MANUFACTURING HEALTH:

A MARRIAGE OF CONVENIENCE BETWEEN BIG FOOD AND AMERICAN CONSUMERS

PREPARED BY: LITA REYES, REYES MARKETING
COMMISSIONED BY: TOMKAT CHARITABLE TRUST

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To the memory of Brooks Shumway whose support emboldens me today and forward.

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EXECUTIVE SUMMARY

We are at a tipping point in the relationship between food and health. Americans are handing over their health needs to the food and beverage industry, and Big Food companies are making massive investments and food portfolio adjustments because they see the next major consumer trend as health. As happened with organic ideals and regulations, Big Food's entry into the health arena means they are redefining "healthy" foods and are positioning themselves to capture this lasting market. Big Food companies have shifted messaging towards nutrition, acquired diet and health companies, and entered the pharmaceutical industry. Now more than ever, protecting public health requires garnering attention and effectively changing eating behavior.

Consumers make a strategic choice, whether consciously or unconsciously, to eat manufactured foods for convenience and in pursuit of their ideal of "health." American consumers are being trained to relate to beloved, iconic, global brands as trusted partners in their food and their health. However, the perception that health can be attained through conveniently packaged bottles, snack bars, and squeeze bags lures American consumers away from practices of real health. With metabolic syndrome skyrocketing, consumers pursue convenience, taste, and the vision of health as proffered by Big Food to the detriment of their real health. Americans remain largely unhealthy, overweight, and undernourished by their food.

In order to positively impact food choices and improve the health of Americans, we must teach children to love and enjoy whole food, and we must do so in a way that competes effectively with the messaging and lifestyle promoted by major brands.

Declining American health and increasing concern about the future of our food system has turned public attention to food manufacturing and distribution processes. With over 100 years experience, Big Food companies are multibillion dollar and multinational successes. In the process, they have learned valuable lessons about winning market share and shifting our eating behavior. This paper reviews how Big Food uses marketing strategies, advances their concerns at a policy level, and conducts consumer behavior research to sell their products. Utilizing the strategies that Big Food has so effectively employed to shape our eating paradigm can aid whole food and public health proponents to shape an effective and sophisticated response. The seven key lessons from Big Food:

- Define winning
- Build a shared vision
- Unify
- Understand the consumer
- Promote an aspirational lifestyle
- Play every angle
- Commit to long-term change

While most adults have had experience eating whole food during their childhood, many of today's children, especially in urban areas, have little such experience. Their eating experience is almost entirely comprised of fast food, manufactured food, and snack food, both at school and at home. In order to positively impact food choices and improve the health of Americans, we must teach children to love and enjoy whole food, and we must do so in a way that competes effectively with the messaging and lifestyle promoted by major brands.

Reshaping our society's relationship to food means forging a common vision and shifting our thinking paradigm about the approach to achieving that vision. Resources, both financial and human, have typically been divided across organizations with their own visions and strategies. However, aligning these committed organizations into a common vision can increase their impact. While America sits on the tipping point of handing over its health aspirations to Big Food, we still have the opportunity to interrupt Big Food's momentum and win back attention for a real health approach to eating.

INTRODUCTION

"Manufacturing Health" was conceived in Spring 2011 as a response to Kat Taylor, cofounder of TomKat Charitable Trust (TKCT), who was "hopping mad" about how consumer product goods manufacturers market their products. Kat was upset at the onslaught of Big Food marketing and how consumers are driven to constant purchasing, while not understanding their own drive to consume an often unhealthy stream of products. This has directly led to America's skyrocketing rates of obesity and metabolic syndrome.[1] Why do consumers make unhealthy food choices, and what is the contribution of Big Food manufacturers to societal health problems? In an effort to find the answers, TKCT wanted to better understand the Big Food industry, particularly the factors that contribute to consumers' food choices, in the hope of identifying strategies that could encourage people to make healthier, more sustainable food choices.

Big Food companies have entrenched their products in consumer lives over the course of more than a hundred years by effectively delivering a powerful combination of reliable taste and emotional aspiration fulfillment. This manufactured food differs substantially from traditional whole food in terms of its nutritional value, chemical and preservative content, and health impact. Big Food's history and experience mean that in today's marketplace, they are a powerful force in shaping products, rules and regulations, and consumer demand. In order to support the work of sustainable agriculture and to promote real health, this paper examines the business practices and future strategies of major players in the Big Food industry and how they use consumer behavior to sell their products.

BIG FOOD LANDSCAPE AND HISTORY

Four Key Players for Consideration

Analyzing the landscape of Big Food manufacturers, processors, distributors, and retailers, four key players stand out as the primary sources of what might be called "food culture." These major companies include soft drink and snack food manufacturers and a major retailer:

- Nestlé S.A.
- The Coca-Cola Company
- PepsiCo, Inc.
- Walmart Stores, Inc.

Nestlé is based in Switzerland and is the largest food-and-beverage company in the world.[2] Coca-Cola, founded in the U.S., is the largest beverage company in the world.[3] PepsiCo is based in the U.S. and is the second largest food-and-beverage company in the world (after Nestlé) and the largest food-and-beverage company in the U.S.[4] U.S.-based Walmart is the leading food retailer in the world and is more than 2.5 times as large as the next largest global retailer (France-based Carrefour), giving Walmart an unprecedented position in distribution.[5] (See Appendices A-D.)

