



## Protecting the Public by Incorporating Scientific Research

# Protecting Young People From Junk Food Advertising: Implications of Psychological Research for First Amendment Law

Jennifer L. Harris, PhD, MBA, and Samantha K. Graff, JD

In the United States, one third of children and adolescents are overweight or obese, yet food and beverage companies continue to target them with advertising for products that contribute to this obesity crisis.

When government restrictions on such advertising are proposed, the constitutional commercial speech doctrine is often invoked as a barrier to action. We explore incongruities between the legal justifications for the commercial speech doctrine and the psychological research on how food advertising affects young people.

A proper interpretation of the First Amendment should leave room for regulations to protect young people from advertising featuring calorie-dense, nutrient-poor foods and beverages. (*Am J Public Health*. 2012;102:214–222. doi:10.2105/AJPH.2011.300328)

### NUMEROUS STUDIES HAVE

documented the volume and poor nutritional quality of foods and beverages marketed to children

and adolescents. The food industry spends more than \$1.6 billion per year in child- and teen-targeted marketing of their products.<sup>1</sup> The average child in the United States views 13 food ads on television each day,<sup>2</sup> and food advertising represents approximately 30% of all paid television advertising viewed by children.<sup>3</sup> Food companies also target children directly on the Internet, product packaging, social media, and numerous other marketing venues.<sup>1</sup> Nearly all foods featured in advertising targeted toward young people have high levels of calories, total fat, saturated fat, sugar, or sodium (i.e., they are unhealthy, calorie-dense, nutrient-poor foods, or “junk” foods) and are often nutritionally inferior to products targeting adults.<sup>4–9</sup>

Research has consistently demonstrated the effects of food advertising on children’s brand preferences, food choices, and requests to parents.<sup>10,11</sup> Recent studies suggest that food advertising may also have a broader impact on children’s and adolescents’ diet and health, including increased consumption of snack foods, sugar-sweetened beverages, and fast

food<sup>12–14</sup> and higher body mass indexes.<sup>14,15</sup>

One third of children and adolescents in the United States are overweight or obese,<sup>16</sup> and rates of diet-related diseases among young people are unprecedented.<sup>10,17,18</sup> Public health experts conclude that this epidemic of childhood obesity and poor diet cannot be resolved without dramatic changes in the obesogenic food environment that surrounds young people and to which food advertising is a major contributor.<sup>1,10,19,20</sup>

Advocates have proposed a range of public health tools to protect young people from exposure to unhealthy food advertising, including nutrition and media literacy education, public health and industry advertising to promote consumption of healthy foods, industry self-regulation, government legislation and regulation, and litigation.<sup>19</sup> However, education and counteradvertising alone cannot compete with the \$1.6 billion spent annually by industry to target young people with continuous reminders about the rewards of consuming primarily unhealthy foods<sup>11,19</sup>; significant reductions in the volume of unhealthy food

advertising directed at young people are necessary.

It is unlikely that the food and beverage industry will voluntarily make these changes. Seventeen food and beverage companies in the United States<sup>21</sup> participate in the Children’s Food and Beverage Advertising Initiative and have pledged to improve their advertising directed at children; however, these pledges have been criticized for numerous limitations in the types of marketing and products covered.<sup>22</sup> For example, “child-targeted” advertising is defined as advertising that appears in media in which 50% or more of the audience is between the ages of 2 and 11 years,<sup>21</sup> yet this definition excludes many types of media that appeal to and are viewed primarily by non-adults.<sup>22</sup> Similarly, most pledges do not restrict advertising for “better-for-you” foods,<sup>21</sup> but these criteria are defined by the companies themselves and often allow advertising of products high in saturated fat, sodium, or sugar.<sup>22</sup> Evaluations of the effectiveness of these pledges demonstrate minimal improvements at best.<sup>23–26</sup>

In the absence of effective industry self-regulation, it is imperative



for the government to step in; however, governmental bodies have been timid about attempting to limit young people's exposure to food advertising.<sup>19,27</sup> An oft-cited barrier to action is the constitutional commercial speech doctrine, which affords significant First Amendment protection to advertising, defined by the US Supreme Court as "speech proposing a commercial transaction."<sup>28</sup> (It is beyond the scope of this article to speculate how courts would parse out which promotional activities involve advertising versus non-speech-related marketing that is unprotected by the First Amendment. Our analysis applies to "advertising" however construed.) The commercial speech doctrine presumes that advertising restrictions harm consumers and the overall economy by obstructing the free flow of information needed to facilitate informed commercial transactions.<sup>19,29</sup>

We discuss key premises underlying the commercial speech doctrine and psychological research on how food advertising affects young people. Examining both legal and psychological theories of advertising effects, we demonstrate that the commercial speech doctrine, in its current form, has little relevance to the actual techniques used to encourage the purchase and consumption of nutritionally poor foods by children and adolescents. As applied to unhealthy food advertising to young people, the commercial speech doctrine is outdated and inadequate and should not stand as an impediment to well-crafted government

restrictions on such advertising. Although this premise has not been tested in the courts, there should be constitutional room for governments at the local, state, and federal levels to use laws, regulations, and enforcement actions to curb advertising of junk foods to children.

### KEY PREMISES OF THE COMMERCIAL SPEECH DOCTRINE

Until the 1970s, the Supreme Court made no distinction between laws restricting advertising and laws governing other standard business practices. Advertising was treated as an economic activity subject to basic public health, safety, and welfare regulations, not as free expression subject to First Amendment protection.<sup>30</sup> This changed in 1976 with the Supreme Court's decision in *Virginia State Board of Pharmacy v Virginia Citizens Consumer Council*, which struck down a statewide ban on advertisements of prescription drug prices.<sup>31</sup> *Virginia Pharmacy* marked the emergence of a new commercial speech doctrine that the court has since fleshed out in a line of cases making it increasingly difficult for the government to limit advertisements for products of concern.

