Self-regulation and the response to concerns about food and beverage marketing to children in the United States

Parke Wilde

The Institute of Medicine reported in 2005 that food and beverage marketing to children and youth is "out of balance with healthful diets". The dominant policy response in the United States has been to encourage self-regulation by the food, beverage, advertising, and media industries. From a nutrition perspective, this deference to the private sector may seem surprising. This article reviews current economic and legal perspectives on food marketing to children that are motivating the policy decision to attempt a period of self-regulation. The empirical literature on this topic has been reinvigorated by new data on marketing practices and expenditures. The article concludes by considering whether more directive policies are possible in the future.

INTRODUCTION

Childhood obesity ranks high among pressing public health concerns in the United States[1,2] and around the world.[3] Food and beverage marketing is on the list of candidate contributing causes.[4] In the United States in recent years, the dominant public policy response to nutrition concerns about food and beverage marketing to children has been to encourage industry self-regulation with minimal government oversight.[5]

To an observer trained in medicine or nutrition science, this deference to the private sector may seem surprising. When physicians respond to a patient with a serious medical condition, they are accustomed to prescribing a remedy. Some might expect that the federal government, responding to vigorous marketing of high-sugar and energy-dense food during a national epidemic of childhood obesity, similarly would prescribe a public health solution.

To understand the reluctance of the United States government to offer such a prescription, this article focuses on economic and social factors beyond nutrition science. It is well recognized that scientific evidence is just one of several important factors in policy development.[6] This article provides a terse summary of the extent of childhood obesity, the likely effect of marketing on children's food choices, and the history of the debate over public policy responses through 2006. It gives greater attention to the economics of food company decision-making about marketing, the incentive compatibility of recommendations for voluntary industry remedies, the political decision over how to allocate the burden of proof in using scientific evidence for policy purposes, and the changes in the food industry's system of self-regulation that have occurred since 2006. The article's goals are as follows: 1) to make sense of the current policy stance favoring self-regulation in the United States; and 2) to provide the necessary background information to evaluate the current period of self-regulation critically. It concludes by considering whether the current *laissez faire* approach appears to be a stable public policy response, or whether more directive policy responses are possible in the future.

BACKGROUND

The current debate in the United States over food marketing to children has roots dating back 30 years. The Federal Communications Commission (FCC) and the Federal Trade Commission (FTC) share responsibility for

Affiliations: *P Wilde* is with the Friedman School of Nutrition Science and Policy, Tufts University, Boston, Massachusetts, USA.

Correspondence: *P Wilde*, Friedman School of Nutrition Science and Policy, Tufts University, 150 Harrison Ave., Boston, MA 02111, USA. E-mail: parke.wilde@tufts.edu, Phone: +1-617-636-3495, Fax: +1-617-636-2781.

Key words: advertising, children, marketing, obesity, youth

doi:10.1111/j.1753-4887.2009.00183.x

food advertising issues. In the area of advertising, there is tension between the two parts of the FTC's mandate, which is to serve the public interest through appropriate regulation and to promote free and competitive markets. In 1978, in what became known as the "kid-vid" proposal, the FTC requested public comment on several options for proposed rules to remedy the widespread marketing of high-sugar food to children: 1) a ban on television advertising for any product directed at an audience composed largely of children too young to understand the selling purpose of advertising; 2) a restriction just on advertising for particularly unhealthy products (at the time, the concern was dental cavities caused by sugar); and 3) a requirement that healthy messages be provided to balance unhealthy messages.[4,7,8] After three years of heated controversy, the FTC terminated the proposed rulemaking without taking any action. Soon after, Congress removed the FTC's authority to use one of the main legal tools at its disposal, i.e., the argument that food advertising to children is "unfair". Even beyond the specific restrictions on the FTC's authority, the "kid-vid" experience left federal agencies and many U.S. policymakers reluctant to pursue any efforts to limit food marketing to children in the subsequent decades.[7,8]

The matter was left to rest until changes over more than twenty years in the health of U.S. children altered the policy environment in the current decade. High-profile reports on childhood obesity were published by the Surgeon General in 2001 and the Institute of Medicine (IOM) in 2004 and 2006.[1,2] In the account of the most recent of these reports,[2] the prevalence of obesity has grown rapidly since the 1970s, reaching 16% of girls and 18.2% of boys; the prevalence of a borderline weight status, classifying children at risk of obesity, is much higher; rates of obesity-related chronic diseases in children are rising; the annual medical costs for obesity-related illness in children are estimated at $11 billion for private insurance and $3 billion for those with Medicaid; and racial, ethnic, and income disparities in the childhood obesity prevalence and its suspected causal factors raise important questions of social inequality.

Since the 1970s, food and beverage marketing to children has also been transformed. The level of television advertising for food and beverages, noted at the time of the "kid-vid" proposal, has remained high and continues to focus on "low nutrition" products.[9] In the most recent FTC estimates, based on data acquired from leading food and beverage companies using federal powers of subpoena, $1.6 billion was spent in 2006 on food marketing and promotion directed at children and adolescents, of which $745 million was for television advertising.[10] The leading products advertised on television continue to be caloric carbonated beverages, fast-food restaurants, and sweetened breakfast cereals. Meanwhile, since the 1970s, new technologies have been invented and developed into major marketing tools. The FTC report explained how new media – "the Internet, digital (such as email and text messaging), and word-of-mouth/viral marketing" – are used in conjunction with traditional advertising and promotion to communicate a well-coordinated brand message.[10]

The Institute of Medicine's report, *Food Marketing to Children and Youth: Threat or Opportunity?*, marked a turning point in the public debate when it was released in 2005 and published formally in 2006.[4] Building in part on recent reviews of the research literature,[11] the report summarized the evidence from 123 research studies of the consequences for children's food choices and health outcomes. The report drew some distinctions in the strength of evidence for particular claims.[12] For example, it contrasted stronger evidence for the effect of television advertising against a smaller body of research on other marketing methods, and it differentiated the strong evidence on proximate outcomes, such as children's attitudes and food choices, from the smaller body of research on more distant outcomes, such as long-term weight gain. Still, the carefully worded conclusion was clear: "Food and beverage marketing practices geared to children and youth are out of balance with healthful diets and contribute to an environment that puts their health at risk."

