

# Weighing In: The Taste-Engineering Frame in Obesity Expert Discourse

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Obesity is a significant public health concern whose importance and intractability warrant a detailed analysis of the frames used in expert discourse.<sup>1-3</sup> The use of frames is critical to public health because they can determine the worthiness of a social health concern in the public eye, set the boundaries of public opinion and debate,<sup>4</sup> and influence the level of public and private investment a social health concern receives.<sup>5,6</sup>

As with other social phenomena, obesity discourse has been dominated by the individualist, personal responsibility frame<sup>7</sup> even as individual approaches toward obesity have demonstrated limited effectiveness.<sup>8</sup> Because the only tools the personal responsibility frame proposes are those of educating the public about obesity, once this strategy has been exhausted, this frame has no other suggestions to offer. Moreover, the personal responsibility frame promotes ineffective strategies such as shaming and stigmatization, which can lead to further weight gain.<sup>9</sup> Developing alternative frames of discourse may be an important part of a paradigm shift that would enable research, practice, and politics to move away from the personal responsibility frame toward frames in which more creative obesity-prevention policies become politically feasible.

Policies that aim to address systemic factors related to obesity strongly depend on the support of public opinion and policymakers.<sup>10</sup> However, previous opinion polls suggest that there is limited support for broad-based policies that target upstream factors.<sup>11-16</sup> The key is to identify alternative frames of obesity discourse that could help people see players and solutions within the environmental frame as easily as they see individuals in the personal responsibility frame.

An important first step in identifying alternative frames is to consider the understandings of experts on obesity prevention, how these understandings shape their communications, and the impacts of these communications among the public.<sup>17</sup> This work is all the more

**Objectives.** We sought expert opinion on the problems with 2 dominant obesity-prevention discourse frames—personal responsibility and the environment—and examined alternative frames for understanding and addressing obesity.

**Methods.** We conducted 60-minute, semistructured interviews with 15 US-based obesity experts. We manually coded and entered interview transcripts into software, generating themes and subthematic areas that captured the debate's essence.

**Results.** Although the environmental frame is the dominant model used in communications with the public and policymakers, several experts found that communicating key messages within this frame was difficult because of the enormity of the obesity problem. A subframe of the environmental frame—the taste-engineering frame—identifies food industry strategies to influence the over-consumption of certain foods and beverages. This emerging frame deconstructs the environmental frame so that causal attributes and responsible agents are more easily identifiable and proposed policies and public health interventions more salient.

**Conclusions.** Expert interviews are an invaluable resource for understanding how experts use frames in discussing their work and in conversations with the public and policymakers. Future empirical studies testing the effectiveness of the taste-engineering frame on public opinion and support for structural-level health policies are needed. (*Am J Public Health*. 2015;105:554–559. doi:10.2105/AJPH.2014.302273)

urgent as there appears to be no published consensus on the causes of obesity, with major studies reasserting that the causes of obesity are “extremely complex” and “fiendishly hard to untangle.”<sup>18-20</sup> In light of such assertions, is it any wonder that the public refuses to go where experts dare not tread? Broad support for addressing the obesity epidemic is sure to be tepid when experts cannot clearly say what its causes are. Yet perhaps there is more of a consensus than these published reports are willing to acknowledge. The public health community's responsibility is to find causal explanations for obesity that are both true to the science and clear enough for the public to embrace. Although the public is capable of recognizing multiple causes of disease,<sup>21</sup> the dominance of the personal responsibility frame in discourse forecloses opportunities to advance different perspectives of obesity causation.

We addressed this gap in the literature by conducting one-on-one interviews with US-based experts who work in obesity. These interviews approximate a natural conversation about obesity prevention while prompting discursive reasoning within the context of potential alternative frames. These interviews examine core reasoning patterns to better understand how experts communicate about obesity prevention and to determine the basic content of the messages experts want to advance with the public and policymakers.<sup>17</sup> Two main objectives of the interviews are to (1) assess expert opinion on the problems associated with the dominant frames used by the public in understanding obesity and (2) examine whether alternative frames are in use by experts.