The Supreme Court has held that the government's obligation to protect children from harm can be subordinated to corporations' right to express—and adults' right to receive—truthful commercial information that is not misleading.<sup>32a</sup> The court also has ruled that minors have significant First Amendment rights to be exposed to literary, artistic, and other ideas.<sup>32b</sup>

However, neither the Supreme Court nor any lower federal court has applied the commercial speech doctrine to a restriction on advertising targeted toward young people. Understanding the 4 key premises of the commercial speech doctrine—advertisers will convey concrete product information, recipients of advertising will use it to make rational decisions, misleading advertising is distinguishable from other advertising, and potentially misleading advertising can generally be cured by disclosures—and how they apply to current food advertising practices is a first step toward resolving the question of whether advertising directed at children or adolescents is protected at all and, if so, whether it is protected to the same degree as advertising aimed at adults.

### Product Information

A major emphasis of *Virginia Pharmacy* was the importance of the free flow of truthful commercial information to individual consumers and society at large.<sup>31</sup> The Supreme Court observed that a particular consumer's interest in the information conveyed by advertising "may be as keen, if not keener by far, than his interest in the day's most urgent political debate."<sup>31</sup> With regard to prescription drug prices, the court focused on the benefit of advertising to the poor, sick, and elderly, who have scarce dollars to spend on medication and scarce resources to comparison shop. In the court's view, society also has much to gain from the unrestricted flow of commercial information. Advertising is important because,

however tasteless and excessive it sometimes may seem, it is nonetheless dissemination of information as to who is producing and selling what product, for what reason, and at what prices.<sup>31</sup>

The presumption that advertising relays information about producers, sellers, product characteristics, and prices underlies the entire line of commercial speech cases that followed *Virginia Pharmacy*.<sup>28,33</sup> For instance, in the 2001 *Lorillard v Reilly* case, the Supreme Court struck down a state regulation forbidding tobacco advertisements within 1000 feet of schools in large part because

tobacco retailers and manufacturers have an interest in conveying truthful information about their products to adults, and adults have a corresponding interest in receiving truthful information about tobacco products.<sup>32a</sup>

(The current scarcity of tobacco billboards is the result of a litigation settlement between 46 states and the major tobacco companies in which the companies volunteered to abide by certain advertising restrictions that would not necessarily withstand First Amendment scrutiny had they been imposed through regulation.<sup>34</sup>)

### Rational Decision Making

A corollary to the Supreme Court's presumption that advertising conveys concrete information is that consumers generally use this information to make logical decisions. The commercial speech doctrine is built on a rational choice theory of behavior. As explained in *Virginia Pharmacy*, resources in our free enterprise



system are allocated through numerous private economic decisions.<sup>31</sup> Public interest requires that “those decisions, in the aggregate, be intelligent and well informed.”<sup>31</sup> Advertising is indispensable because it supports rational economic decisions, which in turn ensure the stability of markets. Thus, individuals who choose to consume calorie-dense, nutrient-poor foods are assumed to have made this decision on the basis of their calculation that the immediate gratification of consumption outweighs any negative long-term health consequences.

To be sure, the Supreme Court has recognized in many different contexts<sup>35-37</sup> that children and adolescents do not behave as do rational adults because

juveniles' lack of maturity and under-developed sense of responsibility... often result in impetuous and ill-considered actions and decisions.<sup>35</sup>

Because the court has never applied the commercial speech doctrine to a restriction on advertising directed at young people, it has not confronted the dissonance between the rational choice theory that justifies First Amendment protection of commercial speech and the doctrinal acknowledgment that young people tend to make irrational choices.

### Misleading Advertising

The Supreme Court has always been clear that false or misleading advertising is not entitled to First Amendment protection because it serves no informational function. “The public and private benefits from commercial speech derive from confidence in its accuracy

and reliability.”<sup>38</sup> Therefore, false or misleading commercial speech can be banned outright to ensure “that the stream of commercial information flow[s] cleanly as well as freely.”<sup>31</sup>

The court has been less clear about what, precisely, constitutes “misleading” advertising. The few cases that touch on the question suggest that advertisements are not protected if they have no intrinsic meaning, convey no information, are inherently likely to deceive, or have proven to be misleading in practice.<sup>28,39,40</sup> Federal Trade Commission policy<sup>41</sup> and state consumer protection laws<sup>42</sup> articulate various standards for what constitutes unlawfully misleading or deceptive advertising, but ultimately any federal or state action against misleading or deceptive advertising must be able to pass First Amendment muster.

### Potentially Misleading Advertising

Unlike advertising that is misleading, advertising that merely has the potential to mislead receives significant First Amendment protection. The government must be able to show that a restriction on potentially misleading advertising directly advances substantial public goals that can be achieved only by limiting speech.<sup>43</sup> “Because the extension of First Amendment protection to commercial speech is justified principally by the value to consumers of the information such speech provides,”<sup>44</sup> the Supreme Court has historically favored disclosure requirements over flat prohibitions on speech as

a remedy to dissipate the possibility of consumer confusion or deception.<sup>44,45</sup>

### THE “REAL WORLD” OF FOOD ADVERTISING

In the marketplace presumed by the commercial speech doctrine, consumers pay attention to and rationally and deliberately process information presented in advertising communications. They then use this information to make informed purchase decisions. Provided the information is not false, misleading, or deceptive, unrestricted access to product information should contribute positively to the free market. Unfortunately, these assumptions do not reflect food advertising today in at least 3 critical ways: (1) many campaigns are designed to persuade implicitly and specifically bypass rational consideration of product information, (2) messages presented in advertising for nutrient-poor foods provide information about these products and the benefits of consuming them that can mislead children, and (3) children and adolescents do not have the cognitive capacity to rationally consider advertising appeals and reject those not in their long-term interest or the self-regulatory abilities to resist the immediate temptation of the highly palatable foods typically promoted.<sup>46</sup>

### Selling in the Absence of Information

Marketers distinguish between informational marketing that provides rational benefits and reasons to purchase a product and emotional marketing

designed to make the consumer feel good about a product.<sup>47</sup> Increasingly, marketers have learned that they can effectively persuade consumers by presenting implicit messages that entertain and create positive feelings about their products but present no rational product benefits. In a recent analysis of 880 advertising campaigns, Binet and Field concluded that