Concern was heard from many sectors of civil society. The Center for Science in the Public Interest had already recommended restrictions on advertising high-calorie, low-nutrition foods and beverages.[13] The American Academy of Pediatrics in 2006 called for members to respond in several ways to the onslaught of food marketing, including contacting their Congressional representatives to support a restriction on "junk-food" advertising during programming that is viewed predominantly by young children.[14] The American Psychological Association in 2004 recommended a restriction on all television advertising targeting children younger than 7 or 8 years, on grounds that these children cannot yet understand an advertiser's persuasive intent.[15]

In contrast with these policy proposals, the 2005 IOM report on food marketing recommended voluntary commitments by the food and advertising industries to change marketing practices (recommendations 1–5), and that progress be monitored by a federal agency designated by the Secretary of Health and Human Services (recommendation 10).[4] One easily overlooked sentence in the report (in the fourth bullet following recommendation 8), considered the possibility of a stronger Congressional policy response in the future: "If voluntary efforts related to advertising during children's television programming are unsuccessful in shifting the emphasis away from high-calorie and low-nutrient foods and beverages to the advertising of healthful foods and beverages, Congress should enact legislation mandating the shift on both broadcast and cable television."[4]

National governments in several other countries regulate advertising. For example, since the early 1990s, Norway and Sweden have banned television advertisements aimed at children ages 12 years and younger.[4] The 2005 IOM report noted the absence of a comprehensive evaluation of possible obesity-reducing-effects of these policies.[4] In 2007, France required advertisements for processed foods high in added sugars and fats to be accompanied by a nutrition message, unless the advertiser chooses to pay a financial penalty instead. The United Kingdom in 2007 banned advertising of foods high in fat, sugar, and salt on television programs that appeal to children younger than 16 years of age.[16]

In 2005, the FTC held the first of two workshops on food marketing to children. In her opening comments, FTC chairman Deborah Platt Majoras emphasized parental responsibility and the "tremendous benefits" of "effective self-regulation".[5] In 2006, a high-profile joint task force on media and childhood obesity was announced, with participation from Senator Sam Brownback, Senator Tom Harkin, FCC Chairman Kevin J. Martin, Commissioners Deborah Taylor Tate and Michael Copps, leading industry organizations, and public interest groups, but a planned report and recommendations have not been released to date.[17] In the U.S. Congress, several bills have proposed to reinstate the FTC's authority to regulate food advertising to children, or to have the Institute of Medicine recommend guidelines that the FTC could use in overseeing such advertising. None of these bills have passed.[16] The system of industry self-regulation discussed below is the main policy response to date in the United States.

ECONOMIC AND LEGAL ANALYSIS

The economic and environmental causes of childhood obesity distinguish this health condition from diseases that can be addressed with an individual-level treatment. A large source of difference in contemporary views about the right policy response to food marketing arises from differences in economic and legal perspectives, rather than differences in understanding of the scientific facts.

Economic perspective

Proposed government policy solutions to address food marketing often are weighed against the countervailing advantages of accepting market outcomes. As economist Paul Krugman put it, "In today's America, proposals to do something about rising obesity rates must contend with a public predisposed to believe that the market is always right and that the government always screws things up".[18] Some economists follow the free market line of thought to a destination that many scientists and medical professionals would find absurd, characterizing weight status as merely a free choice between desirable foods and sedentary behavior today and health outcomes years in the future.[19,20] In this view, as technological change has lowered the real cost of producing food and reduced the need for human energy expenditure in daily living, people rationally choose to gain weight.

The broader current of the economic literature recognizes childhood obesity as a problem and considers many possible justifications for government intervention to address food marketing to children.[21,22] An influential body of economic theory argues that, except in conditions of market failure, market outcomes are Pareto Optimal, which means that each person's interests are served as well as can be achieved without hurting another person's interests. Although the ideal conditions required by this theory are not met in real-world settings, many economists still find this theory useful as a way of organizing their thoughts about the merits of government policies. In this view, one should consider policy responses more favorably in situations of market failure, and defer to market outcomes in many other situations. The term market failure does not imply that markets actually cease functioning. Rather, it describes conditions under which market outcomes are not guaranteed to serve the public interest.

Economists have listed many market failures as justifications for government action to address food marketing to children. One of the market failures most commonly mentioned is the externality that medical expenditures for obesity-related medical treatments impose on the people who share in paying for insurance programs.[21–24] However, this market failure could be cited in the context of almost any personal decision that affects health, so it may be too broad to be useful in critically assessing the relative merits of particular government policies to influence food marketing.

Several other market failures are more relevant and specific for motivating a government response on food marketing issues. Three illustrative examples from the recent literature are given here. First, food marketers may fail to provide sufficient information about their products, or they may mislead children and their parents about the products' benefits.[21–24] Second, in contrast with adults, children cannot be expected to defend their own interests in the marketplace with rationality and foresight.[15,21–24] Third, children are obliged by law to spend long hours in a school environment, so neither their marketing exposure nor their food purchases from a monopoly provider in that setting can be described as free choices.[25]

Economist John Cawley presents the following argument: "An important advantage of the economic framework of obesity is that it has a clear goal: to eliminate market failures".[21] To achieve a public health goal in an economically efficient manner, one quite imaginative proposal suggests leaving companies free to choose their own changes in marketing practices, while holding them responsible for the overall effectiveness of the changes, somewhat in the spirit of "cap-and-trade" systems for regulating air pollution.[26] Though critics sometimes characterize the economic perspective as capitulation to business interests,[27] it pays attention to the interests of both consumers and producers. The main implication of the economic perspective is not to rule out government responses or to cave in to business interests, but rather to pose some specific questions about how well a proposed government response compares to market-based alternatives.

Legal perspective

Proposed policy solutions are subject to both political and legal scrutiny. In the United States, the political scrutiny depends in part on public opinion. There is evidence that public concern about food marketing and childhood obesity is rising, although parents hold somewhat paradoxical views about industry and parental responsibility in this area. The most recent in a series of annual WSJ.com/Harris Interactive surveys found that 76% of parents in 2007 agreed or strongly agreed that advertising by the food industry to children is a major contributor to childhood obesity, up from 69% of parents two years earlier. At the same time, 81% of parents in 2007 agreed or strongly agreed with a statement that assigned blame to parents rather than food industry advertising, down from 86% two years earlier. Among parents, 60% in 2007 said the government should do more to regulate food advertising to children, up from 55% two years earlier.[28]

Even where they have political support, proposed policy solutions also are weighed against the legal rights of people and businesses whose interests would be affected. After considering the option of regulating food marketing to children, the FTC workshop report concluded: "[T]ailoring such restrictions to conform to First Amendment constraints could present significant challenges."[5]