Policymakers and media predominantly frame obesity as an issue of personal responsibility or as an environmental issue.<sup>4,22,23</sup> Far from being politically neutral, the

personal responsibility frame is ideologically charged and politically consequential.<sup>24–26</sup> Such a frame places a special emphasis on the individual and the ability to make rational choices and exercise willpower to avoid becoming obese,<sup>27</sup> while denying the role of harmful social and structural forces.<sup>28</sup> As a consequence, the frame maintains the status quo by casting responsibility onto individuals<sup>29</sup> while deflecting the role of institutions.<sup>25</sup>

Conversely, the environmental frame assigns responsibility to business, government, and larger social forces, often without specifying a concrete causal mechanism.<sup>26,27</sup> Perhaps because the causal role of the environment is unclear to the general public, news stories tend to promote individual behavioral change as a solution more often than changes in social or economic policies.<sup>4,30</sup> Similar to other social health concerns, there is significant cultural and political resistance to the idea of environmental causation of obesity.<sup>27</sup>

## METHODS

We invited 29 individuals with significant expertise in the area of obesity research, policy, and advocacy in the United States to participate in the study. We identified these obesity experts through 2 nonprobability processes: purposive sampling (based on literature and Internet searches as well as our own experience) and snowball sampling (the advice of other experts within our own institution, key stakeholders, and interviewees).<sup>31</sup> The main selection criteria for invitees were level of expertise on obesity (indicated by amount of published research, number of citations, whether they hold senior-level positions, level of recognition in public health community, etc.). We identified approximately 79% and 21% of invited participants through purposive sampling and snowball sampling, respectively.

Individuals were invited via e-mail to participate in the study. Two weeks following initial contact, participation was confirmed via e-mails or telephone calls. Four invited individuals did not respond. Scheduling conflicts were the primary reason given among those declining to participate ( $n = 6$ ). At the end of the recruitment period, 19 agreed to participate. Of these, 15 participated in a 60-minute, semistructured interview. (Because of time

constraints, the remaining 4 were unable to participate.) The final sample of participants represented the full population of invited participants. We conducted interviews between August and October 2012, and recorded and transcribed them for analysis. All participants were assured that their comments would be anonymous and that no identifying information would be included in the final report.

Twenty interview questions directed the conversation. Interviews ranged from 49 to 75 minutes. Because the protocol was semistructured, we posed emerging questions as appropriate according to the conversation. We pretested the interview protocol with a sample of University of California Los Angeles obesity researchers ( $n = 4$ ) to clarify question wording and sequence, length of time, and comprehension.

We used a grounded-theory approach<sup>32</sup> to extract themes from the interviews. We manually coded transcripts and entered them into QSR NVivo 10 software (QSR International Pty Ltd, Victoria, Australia), through identification of nodes and themes. We applied NVivo coding to the transcripts, with general searches for word usages and imputed nodes. This method generated diverse themes and subthematic areas. We iteratively read transcripts until thematic saturation was reached.

## RESULTS

Each of the participants held expertise in a variety of areas including diet and nutrition, physical exercise and education, policy, and advocacy. Ten participants held faculty appointments at major US-based research universities (3 were pediatricians, 3 held appointments in departments of nutrition and physical sciences, and 4 held appointments in departments of health policy/management, prevention research, community health sciences, and social behavior). The remaining participants ( $n = 5$ ) worked in national and state policy or science institutions. Thirty-three percent of the participants were male and 80% were non-Hispanic White. All participants held advanced research or professional degrees.

Four overarching themes emerged from contextual analysis of the interviews: (1) the environmental frame is the dominant model used by experts in communications with the public and policymakers, (2) various strategies

used by the food industry significantly influence the overconsumption of certain food and beverage products, (3) the personal responsibility frame and its associated values impede progress in obesity-prevention efforts, and (4) other values besides personal responsibility are also important to emphasize throughout obesity discourse (Table 1). Selective quotations from experts are used to clarify the discussion.

Many of the experts' views regarding the role of the environment and the food industry on people's food and beverage choices were shared in response to the first interview question, "What are the top 3 issues that are important for the public to know about obesity prevention?" Some experts emphasized specific issues, but others were more vague given the "enormity and complexity of the obesity problem." Thematic analysis revealed that experts collectively identified the following top 3 issues: (1) obesity is a complex problem that is tied to other societal problems; (2) personal responsibility is not an adequate explanation for the rise in obesity rates in the general population; and (3) the environment is the largest influence on obesity and our food choices; specifically, the food industry significantly influences our food choices by systematically manipulating the environment.

