest an increase in the amount of time children spend shopping with their parents (~3 h per week for 3-to-8-year olds) (O'Daugherty et al., 2006) and the influence of children's requests on family purchasing habits (O'Daugherty et al., 2006; Ebster, Wagner & Neumueller, 2009). A study by O'Dougherty et al. (2006) found that 50% of children shopping in supermarkets with their parents initiated a request for specific foods and that the majority of these requests were for sweets

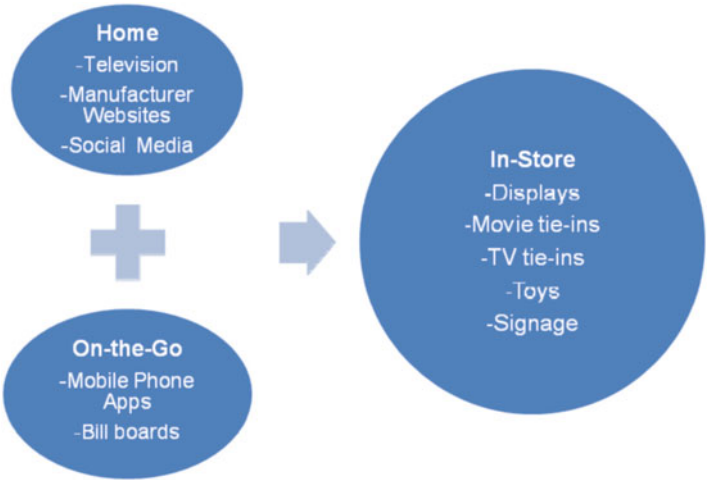

Fig. 15.1 Sectors of influence and marketing techniques used to reach consumers before and during in-store purchases based on examples from a 2009 Grocery Manufacturers Association Report

or snacks influenced by brand loyalty and marketing techniques. Additionally, Ebster et al. (2009) found that children are more persuasive in their requests for food items in supermarkets if they are easily consumed (e.g., candy) or include giveaways such as toys. These studies illustrate the importance of the retail food store environment as a setting where families negotiate the influence of food and beverage marketing on purchasing practices that influence dietary behaviors.

Second, food and beverage companies increasingly view the retail environment as a critical medium for content delivery, with a goal towards reaching people when they are in a buying mode. A 2009 Grocery Manufacturers Association Report describes "shopper marketing" – programs and promotions that collectively influence consumers "on the path to purchase" in the retail environment (Grocery Manufacturers Association, 2009). Specific sectors of influence and marketing techniques include the *home environment* (e.g., television), *on-the-go* (e.g., mobile phone apps, billboards), and *in-store* (e.g., displays, movie-tie ins) (Fig. 15.1).

These shopper-marketing programs are considered to be effective with respect to purchasing food and beverage in the retail environment due to influences on brand selection and shopping behaviors in and out of the store environment. Survey research indicates that 67% of the consumers are influenced by various marketing techniques out-of-the store (TV commercials/shows/movies: 32%, online coupons: 45%, websites: 17%, blogs: 16%, social media: 12%) when selecting specific brands to purchase in-store (Grocery Manufacturers Association, 2009). Companies also have an opportunity to influence food and beverage purchases in-store, as consumers also indicate that product displays (28%) and signage (40%) may influence whether they actually purchase a specific product in the retail environment (Grocery

Manufacturers Association, 2009). Shopper marketing has become so successful, a 2011 Robert Wood Johnson Foundation/The Food Trust report noted, that it is one of the fastest growing areas in the food retail marketing budget, and accounted for about 21% of the budget for manufacturers and 26% for retailers (Robert Wood Johnson Foundation, 2011). As the VP of Shopper Marketing for ConAgra noted in the trade publication, Advertising Age, more people are exposed to point of purchase advertising and promotions than major television events, suggesting that while major sitcoms had finales once a year, people are…."walking through Walmart every week." (Bryson, 2010) ConAgra now spends 20% of their advertising and promotions budget on shopper marketing, shopper insights, and in-store marketing, Saatchi has a psychologist and anthropologist on staff to understand shopper behavior, and Kraft, Campbell's Soup, and Wal-Mart have all rolled out research programs to gain insights into how shoppers interact with brands and promotions in-store (Bryson, 2010).

Third, although several companies have signed on to the Children's Food and Beverage Advertising Initiative (CFBAI) to either refrain from marketing to children under 12, or to market healthier foods to this age group, retail food stores are not included as one of the settings for this initiative (Better Business Bureau, 2011). Consequently, food and beverage companies are free to continue "marketing as usual" to children and adolescents without any oversight.

In sum, food and beverage companies are increasing their efforts to use the retail food store environment to market their products to consumers. Brand cues such as in-store signage and displays, as well as other marketing techniques have been shown to influence point-of-purchase selections. Although most empirical evidence linking food marketing to child weight status has focused on television, and more recently, digital media, the retail food store is an important medium, as young children are being exposed to marketing techniques as part of family shopping routines.

Case Study- Investigating Food Marketing in Retail Food Stores in Illinois

Given the increased importance of retail food stores as a critical medium for marketing targeted to children and families, (Grigsby-Toussaint et al., 2011) investigated the presence or absence of 78 items commonly marketed to youth on television or the internet across 118 food stores located in Central Illinois. Stores were classified either as grocery stores (i.e., stores with both fresh produce and meat sections) or convenience/corner stores for data analysis. Following similar procedures from a previous study (Grigsby-Toussaint et al., 2010), stores were designated as being in Black or *White* neighborhoods (census block groups) based on US census 2010 estimates (U. S. Census Bureau 2010). On average, 76% of the residents of *White* neighborhoods were White, while the mean concentration of Blacks in *Black* neighborhoods was 53%.