In terms of direct impact on consumers, these three food manufacturers are world leaders, and Walmart serves as the world's leading retail partner, with well-placed global locations and entrenched support for brand building in local markets. Annual revenue for 2010 also reflects their leading international position: Nestlé $117.3 billion, PepsiCo $57.8 billion, Coca-Cola $35 billion, and Walmart $408 billion.[6,7,8,9]

Context Setting: Men on a Mission with Lasting Visions

Three of these Big Food competitors have pursued strikingly similar visions for more than 100 years and were founded on a common platform related to heath or nutrition. Nestlé was started in the 1800s and is nearly 146 years old. A Swiss pharmacist started the company seeking to help infants with problems breast-feeding. Promoting a healthy, cost-effective substitute to combat the problem of infant mortality, Nestlé was founded with an alternative product for infant nutrition.[10]

PepsiCo came into being in 1893 when a North Carolina pharmacist invented a similar form of the drink we know today as "Pepsi" to aid digestion. The formula was said to naturally stimulate the release of enzymes used in digestion. [11]

Coca-Cola's 125-year history is similar. A wounded civil war veteran trying to overcome his addiction to morphine developed a wine aimed at curing his addiction. Once prohibition arrived, he was then forced to make his beverage non-alcoholic.[12]

Although much newer, at only 49 years old, Walmart also has a beginning rooted in a mission to improve people's lives. As stated in the Walmart *2010 Annual Report*, "Sam Walton may not have been able to guess the specific challenges we've all faced over the past year or the challenges we'll face in the future. But he had a vision for a company that would help people 'save and do better' in life. And he believed that vision could apply everywhere."[13]

Contemporary Priorities

Today, each company's mission is translated into language reflecting the times. There is no debate that financials adding up is job one, but no firm does so without also maintaining a degree of focus on either perceived or real "greater good." In almost any given Big Food annual report, common themes emerge through the image choices, language use, and tone of communications to encourage investors. To some degree, the company names are interchangeable, whether processor, manufacturer, distributor, or retailer. Most of these organizations are following a similar path of market development, marketing practices, sustainability, stakeholder engagement, and challenges.

For example, the title of the 2010 Nestlé annual report is *Nestlé. Good Food. Good Life*. The report emphasizes the importance of creating value for both society and shareholders in building a successful business.[14] Coca-Cola entitled its 2010 Annual Review *Advancing Our Global Momentum*. The company's document highlights its aim to grow despite the economy, while being responsible to its stakeholders and the environment.[15] PepsiCo also aspires to something bigger than just being a profitable business, as evidenced by its most recent annual report title: *PepsiCo. The good company. Performance with purpose.*[16]

PepsiCo stands out among these Big Food companies for continually making more compelling decisions with regard to leadership and direction. In a May 2011 interview in *The New Yorker,* Indra K. Nooyi, PepsiCo's Chairman and CEO, stated that the company "must aspire to higher values than the day-to-day business of making and selling soft drinks and snacks."[17] As John Seabrook notes, "Nooyi is unique as the company's first woman leader. She's also an immigrant, a vegetarian, and a Hindu. She brings an atypical background to the role of C.E.O., a position typically filled with someone groomed in the finance arena. Given her prior roles in corporate strategy, Nooyi has an ideal skill set to position PepsiCo for new markets. She can be more effective at setting a path for the next 20 years with a vision for the company being 'the defining food and beverage company of the world.'"[18]

As it appears most poised to make short-term tradeoffs and adapt to market pressures to "clean up its act," PepsiCo will be used throughout this paper as the primary example to illustrate the relationship between Big Food and consumers. PepsiCo's priorities throughout the arc of its history represent a differentiation that makes it compelling to study most closely. The possibility of real transformation of the company's priorities and strategy could make history.

Among these Big Food manufacturers, it is clear that a 100-year history equates to a 100-year vision. It is difficult to know whether this was intentional or just a by-product of each company doing what it does well, playing to its strength, and thus ultimately defining its character by default. With a clear, crisp picture from the beginning about what to do, and a definition of winning measured in market share, Big Food continues to learn lessons, repeat what wins, and not repeat what loses.

CHANGING MARKETS

The United States marketplace is waking up to serious public concerns around societal and environmental issues. Consumers are sicker than they have ever been and are anticipated to get worse. Natural resources are finite, and with a growing population, no slow down in use is foreseeable in the near future.

Over the last 100+ years, Big Food's key strength has been their ability to effectively adapt to marketplace changes. Their experience and resources afford great insight into the changing nature of what consumers want, and Big Food then delivers it.

United States consumers are reaching a saturation point with the same old snacks. With increasing health issues, they want the same great tastes in healthier products. Simultaneously, new markets are opening up where Big Food's standard products are wanted. As a result, Big Food is adjusting their products and their distribution to meet the demands and interests of these changing markets.

Declining Interest in the United States

One of Big Food's current challenges in the United States is growing recognition of the contribution of manufactured food to obesity. Despite the power of their brands, Big Food companies are susceptible to the pressures and impact of bad press. These organizations must deal with the obesity issue to protect themselves from a tarnished public image in order to protect their bottom line and their future reputation as well.