### The Complexity of Obesity

The application of the environmental frame in obesity research extends into several areas, including the physical,<sup>33</sup> food,<sup>34</sup> social,<sup>35</sup> home,<sup>36</sup> school,<sup>37</sup> neighborhood,<sup>38</sup> socioeconomic,<sup>39</sup> cultural,<sup>40</sup> and built<sup>41</sup> environments. Yet this depth and breadth of research—essential to advancing science—may be getting in the way of communicating this science to nonscientists. For example, some experts noted that obesity was a complex problem that had "no easy solutions" and was "tied to many of the problems and issues we're facing as a society."

The connection between obesity and other issues, such as transportation and air pollution, was also emphasized. Therefore, interdisciplinary efforts are needed to focus on the structural determinants that produce and sustain the obesity problem. Yet, a few experts cautioned that describing obesity as a complex problem could discourage changes in personal behaviors and stymie efforts to implement structural-level obesity policies.

**TABLE 1—Critical Themes, Subthemes, and Key Points From the Obesity Expert Interviews: 2012**

Themes and Subthemes	Key Points
Environment	Large and encompassing; complex. Details everything from food environment to air quality to physical activity space but is difficult to communicate, difficult to develop strategic action and planning, and difficult to identify responsible agents.
Taste engineering: food environment (environmental engineering)	Imbalance of access—there are more affordable opportunities to eat junk food and less affordable opportunities to eat healthy food that tastes good; unhealthy food becomes the default option. Placement of foods at children’s eye level at check-out counters creates tension between parental authority over children’s food consumption and effects of product placement.
Taste engineering: food design (physiological engineering)	Research demonstrating that certain foods can be physically addicting is going to be the “game changer.” One of the implications of food addiction research is that people may not be as in control of their food consumption as they would like to think.
Taste engineering: cognition (cognitive engineering)	Omnipresence of advertising and marketing of unhealthy food establishes obesogenic cultural norms. The 4 “P’s” of food marketing—product, price, place, and promotion—yield harmful effects on food consumption, particularly among children.
Personal responsibility	
American traditionalism; moral fabric of the United States; individualism	Although personal responsibility should be valued, the flip side is that if one fails it is because it is one’s own fault. Having personal responsibility as the default frame weakens the probability of implementing population-based policies to address obesity. People’s natural way to think about health is through an individual lens.
Self-determination and willpower	Health behavior can often be influenced by something other than sheer willpower.
Choice and freedom	There is an illusion of “free choice” and autonomy when it comes to making healthy food choices; choices are made within the context of the food environment.
Values	
Social responsibility	There does not need to be a clash between “personal” responsibility and “social” responsibility; how do we as a collective society make it possible for individuals to practice personal responsibility?
Equality of opportunity	Giving people the same opportunity to eat well and exercise also affects their ability to practice personal responsibility.
Consumer rights and freedoms	How do we preserve the sanctity of consumer choice and freedom?

**The Limits of Personal Responsibility**

Experts expressed deep concern that the public may not be fully aware of how much the environment undermines personal responsibility:

I think people recognize that they play a key role in their own food choices, but they often don’t recognize outside forces [that have] such a profound effect on shaping those choices.

Whereas experts acknowledged its role in obesity prevention, several were concerned that focusing exclusively on personal responsibility diminishes other critical, structural-level influences such as the ubiquity of processed food marketing and the limited access to and availability of affordable, fresh, and healthy food options. One expert explained:

I think you can try to play on personal responsibility and acknowledge it. Say “yes of course personal responsibility is important” but there are other things that also influence food choices and people’s ability to exercise personal responsibility, which could be addressed to make it easier to do what they want.

Experts noted the importance of finding ways to effectively communicate this message with the public to correct misperceptions that “they’re in it all by themselves” and to assure them that “there’s no way [obesity] is a personal failure for two-thirds of the public.”

Experts also noted that, as a value, personal responsibility is fundamentally linked to the concepts of autonomy and individualism, which reinforces beliefs in the United States that the individual is exclusively responsible for his or her health.<sup>42</sup> Personal responsibility as a value can also evoke a language of blame, weakness, and moral vice.<sup>7,43</sup>

**The Environment and How the Food Industry Shapes Choice**

The top issue identified by most experts (n = 13) was the influence of the environment on obesity and people’s food choices. One expert succinctly stated:

First, the environment dictates the population’s health. Second, prevention is a consequence of how that environment is shaped. Third, if we want the kind of productive and good society that I think most people want, we have to pay attention to that environment.

A more sobering view was shared by one expert, who stated that “the environment in effect is conspiring to add pounds without anybody thinking about it or knowing about it.”