However, it would be mistaken to exaggerate the Constitutional constraints. The First Amendment protections for commercial speech have been strengthened over the course of several legal decisions in recent years, but they remain less stringent than the Constitutional protections for political speech.[4,7] The most influential doctrine used by the Supreme Court in deciding questions about restrictions on commercial speech is called the *Central Hudson* test.[4,7,29] According to this standard, the government is permitted to restrict commercial speech if the product is unlawful or the advertisement is deceptive. An advertisement that would not deceive an adult may nevertheless be misleading when directed toward children who cannot understand its persuasive intent.[4] Even if the product is legal and the speech is not deceptive, the *Central Hudson* test permits restrictions that advance an important public interest and are no more extensive than necessary to serve that interest. Preventing childhood obesity clearly is an important public interest, so the current legal frontier is defining exactly how rigorously the government must prove that a proposed restriction is "no more extensive than necessary".[4,29] In recent years, the Supreme Court has struck down several government attempts to regulate non-deceptive advertising, because they failed to meet this last standard.[4]

The *Central Hudson* test provides a useful vehicle for thinking systematically about which of the public policy responses to address food marketing to children are Constitutional. Five examples from the recent literature illustrate the classes of policies that remain permissible. First, restrictions on marketing practices beyond advertising, similar to rules about how tobacco products can be sold, are not restrictions on speech. The government may still have to prove that a regulation is reasonable, but this standard is more lenient than the justification required for a restriction on speech.[30] Second, restrictions on product placements and character marketing could be permissible if it can be shown that these practices deceive children. The *Central Hudson* test does not protect deceptive speech.[31] Third, the Constitutional protection of commercial speech may apply less strictly to symbolic marketing about brands and their trademarks than to advertising that communicates factual information.[4,29,32] Fourth, restrictions may be more permissible for broadcast television and radio than for other media, because the broadcast frequencies are "a scarce resource" that broadcasters "hold in trust for the general public".[4] Fifth, so long as a school district avoids certain kinds of inconsistent rules that would raise concerns about reasonableness (such as restricting advertising for products that are permitted for sale in schools), it seems clear that the Supreme Court will defer to school districts on rules for advertising at school.[33]

Supporters of a *laissez faire* approach to food marketing emphasize that "concerns about children's welfare do not justify reducing all discourse to a level deemed appropriate for children".[7] Supporters of a stronger policy response suggest instead that the *Central Hudson* test can be treated "not as an elaborate ruse for the erection of uncrossable barriers to the regulation of commercial speech, but as a template for carefully reviewing the rationale and appropriateness of commercial speech regulations".[29] First Amendment scrutiny raises a series of reasonable legal questions, which can be answered well by some, but not all, proposed policy responses.

Human rights and ethical perspectives

Alternative perspectives on public policy choices are yet more broadly favorable to strict regulations against food and beverage marketing to children. A proposed policy-making framework called the Sydney Principles interprets the United Nations Convention on the Rights of the Child to include a "right to freedom from obesity".[34] This document, by a working group of the International Obesity Task Force (IOTF), a think tank and advocacy arm for the International Association for the Study of Obesity, describes the alternative to a human rights approach as a "risk-benefit perspective" that favors "corporate profits" over "children's health".[34] In this view, the correct policy response to limit food marketing to children is necessarily "statutory in nature" rather than self-regulatory.

Schwartz and Brownell[35] describe a "toxic environment" caused by food marketing to children. Similarly, Parmet and Smith[29] describe marketing as similar to an environmental "nuisance", such as pollution from a manufacturing plant, which can be remedied legally and Constitutionally using the government's "police powers". Moodie et al.[24] explore "extra welfarist" arguments for stronger government action, by which they mean arguments that do not fall within the traditional welfare economics framework outlined above. For example, they question whether individuals are sufficiently rational in their food decisions to merit the deference their preferences are given under the market approach.

In some views, food marketing to children is not just insufficiently regulated, but more fundamentally unethical. A recent review by Hawkes[16] of policy responses in other countries reported that increased attention to the ethics of food marketing has helped motivate new rules by some national governments, with less need to focus on scientific issues for justification: "Arguably, then, it is only if food marketing becomes viewed as unethical – by exploiting and deceiving young people into buying food products that may harm them – that restrictions will emerge, whatever the evidence".

A framework for decision-making

If all food marketing to children were accepted by the public and the federal government in the United States as inherently unethical, akin to a human rights violation or an environmental toxin, it would shift the burden of proof by reducing the need to answer economic questions about market failures or legal questions about Constitutionality. Alternatively, if these economic and legal questions remain salient in the US policy discussion, as seems likely, a reasonable decision-making framework gives greatest credence to those policy options that best solve market failures and pass legal hurdles, such as the *Central Hudson* test.

The economic and legal perspectives help in understanding the current policy priorities of governments. The evidence base on the effects of television advertising is larger than the evidence base on marketing in school settings.[16] Yet, policies to address marketing in school settings are more feasible, because of the special economic and legal status of schools. Similarly, Hawkes[16] noted that many governments are attempting systems of self-regulation, "despite the lack of evidence that self-regulation is any more effective at preventing the growth of obesity". The motivation for trying self-regulation is related more closely to the economic and legal considerations than to the scientific evidence base.

A period of self-regulation may be important in future policy development. If the attempt at self-regulation succeeds, it remedies concerns about unhealthy food and beverage marketing to children without imposing unnecessary economic burdens or restraints on free speech. If self-regulation fails, the attempt still has the advantage of strengthening the evidence that market failures persist and building the case that a more directive policy response is "no more extensive than necessary" to serve an important public interest.

PRIVATE SECTOR INCENTIVES FOR BRANDING AND MARKETING

The success of self-regulation is constrained by the incentives facing firms or businesses. The collective behavior of an industry, such as "food manufacturers" or "quick-serve restaurants," represents the sum of decisions by individual firms pursuing their own business goals, not the wisdom of a decision-maker who represents the industry as a whole. The firm's goal is profit. Brian Wansink (current director of United States Department of Agriculture's Center for Nutrition Policy and Promotion) and Mike Huckabee (former Arkansas Governor and Republican Presidential primary candidate in 2008) write, "It is important that well-meaning critics understand that food companies are not focused on making people fat; they are focused on making money".[36] For public corporations in particular, actions by management to pursue goals other than profit expose the company to shareholder lawsuits.[37] Any proposal for a voluntary industry response to childhood obesity will fail if it is not compatible with the profit incentives faced by the industry's member firms.

For food manufacturers, chain restaurants, and food retailers in the United States, the profitability of firms depends centrally on marketing and advertising practices. The economic model of a perfectly competitive firm, which must decide only how much of a commodity to produce and what inputs to use, does not apply to most of the US food industry beyond the farm gate. Neither does the model of a monopoly or a cartel, in which the firm's interest agrees with the industry's interest, apply to most of the US food business, which is, in practice, highly competitive. Rather, a hybrid model known as monopolistic competition offers the best guide to understanding most decision-making by food and beverage companies in the United States.