In order to investigate marketing techniques, packaging on food items were evaluated for specific claims (e.g., nutrition or taste), the presence of cartoon characters, information on giveaways, the inclusion of toys, or statements regarding suggested use (e.g., "great as a lunchbox treat"), or convenience (e.g., "ready-to-eat pudding snacks").

Audit Instrument and Data Collection Procedures

Adapted from an existing instrument by Chapman, Nicholas, Banovic and Supramaniam (2006), an audit tool was developed and tested for use in the study area. The 78 items included on the instrument were based on competitive media reports and a literature review of items commonly advertised to youth on television and the internet (Institute of Medicine, 2006; FTC, 2008; Moore, 2006). Items were categorized as (1) breads and pastries, (2) breakfast cereals, (3) candy and gum, (4) chips, (5) cookies and crackers, (6) dairy, (7) fruit and cereal bars, (8) ice cream, (9) prepared foods (e.g., lunchables), (10) sodas, and (11) non-carbonated drinks (e.g., juices).

Data Analysis

A *marketing to availability (M:A)* ratio was calculated to determine how often marketing techniques were utilized when an item was available. Chi-square tests were used to test for differences in the *M:A* ratio between store types and neighborhoods. SPSS version 16.0 was used to run all analyses.

Results

Figure 15.2 summarizes how often items were available and had marketing techniques (M:A ratio) observed on packaging across neighborhoods and store types. Grocery stores (57.5%) and stores located in Black neighborhoods (56.6%) were the most likely to have marketing techniques on the packaging of items targeted at youth and families (Grigsby-Toussaint, et al., 2011). Given the wide selection of foods available at grocery stores, this observation was not unexpected. Although Black neighborhoods did not have as many grocery stores, a higher prevalence of available items with evidence of marketing was observed compared to stores in White neighborhoods (Grigsby-Toussaint et al., 2011).

Figure 15.3 summarizes the distribution of marketing techniques on selected items that were evaluated as part of the study. Overwhelmingly, non-carbonated drinks (97.7%) were most likely to have some marketing technique present on packaging, followed by fruit and cereal bars (76.9%), soda (62.2%), dairy products (55.5%) and prepared foods (49.5%). Although not presented in figure 15.2 or 15.3, across all

Fig. 15.2 Percent of available items with marketing techniques targeted to youth across store types and neighborhoods

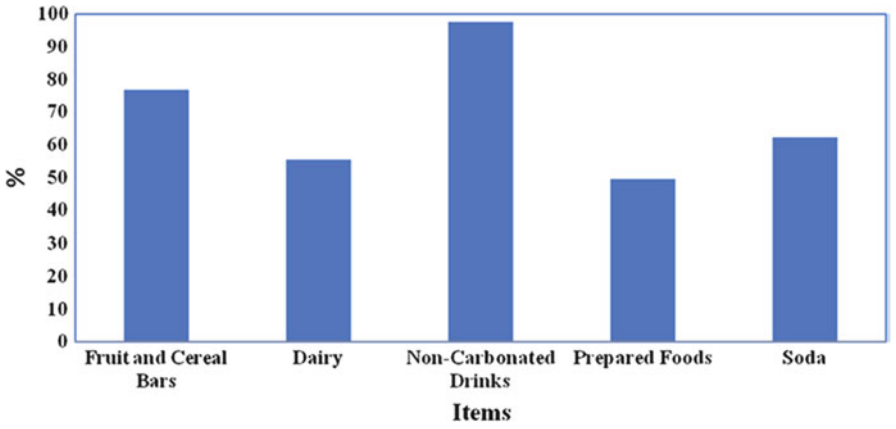

Fig. 15.3 Percent of selected items with marketing techniques targeted to youth in retail food stores

stores, nutrition (92%) and taste (90%) claims were the most common. Tie-ins for television shows (72%) were observed more often than tie-ins for movies (63.5%), but this was not significantly different between store types or neighborhoods.

Case Study Summary

This investigation of marketing in food stores in Central Illinois found that foods commonly promoted to youth on television and the internet were often available and marketed in food stores. Given estimates that some youth are exposed to more

than 4000 advertisements via television per year, primarily for foods of poor nutritional content (Harris et al., 2009; Moore 2006), the retail food store environment may conceivably reinforce preferences for energy dense foods. A study by Borradaile et al. (2009), for example, showed that urban elementary school children were most likely to purchase energy-dense foods from corner stores (Borradaile et al., 2009), further bolstering the importance of food stores as sites for targeted childhood obesity interventions (e.g., working with stores to change the placement of certain items). Additionally, the observation that specific foods are more commonly marketed in stores located in Black neighborhoods is also of particular concern. This finding suggests that youth residing in these neighborhoods have increased exposure to food marketing, in addition to limited healthy food options (Grigsby-Toussaint et al., 2010), thus placing them at higher risk for obesity.

Areas for Intervention

In order to effectively counter marketing targeted at children and families, public health advocates will have to work in all areas utilized by major food and beverage companies to influence purchasing behaviors (Fig. 15.4). For example, in the food store environment, retailers can increase the marketing of healthier food alternatives, while parents can reduce screen time in the home environment. Specific examples for potential interventions are highlighted below.