Despite contributing to obesity among adults and children—attributed in part to its high-calorie, low-cost processed foods and sugary soft drinks—PepsiCo has managed to build a brand with revenues that have increased over a hundredfold in the last 50 years. However, PepsiCo is not immune to softening sales and bad press, as evidenced by its 0.5 percent decline in soda sales in 2011.[19] PepsiCo's softening sales are attributed both to Nooyi's moving the company into healthier fare and also to recent attacks about their standard products' dependency on sugar, fat, and salt. Research sheds light that obesity in 2008 resulted in $47 billion in healthcare charges and about 300,000 deaths.[20] Given the company's massive distribution footprint (supported by retailers such as Walmart), Americans are able to ingest four times more soda a year on average than 60 years ago. This means they're consuming 3,400 milligrams of sodium per day, twice the recommended amount. Sodium is linked to high blood pressure. PepsiCo's snacks also increase cholesterol and potentially contribute to heart disease due to the oils and fats used for frying potato and corn chips. [21]

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The question now is this: What will PepsiCo (and the other Big Food organizations like them) do as historical practices and products come into conflict with modern health concerns?

Addressing Modern Health Concerns

American lifestyles and diet issues have slowly given rise to the health epidemic facing our adults and children today. In turn, an increase in healthy food choices has cultivated new markets in snack foods, eggs, and produce over the last 40+ years.

In the late 1980's, supermarket shelves had a minimal selection of diabetic-designed foods, with sugar-free candies being one example. For the cholesterol-conscious, doctors may have prescribed diet limitations after a health crisis. The patient was then directed to find Egg Beaters® for instance in the supermarket, or possibly spurred to shop at a natural foods store. In the

aisles of the natural foods store, the consumer would have another world and lifestyle presented to him.

Big Food began expanding their existing product lines with new takes on their known name brand products. For example, Nabisco's Snack Well's® helped the company enter into the health-conscious or fat-reducing market. Healthy brand extensions required more supermarket shelf space, thereby squeezing out smaller companies who could not build a "billboard" of branded products belonging to a "family." Green boxes sprung up in most food categories, touting a health claim and, most importantly, a reduction of some "evil" ingredient. Today, Nabisco has evolved the "100 Cal" product line where—through simple portion control done by the manufacturer and requiring no thought on the part of the consumer—you'll find your favorite flavors like Oreo® trimmed down to just 100 calories.

Big Food has lobbied to water down organic regulatory standards while simultaneously capitalizing on consumer interest and garnering a significant share of the organic market.

In the 1970s, the organic movement started as an alternative to the negative social and environmental effects of Big Food's global scaling. It was a movement reflecting the consumers' right to know where and how their food is produced. The organics market quick growth toward 1% of total U.S. food sales in the mid-1990s made it more prevalent and accessible nationwide.[22] Today, the organics market has grown on average by 20% every year since 1990, resulting in a $19 billion market. [23] Big Food has lobbied to water down organic regulatory standards while simultaneously capitalizing on consumer interest and garnering a significant share of the organic market. What remains evident is that the primary reason for Big Food entering the organic market is the profit, not the ideals that were fundamental to the movement.[24]

Similar to the ideals-based organic movement, fair trade made swift achievements advocating ethical sourcing principals. Fair trade coffee is now relatively common, and possibly a household item, since its association with the brand giant Starbucks. Just this past November, Fair Trade U.S.A. announced plans to lower its standards, thereby allowing large coffee plantations such as Nestlé and Folgers® (now owned by J.M. Smucker) to become eligible for certification. [25]

Ultimately, the rise of consciousness about health and societal impacts along with economic and environmental issues has brought big business to the theme and practice of sustainability. Whether they are merely doing so through perceived practices such as "greenwashing" or through actual change is still to be determined. Either way, the need for Big Food to respond to public concern is real.

Opening Key Markets

To combat the financial impact of declining U.S. interest in snack foods, Big Food is opening and developing new global markets with unprecedented momentum. Big Food is enjoying growth in emerging countries such as Africa, Brazil, China, India, and Russia, where convenience food markets are on the rise and concerns about health and nutrition are not yet affecting consumer behavior.

PepsiCo's emerging countries represent 30% of the company's total business.[26] Their *2010 Annual Report* indicates that the company is growing in international markets at a faster pace than that of the world economy:

- Africa – in pilot development with seed and crop testing.
- Brazil – business grew at about 3.5 times Brazil's real GDP growth rate.
- China – initiated a $2.5 billion investment program in China in 2010, including plans to open 10 to 12 new food and beverage plants and R&D facilities over three years.
- India – business grew at 2.5 times India's real GDP growth rate.
- Russia – acquired a controlling interest in Wimm-Bill-Dann, Russia's largest food and beverage business, and made plans in 2010 to build a new plant, part of a $1 billion investment. [27]

With strategies to win market share beyond the United States, Big Food proves they adapt well while seeking new opportunities to grow or achieve their goal of profit. More examples are provided in the later section of this paper: Momentum Builds Billon-Dollar Brands.

RESPONDING TO CHANGE

Big Food is responding to changes in the marketplace by playing to their strengths in three ways. First, they are strong at *cultivating product portfolios* and are rapidly developing new portfolios to meet new demands. They reorganize their existing product portfolios to align health benefits and then determine what healthy products are needed to fill out the portfolios. Big Food then buys companies offering products that bolster their portfolios in the areas of health.

Second, they are developing strength by *reengineering food* to improve health benefits. They are doing this by building better snack foods with healthier ingredients and by researching the consumer mind to know what tastes good. For marketing communications purposes, they are also studying the effect of how specific language works to sell products with health benefits.