In this industry structure, each firm is the monopoly producer of branded products, and the intensity of a firm's competition with other firms is a matter of degree.[38] The firm competes most intensely with competitors that are "nearby" in a psychological "marketing space", which describes how similar brands are to each other. Some customers will be loyal to one firm's brand, while other customers are nearly indifferent between multiple brands. A firm under perfect competition commonly has an "upward-sloping supply function", which means it has an incentive to increase sales in response to an increased price. By contrast, a firm under monopolistic competition has a strong profit incentive to sell a larger quantity even at the current market price. Key business goals include attracting new customers and increasing the brand loyalty, purchase frequency, and quantity purchased for existing customers.

These goals are served by advertising and marketing branded products. Tillotson writes: "In many ways, the food industry today is organized around the pivotal role that the mega-brands fill in what Americans eat and drink."[39] A large body of literature advises business executives on how to use branded marketing to enhance profitability. The leading marketing text by Kotler and Armstrong[40] instructs marketers not to leave their brand's position in the marketing space to chance, but instead to "plan positions that will give their products the greatest advantage". They note further: "All the company's marketing mix efforts must support the positioning strategy". The positioning strategy may rely on creating a "point of difference" in the consumer's mind, between a branded product and its competitor, even if an independent observer might see the products as similar.[41]

The firm's advertising message necessarily addresses the consumer's own goals and preferences, ranging from biological tastes for high-fat and high-salt foods to social desires to be "cool" or accepted by peers. Misplaced hopes for voluntary changes in advertising practices could be generated by an exaggerated assessment of advertisers' power to manufacture wants. "Advertisers themselves object to this characterization," write Schor and Ford,[32] "arguing that they cannot create desire out of whole cloth, but are merely evoking pre-existing desires and preferences that already lurk inside the consumer." Kotler and Armstrong[40] write: "Marketers are most effective when they appeal to existing wants rather than when they attempt to create new ones." Companies cannot freely choose to market just any new product with lower sugar or fat over an existing product, but must instead respond to consumer tastes and remain consistent with a brand's psychological positioning. "Understandably," Tillotson[39] points out, "food companies are leery of any change in the taste of consumer-loved mega-brands."

Since the 1970s, marketing to children and their parents has become a core part of overall marketing strategy. James McNeal, a pioneer in this area of marketing, writes: "The plain fact of the matter is that businesses have only two major sources of new customers: either they are switched from competitors, or they are developed from childhood. . . . If children are made to feel warm and fuzzy about a store or brand or product, they will bond with it."[42] Though a strong proponent of food marketing to children, McNeal is critical of marketing that deceives kids or their parents. He reports the explanation marketers give for such practices: "Competition does it, so we have to." McNeal's definition of deception includes obvious cases such as misleading terms of purchase or false claims of health benefits. It also includes practices such as using spokespersons or spokescharacters "to deceive kids into thinking that the product must be good if famous people say it is" or "that the kids also can be like those persons if they consume the packaged product".[43] Marketers increasingly use this type of symbolic marketing, emphasizing the "coolness" of the product over factual claims about specific product attributes, to increase a product's appeal to children and youth.[32]

Some analyses express high hopes for voluntary industry action. For example, the 2005 IOM report asks food, beverage, and marketing companies and trade associations to "use their creativity" and "assume transforming leadership roles" to improve marketing practices.[4] At the FTC's 2007 workshop, chairman Majoras suggested that market competition would encourage non-participating companies to join the efforts of those companies that are already changing their marketing practices.[44] Majoras' hopes for the role of market competition would make sense only if restrained advertising were actually more profitable at the firm level. The preceding discussion suggests instead that market competition generates strong incentives for vigorous marketing to children.

Desrochers and Holt raise the possibility that proposed public policy alternatives could themselves have unintended consequences in the marketplace. They ask two questions about proposed restrictions on food advertising to children: "1) Where would the food advertisements go; and 2) what would fill the void left on children's programs?".[45] Food advertisers that are determined to reach child audiences can find them in large numbers watching family and adult programming that would not be covered by any of the voluntary restrictions on food marketing to children. Meanwhile, other advertisers promoting sedentary activities such as movies, toys, and video games could bid for the advertising time on children's shows. The bleak implication is that incentives for unhealthy advertising are powerful; the settings are plentiful; and most proposed policy responses cover only some of these settings. One might conclude from Desrochers and Holt's article that restraint on marketing is futile; alternatively, one might conclude that a regulatory or self-regulatory response must be binding and comprehensive to be effective.

RECENT DEVELOPMENTS IN ASSESSING THE EFFECT OF MARKETING

The literature through 2005 on the effects of marketing and advertising has already been summarized more thoroughly than can be accomplished here.[4,46,47] Recently, Chou, Rashad, and Grossman[46] linked data on fast-food restaurant advertising by metropolitan area with obesity outcomes and a wide variety of control variables from the National Longitudinal Survey of Youth (NLSY) in the late 1990s. To illustrate the magnitude of their estimates quantitatively, they estimated that an advertising ban on television would reduce the number of overweight children aged 3–11 in a fixed population by 10%.

Such literature is just one of two main sources of evidence commonly cited for the effect of marketing.[16] The other source is the simple fact that marketing to children is expensive and yet widespread. At the 2005 FTC workshop on food marketing, Senator Tom Harkin tartly summarized this line of reasoning: "[C]orporate America doesn't spend $12 billion a year on advertising aimed at kids because it likes to throw money away."[48]

Brand switching or demand expansion

Individual firms would have a strong incentive to advertise if advertising merely caused consumers to switch from a competitor's brand, without necessarily raising the level of consumer demand for a whole category of products. It is only the latter outcome that raises concerns about promoting overconsumption and obesity. One frontier of economic research on the effect of marketing and advertising focuses on distinguishing brand-switching effects from demand-expanding effects.

Based on older research by Bolton in 1983, Zywicki et al.[20] in 2004 expressed doubt that most food advertising to children expanded demand overall. Variations on this argument arise in much subsequent commentary by critics of government intervention to address food marketing concerns, but without empirical evidence one way or the other.[23] Richards and Padilla[49] estimate a model of promotional marketing in the restaurant industry, where each restaurant firm competes for brand share in an attribute space. The model allows consumer preferences to be "intertemporally non-separable", which means that changes in consumer demand could have a persistent character, as would happen if consumers developed strong brand loyalties or became addicted to a particular consumption pattern. Based on a large-scale survey of 12,000 households in Canada, Richards and Padilla[49] estimated that a comparatively small share of one brand's sales increase in response to promotional marketing came at the expense of other brands, while "the principal effect is to cause fast-food consumers to purchase more often, or buy more on each visit".