Experts often used the terms “control,” “used,” “taken advantage of,” and “undermined” to emphasize the “corporate objective to increase profit to their shareholders” by inducing overconsumption of certain food products. One expert compared the physical and mental energy needed to eat healthily to “swimming upstream” and another stressed the incompatibility between the interests of the food industry and those of the consumer:

I want the public to think a lot about the role that corporations play and to know what the true purpose of corporations [is], which is to make

money and to sell as much of their product as they possibly can. And so there's an inherent contradiction in a company saying "we care about your health" when they are marketing and selling processed junk.

Many experts discussed the food industry within the context of environmental factors that constrain people's ability to eat well, the effects of advertising and marketing on food consumption, and the association between certain foods and food addiction.

*The food environment.* A perspective shared by experts was the difficulty for people to "maintain a healthy weight within an obesogenic environment." Obesogenic environments were referred to as those lacking access to fresh, tasty, and whole foods and were teeming with an overabundance of convenience stores selling cheap, processed snacks and sugar-sweetened beverages (SSBs). Some experts argued that the environment was strategically designed to encourage unhealthy eating habits while making the consumption of fresh food virtually impossible:

So it's like going to a doctor, or a dietitian and you're having them counsel you on how to eat a healthy diet and then throwing people back into this food environment where it's so incredibly difficult and nearly impossible to have a healthy weight.

Establishing optimal defaults as a strategy to counter the adverse effects of the food environment was also raised. A few experts argued that current food-environment defaults "are not based on health considerations" but are instead established "by food companies and restaurants" who determine beverage sizes and "whether certain foods such as potato chips and french fries are automatically served as side dishes." These default options, as one expert proclaimed, "have a really big effect on weight."

*Cognition.* The discussion of reasoning about food choices focused primarily on the complex effects of food advertising and marketing, particularly among children.<sup>44</sup> Across the board, experts agreed on food advertising and marketing restrictions to children on television, the Internet, and cell phones. Some experts also raised the question of whether protections afforded by the First Amendment should be upheld within the context of children's health and well-being.

One expert noted that advertising to children is "being done very specifically" to increase

brand loyalty and sales, which undermined parental authority:

Food marketing interferes with parental responsibility and parental choice . . . if they're marketing to kids, they are purposefully trying to turn the child against the parent and have children nag them for food that parents don't want them to have.

Several experts also discussed advertising and marketing effects on adult decision-making, noting that the "bombardment of advertising" and constant "images and smells of attractive, tasty foods, of opportunities to eat 24/7" overwhelms one's ability to "make healthy food decisions."

*Food design.* Experts expressed both optimism and caution about emerging evidence on the similarities between the physiological reaction to excessive food consumption and addiction to psychoactive substances.<sup>45</sup> Some experts argued that the evidence on food addiction could be a "game changer" for obesity-prevention policies and serve as a communications bridge to the public, which could "help people understand that once again there's much more going on than willpower" and "soften the public's resistance to the kinds of policies that would reshape the environment and make it a healthier place." Others believed that food addiction research could shift the conversation about obesity causality as evidence regarding nicotine addiction did for tobacco control.<sup>46</sup>

However, some experts questioned the feasibility of applying strategies used in tobacco control to combat obesity because "a sugared beverage is not the same thing as tobacco." Concerns were also shared about relying on a food addiction argument in a society that has little tolerance for perceived self-inflicted health problems, even those with other plausible targets of blame<sup>27</sup>:

Does it help us considering addiction is so poorly treated in this country anyway, and there is no money or resources to go into dealing with addiction in our country?

Some experts opined that watchful waiting might be best with regard to the food addiction theory, expressing reservations about the existence of "a magic bullet to solving things."

## DISCUSSION

The objective of this research was to examine how experts discuss the core story of

obesity prevention to identify potential alternative frames that could prove more useful in garnering public support for structurally oriented approaches to addressing obesity. Although most experts tend to discuss the causal attributes of obesity within the context of the environment and the food industry, the media and the public generally discuss the issue within the context of the individual.<sup>15</sup> The majority of expert opinion on the food industry's influence of taste preferences and choices can be categorized within an alternative sub-frame of the environmental frame—taste engineering.