Third, Big Food *wields influence with governments and individuals*. They use their strength in relationships to do two things: (1) influence government to create and change rules to work in their favor and (2) utilize brand power and corporate resources to attract, hire and develop key talent.

Cultivating a Healthy Product Portfolio

With the onslaught of changing markets, Big Food's responses are going beyond new product launches or new revisions of established products. PepsiCo, Nestlé, and Coca-Cola are reorganizing product portfolios and acquiring new companies focused on a new key concept: delivering nutritional benefits.

"SELLING THE RIGHT STUFF" BY DESIGN

PepsiCo CEO Nooyi suggests that demonizing big business about prevailing public health issues is not as beneficial as encouraging large companies to play a role in solving the problem. She recommends a solution of "selling the right stuff"—and is driving a huge initiative towards healthier products.[28]

PepsiCo is organizing its products using a specialized product system or a "by design" categorization of food. This involves framing its snacks and beverages into three categories: Fun-for-You, Better-for-You, and Good-for-You. At this juncture, it is difficult to know whether or not consumers will be aware of, or care about, how PepsiCo is categorizing and marketing its foods based on fun and function. How much PepsiCo intends to inform and empower consumers is not clear from the packaging as seen in the PepsiCo *2010 Annual Report* (Appendix E). Will PepsiCo overtly train the consumer on how to buy from its system of choices? Will there be explanations and commercial campaigns? Or will they remain stealthy in training the consumer to adopt their implicit approach?

PepsiCo CEO Nooyi suggests that demonizing big business about prevailing public health issues is not as beneficial as encouraging large companies to play a role in solving the problem.

Perhaps PepsiCo will simply do the thinking for consumers, very much like Weight Watchers®, which has a well-established and successful points-based system that makes eating "easy." This approach takes the thinking away from actual food choices and redirects it to math functions, as consumers simply add up points per day. The company suggests its tactic works because it is an educational experience of "how to eat right and live healthy," rather than a diet.

Another illustration of food categorization with less sophistication is how pet owners are trained to buy dog food. Consider Mars Incorporated's pet care company Pedigree® and its approach to life stage and size: puppy versus adult versus senior, then small versus medium versus large.[29] Food categorization by design makes

purchasing decisions as easy as identifying a color-coded box, and we may begin to see similar packaging strategies in groceries.

The underlying message is curious, if not alarming. Individuals are no longer required to think about what they eat. Is it possible that consumer research is telling Big Food that consumers don't *want* to think? Convenience is then bought at a premium of one's health.

ADDING NUTRITION CATEGORIES THROUGH ACQUISITIONS

PepsiCo, Nestlé, and Coca-Cola are all buying additive businesses that build out nutritional benefits within product lines and categories. Purchasing companies that have already paid product research and development costs and fought for consumer attention helps Big Food gain more market share faster and cheaper than if they had to do that work themselves. The goal is to offer consumers more choice. More choice also means more noise in the supermarket and a distraction from Big Food's competitors—including the food that is actually better for the consumer. The unfortunate result of this is that whole food is being drowned out of the marketplace. Barry Schwartz, the psychologist who wrote *The Paradox of Choice – Why More is Less*, posits that eliminating consumer choice greatly reduces anxiety for shoppers.[30] Big Food is aggravating consumer anxiety with an overabundance of choice, in part to drive business to their recognized brands.

In order to build healthy product portfolios, PepsiCo and Nestlé are in the process of merging food and medicine.

Creating new food categories is one of the methods PepsiCo uses to seamlessly integrate newly acquired health-conscious companies. The company's "Good-for-You Portfolio," offering snacks and drinks made of grains, fruit, nuts, vegetables, and dairy, was expanded as PepsiCo was spending $6 billion on businesses that produce coconut water, juice-and-dairy, and fortified water.[31] Note that the existing lines of processed foods are not going away or being discontinued. Instead, those foods are becoming PepsiCo's "Fun-for-You Portfolio." "Good-for-You" now represents $10 billion in business, a number Nooyi expects to triple by 2020.

The food categorization approach for "packaged nutrition" and "functional" foods and beverages is, by design, creating a Big Food system of "personalized nutrition." These product portfolios are designed to deliver functional benefits. Nutrition attributes such as antioxidants are found in Naked® juice (acquired by PepsiCo in 2006). Athletic-type specific physiological or metabolic attributes are delivered in Gatorade® (acquired by PepsiCo in 2001). These selling points appeal to consumers' physiological and aspirational experiences. With aging Baby Boomers and health conscious consumers, PepsiCo's aim is to leverage its cost efficiencies and distribution to deliver these products to the company's brand-loyal consumer base. Moreover, Nooyi is coining the phrase "scientifically advantaged" to suggest that the same great taste is available in PepsiCo's nutritionally better products. Consumers are no longer faced with choosing between health and taste—life just got easier.[32]

Developing Reengineered Food

Big Food possesses a powerful advantage as they use cutting-edge research and product development to win market share. Today, Big Food offers new products that merge food and medicine, aiming to improve health benefits. Research helps create ingredients in the lab or discover new ingredients in nature that are being incorporated into "healthier" products. Big Food is effectively building a better snack experience for the consumer with products that taste good and match consumers' health aspirations. Research even reveals the difference between what consumers say they want and what they really want, helping companies label products with language that effectively works to sell those products. State-of-the-art laboratories and significant expansion of a company's research capabilities reflect major capital investments to develop the food of the future.