Paradoxically, if it were true that brand switching were the principal effect of marketing, then it would be easier for food and beverage companies to accept governmental restrictions on advertising. In this case, such restrictions would enhance company profitability by allowing companies to avoid large advertising expenses with no net loss of average sales. When food and beverage industry organizations object strenuously to proposed restrictions, the objection may reflect their own assessment that marketing and advertising really have demand-expanding effects.

Recent estimates of advertising exposure

Another area of active research offers improved estimates of and details about children's food advertising exposure. A study published in 2007 by FTC staff used proprietary Nielsen data collected in 2004 from electronic boxes on televisions in the homes of a nationally representative sample of households.[9,45] The researchers compiled data on nearly one million national advertisements and nearly five million spot advertisements in particular markets. The study included all television shows watched by children, not just children's programming. Estimates of exposure were weighted so that advertisements seen by more children counted more heavily. Children ages 2–11 years watched 25,600 advertisements on average in 2004, of which 5500 – or 15 per day – were for food or beverages. This figure is similar to an estimate of 5600 food and beverage advertisements per year for children, from a report by the Kaiser Family Foundation, using 2005 data and a somewhat different methodology.[50] Only half of the food advertisements in the FTC analysis were on shows whose audience was composed mostly of children. The other half of children's food advertising exposure was on "family" programming or even programming intended for adults.[9] The leading categories of food advertising seen by children were for restaurants and fast food, cereals (of which 84% of ads were for sweetened cereal), and desserts and sweets (of which 52% of ads were for candy). The FTC researchers reported that in 2004 children in the United States saw, on average, 1400 advertisements for fast food and restaurants; 132 advertisements for beer, wine, and mixers; 16 advertisements for vegetables and legumes; and 0 advertisements for fresh fruit.[9]

A sideline debate about these estimates centers on whether food advertising exposure is rising or falling. In a 2004 article, Zywicki et al.[20] expressed doubt that children were exposed to increased levels of television advertising, compared to earlier periods, which he interpreted to suggest that advertising does not contribute to the growing problem of childhood obesity. The 2007 FTC report compared the new estimates for 2004 to earlier estimates using a different methodology in 1977. The executive summary to the new report said: "Our data do not support the view that children are seeing more advertising for low nutrition foods." By including a rough estimate of food ads that were missing from the sampling frame in earlier studies, the FTC researchers estimated that children's total exposure was 6084 ads per year, on average, in 1977. By this measure, advertising exposure fell 9% by 2004. For cereals and desserts, which were heavily advertised in 1977, it is clear that advertising exposure fell. For restaurants and fast food, by contrast, advertising exposure was higher in 2004.[9]

A longer reference period offers a different perspective on the meaning of the gentle downward time trend in television advertising at the 2004 time point. In the 1950s, fewer than 2% of households in the United States had televisions.[46] By 1977, there had been a dramatic increase in children's advertising exposure. By 2004, television advertising exposure had fallen back by perhaps a few percentage points, while children also saw advertisements in a wide variety of newer electronic media. Children in the United States were exposed to historically novel and persistently high levels of advertising for high-sugar and energy-dense foods and beverages during the decades that the rates of childhood obesity increased.

A more recent study found a continuation of the modest improvements. The average number of food advertisements per hour of children's programming was estimated to fall from 10.9 advertisements per hour in 2005 to 8.5 advertisements per hour in 2007.[51] The reduction was greater on broadcast television than on cable channels. The study classified foods according to nutritional criteria of the United States Food and Drug Administration (FDA) into three tiers, ranked from least healthy to most healthy as "whoa", "slow", and "go". The fraction of all foods in the "whoa" category was 84% in 2005 and 79% in 2007. The fraction in the "go" category was approximately 3% in 2005 and 4.2% in 2007.[51]

THE CURRENT SYSTEM OF SELF-REGULATION

The system of self-regulation includes several components. The Children's Advertising Review Unit (CARU) oversees voluntary principles guiding how products are advertised. The newer Children's Food and Beverage Advertising Initiative oversees voluntary principles guiding what foods may be advertised to children under the age of 12 years. Some companies participate separately in recent voluntary initiatives offering self-regulation of food and beverage marketing in school settings. Finally, some companies have independently instituted their own voluntary guidelines for marketing to children, although individual firm-level practices are not always considered industry self-regulation.

Children's Advertising Review Unit

The CARU was established in 1974 and is funded by companies that advertise. The unit is administered by the Council of Better Business Bureaus (CBBB), and its policies are set jointly by the CBBB and three major advertising trade associations. CARU addresses advertising in media targeted to children under the age of 12 years, a jurisdiction that includes children's magazines and television programs, but not family television programming, which is also viewed by large numbers of children. Broadly, CARU asks advertisers not to be untruthful, misleading, or inappropriate for the target audience of children.[52]

CARU's guidelines ask advertisers to avoid specific narrowly defined practices. For example, spokescharacters from one children's television show should not be used in advertisements on the same show, but may be used in other advertisements; sweepstakes prizes may be used to attract children, but the prize should not be given more emphasis than the product itself. An advertisement should not mislead children by saying that consuming a food will result in growth, power, or intelligence, although communicating this message symbolically may be acceptable if the link is sufficiently tangential. The guidelines ask advertisers to encourage "responsible use" of food and beverages, for example, by showing cereal along with the rest of a breakfast.[52]

In 2006, responding to discussion at the FTC's 2005 workshop, CARU guidelines were updated to authorize review of "unfair" advertising practices, explicitly address advertising in online games, address "blurring" of advertising mixed with programming content, to encourage display of appropriate serving sizes, and to prohibit disparagement of healthy food and lifestyles. It remains to be seen whether the review of "unfair" practices opens an avenue for restraining marketing of unhealthy food to children, or whether the new language on "blurring" strongly constrains product placement.[53] Beyond the guidelines about how food and beverages are portrayed in children's advertising, CARU does not review the nutrition quality of the products themselves.

In a 2004 White Paper, CARU offered case summaries showing how these standards work in practice. In a typical example from the 1990s, which illustrates the two food-related guidelines mentioned above, CARU questioned an advertisement in which Kellogg's character Tony the Tiger comforts a boy who was left out of a kickball game, saying: "But first, let's start with a complete breakfast including my Frosted Flakes." Then, the boy is shown joining the game, being successful and accepted by the other boys. The advertiser disagreed with CARU's determination "that eating the cereal was related to the boy's acceptance". The company informed CARU that the commercial had completed its flight and the company had no intentions to run it in the future.[54]

One study monitored subsequent compliance with company statements that close a CARU case.[55] In 2004, The Center for Science in the Public Interest filed seven examples of advertisements in the magazine *National Geographic Kids*, of which CARU agreed that five were in violation of the guidelines for advertisers. Following the same formula used in the Frosted Flakes example above, most advertisers expressed disagreement with the CARU determination, announced that the advertisements had run their course, and offered in a spirit of voluntary cooperation to avoid such practices in the future. CARU issued press releases about the successful completion of the cases. The 2006 study reported that several advertisers used similar advertising practices again, leading in one case to a new CARU determination and a new press release, which did not mention the earlier non-compliance.[55] There are no financial sanctions for non-compliance with a CARU determination.