[t]he more emotions dominate over rational messaging, the bigger the business effects. The most effective advertisements of all are those with little or no rational content.<sup>48(p132)</sup>

In many cases, providing information about concrete product attributes may even reduce the persuasiveness of a message. Companies use psychological techniques to design advertising that triggers powerful emotional responses in consumers (Table 1 summarizes the psychological processes used to inform these advertising practices).<sup>49-65</sup>

Marketers' ultimate goal is to create a brand image in consumers' minds, a network of positive associations tied to the brand and its users that will generate lifelong affinity and loyalty for products associated with the brand.<sup>66</sup> Through implicit messages presented in advertising, consumers infer qualities of the brand, including user characteristics, product attributes, and emotional benefits from consuming the brand's products. Even preschoolers understand the meaning of brand images; they believe, for example, that a product in a McDonald's package tastes better than does the same product without a McDonald's wrapper.<sup>67</sup>



**TABLE 1—Implicit Psychological Processes Used in Designing Advertising**

Psychological Process	Description	Application to Advertising
Elaboration likelihood model <sup>49</sup> /heuristic-systematic model <sup>50</sup>	These dual information-processing models both propose 2 routes to persuasion: attitude change can occur directly when consumers rationally consider and accept or reject the information presented (the central or systematic route) or indirectly when consumers implicitly process cues presented in the advertisements unrelated to the central message, such as positive images and emotional messages (the peripheral or heuristic route).	These 2 routes to persuasion correspond to informational and emotional advertising. Even when no direct product benefits appear in advertising, it can persuade through the indirect product cues presented (e.g., attractive models, cool music, desirable situations). A few studies have tested these processes with children and adolescents, and the results show that young people primarily process advertising through the indirect route. <sup>51-53</sup>
Classical conditioning or affective transfer <sup>54</sup>	By continuously pairing an object (i.e., the product) with stimuli that generate positive emotions (i.e., the advertisement or other communication), over time emotional responses to the stimuli will transfer to the object.	A humorous or feel-good advertisement can have no apparent connection to the advertised product, yet the positive emotions experienced while watching the ad will transfer to the product itself and, over time, increase preference for and choice of the product. <sup>55,56</sup>
Mere exposure effect <sup>57</sup>	Repeated exposure to a neutral, unknown object will result in a preference for the previously neutral object.	Brand logo placements and mere brand mentions, with repeated exposure, will lead to preferences for and choice of that brand versus other brands with fewer placements and mentions. <sup>58,59</sup>
Associative network or schema <sup>60</sup>	An object becomes automatically associated in a person's mind with all other concepts experienced together with the object, including emotions, attitudes, motivations, and behaviors, to create an associative network or schema about the object. When a person comes in contact with the object, all associations contained in that network will also become activated automatically.	Consumer behavior researchers conceptualize brand image as an associative network. <sup>61,62</sup> All experiences with the brand create this brand image, and marketers attempt to shape this brand information through all marketing communications. <sup>63,64</sup> These brand images ultimately come to automatically represent what the brand means, including who uses it, when to consume it, and the rewards from doing so.
Social learning theory <sup>59</sup>	Children learn and model behaviors, attitudes, and emotions by observing others' actions and the consequences of those actions. The symbolic environment of the media also provides vicarious learning about social behaviors and attitudes.	Continued exposure to advertising that promotes foods and beverages as fun, socially desirable and commonplace, with no negative consequences from consuming them, can influence children's attitudes and consumption of the unhealthy foods commonly promoted.

One market research company described why this advertising to young people is so important:

We are showing that the initial connection and affinity to a brand is made on an emotional level—and that when purchase decision time comes nearer, the young consumer is looking for affirmation for the emotional choice they have already solidified.<sup>68</sup>

One of the advantages to marketers of using implicit messages

to promote their products is that it allows them to circumvent consumers' skeptical responses to advertising.<sup>69-71</sup> Because consumers are less aware of implicit advertising effects, they do not actively attempt to counteract them; as a result, these types of advertising can be more persuasive than is direct communication of products and benefits.<sup>69</sup> Many newer forms of advertising are designed specifically to influence "covertly" in

this manner. Examples include product placements in which brand images are integrated into the entertainment content of movies, television shows, video games, and music lyrics; advergames, which are Internet games developed by companies to promote their products with continual product reminders throughout the game play; celebrity endorsements and licensed characters in advertising and product packaging; and

sponsorships that provide frequent brand logo placement, including logos on curricular materials, scoreboards, and player jerseys in schools.<sup>46,70,71</sup>

These advertising messages convey virtually no concrete information and, therefore, do not facilitate conscious, rational decision making about product alternatives. In addition, precisely because they do not provide concrete information, these



messages are often more persuasive than are those that do communicate specific product attributes and utility.<sup>48</sup> Although food marketers commonly use implicit techniques in advertising targeted toward all audiences, many are used disproportionately to reach children and adolescents.<sup>1</sup> For example, more than half of food companies' expenditures on cross promotions, philanthropy tie-ins, event marketing, and product placements target a child or adolescent audience.<sup>1</sup> Soft drink advertising provides a classic example of the power of brand image and emotional advertising. Although blind taste tests have shown that most consumers prefer the taste of Pepsi, neuroimaging studies demonstrate Coke drinkers' strong emotional attachment to the brand.<sup>72</sup> Coke's recent "Open Happiness" advertising campaign referenced no actual product characteristics.<sup>73</sup>

### Potentially Misleading Messages in Unhealthy Food Advertising

As discussed, the majority of food advertising viewed by children and adolescents promotes calorie-dense, nutrient-poor products, and most young people encounter these messages numerous times each day.<sup>4,10,11,19</sup> Increasing scientific evidence demonstrates that exposure to the messages presented in food advertising also conveys potentially misleading information. Psychological studies demonstrate that food advertising influences parents' and children's normative beliefs about what others eat and what they should be able to eat.<sup>74,75</sup> Children's television food

advertising typically features happy, energetic children who are not overweight and are consuming unhealthy foods anywhere, at any time.<sup>19</sup> According to social learning theory,<sup>65</sup> food advertising of all forms teaches children that most people regularly consume these unhealthy foods, most parents allow these behaviors, and there are no negative consequences for doing so (i.e., poor health or weight gain).