IMPROVING HEALTH BENEFITS

In order to build healthy product portfolios, PepsiCo and Nestlé are in the process of merging food and medicine. These companies are committed to developing their own inventions and reengineering food ingredients to

market for health. PepsiCo is addressing the underserved and lower-income markets with research and development to expand affordable and nutritionally relevant products. For example, in India, the company is addressing iron-deficiency anemia with fortified snacks and biscuits. It has also identified nutrient-stable crops for growing in sub-Saharan Africa so that foods and snacks can be produced locally as part of a pilot project in 2011.[33]

Similarly, Nestlé indicates in its *Annual Report 2010* that the company is providing lower-income consumers around the world with nutritious, affordable, branded food. It is offering 4,860 food items as part of its "Growth drivers" in "Emerging markets and Popularly Positioned Products" (see Appendix F). One example includes selling 90 billion servings annually of Maggi bouillon cubes fortified with key micronutrients to address specific vitamin deficiencies in emerging markets. Other new market and product development investments are being made between food and pharmaceuticals as part of the creation of Nestle Health Science and the Nestle Institute of Health Sciences. The initiative seeks to prevent and treat health conditions such as diabetes, obesity, Alzheimer's, and cardiovascular disease. Nestlé's Vitaflo line focuses on inherited metabolic syndrome. Its products are developed for specific medical purposes such as inborn errors of metabolism (IEM) and disease-related malnutrition (DRM). Nestlé also owns the Jenny Craig brand targeted for the weight-conscious, stating it is a "clinically proven" weight management program with a holistic approach to weight loss and weight maintenance focusing on "food, body, and mind."[34]

Big Food is now also using research to develop age-centric food and beverage products and to create a life stage orientation toward certain foods and beverages. Products are being designed and categorized based on what a body's nutritional needs might be, given a consumer's age and other characteristics. At PepsiCo, Nooyi envisions functional foods designed for the life stages of teens, pregnant women, and seniors. In a Nooyi-type world, an otherwise harried consumer breathes into a vending machine, has his or her metabolism analyzed, and seconds later grabs a customized snack that has plopped out the bottom.[35] Big Food's strategy is to market products with a scientific health approach in order to deliver personalized nutrition from the cradle to the grave. This growth strategy enables Nestlé to embark on new industries and PepsiCo to claim snack foods as "healthy." Can such a vision and growth last for another 100 years?

Big Food's strategy is to market products with a scientific health approach in order to deliver personalized nutrition from the cradle to the grave.

BUILDING A BETTER SNACK EXPERIENCE

As illustrated by Nestlé's beginnings in infant nutrition, food has historically been engineered to achieve particular goals, hence the phrase "manufactured foods." In the early 1990s, the amount of peanut butter M&M/Mars originally put in its M&M'S® Peanut Butter Chocolate Candies may have been an attempt to influence consumer buying habits instead of merely creating a pleasing flavor. When the candy was being launched, the Brand Manager suggested that the formulation was based on not completely satisfying the consumer's desire in a few pieces of confection. Encouraging the consumption of more candy was the goal—just enough peanut butter to make the consumer eat more.

In today's food climate, the engineering of food has turned to health. Big Food is trying to add health to the brand experience without losing the consumer base over taste. For example, PepsiCo has invested $500 million in research and development, with the express purpose of reducing salt and sugar content by 25% by 2015, while keeping the same taste experience of their products.[36]

PepsiCo plans to achieve its sodium reduction goal with the help of a "15 micron salt" the company has developed. This new salt delivers the same taste experience with 25% to 40% less sodium. The company is effectively selling it in the U.K. in its existing Walkers® brand of chips. Soon to arrive in the U.S., this new salt will appear in the Lay's® brand plain chips by the end of 2012.[37]

Simultaneously, PepsiCo is planning to reach its sugar reduction goal by discovering and exploring plant substitutes for sugar. At the company's newly

established Global Nutrition Center, senior vice president Gregg Yep leads searches around the globe for natural ingredients with health benefits. Kuming Botany University, based in China, is one of the partners in this search.[38] By using the collections of its "trekkers," PepsiCo has its people talk to local villagers to discover how are they making food taste sweet. Startling results may come from a host of organic sources such as fruits, plants, roots, and even insects.

Once natural sweeteners are identified, PepsiCo will then employ two types of tasters to determine the viability of potential alternatives. The first taster is PepsiCo's own invention of a robot built with human taste buds engineered to identify a natural, zero-calorie sweetener that tastes exactly like sugar.[39] The efficiency and effectiveness of the robot enables it to taste 40,000 samples a day![40]

The other tasters are human. Consumer feedback helps Big Food win more consumers. Human tasting involves two types of consumer testing. The first uses focus groups with ordinary consumers who taste and comment on new products such as a "chewy smash bar" for cereal, fruit, and chocolate flavors. The second uses professional testers trained for nuance. This second group makes refined comments on specific flavors, such as delineating the lemon-lime combination varieties for an optimum blend. Professional tasters have skills to discern these attributes at a very detailed level. Sodas, for example, can have up to 26 attributes upon which a taster might comment. Strikingly, the "win rate" for new products is low, with only one in 10 ever making it out of the lab.[41] It is important to note that even with the low success rate, the investment in R&D is minimal compared to the profit derived from food products developed for taste and cost rather than health.