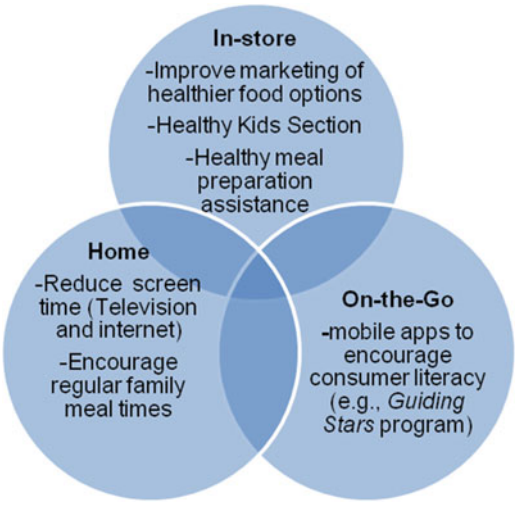

Fig. 15.4 Potential areas for intervention to counter shopper marketing programs that influence consumer choices in the retail food store environment

Food Stores

A Robert Wood Johnson/Food Trust (2011) report highlighted several successful interventions in the retail food store environment to encourage healthy eating. These include the Snack Smart program in Philadelphia, where community partnerships resulted in the development of marketing material that could be placed on doors and windows inside food stores to highlight healthier snacks and beverages. In another example, the Baltimore Healthy Stores project successfully negotiated the promotion of specific food items at different times based on the needs of both community residents and store owners (Gittelsohn, Suratkar, Song, Sacher, et al., 2010). In this case, foods were promoted around specific themes, e.g., healthy breakfast (low-sugar cereals), healthy beverage (water), rather than having all food types promoted at the same time (Gittelsohn et al., 2010).

Another interesting food store intervention, undertaken by Hannaford supermarkets, involves using a front-of-package nutrition labeling system to assist consumers with locating healthy food options (Robert Wood Johnson Foundation, 2011). The *Guiding Stars*® system uses a star rating system to indicate foods with the highest nutritional value, and is currently undergoing licensing procedures for use on social media websites in addition to mobile application formats.

Although these are successful examples of in-store interventions intended to improve the consumption of healthier food options, each community would be well served to hold discussions to determine which modifications to food stores would also reap (financial) benefits for store owners. In the study area of the lead author, displays for children's lunches were typically elaborate and bereft of fruits and vegetables (Fig. 15.5), while on rare occasions, fruits and vegetables were found with some targeted marketing for families (Fig. 15.6). Discussions in this community then could conceivably focus on reversing this trend, with community-based organizations highlighting stores encouraging fruit and vegetable consumption, and stores using sales data to examine potential improvements in their bottom line.

Media/Advertising Literacy

Media literacy can help children to critically evaluate commercial messages and then, quite possibly, circumvent persuasion influences. According to Moses and Baldwin (2005), in order to understand advertising, children need to (1) know when they are viewing advertisements to guard against them; and (2) recognize the purpose of advertising, with the understanding that there are many purposes in mind (e.g., selling intent, preference, etc.). Such knowledge has been encapsulated in the persuasion knowledge model (Friestad & Wright, 1994), which predicts that as audiences gain knowledge about persuasion attempts, they may be able to ignore or counter argue against the attempt as a way to cope.

Fig. 15.5 Nabisco's popular Oreo cookies are advertised in the familiar setting of a children's school bus. The "Pack a smile" logo encourages parents to include Oreo cookies in their children's lunch to make them happy. These elaborately designed and appealing packages and kiosks are rarely used to advertise fresh fruits and vegetables

Fig. 15.6 The Chiquita bananas pictured here are relatively free of advertising, although Chiquita, somewhat unique to fruit and vegetable suppliers, does include labels with slogans on their fresh fruit

A handful of studies have tested the influence of advertising literacy ("persuasion knowledge") on persuasion with children. For instance, after children aged 8–11 played a Nesquik chocolate cereal advergame, their recognition that the advergame was an advertisement and their recognition of the specific brand were assessed (i.e., persuasion knowledge) (Waiguny, Nelson, & Terlutter, 2012). However, the results showed that persuasion knowledge (understanding the advergame's commercial intent) only negatively influenced brand attitudes for the featured brand when the children were under-challenged by the game (Waiguny, Nelson, & Terlutter, 2012). For those children who were optimally challenged and having fun, critical evaluation of the brand did not occur. This finding suggests that the fun of the game may supersede any literacy effects.

One of the ways to increase media literacy of a specific persuasion attempt is to create clear and conspicuous disclosures of the advertising. In digital settings such as advergames, disclosures come in the form of an 'ad break' (e.g., from Applejacks.com *KIDS:* This page may contain a product or promotion advertisement).

A study by An and Stern (2011) tested whether persuasion knowledge would be activated when children (aged 8–11) saw or heard an "ad break" (disclosure) while playing an advergame. Their results showed that even though the ad breaks did not increase children's persuasion knowledge, the breaks did reduce the children's recall of and preference for the embedded brand.

Using Media to Create Preferences for Healthy Foods

Another way to promote healthy food is to use the same successful persuasion techniques used by marketers of junk food (e.g., advergames; Dias & Agante, 2011; Hernandez & Chapa, 2010; Pempek & Calvert, 2009). For example, researchers have found that after children (aged 9–10) played a healthier version of Pac-Man (where players were awarded/penalized points for consuming nutritious/less nutritious snacks), they were more likely than those who played a less healthy version to select and eat more healthier snacks after game play than those in the less healthy condition (Pempek & Calvert). Similar results were obtained among children (aged 7–8) in Portugal (Dias & Agante). That is, directly after playing a game that featured healthy or unhealthy foods, children were more likely to choose the type of food featured in the game. Therefore, the growing body of research on the persuasive power of advergames, especially with children, seems to suggest a direct response of playing the game on more favorable attitudes, preference, and choice for the embedded products or brands – at least in the short term directly after game play.