To correct these potentially misleading messages, media literacy programs and nutrition education are commonly proposed to teach children about the persuasive intent of advertising and the importance of a healthy diet.<sup>76</sup> Most media literacy programs have not been evaluated systematically; however, they are based on the inaccurate assumption that increased understanding of persuasive intent and skepticism about food advertising reduce the effectiveness of such advertising.<sup>46</sup> Recent research has failed to demonstrate a relationship between skepticism about advertising and its effectiveness. In one study, for example, children who participated in a media literacy intervention exhibited greater preferences for the advertised foods discussed in the intervention.<sup>77</sup> For similar reasons, nutrition education is unlikely to counteract the effects of food advertising. Preferences for and consumption of healthy and unhealthy food are not related to accurate nutrition beliefs; young people's food preferences are determined to a large extent by perceived taste.<sup>78-80</sup>

Industry might argue that the government could require disclaimers to address potentially

misleading information in food advertising; however, knowing that a message is an advertisement or that the food is not nutritious does not reduce the innate desire to consume the highly palatable but poor-quality foods most commonly marketed to young people. Although disclaimers warning of the dangers of consuming foods high in fat, sugar, or sodium have not been tested, research on the effects of warning labels on alcohol and tobacco packaging demonstrates that the text-based warning labels used in the United States have increased knowledge about the potential harmful effects of these substances but have not reduced alcohol or tobacco consumption.<sup>81,82</sup>

In one study, adolescents' knowledge about warning labels on cigarette packaging was paradoxically associated with increased cigarette smoking.<sup>83</sup> In contrast, graphic warning labels used in Australia have been shown to reduce future intent to smoke among adolescents.<sup>84</sup> The amount of packaging devoted to branding messages is significantly reduced to make room for required health messages, and this reduction in branding has a greater impact on smoking behavior than do the warning labels themselves.<sup>85</sup>

### Young People's Ability to Resist Food Advertising

Given the potential harm associated with exposure to advertising for energy-dense, nutrient-poor foods, food advertising to young people can be justified only if they have the rational capacity to resist its influence. However, psychological research

consistently demonstrates that children and adolescents often lack this ability. Harris et al. posited that successfully resisting food marketing requires 4 conditions: (1) active attention to advertising stimuli and comprehension of their persuasive intent, (2) an understanding of how one is affected by these stimuli and how to effectively resist, (3) cognitive maturity and fully developed self-regulatory abilities, and (4) the motivation to resist.<sup>46</sup>

From preschool through adolescence, numerous developmental barriers limit young people's ability to satisfy these 4 conditions. For example, until the age of 7 or 8 years, children do not have the cognitive capacity to recognize the persuasive intent of advertising required for the first condition.<sup>86</sup> Because they view advertising as simply another source of information and cannot understand that this information might be biased, any advertising targeted toward young children is likely to be misleading and thus not protected by the First Amendment.<sup>29</sup> Older children do have the ability to understand persuasive intent; however, until the age of 11 or 12 years, they require cues to remind them to critically process advertising content.<sup>86</sup> When exposed to advertisements, they do not regularly think about the advertisers' intent and therefore do not rationally consider the information being presented; as a result, they cannot satisfy the second condition.

Even when children have the knowledge and desire to maintain a healthy diet, they do not yet possess the highly developed behavioral control mechanisms



necessary to self-regulate their consumption of innately desirable but nutrient-poor foods in the face of continued reminders from advertising and the ready availability of such foods throughout their environment (the third condition).<sup>87</sup> Although adolescents are highly skeptical of advertising and understand its intent,<sup>88</sup> most adolescents' brains are not sufficiently developed to enable them to regularly inhibit impulsive behaviors and resist immediate gratification for longer-term rewards, a requirement to successfully resist advertising for highly appealing but unhealthy foods.<sup>89,90</sup> Alcohol and tobacco researchers have consistently demonstrated that adolescents are more susceptible than are adults to advertising for these tempting but harmful products,<sup>89</sup> and more recent studies on food advertising targeting adolescents have begun to show a similar susceptibility.<sup>90</sup>

Food marketers also commonly target young people with techniques specifically designed to counteract their motivation to resist advertising messages (the fourth condition). For example, food companies commonly use social media (e.g., promotions on Facebook and Twitter), viral videos on YouTube, and widgets (i.e., small applications that can be downloaded to a computer or cell phone) that exploit the power of peers and encourage young people to send advertising messages to their friends.<sup>5,6</sup> Beloved cartoon characters target children on product packaging and celebrity tie-ins target older children and adolescents<sup>7</sup>; both are highly effective.<sup>91</sup> Television advertising on children's

programming commonly portrays food as a toy or plaything, not something that is actually consumed.<sup>23</sup> Many young people consider food advertising to be fun and cool,<sup>92</sup> key motivations for this age group.

### SQUARING THE SCIENCE WITH THE LAW

It is difficult to understand why advertising designed to persuade without consumers' awareness or developed to appeal specifically to young people's unique vulnerabilities should be afforded commercial speech protection. Most of the food advertising targeting young people provides little information about tangible characteristics of the food itself that can be used to make rational consumer judgments. Instead, food advertising uses powerful psychological techniques to promote positive emotional associations with these hard-to-resist and potentially harmful products.

Therefore, advertising that promotes unhealthy food and beverage products to young people does not correspond to the dichotomy between misleading speech and other speech established by the commercial speech doctrine; assessing these ads with respect to their accuracy and reliability is irrelevant. Much of this advertising appears to fall into the misleading category of unprotected speech because it has no intrinsic meaning, conveys no information, is inherently likely to deceive, or has proven to be misleading in practice. In addition, even if the advertising cannot be proven to be misleading, the potential for harm

from overconsumption of the nutrient-poor, calorie-dense products featured substantially outweighs the small, if any, benefit of the advertising for its intended audience (i.e., children and adolescents). Research also demonstrates that disclosures, the remedy often proposed in commercial speech cases, are unlikely to counteract the potentially misleading information presented in food advertising to young people.