UNDERSTANDING THE CONSUMER MIND

Consumer feedback is not limited to overt, observable responses and self-reports. PepsiCo is using high-tech equipment to also reveal the subtleties of consumer behavior as influenced by the unconscious mind.

Using fMRI studies that measure brain activity, PepsiCo examined the effect of language on the brain's response to taste. They discovered that depending on an individual's level of reward sensitivity, he or she may respond differently to words such as "healthy" or "treat." A person with a high level of reward sensitivity—or those easily satisfied—will find something labeled "treat" more satisfying. A person with a low level of reward sensitivity will find something labeled "healthy" to be more satisfying. Some researchers believe those with low reward sensitivity are more likely to struggle with obesity since they need to eat more to achieve a sense of satisfaction, or "bliss point." This means PepsiCo's tests indicate products labeled "healthy" would appeal *more* to people with unhealthy eating habits. [42]

Another resource that PepsiCo is using to study consumers is its new research lab equipped with a one-way mirror and concealed cameras. Cameras in combination with facial-interpretation software are used to interpret how people say one thing while they're really thinking something else. While participating in taste trials, they may say they prefer the new product without the salt and calories, yet they really want to eat the original product.[43] The conundrum lies in whether we even know what that "same great taste" is anymore, due to the effect of advertising, packaging, and now, "scientifically advantaged" treatments and inventions.[44] Physiological sensations and social aspirations are now blurred even in people's own minds. Determining how to influence consumer behavior through packaging and taste is a complex challenge both for Big Food and for anyone undertaking a shift in our eating paradigm.

Determining how to influence consumer behavior through packaging and taste is a complex challenge both for Big Food and for anyone undertaking a shift in our eating paradigm.

Influencing Government and Individuals

SCALING ORGANIC FOR PROFIT

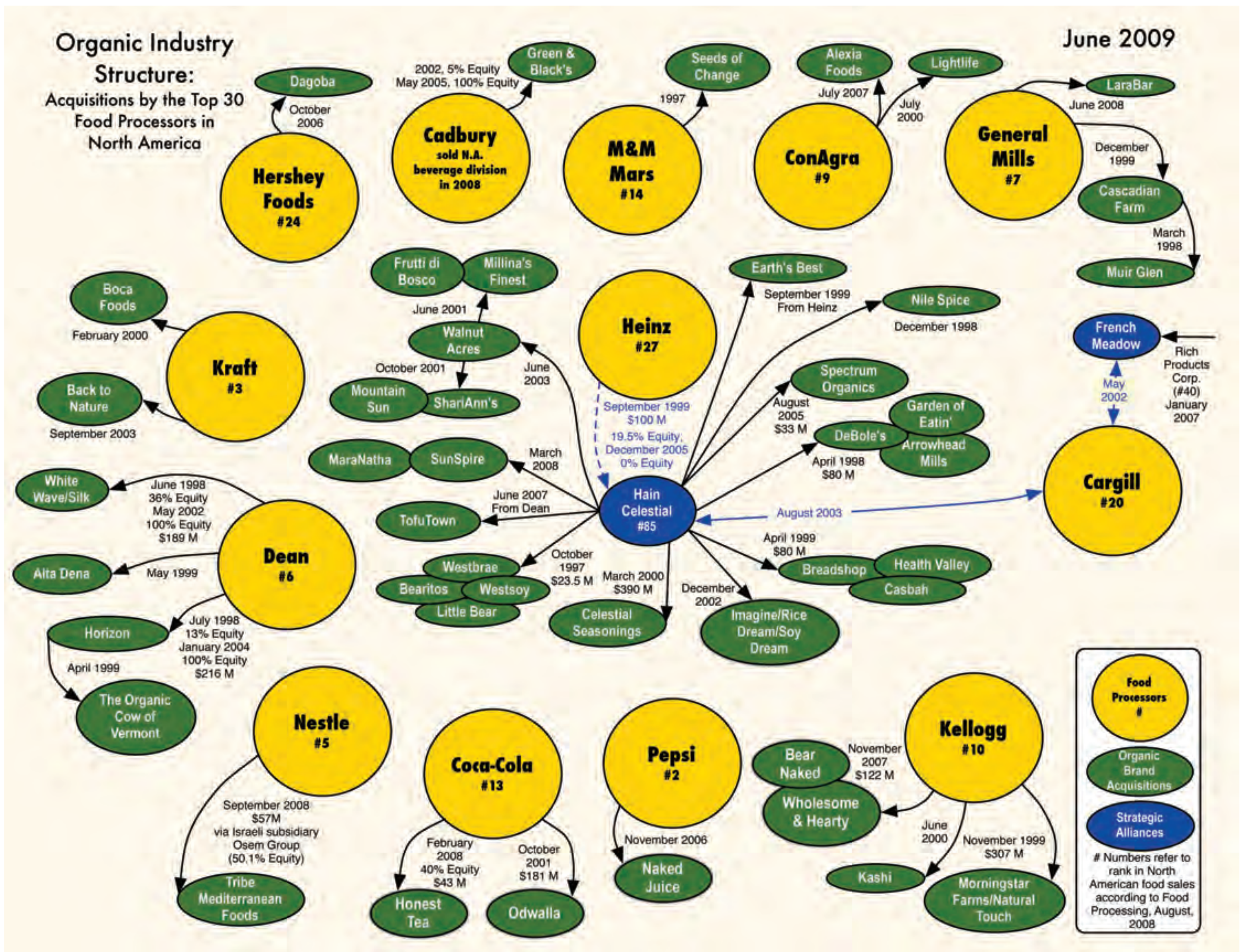
Big Food's ability to defuse threats and capitalize on opportunities is real and problematic for food reform movements. As an example, the rapid market growth of organic in conjunction with the movement for uniform federal standards caught the attention of Big Food. Big Food entered the organic market, eroding the price premium earnings of businesses adhering to