Family Mealtimes

Families can play an important role in reducing the effects of food marketing on their children. Taking charge of mealtimes has the potential to have profound effects. Families that regularly eat together reduce their child's odds of being overweight by 12% and increases their odds of eating healthy foods by 24% (Hammons & Fiese, 2011) Yet, these are difficult settings for many parents to manage. In surveys of barriers to sharing meals together, parents report that being able to plan ahead, controlling children's behavior, dealing with picky eating, and conflict at the table often get in the way of a pleasant mealtime (Fulkerson, Story, Neumark-Sztainer, & Rydell, 2008; Quick, Fiese, Anderson, Koester, & Marlin, in press). In order to convince parents to turn off the television while eating together, it will be important to give them the tools to more effectively manage behaviors commonly experienced during mealtimes. An initiative developed by the Family Resiliency Center at the University of Illinois has created public service announcements and supporting materials to address common mealtime dilemmas such as sibling conflict (http://familyresiliency.illinois.edu/MealtimeMinutes.htm). Other programs to promote positive mealtimes have identified the need to include tips on how to reduce TV watching during meals (Fulkerson et al., 2011). In order to fully capture the health potential of mealtimes, it is essential to give families the tools they require to regain control of this important event. It may not be sufficient to tell families to turn off the TV if they are overwhelmed with work responsibilities, have inadequate cooking skills, and feel powerless in controlling their children's behavior. A proactive stance in recognizing these barriers may assist families in making healthier choices for their children.

Summary

Emerging empirical evidence suggests that the retail food store environment is increasingly becoming an important medium for the food and beverage industry to target children and families with various marketing techniques. Due to family routines which involve food shopping, young children may more often be exposed to marketing via the retail environment, even if parents prohibit television and digital media exposures. Improving our understanding of in-store marketing, as well as other promotions undertaken outside of the stores, is critical for curbing the purchase of energy-dense foods with low-nutritional value that increase obesity risk among children and their families.

References

An, S., & Stern, S. (2011). Mitigating the effects of advergames on children. *Journal of Advertising, 40*(1), 43–56.

Anderson, P. M., & Butcher, K. F. (2006). Childhood obesity: Trends and potential causes. *The Future of Children, 16*, 19–46.

Applejacks.com. http://www.applejacks.com. Accessed 25 Sep 2011.

Atkin, C. (1978). Observation of parent–child interaction in supermarket decision making. *The Journal of Marketing, 42*, 41–45.

Bandura, A. (2002). Social cognitive theory of mass communication. In J. Bryant & D. Zillmann (Eds.), *Media effects: Advances in theory and research* (2nd ed., pp. 121–154). Mahwah, NJ: Erlbaum.

Bagozzi, R., Gopinath, M., & Nyer, P. (1999). The role of emotions in marketing. *Journal of the Academy of Marketing Science, 27*(2), 184–206.

Batra, R., & Stayman, D. M. (1990). The role of mood in advertising effectiveness. *The Journal of Consumer Research, 17*(2), 203–214.

Bogost, I. (2007). *Persuasive games: The expressive power of video games*. Cambridge: MIT Press.

Borradaile, K. E., Sherman, S., Vander Veur, S. S., McCoy, T., Sandoval, B., Nachmani, J., et al. (2009). Snacking in children: The role of corner stores. *Pediatrics, 124*(5), 1293–1298.

Borzekowski, D. L., & Robinson, T. N. (2001). The 30-second effect: An experiment revealing the impact of television commercials on food preferences of preschoolers. *Journal of the American Dietetic Association, 101*(1), 42–46.

Brown, S. P., & Stayman, D. M. (1992). Antecedents and consequences of attitude toward the ad: A meta-analysis. *The Journal of Consumer Research, 19*, 34–51.

Calcott, M. F., & Lee, W. (1994). A content analysis of animation and animated spokes-characters in television commercials. *Journal of Advertising, 23*, 1–12.

Chapman, K., Nicholas, P., Banovic, D., & Supramaniam, R. (2006). The extent and nature of food promotion directed to children in Australian supermarkets. *Health Promotion International, 21*, 331–339.

Child Trends. (2010). *Watching television*. Retrieved from http://www.childtrendsdatabank.org/?q=node/261. Conference summary: The Wingspread Conference on Childhood Obesity, Healthy Eating and Agriculture Policy (2007). Retrieved January 5, 2009, from http://www.healthyeatingresearch.org/images/stories/her_wingspread/1wingspreadsummary.pdf.

Control, C. f. D. (2007). Childhood obesity. Retrieved from http://www.cdc.gov/nccdphp/dnpa/obesity/childhood.

Connor, S. M. (2006). Food-related advertising on preschool television: Building brand recognition in young viewers. *Pediatrics, 118*(4), 1478–1485.

Coon, K. A., Goldberg, J., Rogers, B. L., & Tucker, K. L. (2001). Relationships between use of television during meals and children's food consumption patterns. *Pediatrics, 107*, e7.