Children's Food and Beverage Advertising Initiative

The Children's Food and Beverage Advertising (CFBA) initiative was established in 2006 to facilitate a shift in advertising toward healthier food and beverages.[56] Beyond CARU's rules for advertising practices, the need for standards related to the healthfulness of particular foods was heard from many quarters, including a recommendation of the 2005 IOM report on food and beverage marketing[4] and a proposal from the Center for Science in the Public Interest that was discussed at the 2005 FTC workshop. Some industry representatives at the workshop opposed food-specific standards, and CARU saw oversight of nutrition quality as outside its mandate.[5]

The CFBA initiative is administered by the CBBB separately from CARU.[56] The CFBA initiative's core principles say that participating companies will devote at least 50% of their advertising aimed at children under 12 years of age to advertising that "will further the goal of promoting healthy dietary choices and healthy lifestyles". Advertising can qualify as "healthy" for this purpose in two ways: it can promote a product classified as "better for you" under nutrition standards established by the company, or the advertising can include messaging that encourages physical activity or good eating habits consistent with the federal government's *Dietary Guidelines for Americans* or MyPyramid guidance. The CFBA initiative gives several examples from which the companies can draw in developing their nutrition criteria for products that are "better for you": products that qualify for an FDA-defined health claim or the FDA-defined descriptor "healthy"; products that qualify for FDA-defined claims of "free", "low", or "reduced" calories, total fat, saturated fat, sugar, or salt; products that qualify for USDA's Healthier School Challenge Program for in-school sales; products that address recommendations for children under 12 years of age in the *Dietary Guidelines* or MyPyramid; or products in a calorie-control serving size.

The companies choose their own standards for defining "advertising oriented toward children under age 12". Only two pledges use the same standard as the 2008 FTC report, which stipulated settings where more than 30% of the audience is children under the age of 12 years. Some pledges use a lenient standard of 50% of the audience.[57] The definitions in other pledges are so imprecise and complex that it is difficult to determine what advertising is covered. The Campbell Soup Company proposed the following standard: "audience composition that is approximately two times the proportion of that age group in the general population (composition index of 200 or more)". Pepsico listed five different non-quantitative factors, specifying "none of which shall be controlling".[57]

Even for child-focused advertising, the CFBA initiative permits up to half to remain outside the jurisdiction of the "healthy" criteria, although some companies have pledged to apply the "healthy" criteria to all of their advertising to children. The "healthy" criteria permit products that fail to meet "better for you" nutritional standards, so long as the advertising also includes physical activity messaging. The "better for you" nutrition standards themselves have an either/or character, such that, for example, high-sugar products can satisfy the standards if they meet the FDA definition of low in fat, while high-fat products can satisfy the standards if they meet the definition for low in sugar.

Companies may volunteer to join the CFBA initiative by submitting a pledge explaining how the company will comply with the CFBA initiative's core principles. More than a dozen major companies have joined, including Kraft Foods, General Mills, Coca-Cola, Pepsico, McDonald's, and Burger King.[56] Other major companies, such as Yum Brands, have not joined to date. In a 2006 summary of Nestlé's efforts to respond to obesity, the following was written: "Nestlé will collaborate closely with public health bodies, both national and international, in efforts to reduce the incidence of global obesity."[58] An early 2008 letter from US Representative Edward Markey to Nestlé asked why the company had not joined the CFBA initiative, pointing out that the company has participated in a similar initiative in Canada.[59] Nestlé announced in July, 2008, that it would join the CFBA initiative.

Several companies pledged to use the nutrition standards for their existing healthy labeling trademarks as the criteria for their child-directed advertising under the CFBA initiative. Kraft Foods will advertise to children only its Sensible Solutions line. An earlier comparison of Kraft products that qualify as Sensible Solutions (e.g., Pizza Lunchables) and fail to qualify (e.g., Maxed Out Deep Dish Lunchables) argued that the improvements were modest in scope.[60] PepsiCo will advertise to children only products that meet its Smart Spot criteria. The company says that Gatorade Thirst Quencher, a beverage that gets all of its calories from added sugars, qualifies as "better for you" because its marketing promotes children engaging in sports and physical activity and "because it is formulated for more complete rehydration in circumstances where water may be insufficient".[56]

The CFBA initiative reviews company marketing for compliance with the voluntary pledges, but it does not seek to evaluate whether the pledges themselves are strong enough to make a material difference in the food and beverage marketing environment for children. The compliance section of the first progress report, covering just the first six months of the CFBA initiative, addresses comparatively minor issues, noting that Campbell Soup and Unilever overlooked and then corrected a couple of ineligible products on their child-directed websites.[57] The CFBA initiative's future reports will cover additional companies whose pledges first took effect more recently.

Self-regulation in school settings

The policy discussion plays out somewhat differently in the school environment. Food and beverage companies use schools as an active arena for commercial marketing and a direct source of revenue through sales.[61] Examples of marketing include advertisements during in-school television news programming, athletic sign boards, vending machine and direct sales promotion, incentive programs and branded fundraising activities, and sponsored educational materials.[25]

When the National School Lunch Program and other child nutrition programs were reauthorized in 2004, Congress made few changes to federal rules governing the marketing of food and beverages in schools. However, Congress opened the door to greater local action by requesting that each participating school district in the country pass a "wellness policy" for food and physical activity practices in schools. Increasing numbers of states also began to pass state-wide policies.[62] Rather than face a cacophony of disparate state and local requirements, food and beverage companies began to develop voluntary nutrition standards for products sold in schools. These standards typically included stronger nutrition criteria for foods sold in elementary schools and more lenient criteria for higher grades. Such standards are likely to become somewhat more widespread and nationally uniform following the publication of a 2007 IOM report, which specified national nutrition standards for such sales,[63] though there is no federal mandate and these standards address just some aspects of industry marketing in schools.

EVALUATING SELF-REGULATION

The evidence most commonly cited for or against self-regulation relies on competing long lists, respectively, of promising voluntary efforts to improve marketing[44] or questionable marketing practices.[25,27] A company will reformulate a popular cereal brand advertised to children to have less added sugar, but critics will point out that the reformulated product will still have 12 g of sugar per serving, just barely qualifying as "better for you"; a company will promise to license a popular cartoon spokescharacter to advertise a line of frozen vegetables or to join a public service announcement for children's physical activity, but the same spokescharacter will continue to advertise popular high-sugar cereals and desserts, calling into question the character's marketing position from the child's perspective.[25,44] These competing lists are difficult to evaluate critically, because they include little quantitative data to help evaluate the scope or frequency of each questionable practice or voluntary accomplishment. They do not suffice for the important policy goal established earlier in the framework for decision making: critical evaluation of the current period of self-regulation.