### Potential Regulation of Food Marketing to Young People

Legislators and regulators at all levels of government should consider testing the limits of the current, inadequate body of First Amendment case law and advancing a constitutional interpretation that accords with scientific reality. How a given government body can test these limits depends on the authority endowed upon it. Congress has the most leeway to enact far-reaching laws aimed at protecting children and adolescents from harmful food marketing, including restrictions on advertising for nutrient-poor products in media targeted at and viewed predominantly by young people.

Of course, Congress would have to define unhealthy food advertising to young people under a given age. Practically, food companies have had no difficulty identifying what constitutes food marketing to children, either as defined in their own Children's Food and Beverage Advertising Initiative pledges<sup>21</sup> or as defined by the Federal Trade Commission for the purposes of its 2008 report, *Marketing Food to Children and Adolescents: A Review*

*of Industry Expenditures, Activities, and Self-Regulation*.<sup>1</sup> Legally, any definition that will serve as the basis for government regulation of advertising to young people would have to set a justifiable age cutoff and could not overly impede adults' access to commercial information.<sup>32a</sup>

Certain federal agencies are well positioned to tackle unhealthy food advertising to young people. The Federal Trade Commission could set an important precedent by bringing strategic enforcement actions against unfair and deceptive food advertising, and the Federal Communications Commission could focus on product placements in programming, program-length commercials, and limits on advertising time during programming.

State and local governments have limited jurisdiction to regulate food advertising on media that cross state lines, but they have many options to regulate locally based food sales and promotion.<sup>93</sup> They also have significant flexibility under the First Amendment to limit advertising in schools.<sup>94</sup> In addition, state and local government attorney's offices could file lawsuits alleging that techniques used by food advertisers violate state consumer protection laws.

### Conclusions

The United States faces a severe epidemic of obesity and poor diet that adversely affects the health of young people.<sup>10,16-18</sup> Advertising for highly palatable foods that should be consumed in limited quantities contributes to this epidemic and poses unique risks to children and adolescents.<sup>19</sup>



Food companies should refrain from advertising unhealthy products intentionally to children and adolescents, but they claim that the commercial speech doctrine allows them to openly and legally target these products to young people using sophisticated psychological techniques that take advantage of their developmental vulnerabilities. This doctrine is based on an outdated understanding of what advertising is and how it affects consumer behavior. To the extent that it stands as a barrier to regulation of junk food advertising to children and adolescents, the commercial speech doctrine must be reconsidered. Well-tailored government actions to restrict food and beverage marketing specifically targeting children should be able to withstand First Amendment scrutiny. For the health of our children, these actions should be taken and, if necessary, tested in the courts. ■

### About the Authors

Jennifer L. Harris is with the Rudd Center for Food Policy and Obesity, Yale University, New Haven, CT. Samantha K. Graff is with Public Health Law & Policy, Oakland, CA.

Correspondence should be sent to Samantha K. Graff, JD, Public Health Law & Policy, 2201 Broadway, Suite 502, Oakland, CA 94612 (e-mail: sgraff@phlpnet.org). Reprints can be ordered at <http://www.ajph.org> by clicking on the "Reprints/Eprints" link.

This article was accepted June 6, 2011.

### Contributors

J.L. Harris wrote the scientific portions of the article, and S.K. Graff wrote the legal portions. Both authors reviewed and provided comments on all sections of the article.

### Acknowledgments

This work was supported by grants from the Robert Wood Johnson Foundation

(through the National Policy & Legal Network to Prevent Childhood Obesity, a project of Public Health Law & Policy, and the Rudd Center for Food Policy and Obesity) and the Rudd Foundation.

We thank Seth E. Mermin for his insightful feedback on a draft of this article.

### Human Participant Protection

No protocol approval was necessary for this research because no human participants were involved.