Council of Better Business Bureaus (CBBB). (2011). The children's food and beverage advertising initiative in action. The US children's food and beverage advertising initiative fact sheet. http://www.bbb.org/us/children-food-beverage-advertising-initiative/. Accessed 25 Sep 2011.

Crespo, C. J., Smit, E., Troiano, R. P., Bartlett, S. J., Macera, C. A., & Andersen, R. E. (2001). Television watching, energy intake, and obesity in US children: Results from the Third National Health and Nutrition Examination Survey, 1988–1994. *Archives of Pediatric Medicine, 155*, 360–365.

De Houwer, J. (2007). A conceptual and theoretical analysis of evaluative conditioning. *The Spanish Journal of Psychology, 10*(2), 230–241.

De Houwer, J., Baeyens, F., & Field, A. P. (2005). Associative learning of likes and dislikes: Some current controversies and possible ways forward. *Cognition and Emotion, 19*(2), 161–174.

De Houwer, J., Thomas, S., & Baeyens, F. (2001). Associative learning of likes and dislikes: A review of 25 years of research on human evaluative conditioning. *Psychological Bulletin, 127*(6), 853–869.

Dias, M., & Agante, L. (2011). Can advergames boost children's healthier eating habits? A comparison between healthy and non-healthy food. *Journal of Consumer Behaviour, 10*(3), 152–160.

Dietz, W. H. (1998). Health consequences of obesity in youth: Childhood predictors of adult disease. *Pediatrics, 101*(3 Pt 2), 518–525.
Dijksterhuis, A., Smith, P. K., van Baaren, R. B., & Wigboldus, D. H. J. (2005). The unconscious consumer: Effects of environment on consumer behavior. *Journal of Consumer Psychology, 15*(3), 193–202.
Ebster, C., Wagner, U., & Neumueller, D. (2009). Children's influences on in-store purchases. *Journal of Retailing and Consumer Services, 16*(2), 145–154.
Elliott, C. (2007). Against happiness. *Medicine, Health Care, and Philosophy, 10*(2), 167–171.
Federal Trade Commission. (2008, July). *Marketing food to children and adolescents: A review of industry expenditures, activities, and self-regulation* [Report to Congress]. Retrieved from http://www.ftc.gov/opa/2008/07/foodmkting.shtm.
Feldman, S., Eisenberg, M., Neumark-Sztainer, D., & Story, M. (2007). Associations between watching TV during family meals and dietary intake among adolescents. *Journal of Nutrition Education and Behavior, 39*, 257–263.
Fiese, B. H., & Schwartz, M. B. (2008). *Reclaiming the family table: Mealtimes and children's health and wellbeing*. Washington, DC: Society for Research In Child Development.
Freedman, D. S., Dietz, W. H., Srinivasan, S. R., & Berenson, G. S. (1999). The relation of overweight to cardiovascular risk factors among children and adolescents: The Bogalusa Heart Study. *Pediatrics, 103*, 1175–1182.
Friestad, M., & Wright, P. (1994). The persuasion knowledge model: How people cope with persuasion attempts. *The Journal of Consumer Research, 21*(1), 1–31.
Fulkerson, J. A., Story, M., Neumark-Sztainer, D., & Rydell, S. (2008). Family meals: Perceptions of benefits and challenges among parents of 8- to 10-year-old children. *Journal of the American Dietetic Association, 108*, 706–709.
Fulkerson, J. A., Kubik, M. Y., Rydell, S., Boutelle, K., Garwick, A. W., Story, M., et al. (2011). Focus groups with working parents of school-aged children: What's needed to improve family meals? *Journal of Nutrition Education and Behavior, 43*(3), 189–193.
Galst, J. P., & White, M. A. (1976). The unhealthy persuader: The reinforcing value of television and children's purchase-influencing attempts at the supermarket. *Child Development, 47*, 1089–1096.
Gittelsohn, J., Suratkar, S., Song, H., Sacher, S., Rajan, R., Rasooly, I.R., et al. (2010). Process evaluation of Baltimore health stores: A pilot health intervention program with supermarkets and corner stores in Baltimore City. 1–10. *Health Promot Pract, 11*(5) 723–732.
Grigsby-Toussaint, D. S., Zenk, S. N., Odoms-Young, A., Ruggiero, L., & Moise, I. (2010). Availability of commonly consumed and culturally specific fruits and vegetables in African-American and Latino neighborhoods. *Journal of the American Dietetic Association, 110*, 746–752.
Grigsby-Toussaint, D., Moise, I. K., & Geiger, S. D. (2011). Observations of marketing on food packaging targeted to youth in retail food stores. *Obesity, 19*(9), 1898–1900.
Grocery Manufacturers of America. (2009). Shopper Marketing 3.0; Unleashing the Next Wave of Value. http://www.gmaonline.org/downloads/research-and-reports/Booz_Ci_GMA_Shopper_Marketing_3.0.FIN_LR.PDF. Accessed online Sept 2011.
Groovyglider.com. http://www.groovyglider.com/. Accessed 25 Sep 2011.
Halford, J. C. (2004). Clinical pharmacotherapy for obesity: Current drugs and those in advanced development. *Current Drug Targets, 5*(7), 637–646.
Halford, J. C., Boyland, E. J., Hughes, G., Oliveira, L. P., & Dovey, T. M. (2007). Beyond-brand effect of television (TV) food advertisements/commercials on caloric intake and food choice of 5-7-year-old children. *Appetite, 49*(1), 263–267.
Hammons, A., & Fiese, B. H. (2011). Is frequency of shared family meals related to the nutritional health of children and adolescents? A meta-analysis. *Pediatrics, 127*(6), e1565–e1574.
Health, T. f. A. s. (2008). *F as in fat: How obesity policies are failing in America.* Washington, DC: Trust for America's Health.
Harris, J. L., Bargh, J. A., & Brownell, K. D. (2009). Priming effects of television food advertising on eating behavior. *Health Psychology, 28*(4), 404–413.