### Taste Engineering as a Viable Alternative Frame

Current models of obesity emphasize the different actors and factors through which obesity-related behaviors travel. The foresight model, for example, does a superb job cataloging the factors involved, but is less explicit about the causal mechanisms.<sup>20</sup> Using such a model to guide public decision-making around obesity is like navigating around town with a phone book. What is needed is a map.<sup>47</sup> Reframing obesity as a consequence of taste engineering provides a unifying causal map for some of the factors that influence obesity. The taste-engineering frame gathers many of the insights carefully collected as part of the environmental frame and recognizes that the environment has not changed at random, but rather, the food industry "wields extreme power on what to eat, when to eat, and how much to eat." The frame does not obviate individual agency but instead identifies those constraints that limit people's ability to freely choose the type and amount of food to eat. As opposed to the rational-choice model, which considers individual preferences as predetermined and immutable,<sup>48</sup> taste engineering calls attention to the ways that preferences are deliberately altered.

There are 3 central tenets of the frame—engineering of the food environment, cognitive engineering, and physiological engineering (food design). Engineering the food environment influences what and how much you eat by inundating the social and physical environment with cues to increase the desire for and consumption of large portions of unhealthy foods and beverages.<sup>49</sup> Cognitive engineering,



achieved through persistent advertising and marketing of processed snacks and SSBs, establishes lifelong habits and dietary preferences.<sup>50</sup> By increasing the saliency of product brands in the mind, marketing leads to increased preference for and consumption of those brands.<sup>50</sup> Physiological engineering creates physical dependency on certain types of food and beverages, by adding salt, sugar, caffeine, and even nicotine, for example, to exploit the dopamine and opiate systems.<sup>51</sup> Studies have shown that caffeine is added to potato chips, candy, and sunflower seeds,<sup>46</sup> and nicotine to fruit juices and bottled water.<sup>52</sup> Although the food industry insists these substances are added to enhance flavor, studies have shown no such detectable impact.<sup>46,53,54</sup>

### Policy Implications of the Taste-Engineering Frame

The taste-engineering frame readily identifies the specific public health policy and interventions that would most effectively countervail food industry engineering strategies. However, increasing support of such policies among the public can only be achieved through effective communication. Previous research on early childhood development,<sup>55</sup> child mental health,<sup>56</sup> and the social determinants of health<sup>57</sup> demonstrates that exposure to frames encouraging participants to deliberate these concerns within a broader societal context can significantly increase public support of population-based policies.

The recent attempt to limit the sale of SSBs larger than 16 ounces in New York City provides an opportunity to consider the role of effective communication. In its refusal to reinstate the New York City soft drink size limit law, the New York State Court of Appeals drew distinctions between the proposal and past initiatives of the city's Board of Health that had a "more direct link to the health of the public."<sup>58</sup> This view raises concerns about the potency of public messaging about the scientific connection between SSBs and obesity.<sup>59</sup> These expert interviews may reveal a missing link in the communication chain. For example, although there were a total of 138 references about the association between SSBs and obesity, it was identified only once as the most important thing for the public to know and understand about obesity prevention.

However, if SSB policies are considered an effective strategy to curb obesity rates, then the core story must assuredly and routinely identify SSBs as a major culprit.

### Values Embedded Within the Taste-Engineering Frame

Identifying and communicating values embedded within the taste-engineering frame could be useful to redressing public beliefs that proposed interventions or policy solutions in response to food engineering strategies are "lifestyle laws" and an affront to "personal freedom."<sup>60</sup> Responding to a comment about how policies are a way to "reinforce [the concept of] freedom of choice" to the public, one expert clarified:

Policy is not a matter of interference with personal choice; it's a matter of allowing parents to make their own choices for their own kids, rather than having someone interfere with it.

Some experts noted values such as "consumers' autonomy" and "parental rights" and others referenced "knowledge" and "information symmetry."

### Conclusions

Expert interviews are an invaluable resource in eliciting and illuminating the ways in which experts use frames in discussing their work and in conversations with the public and policymakers. The taste-engineering frame reflects a consensus among experts, even though it is not explicitly used by them. It deconstructs the popularly referenced environmental frame so that causal attributes and responsible agents are more easily identifiable and proposed policies and public health interventions more salient. Persuading experts to be more direct about the taste-engineering frame may help to shift the discourse around obesity-prevention policies. Furthermore, future empirical studies testing the effectiveness of this frame and its associated values on public opinion and support for population-based health policies are also recommended. ■

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### Contributors

S. E. Ortiz originated the study, conducted the interviews and the analyses, and wrote the article. F. J. Zimmerman provided oversight for the investigation, methodological support, and substantive editorial feedback. F. D. Gilliam Jr provided methodological support and editorial feedback.

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This project was approved by the UCLA institutional review board.

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