A hindrance to stronger evaluation is that much of the data that could be used for more rigorous evaluation is proprietary.[4,5,12,32,44] Research firms that specialize in marketing and advertising to children share their reports with industry on a confidential basis.[4,25] The FTC cannot share the proprietary Nielsen data used in its 2007 analysis of television advertising to children.[9]

The FTC's 2008 report on marketing expenditures, based on marketing data collected directly from subpoenas sent to 44 food and beverage companies, covered both traditional advertising and newer marketing and promotion practices in 2006.[10] Because 2006 is the same year that the CFBA initiative was established, the FTC report provides a baseline for research on the recent changes in self-regulation. A future FTC report is expected in 2010. Key questions include whether the FTC will succeed in expanding the scope of its report to include nutritional information about the products advertised, and whether it will be able to share sufficient firm-specific information for evaluation of the material impact of company pledges.

CONCLUSION

Improving and evaluating the current self-regulatory system has reached a critical juncture. Sound economic and legal perspectives motivate an attempt at self-regulation, but both perspectives also offer justification for stronger measures if self-regulation is insufficient to meet important public-interest goals. Leading reports and influential policy-makers describe the current system of self-regulation as an experiment to be evaluated critically with an eye toward possible changes in government policy in the future. The 2005 IOM report on food and beverage marketing recommended that, if voluntary efforts to change food and beverage marketing are unsuccessful, Congress should enact legislation mandating improvements in broadcast and cable television advertising policies.[4] At the 2005 FTC workshop, FTC chairman Deborah Platt Majoras observed, "if industry fails to demonstrate a good faith commitment to this issue and take positive steps, others may step in and act in its stead".[48]

Whether the recent changes in self-regulation will succeed is genuinely an open question. There are at least two ways the experiment could fail: 1) given that some leading food, beverage, and media companies have refused to participate in substantial voluntary advertising initiatives, competitive pressures could force current participants to weaken their pledges or quit their voluntary participation altogether; 2) voluntary nutrition and marketing standards could remain too permissive to have a material benefit for the food and beverage marketing environment overall.

At this juncture, there is heightened interest in transparent evaluation of the current system of self-regulation. The long lists of industry accomplishments, and the equally long lists of borderline products or marketing practices that are left unchanged, are rhetorically effective but more deeply meaningless in the absence of a critical quantitative evaluation. The FTC report in 2010 will be judged on its success in providing independent, detailed, quantitative, and goal-oriented evaluation.

REFERENCES

1. Institute of Medicine. *Preventing Childhood Obesity: Health in the Balance*. Washington, DC: National Academies Press; 2004.
2. Institute of Medicine. *Progress in Preventing Childhood Obesity*. Washington, DC: National Academies Press; 2007.
3. World Health Organization. *Global Strategy on Diet, Physical Activity and Health*. Geneva: World Health Organization; 2004.
4. Institute of Medicine. *Food Marketing to Children and Youth: Threat or Opportunity?* Washington, DC: National Academies Press; 2006.
5. Federal Trade Commission and Department of Health and Human Services. *Perspectives on Marketing, Self-regulation & Childhood Obesity: A Report on a Joint Workshop*. Washington, DC: Federal Trade Commission; 2006.
6. Brownson RC, Royer C, Ewing R, McBride TD. Researchers and policymakers: Travelers in parallel universes. Am J Prevent Med. 2006;30:164–172.
7. Beales J. Advertising to kids and the FTC: A regulatory retrospective that advises the present. George Mason Law Rev. 2004;12:873–894.
8. Westen T. Government regulation of food marketing to children: The Federal Trade commission and the kid-vid controversy. Loyola Los Angel Law Rev. 2006;39:79–92.
9. Holt D, Ippolito P, Desrochers D, Kelley C. *Children's Exposure to TV Advertising in 1977 and 2004: Information for the Obesity Debate*. Washington, DC: Federal Trade Commission; 2007.
10. Botha S, Fentonmiller K, Jennings C, et al. *Food to Children and Adolescents: A Review of Industry Expenditures, Activities, and Self-Regulation*. Washington, DC: Federal Trade Commission; 2008.
11. Hastings G, Stead M, McDermott L, et al. *Review of the Research on the Effects of Food Promotion to Children*. Glasgow, UK: Centre for Social Marketing, University of Strathclyde; 2003.
12. Nestle M. Food marketing and childhood obesity – a matter of policy. N Engl J Med. 2006;354:2527–2529.
13. Moore E. Perspectives on food marketing and childhood obesity: Introduction to the special section. J Public Policy Mark. 2007;26:157–161.
14. American Academy of Pediatrics. Children, adolescents, and advertising. Pediatrics. 2006;118:2563–2569.
15. Kunkel D, Wilcox B, Kantor J, et al. *Report of the Task Force on Advertising and Children*. Washington, DC: American Psychological Association; 2004.
16. Hawkes C. Regulating and litigating in the public interest: Regulating food marketing to young people worldwide: Trends and policy drivers. Am J Public Health. 2007;97:1962–1973.
17. Grocery Manufacturers Association. *2007 Industry Report on Health and Wellness*. Washington, DC: Grocery Manufacturers Association; 2007.
18. Audretsch DB, DiOrio D. The spread of obesity. In: Acs ZJ and Lyles A, ed. *Obesity, Business, and Public Policy*. Northampton, MA: Edward Elgar; 2007:15–26.
19. Philipson T. The world-wide growth in obesity: An economic research agenda. Health Economics. 2001;10:1–7.
20. Zywicki T, Holt D, Ohlhausen M. Obesity and advertising policy. George Mason Law Rev. 2004;12:979–1011.
21. Cawley J. The economics of childhood obesity policy. In: Acs ZJ, Lyles A, Stanton KR, eds. *Obesity, Business, and Public Policy*. Northampton, MA: Edward Elgar; 2007:27–56.
22. Acs Z, Henderson L, Levy D, Lyles A, Stanton K. A policy framework for confronting obesity. In: Acs ZJ, Lyles A, Stanton KR, eds. *Obesity, Business, and Public Policy*. Northampton, MA: Edward Elgar; 2007:221–252.