Harris, J. L., Pomeranz, J. L., Lobstein, T., & Brownell, K. D. (2009). A crisis in the marketplace: How food marketing contributes to childhood obesity and what can be done. *Annual Review of Public Health, 30*, 211–225.

Harrison, K., & Marske, A. L. (2005). Nutritional content of foods advertised during the television programs children watch most. *American Journal of Public Health, 95*(9), 1568–1574.

Hastings, G., Stead, M., McDermott, L., Forsyth, A., MacKintosh, A. M., Rayner, M. et al. (2003). *Review of the research on the effects of food promotion to children*. Glasgow, Scotland: Center for Social Marketing.

Hernandez, M. D., & Chapa, S. (2010). Adolescents, advergames and snack foods: Effects of positive affect and experience on memory and choice. *Journal of Marketing Communications, 16*, 59–68.

Hofferth, S. L., & Sandberg, J. F. (2001). How American children spend their time. *Journal of Marriage and Family, 63*, 295–308.

Institute of Medicine (U.S.), & Committee on Health Food Marketing and the Diets of Children and Youth. (2006). *Food marketing to children and youth: Threat or opportunity?* Washington, DC: National Academy Press.

Jacobs, M. P., & Fiese, B. H. (2007). Family mealtime interactions and overweight children with asthma: Potential for compounded risks? *Journal of Pediatric Psychology, 32*(1), 64–68.

John, D. R. (1999). Consumer socialization of children: A retrospective look at 25 years of research. *The Journal of Consumer Research, 26*, 183–213.

Johnson-Taylor, W. L., & Everhart, J. E. (2006). Modifiable environmental and behavioral determinants of overweight among children and adolescents: Report of a workshop. *Obesity, 14*(6), 929–966.

Jordan, A. B., & Robinson, T. N. (2008). Children, television viewing, and weight status: Summary and recommendations from an expert panel meeting. *The Annals of the American Academy of Political and Social Science, 615*, 119–132.

Khaodhiar, L., McCowen, K. C., & Blackburn, G. L. (1999). Obesity and its comorbid conditions. *Clinical Cornerstone, 2*(3), 17–31.

Kinsky, E. S., & Bichard, S. (2011). Mom! I've seen that on a commercial!" US preschoolers' recognition of brand logos. *Young Consumers: Insight and Ideas for Responsible Marketers, 12*(2), 145–158.

Kretchmer, S. B. (2004). Advertainment: The evolution of product placement as a mass media marketing strategy. *Journal of Promotion Management, 10*(1/2), 37–54.

Kroeber-Riel, W. (1984). Emotional product differentiation by classical conditioning (with consequences for the "low-involvement hierarchy"). *Advances in Consumer Research, 11*, 538–453.

Kuittinen, J., Kultima, A., Niemelä, J., & Paavilainen, J. (2007). *Casual games discussion*. Paper presented at the Proceedings of the 2007 Conference on Future Play.

Kunkel, D., Wilcox, B. L., Cantor, J., Palmer, E., Linn, S., & Dowrick, P. (2004). *Psychological issues in the increasing commercialization of childhood.* Report of the APA Task Force on Advertising and Children. Washington, DC: American Psychological Association.

Lapierre, M. A., Vaala, S. E., & Linebarger, D. L. (2011). Influence of licensed spokescharacters and health cues on children's ratings of cereal taste. *Archives of Pediatrics & Adolescent Medicine, 165*(3), 229–234.

Larson, N. I., Story, M. T., & Nelson, M. C. (2009). Neighborhood environments: Disparities in access to healthy foods in the US. *American Journal of Preventive Medicine, 36*, 74–81.

LeBel, J. L., & Cooke, N. (2008). Branded food spokescharacters: consumers' contributions to the narrative of commerce. *The Journal of Product and Brand Management, 17*, 143–153.

Lee, M., Yoonhyeung, C., Quilliam, E. T., & Cole, R. T. (2009). Playing with food: Content analysis of food advergames. *Journal of Consumer Affairs, 43*, 129–154.

Lee, M., & Youn, S. (2008). Leading national advertisers' uses of advergames. *Journal of Current Issues & Research in Advertising, 30*, 1–13.

Lutz, R. J., Mackenzie, S. B., & Belch, G. E. (1983). Attitude toward the ad as a mediator of advertising effectiveness: Determinants and consequences. *Advances in Consumer Research, 10*, 532–539.

Mackenzie, S. B., Lutz, R. J., & Belch, G. E. (1986). The role of attitude toward the ad as a mediator of advertising effectiveness: A test of competing explanations. *Journal of Marketing Research, 23*(2), 130–143.

McWayne, C., Owsianik, M., Green, L. E., & Fantuzzo, J. W. (2008). Parenting behaviors and preschool children's social and emotional skills: A question of the consequential validity of traditional parenting constructs for low-income African Americans. *Early Childhood Research Quarterly, 23*, 173–192.

Morland, K., Wing, S., & Diez-Roux, A. (2002). The contextual effect of the local food environment on residents' diets: The atherosclerosis risk in communities study. *American Journal of Public Health, 92*, 1761–1767.