higher standard. It became difficult, if not impossible, for small businesses with products adhering to stricter regulations to continue to compete in a marketplace where their products were now perceived as the same as those of Big Food. Organic and other micro-markets that cultivate new profit potential are vulnerable to corporate entrants who possess the strength to scale and the influence to reshape product regulation. One significant outcome for the micro-market is the loss of its original ideals.

Big Food was able to render organic ideals toothless even while they accumulated capital from this market segment. They used their relationships in regulatory bodies such as the USDA to effectively dismantle

Organic and other micro-markets that cultivate new profit potential are vulnerable to corporate entrants who possess the strength to scale and the influence to reshape product regulation.

the original organic standards.[45] Simultaneously, Big Food bought successful small organic players and reengineered their products by lowering product quality to drive cost efficiencies. Meanwhile, consumers loyal to the organic brand may not be aware of Big Food's new ownership nor the changing product ingredients.[46]



Effective use of strategic, competitive counter-reform, as evidenced in the cooptation of organic and fair trade standards, helps corporations defuse threats to their profit margins and to their dominant production, pricing, labor, trading, and retailing practices. In the 2009 article, "Corporate Cooptation of Organic and Fair Trade Standards," authors Philip H. Howard and Daniel Jaffee term these reductions in standards the "corporate countermovement" against the regulatory impact of agrifood frameworks such as organic. Alarmingly, no systematic examination is underway to peel back the irony that Big Food has undermined their competitors by weakening the barriers to the accumulation of capital in organic markets and diluting the transformative ideals that made for the heart of organic. Organic is not alone. Big Food will behave similarly with other ideas showing profit potential, such as health-related foods.

The potential exists for the sustainable food system movement to address consumer appeal and win more market share.

Big Food is successful at: (1) removing rules that hurt Big Food; (2) changing rules to create barriers for businesses without massive capital; (3) eroding price premiums so that only the those with economies of scale can survive; (4) soliciting use of subsidies and research; and (5) altering standards to dilute a comprehensive concept into a single issue.[47] Big Food's strengths enable them to undermine the market success of attempts to reinsert higher social and moral principles. The unfortunate outcome in the organic movement was that the ideals of organic were sidelined and lost. The holistic set of agro-ecological practices that originally defined organic has been pushed aside, with the backing of the USDA, influenced by Big Food. Organic was redefined as a substitution of inputs. This allowed more market entrants to use the word "organic," enjoy the image of being organic, and reap capital from a vibrant market of consumers trained that organic is good for them. Will Big Food take the word "health" in a similar fashion?

Howard and Jaffe assert, "Future initiatives should consider how to frame a more decentralized, semi-autonomous system that could foster competition among producers for the highest possible standard, rather than a more centralized standard that pushes practices toward the lowest common denominator."[48] The potential exists for the sustainable food system movement to address consumer appeal and win more market share. What remains elusive is the deeper understanding of how to effectively tap consumers' disconnect between what food *really* satisfies and nourishes and *why* they eat what they eat. Is a conscious and thoughtful diet really that "unsexy?"

IN THE CROSSHAIRS OF CRITICISM

In addition to shaping government regulation, Big Food also shapes public perception. Maintaining a positive public image in the face of merited criticism requires savvy public relations maneuvering and is essential to meeting growth and sales targets.

As an example, Big Food has come under attack as a major contributor to the epidemic of childhood obesity. The Robert Wood Johnson Foundation reported in 2008 that the obesity rate was over 17% for children and adolescents, having more than tripled in 40 years. Heightened risk for hypertension, high cholesterol, sleep apnea, orthopedic problems, and type two diabetes was present for nearly 33% of American children and adolescents who were overweight or obese at the time of the report. The majority of foods and beverages advertised to children are high in calories, sugar, sodium, and fat, making a significant contribution to the deteriorating state of children's health.[49] With plans to continue expansion in child and teen markets, how do companies cultivate a perception of benefiting children in order to continue to promote their products?

By responding to opportunities in the market that give them exposure to children, Big Food is benefiting from consumption-based campaigns to "do good." It's a win-win for a company.

Examining a General Mills Lucky Charms® cereal box reveals two clear tactics. General Mills is promoting whole grain as the first ingredient to suggest that the cereal offers nutrition foremost even though the product has marshmallows, sugar, and corn syrup. They also list the quantitative exchange from the

Choose Your Foods List: Exchange List for Diabetes© from the American Dietetic Association and the American Diabetes Association thereby implying that the sugared cereal is an appropriate food choice for people with diabetes. Beyond ingredients, Big Food also seeks to counter their negative image through educational fund raising—and they do so in a way that continues to earn profits. For instance, General Mills was running premium Saturday morning television commercials in July 2011 to promote its education campaign. Its "Box Tops for Education" program, found on the same cereal box, rewards pupils, parents, and schools for collecting box tops that are essentially the result of having purchased and consumed the product. By responding to opportunities in the market that give them exposure to children, Big Food is benefiting from consumption-based campaigns to "do good." It's a win-win for a company.