### References

1. Federal Trade Commission. Marketing food to children and adolescents. a review of industry expenditures, activities, and self-regulation. Available at: <http://www.ftc.gov/os/2008/07/P064504foodmktngreport.pdf>. Accessed September 12, 2011.
2. Powell LM, Szczpka G, Chaloupka FJ. Trends in exposure to television food advertisements among children and adolescents in the United States. *Arch Pediatr Adolesc Med*. 2010;164(9):794–802.
3. Federal Trade Commission. Children's exposure to TV advertising in 1977 and 2004. Available at: <http://www.ftc.gov/os/2007/06/cabecolor.pdf>. Accessed September 12, 2011.
4. Powell LM, Szczpka G, Chaloupka FJ, Braunschweig CL. Nutritional content of television food advertisements seen by children and adolescents. *Pediatrics*. 2007;120(3):576–583.
5. Moore ES, Rideout VJ. The online marketing of food to children: is it just fun and games? *J Public Policy Marketing*. 2007;26(2):202–220.
6. Montgomery KC, Chester J. Interactive food and beverage marketing: targeting adolescents in the digital age. *J Adolesc Health*. 2009;45:S18–S29.
7. Harris JL, Schwartz MB, Brownell KD. Marketing foods to children and youth: licensed characters and other promotions on packaged foods in the supermarket. *Public Health Nutr*. 2010;13(3):409–417.
8. Elliott C. Assessing "fun foods": nutritional content and analysis of supermarket foods targeted at children. *Obes Rev*. 2008;9(4):368–377.
9. Schwartz MB, Vartanian L, Wharton C, Brownell KD. Examining the nutritional quality of breakfast cereals marketed to children. *J Am Diet Assoc*. 2008;108(4):702–705.
10. Institute of Medicine. *Food Marketing to Children and Youth: Threat or Opportunity?* Washington, DC: National Academy of Sciences; 2006.
11. Hastings G, Stead M, McDermott L, et al. Review of research on the effects of food promotion to children. Available at: <http://www.foodstandards.gov.uk/multimedia/pdfs/foodpromotiontochildren1.pdf>. Accessed September 12, 2011.
12. Harris JL. *Priming Obesity: Direct Effects of Television Food Advertising on Eating Behavior and Food Preferences* [PhD thesis]. New Haven, CT: Yale University; 2008.
13. Andreyeva T, Kelly IR, Harris JL. Exposure to food advertising on television: associations with children's fast food and soft drink consumption and obesity. *Econ Hum Biol*. 2011;9(3):221–233.
14. Chou S-Y, Rashad I, Grossman M. Fast-food restaurant advertising on television and its influence on childhood obesity. *J Law Econ*. 2008;51(4):599–618.
15. Zimmerman FJ, Bell JF. Associations of television content type and obesity in children. *Am J Public Health*. 2010;100(2):334–340.
16. Ogden CL, Carroll MD, Curtin LR, Lamb MM, Flegal KM. Prevalence of high body mass index in US children and adolescents, 2007–2008. *JAMA*. 2010;303(3):242–249.
17. Olshansky SJ, Passaro DJ, Hershov RC, et al. A potential decline in life expectancy in the United States in the 21st century. *N Engl J Med*. 2005;352(11):1138–1145.
18. White House Task Force on Childhood Obesity. Solving the problem of childhood obesity within a generation. Available at: [http://www.letsmove.gov/sites/letsmove.gov/files/TaskForce\\_on\\_Childhood\\_Obesity\\_May2010\\_FullReport.pdf](http://www.letsmove.gov/sites/letsmove.gov/files/TaskForce_on_Childhood_Obesity_May2010_FullReport.pdf). Accessed September 12, 2011.
19. Harris JL, Pomeranz JL, Lobstein T, Brownell KD. A crisis in the marketplace: how food marketing contributes to childhood obesity and what can be done. *Annu Rev Public Health*. 2009;30:211–225.
20. 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(9):881–886.
21. Peeler CL, Kolish ED, Enright M. The Children's Food & Beverage Advertising Initiative in action: a report on compliance and implementation during 2008. Available at: <http://www.bbb.org/us/storage/0/Shared%20Documents/finalbbbs.pdf>. Accessed September 12, 2011.
22. Hawkes C, Harris JL. An analysis of the content of food industry pledges on marketing to children. *Public Health Nutr*. 2011;14(8):1403–1414.
23. Harris JL, Schwartz MB, Brownell KD, et al. Evaluating the nutrition quality and marketing of children's cereals. Available at: [http://www.cerealfacts.org/media/Cereal\\_FACTS\\_Report.pdf](http://www.cerealfacts.org/media/Cereal_FACTS_Report.pdf). Accessed September 12, 2011.
24. Kunkel D, McKinley C, Wright P. The impact of industry self-regulation on the nutritional quality of foods advertised on television to children. Available at: [www.childrennow.org/uploads/documents/adstudy\\_2009.pdf](http://www.childrennow.org/uploads/documents/adstudy_2009.pdf). Accessed September 12, 2011.
25. Wilde P. Self-regulation and the response to concerns about food and beverage marketing to children in the United States. *Nutr Rev*. 2009;67(3):155–166.
26. Sharma LL, Teret SP, Brownell KD. The food industry and self-regulation: standards to promote success and to avoid public health failures. *Am J Public Health*. 2010;100(2):240–246.
27. Hawkes C. Regulating food marketing to young people worldwide: trends and policy drivers. *Am J Public Health*. 2007;97(11):1962–1973.
28. *Central Hudson Gas & Electric Corp v Public Service Commission of New York*, 447 US 557, 566 (1980).
29. Pomeranz JL. Television food marketing to children revisited: the Federal Trade Commission has the constitutional and statutory authority to regulate. *J Law Med Ethics*. 2010;38(1):98–116.
30. Kozinski A, Banner S. The anti-history and pre-history of commercial speech. *Tex Law Rev*. 1993;71:747.
31. *Virginia State Board of Pharmacy v Virginia Citizens Consumer Council*, 425 US 748, 765 (1976).
- 32a. *Lorillard v Reilly*, 533 US 525, 564 (2001).
- 32b. *Brown v Entertainment Merchants Association*, 131 S Ct 2729, 2736 (2011).
33. *Rubin v Coors Brewing Co*, 514 US 476, 481 (1995).