Morton, H., Stanton, R., Zuppa, J., & Mehta, K. (2005). Food advertising and broadcasting legislation: A case of system failure? *Nutrition and Dietetics, 62*(1), 26–32.

Moore, E. S. (2004). Children and the changing world of advertising. *Journal of Business Ethics, 52*, 161–167.

Moore E. S. (2006). *It's child play: Advergaming and the online marketing of food to children*. Kaiser Family Foundation: Menlo Park, CA. http://www.kff.org/entmedia/entmedia071906pkg.cfm. Accessed 30 September 2012.

Moore, E. S., & Rideout, V. J. (2007). The online marketing of food to children: Is it just fun and games? *Journal of Public Policy & Marketing, 26*, 202–220.

Moses, L. J., & Baldwin, D. A. (2005). What can the study of cognitive development reveal about children's ability to appreciate and cope with advertising? *Journal of Public Policy & Marketing, 24*, 186–201.

NAEYC & SRCD (2008). Using research to improve outcomes for young children: A call for action. Final report of the Wingspread Conference, September 18–20, 2007. *Early Childhood Research Quarterly, 23*(4), 591–596.

O'Daugherty, M., Story, M., & Stang, J. (2006). Observations of parent–child co-shoppers in supermarkets: Children's involvement in food selections, parental yielding, and refusal strategies. *Journal of Nutrition Education and Behavior, 38*, 183–188.

Ogden, C. L., & Carroll, M. (2010). Prevalence of obesity among children and adolescents: United States, trends 1963–1965 through 2007–2008. National Center for Health Statistics. Retrieved June 30, 2011 from http://www.cdc.gov/nchs/data/hestat/obesity_child_07_08/obesity_child_07_08.htm.

Ogden, C. L., Carroll, M. D., & Flegal, K. M. (2008). High body mass index for age among US and adolescents, 2003–2006. *Journal of the American Medical Association, 299*, 2401–2405.

Ogden, C. L., Carroll, M. D., Curtin, L. R., McDowell, M. A., Tabak, C. J., & Flegal, K. M. (2006). Prevalence of overweight and obesity in the United States, 1999–2004. *Journal of the American Dietetic Association, 295*, 1549–1555.

Page, R. M., & Brewster, A. (2009). Depiction of food as having drug-like properties in televised food advertisements directed at children: Portrayals as pleasure enhancing and addictive. *Journal of Pediatric Health Care, 23*(3), 150–157.

Papas, M. A., Alberg, A. J., Ewing, R., Helzlsouer, K. J., Gary, T. L., & Klassen, A. C. (2007). The built environment and obesity. *Epidemiologic Reviews, 29*, 129–143.

Pearce, J., Hiscock, R., Blakely, T., & Witten, K. (2008). The contextual effects of neighbourhood access to supermarkets and convenience stores on individual fruit and vegetable consumption. *Journal of Epidemiology and Community Health, 3*, 198–201.

Pempek, T. A., & Calvert, S. L. (2009). Tipping the balance: Use of advergames to promote consumption of nutritious foods and beverages by low-income African American children. *Archives of Pediatrics & Adolescent Medicine, 163*, 633–637.

Petit, G. S., Bates, J. E., & Dodge, K. A. (1997). Supportive parenting, ecological context, and children's adjustment: A seven-year longitudinal study. *Child Development, 68*, 908–923.

Phillips, B. J., & Gyoerick, B. (1999). The cow, the cook, and the Quaker: Fifty years of culture. *The Journal of Popular Culture, 29*(4), 143–156.

Phillips, B. J. (1996). Defining trade characters and their role in American popular culture. *The Journal of Popular Culture, 29*(4), 143–156.

Powell, L. M., Schermbeck, R. M., Szczypka, G., Chaloupka, F. J., Braunschweig, C. L. (2011). Trends in the nutritional content of television food advertisements seen by children in the United States. *Arch Pediatr Adolesc Med, 165*(12):1078–86.

Quick, B. L., Fiese, B. H., Anderson, B., Koester, B., & Marlin, D. W. (in press). A formative evaluation of family mealtime for parents of toddlers and young children. *Health Communication, 26*(7):656–66.

Rideout, V. J., Vandewater, E. A., & Wartella, E. A. (2003). *Zero to six: Electronic media in the lives of infants, toddlers, and preschoolers.* A Kaiser Family Foundation Report. Menlo Park, CA: Kaiser Family Foundation.

Robert Wood Johnson Foundation Report. (2011). *Harnessing the power of supermarkets to help reverse childhood obesity*. http://www.rwjf.org.

Roberts, D. F., & Foehr, U. G. (2004). *Kids and media in America*. Cambridge, UK: Cambridge University Press.

Roberto, C. A., Baik, J., Harris, J. L., & Brownell, K. D. (2010). Influence of licensed characters on children's taste and snack preferences. *Pediatrics, 126*, 88–93.

Robinson, T. N., Borzekowski, D. L., Matheson, D. M., & Kraemer, H. C. (2007). Effects of fast food branding on young children's taste preferences. *Archives of Pediatrics & Adolescent Medicine, 161*(8), 792–797.

Rodriquez, M. M. D., Donovick, M. R., & Crowley, S. L. (2009). Parenting styles in cultural context: Observations of "protective parenting" in first-generation Latinos. *Family Process, 48*, 195–210.

Rose, D., & Richards, R. (2004). Food store access and household fruit and vegetable use among participants in the US Food Stamp Program. *Public Health Nutrition, 7*, 1081–1088.