23. Kuchler F, Golan E, Variyam JM, Crutchfield SR. Obesity policy and the law of unintended consequences. Amber Waves. 2005;3:26–33.
24. Moodie R, Swinburn B, Richardson J, Somaini B. Childhood obesity – a sign of commercial success, but a market failure. Int J Pediatr Obes. 2006;1:133–138.
25. Linn S, Novosat C. Calories for sale: Food marketing to children in the twenty-first century. Ann Am Acad Polit Soc Sci. 2008;615:133–155.
26. Sugarman SD, Sandman N. Fighting childhood obesity through performance-based regulation of the food industry. Duke Law J. 2006;56:1403–1490.
27. Simon M. Can food companies be trusted to self-regulate? An analysis of corporate lobbying and deception to undermine children's health. Loyola Los Angel Law Rev. 2006;39:169–236.
28. The Wall Street Journal Online and Harris Interactive. *WSJ.com/Harris Interactive Survey Finds that Most Adults Believe Parents, Schools and Food Industry Can Make a Difference in Battling Childhood Obesity*. Rochester, NY: HarrisInteractive; 2007.
29. Parmet W, Smith J. Free speech and public health: A population-based approach to the First Amendment. Loyola Los Angel Law Rev. 2006;39:363–445.
30. Kline R, Graff S, Zellers L, Ashe M. Beyond advertising controls: Influencing junk-food marketing and consumption. Loyola Los Angel Law Rev. 2006;39:603–646.
31. Campbell R. Restricting the marketing of junk food to children by product placement and character selling. Loyola Los Angel Law Rev. 2006;39:447–506.
32. Schor J, Ford M. From tastes great to cool: Children's food marketing and the rise of the symbolic. J Law Med Ethics. 2007;35:10–21.
33. Graff S. First Amendment implications of restricting food and beverage marketing in schools. Ann Am Acad Polit Soc Sci. 2008;615:157–177.
34. Swinburn B, Sacks G, Lobstein T, et al. The "Sydney Principles" for reducing the commercial promotion of foods and beverages to children. Public Health Nutr. 2008;11:1–6.
35. Schwartz M, Brownell K. Actions necessary to prevent childhood obesity: Creating the climate for change. J Law Med Ethics. 2007;35:78–89.
36. Wansink B, Huckabee M. De-marketing obesity. Calif Manage Rev. 2005;47:1–13.
37. Alderman J, Smith J, Fried E, Daynard R. Application of law to the childhood obesity epidemic. J Law Med Ethics. 2007;35:90–112.
38. Baumol W, Blinder A. *Economics: Principles and Policy*, 9th edn. Mason, OH: Thomson South-Western; 2005.
39. Tillotson J. The mega-brands that rule our diet, part 1. Nutr Today. 2005;40:257–260.
40. Kotler P, Armstrong G. *Principles of Marketing*, 10th edn. Upper Saddle River, NJ: Prentice Hall; 2004.
41. Gardner S. Litigation as a tool in food advertising: A consumer advocacy viewpoint. Loyola Los Angel Law Rev. 2006;39:291–310.
42. McNeal J. *The Kids Market: Myths and Realities*. Ithaca, NY: Paramount Market Publishing, Inc.; 1999.
43. McNeal J. *On Becoming a Consumer: The Development of Consumer Behavior Patterns in Childhood*. Boston, MA: Elsevier; 2007.
44. Federal Trade Commission and Department of Health and Human Services. *Weighing in: Marketing, Regulation and Childhood Obesity (Workshop Transcript)*. Washington, DC: Federal Trade Commission and Department of Health and Human Services; 2007.
45. Desrochers D, Holt D. Children's exposure to television advertising: Implications for childhood obesity. J Public Policy Market. 2007;26:182–201.
46. Chou S, Rashad I, Grossman M. Fast-food restaurant advertising on television and its influence on childhood obesity. J Law Econ. 2008;51:599–618.
47. Chernin A. The effects of food marketing on children's preferences: Testing the moderating roles of age and gender. Ann Am Acad Polit Soc Sci. 2008;615:102–118.
48. Federal Trade Commission and Department of Health and Human Services. *Perspectives on Marketing, Self-regulation & Childhood Obesity (Workshop Transcript)*. Washington, DC: Federal Trade Commission and Department of Health and Human Services; 2005.
49. Richards T, Padilla L. Promotion and fast-food demand. Am J Agric Econ. 2009;91:168–183.
50. Gantz W, Schwartz N, Angelini J, Rideout V. *Food for Thought: Television Food Advertising to Children in the United States*. Menlo Park, CA: Kaiser Family Foundation; 2007.
51. Kunkel D, McKinley C, Stitt C. Quantity and nutritional quality of food advertising during children's television programming in the U.S. Unpublished paper presented at the annual meeting of the International Communication Association, Montreal, CA, May, 2008.
52. Children's Advertising Review Unit (CARU). Self-Regulatory Program for Children's Advertising. Available at: http://www.caru.org/. Accessed 26 July 2008.
53. Feldman J. *Memorandum RE: CARU's Self-regulatory Program for Children's Advertising: Overview and Analysis*. Washington, DC: ReedSmith; 2007.
54. Children's Advertising Review Unit (CARU). *Guidance for Food Advertising Self-regulation*. New York: National Advertising Review Council; 2004.
55. Fried E. Assessing effectiveness of self-regulation: A case study of the children's advertising review unit. Loyola Los Angel Law Rev. 2006;39:93–138.
56. Children's Food and Beverage Advertising Initiative. Available at: http://us.bbb.org/WWWRoot/SitePage.aspx?site=113&id=dba51fbb-9317-4f88-9bcb-3942d7336e87. Accessed on 26 July 2008.
57. Kolish E, Peeler CL. *Changing the Landscape of Food & Beverage Advertising: The Children's Food & Beverage Advertising Initiative in Action*. Arlington, VA: Council of Better Business Bureaus; 2008.
58. Green H. Global obesity: Nestlé initiatives in nutrition, health, and wellness. Nutr Rev. 2006;64:S62–S64.
59. Crowley L. Nestle opts out of U.S. initiative on junk food advertising to kids. *Food Navigator – USA*, 10 June 2008.
60. Lewin A, Lindstrom L, Nestle M. Food industry promises to address childhood obesity: Preliminary evaluation. J Public Health Policy. 2006;27:327–348.
61. Palmer E, Sofio L. Food and beverage marketing to children in school. Loyola Los Angel Law Rev. 2006;39:33–78.
62. Mello MM, Pomeranz J, Moran P. The interplay of public health law and industry self-regulation: The case of sugar-sweetened beverage sales in schools. Am J Public Health. 2008;98:595–604.
63. Committee on Nutrition Standards for Food in Schools, Food and Nutrition Board and Institute of Medicine. *Nutrition Standards for Foods in Schools: Leading the Way toward Healthier Youth*. Washington, DC: National Academies Press; 2007.