34. Tobacco master settlement agreement. Available at: <http://oag.ca.gov/tobacco/resources>. Accessed September 12, 2011.
35. *Graham v Florida*, 130 S Ct 2011, 2026 (2010).
36. *Bellotti v Baird*, 443 US 622, 634 (1979).
37. *Parham v J.R.*, 442 US 584, 602 (1979).
38. *Bates v State Bar of Arizona*, 433 US 350, 383 (1997).
39. *In re R.M.J.*, 455 US 191, 203 (1982).
40. *Friedman v Rogers*, 440 US 1, 12 (1979).
41. Federal Trade Commission. FTC policy statement on deception. Available at: <http://www.ftc.gov/bcp/policystmt/ad-decept.htm>. Accessed September 12, 2011.
42. Public Health Law & Policy. Consumer protection: an overview of state laws and enforcement. Available at: <http://www.phlpnet.org/childhood-obesity/products/State-AGs>. Accessed September 12, 2011.
43. *Thompson v Western States Medical Center*, 535 US 357, 371 (2002).
44. *Zauderer v Office of Disciplinary Counsel*, 471 US 626, 651 (1985).
45. *Peel v Attorney Disciplinary Commission*, 496 US 91, 110 (1990).
46. Harris JL, Brownell KD, Bargh JA. The food marketing defense model: integrating psychological research to protect youth and inform public policy. *Soc Issues Policy Rev*. 2009;3(1):211–271.
47. Advertising Research Foundation. Innerscope research: a revolution in audience research. Available at: [http://s3.amazonaws.com/theadf-org-aux-assets/downloads/cnc/engagement/2008-11-19\\_ARF\\_Engagement\\_Innerscope.pdf](http://s3.amazonaws.com/theadf-org-aux-assets/downloads/cnc/engagement/2008-11-19_ARF_Engagement_Innerscope.pdf). Accessed September 12, 2011.
48. Binet L, Field P. Empirical generalizations about advertising campaign success. *J Advert Res*. 2009;49(2):130–133.
49. Petty RE, Wegener DT. The elaboration likelihood model: current status and controversies. In: Chaiken S, Trope Y, eds. *Dual-Process Theories in Social Psychology*. New York, NY: Guilford Press; 1999:37–72.
50. Eagly AE, Chaiken S. Process theories of attitude formation and change: the elaboration likelihood model and heuristic systematic models. In: Eagly AE, Chaiken S, eds. *The Psychology of Attitudes*. Ft. Worth, TX: Harcourt Brace Jovanovich; 1993:305–325.
51. Derbaix C, Bree J. The impact of children's affective reactions elicited by commercials on attitudes toward the advertisement and the brand. *Int J Res Marketing*. 1997;14(3):207–229.
52. Livingstone S, Helsper EJ. Does advertising literacy mediate the effects of advertising on children? A critical examination of two linked research literatures in relation to obesity and food choice. *J Commun*. 2006;56(3):560–584.
53. Te'eni-Harari T, Lampert SI, Lehman-Wilzig S. Information processing of advertising among young people: the elaboration likelihood model as applied to youth. *J Advert Res*. 2007;47(3):326–340.
54. Cohen JB, Pham MT, Andrade EB. The nature and role of affect in consumer behavior. In: Haugtvedt CP, Herr PM, Kardes FR, eds. *Handbook of Consumer Psychology*. New York, NY: Lawrence Erlbaum Associates; 2008:297–348.
55. Shimp TA, Stuart EW, Engle RA. A program of classical conditioning experiments testing variations in the conditioned stimulus and context. *J Consum Res*. 1991;18:1–12.
56. Baker WE. When can affective conditioning and mere exposure directly influence brand choice? *J Advert*. 1999;28(4):31–46.
57. Monahan JL, Murphy ST, Zajonc RB. Subliminal mere exposure: specific, general and diffuse effects. *Psychol Sci*. 2000;11(6):462–466.
58. Janiszewski C. Preattentive mere exposure effects. *J Consum Res*. 1993;20:376–392.
59. Ferraro R, Bettman JR, Chartrand TL. The power of strangers: the effect of incidental consumer brand encounters on brand choice. *J Consum Res*. 2008;35:729–741.
60. Smith ER. Mental representation and memory. In: Gilbert DT, Fiske S, Lindzey G, eds. *Handbook of Social Psychology*. Vol. 1, 4th ed. New York, NY: McGraw-Hill; 2002:391–445.
61. Aaker JL, Biel AL. Brand equity and advertising: an overview. In: Aaker DA, Biel AL, eds. *Brand Equity and Advertising: Advertising's Role in Building Strong Brands*. Hillsdale, NJ: Lawrence Erlbaum Associates; 1993:1–10.
62. Punj GN, Hillyer CL. A cognitive model of customer-based brand equity for frequently purchased products: conceptual framework and empirical results. *J Consum Psychol*. 2004;14(1–2):124–131.
63. Heath R. Low involvement processing—a new model of brands and advertising. *Int J Advert*. 2000;19:1962–1973.
64. Naik PA, Raman K. Understanding the impact of synergy in multimedia communications. *J Marketing Res*. 2003;48(5):375–388.
65. Bandura A. Social cognitive theory of mass communication. In: Zillman JBD, ed. *Media Effects: Advances in Theory and Research*. Mahwah, NJ: Lawrence Erlbaum Associates; 2002:121–154.
66. Keller KL. Brand synthesis: the multidimensionality of brand knowledge. *J Consum Res*. 2003;29:595–600.
67. Robinson TN, Borzekowski DL, Matheson DM, Kraemer HC. Effects of fast food branding on young children's taste preferences. *Arch Pediatr Adolesc Med*. 2007;161(8):792–797.
68. Harris Interactive. Trends & Tudes. Available at: <http://www.harrisinteractive.com/newsroom/newsletters/trendstudies.aspx>. Accessed September 12, 2011.
69. Boush DM, Friestad M, Wright P. *Deception in the Marketplace*. New York, NY: Routledge; 2009.
70. Sprott DE. The policy, consumer, and ethical dimensions of covert marketing: an introduction to the special section. *J Public Policy Marketing*. 2008;27(1):4–6.
71. Petty RD, Andrews JC. Covert marketing unmasked: a legal and regulatory guide for practices that mask marketing messages. *J Public Policy Marketing*. 2008;27(1):7–18.
72. McClure SM, Li J, Tomlin D, Cypert KS, Montague LM, Montague PR. Neural correlates of behavioral preference for culturally familiar drinks. *Neuron*. 2004;44(2):379–387.
73. Coca-Cola. Open happiness. Available at: [http://www.thecoca-colacompany.com/dynamic/press\\_center/2009/01/open-happiness.html](http://www.thecoca-colacompany.com/dynamic/press_center/2009/01/open-happiness.html). Accessed September 12, 2011.
74. Grier SA, Mensinger J, Huang SH, Kumanyika SK, Stettler N. Fast-food marketing and children's fast food consumption: exploring parents' influences on an ethnically diverse sample. *J Public Policy Marketing*. 2007;26(2):221–235.
75. Signorielli N, Staples J. Television and children's conceptions of nutrition. *Health Commun*. 1997;9(4):289–301.
76. Harris JL, Bargh JA. Television viewing and unhealthy diet: implications for children and media interventions. *Health Commun*. 2009;24(7):660–673.
77. Chernin A. *The Relationship Between Children's Knowledge of Persuasive Intent and Persuasion: The Case of Televised Food Marketing* [PhD thesis]. Philadelphia, PA: University of Pennsylvania; 2007.
78. Glanz K, Basil M, Maibach E, Goldberg J, Snyder D. Why Americans eat what they do: taste, nutrition, cost, convenience and weight control concerns as influences on food consumption. *J Am Diet Assoc*. 1998;98(10):1118–1126.
79. Neumark-Sztainer D, Wall M, Perry C, Story M. Correlates of fruit and vegetable intake among adolescents: findings from Project EAT. *Prev Med*. 2003;37(3):198–208.
80. French SA, Story M, Hannan P, et al. Cognitive and demographic correlates of low-fat vending snack choices among adolescents and adults. *J Am Diet Assoc*. 1999;99(4):471–475.
81. Wilkinson C, Room R. Warnings on alcohol containers and advertisements: international experience and evidence on effects. *Drug Alcohol Rev*. 2009;28(4):426–435.
82. Crawford MA, Balch GI, Mermelstein R. Responses to tobacco control policies among youth. *Tob Control*. 2002;11(1):14–19.
83. Robinson TN, Killen JD. Do cigarette warning labels reduce smoking? *Arch Pediatr Adolesc Med*. 1997;151(3):267–272.
84. White V, Webster B, Wakefield M. Do graphic health warning labels have an impact on adolescents' smoking-related beliefs and behaviors? *Addiction*. 2008;103(9):1562–1571.
85. Germain D, Wakefield MA, Durkin SJ. Adolescents' perceptions of cigarette brand image: does plain packaging make a difference? *J Adolesc Health*. 2010;46(4):385–392.
86. John DR. Consumer socialization of children: a retrospective look at twenty-five years of research. *J Consum Res*. 1999;26:183–213.
87. Savage JS, Fisher JO, Birch LL. Parental influence on eating behavior: conception to adolescence. *J Law Med Ethics*. 2007;35(1):22–34.
88. Boush DM, Friestad M, Rose GM. Adolescent skepticism toward TV