Sallis, J. F., & Glanz, K. (2006). The role of built environments in physical activity, eating, and obesity in childhood. *The Future of Children/Center for the Future of Children, the David and Lucile Packard Foundation, 16*(1), 89–108.

Santos, E., Gonzalo, R., & Gisbert, F. (2007). Advergames: Overview. *International Journal Information Technologies and Knowledge, 1*, 203–208.

Schrammel, J., Mattheiss, E., Döbelt, S., Paletta, L., Almer, A., & Tscheligi, M. (2011). Attentional behavior of users on the move towards pervasive advertising media. In J. Müller, F. Alt, & D. Michelis (Eds.), Proceedings of Pervasive Advertising. London: Springer.

Speers, S. E., Harris, J. L., & Schwartz, M. B. (2011). Child and adolescent exposure to food and beverage brand appearances during prime-time television programming. *American Journal of Preventive Medicine, 41*(3), 291–296.

Stitt, C., & Kunkel, D. (2008). Food advertising during children's television programming on broadcast and cable channels. *Health Communication, 23*(6), 573–584.

Story, M., & French, S. (2004). Food advertising and marketing directed at children and adolescents in the US. *International Journal of Behavioral Nutrition and Physical Activity, 1*(3), 1–17.

Story, M., Kaphingst, K. M., & French, S. (2006). The role of schools in obesity prevention. *The Future of Children/Center for the Future of Children, the David and Lucile Packard Foundation, 16*(1), 109–142.

Strum R. (2005). Childhood obesity—What we can learn from existing data on societal trends, part 1. *Preventing Chronic Disease* [serial online] 2005 Jan [May 30, 2009]. Available from http://www.cdc.gov/pcd/issues/2005/jan/04_0038.htm.

Thomson, D.M. (2010). Marshmallow power and frooty treasures: Disciplining the child consumer through online cereal advergaming. *Critical Studies in Media Communication*, August, 1–17.

U. S. Census Bureau. (2010). *Race data.* Retrieved July 26, 2010, from http://www.census.gov/population/www/socdemo/race/racefactcb.html

U.S. Department of Agriculture. (2010). *Part D Section 1: Energy balance and weight management. Report of the dietary guidelines advisory committee of the dietary guidelines for Americans, 2010*. Retrieved August 10, 2010 from http://www.cnpp.usda.gov/dietaryguidelines.htm.

Waiguny, M. K. J., Nelson, M. R., & Terlutter, R. (2010). Persuading playfully? The effects of persuasion knowledge and positive affect on children's attitudes, brand beliefs and behaviors. In W.-N. Lee (Ed.), *Proceedings of the 2010 Conference of the American Academy of Advertising* (pp. 67–70). Minneapolis: AAA.

Waiguny, M. K. J., Nelson, M. R., & Terlutter, R. (2012). Entertainment matters! The relationship between challenge and persuasiveness of an advergame for children. *Journal of Marketing Communications, 18*:1, 69–89.

Wang, Y., & Beydoun, M. A. (2007). The obesity epidemic in the united states–gender, age, socioeconomic, racial/ethnic, and geographic characteristics: A systematic review and meta-regression analysis. *Epidemiologic Reviews, 29*, 6–28.

Wiecha, J. L., Peterson, K. E., Ludwig, D. S., Kim, J., Sobol, A., & Gortmaker, S. L. (2006). When children eat what they watch: Impact of television viewing on dietary intake in youth. *Archives of Pediatrics & Adolescent Medicine, 160*(4), 436–442.

Vandewater, E. A., Shim, M., & Caplovitz, A. G. (2004). Linking obesity and activity level with children's television and video game use. *Journal of Adolescence, 27*(1), 71–85.

Yancey, A. K., Cole, B. L., Brown, R., Williams, J. D., Hillier, A., Kline, R. S., et al. (2009). A cross-sectional prevalence study of ethnically targeted and general audience outdoor obesity-related advertising. *Milbank Quarterly, 87*(1), 155–84.

York, Emily Bryson. (April 15, 2010). Shopping aisles at cutting edge of consumer research and tech. *Advertising Age*

Youn, S., & Lee, M. (2005). Advergame playing motivations and effectiveness. In M. R. Stafford & R. J. Faber (Eds.), *Advertising, promotion and new media* (pp. 320–347). Armonk: M.E.Sharpe.

Zenk, S. N., Schulz, A. J., Israel, B. A., James, S. A., Bao, S., & Wilson, M. L. (2006). Fruit and vegetable access differs by community racial composition and socioeconomic position in Detroit. *Michigan, Ethnicity and Disease, 16*, 275–280.

Zenk, S. N., Schulz, A. J., Hollis-Neely, T., Campbell, R. T., Holmes, N., Watkins, G., et al. (2005). Fruit and vegetable intake in African-Americans: Income and store characteristics. *American Journal of Preventive Medicine, 29*, 1–9.

Zenk, S. N., Lachance, L. L., Schulz, A. J., Mentz, G., Kannan, S., & Ridella, W. (2009). Neighborhood retail food environment and fruit and vegetable intake in a multiethnic urban population. *American Journal of Health Promotion, 23*, 255–264.

Zenk, S.N., Grigsby-Toussaint, D. S., Curry, S.J., Berbaum, M., Schneider, L. Short-Term Temporal Stability in Observed Retail Food Characteristics. (2010). Journal of Nutrition, Education and Behavior, 42, 26–32.