advertising and knowledge of advertising tactics. *J Consum Res.* 1994;21:165–175.

89. Pechmann C, Levine L, Loughlin S, Leslie F. Impulsive and self-conscious: adolescents' vulnerability to advertising and promotion. *J Public Policy Marketing.* 2005;24(2):202–221.

90. Leslie FM, Levine LJ, Loughlin SE, Pechmann C. Adolescents' psychological and neurobiological development: implications for digital marketing. Available at: [http://www.phlpnet.org/sites/phlpnet.org/files/Adolescent\\_development\\_and\\_interactive\\_marketing.pdf](http://www.phlpnet.org/sites/phlpnet.org/files/Adolescent_development_and_interactive_marketing.pdf). Accessed September 12, 2011.

91. Roberto C, Baik J, Harris JL, Brownell KD. The influence of licensed characters on children's taste and snack preferences. *Pediatrics.* 2010;126(1):88–93.

92. Schor JB, Ford M. From tastes great to cool: children's food marketing and the rise of the symbolic. *J Law Med Ethics.* 2007;35(1):10–21.

93. Harris JL, Graff SK. Protecting children from harmful food marketing: options for local government to make a difference. *Prev Chronic Dis.* 2011;8(5):A92.

94. Graff SK. First Amendment implications of restricting food and beverage marketing in schools. *Ann Am Acad Pol Soc Sci.* 2008;615(1):158–177.

## Policy Instruments Used by States Seeking to Improve School Food Environments

Monal R. Shroff, PhD, Sonya J. Jones, PhD, Edward A. Frongillo, PhD, and Michael Howlett, PhD

US legislatures and program administrators have sought to control the sale of foods offered outside of federally funded meal programs in schools, but little is known about which policies, if any, will prevent obesity in children.

We used a theoretical policy science typology to understand the types of policy instruments used by US state governments from 2001 to 2006. We coded 126 enacted bills and observed several types of instruments prescribed by state legislatures to influence the foods sold in schools and improve the school food environment.

Our study helps to better understand the various instruments used by policymakers and sets the stage to examine the effectiveness of the policy instruments used to prevent obesity. (*Am J Public Health.* 2012;102:222–229. doi:10.2105/AJPH.2011.300338)

**IN THE UNITED STATES OVER** the past 20 years, the prevalence of obesity has increased from

6.5% to 17.0% among children aged 6 to 11 years and from 5.0% to 17.6% among those aged 12 to 19 years.<sup>1–3</sup> Sugar-sweetened beverages and unhealthy snacks are associated with obesity among children and young people in these age groups.<sup>4–6</sup>

Children obtain sugar-sweetened beverages and snacks predominantly at home and at restaurants, stores, and schools. Because children spend most of their waking hours in school and have multiple opportunities to eat while there, improving the school food environment is a target of policymakers seeking to improve dietary intake and reduce obesity.<sup>7</sup> Intervention research has demonstrated that changes in school meal programs and à la carte programs can alter children's dietary behaviors,<sup>4,8</sup> and recently legislatures and program administrators have sought to control the sale of competitive foods (i.e., foods offered outside of federally funded meal programs), which are generally high in fat and sugar and low in nutrients.<sup>9,10</sup>

Policies intended to control the sale of competitive foods vary

widely, and little is known about which, if any, of these policies reduce obesity in children. There are substantial gaps in knowledge about evidence-based policies in public health, but the science of policy analysis and understanding contextual factors associated with the selection of policy tools is gaining recognition in the field of public health policy.<sup>11</sup> In this regard, public health research can benefit from studies of policy processes, content, and outcomes that incorporate policy science frameworks and theory.<sup>12–14</sup> To help meet that need, we used a theoretical framework from the policy science literature to help understand the policy instruments used by state governments to address the high prevalence of childhood obesity in the United States.<sup>15</sup>

Policy instruments are the tools prescribed by policymakers to bring about proposed changes in a policy (i.e., the “devices government has at its disposal for implementing policies”<sup>15(p87)</sup>). We studied legislation related to the sale or availability of competitive foods in schools to identify the types

and range of policy instruments used in this sector. Specifically, we examined the policy instruments used during 2001 to 2006 by legislatures in the 50 US states seeking to improve the school food environment in the context of addressing child obesity.

Although the legislative bills we analyzed cannot illuminate all of the rich social process and social environment contexts that are crucial to an understanding of the substance of policy development and ultimate implementation success or failure, our analysis provides a better understanding of the policy instruments used by state legislatures in their attempts to achieve their policy intents. Our main objective was to formulate a policy framework that classifies the types of policy instruments used by policymakers, so the reasons for their selection and their impact, or lack of it, might be better understood. Here we describe the salient features of the framework and illustrate its utility in understanding the choices governments have made and the opportunities they have