Big Food must also face criticism from its shareholders. A recent slump in PepsiCo's soda sales captured shareholder attention and has created increased pressure to push traditional beverage sales while simultaneously promoting new health portfolios.[50] Nooyi has reinforced that the company's execution of its strategic vision must come with some necessary road bumps, but influencing shareholder perception is an uphill battle. PepsiCo must correct and keep its course because its overarching goal is to be ready for the new realities in the marketplace for at least the next 20 years.[51] Internal concerns around sales goals and maximum profitability mean that we can expect PepsiCo and other Big Food companies to continue to market their traditional range of products, while expanding into nutrition, health, and wellness.

In similar fashion to hiring an African-American sales force to tackle an African-American market, Nooyi is today hiring science and health leaders to realize PepsiCo's goals of creating and selling "Good-for-You" food.

Whether shareholders will tolerate the dips involved in pursuing the new health and wellness focus remains. In order to correct the company's soft sales, PepsiCo will need to balance its aspiration to higher values with maintaining its brand equity. Its attempt to "make good" with the company's Pepsi Refresh Project and giving $20 million to consumer-elected causes did not sell more Pepsi-Cola. Undaunted, Nooyi states that the company intends to be here for decades to come, and therefore it must represent the market's demand for actually doing good. However, shareholders get squeamish at the reality of declining soda sales.

STAFFING AND SUPPORT BY DESIGN

Another area where Big Food is strong is in their ability to identify, groom, and convert human talent into effective, results-oriented armies. Big Food companies have training budgets that are sizable enough to sustain massive talent development programs. These programs transform employees' skills into competencies and provide coaching for specific performance objectives, such as effective leadership, to achieve meaningful results. This kind of support, focus, leadership, teamwork, and discipline enables Big Food to keep up momentum and fulfill their visions. Well-liked leaders who are trained to see and articulate the company's vision and mobilize teams to complete defined tasks often win their way up the corporate ladder. CEO compensation may draw debate as a result of media

coverage, but these big companies provide jobs and may even provide fulfilling work because employees feel they are achieving their goals.

Big Food builds armies that are strategically aligned toward a common vision.

One example of grooming a corporate army is how PepsiCo's Board of Directors and CEOs have demonstrated forward-thinking approaches to hiring practices throughout the company's history. PepsiCo's unique hiring practices go as far back as 1947, when it formed the first African-American male sales force, trained to specifically penetrate and grow the African-American markets in the southern U.S.[52] As previously mentioned, PepsiCo also recently groomed and hired its first-ever female CEO. Although it appears that PepsiCo is in trouble with layoffs and stock price volatility, its vision and subsequent decision-making are still sure-footed and clear, as stated by Nooyi.[53] In similar fashion to hiring an African-American sales force to tackle an African-American market, Nooyi is today hiring science and health leaders to realize PepsiCo's goals of creating and selling "Good-for-You" food.

Two prominent PepsiCo employees stand out as part of Nooyi's vision. First, Mehmood Khan, an endocrinologist formerly with the Mayo Clinic, was brought in to lead the company's research efforts. The scientific challenge for his role is to determine whether the company can make a lower-sodium chip that tastes just as salty as a regular chip.[54] Second, Derek Yach, who was formerly with the World Health Organization (WHO), is part of the PepsiCo team working to cut the amount of salt and sugar in its products. Yach's critics think he has sold out. Compared to working within the bureaucracy of WHO, however, Yach is enjoying the authority and resources—both financial and human—in the private sector that can help bring his vision of salt and sugar reduction to fruition. He proposed an "eat less and drink less soda" recommendation at WHO before he was demoted as a result of what is believed to have been Big Food's influence.[55] Yach is notable for having architected the "Framework Convention on Tobacco Control," a landmark in public-health policy, which imposed strict limits on how tobacco companies sell their products around the world. When he tried to parallel this strategy in the food industry, he faced the difficult challenge of trying to paint Big Food as pariahs—such as was successfully done with tobacco. The truth he suggested is that healthy food can be made where a healthy cigarette cannot.[56]

Ultimately, Big Food builds armies that are strategically aligned toward a common vision. Talented and competent individuals are specifically tasked with a role. They are trained and paid well. When an idea is a smart business decision, the ease with which resources are made available makes achieving goals likely, and in many cases inevitable. Coca-Cola's worldwide team provides us a stark appreciation for what it means to have a dedicated army sharing one vision. It has 700,000 employees focused on protecting its shareholders' interests and achieving company goals, as stated in its *2010 Annual Review*:

> "Your trust and confidence in the fine women and men of Coca-Cola are what wakes us up in the morning and fuels us late into the night. Rest assured we will continue to work tirelessly to protect and grow the value of your investment in our Company."[57]

The leaders of PepsiCo use "The Promise of PepsiCo" as the company's guiding vision for its purpose, values, and stakeholder interactions:

> "At PepsiCo, Performance with Purpose means delivering sustainable growth by investing in a healthier future for people and our planet. As a global food and beverage company with brands that stand for quality and are respected household names – Pepsi-Cola, Lay's, Quaker Oats, Tropicana and Gatorade, to name but a few – we will continue to build a portfolio of enjoyable and healthier foods and beverages, find innovative ways to reduce the use of energy, water and packaging, and provide a great workplace for our associates. Additionally, we respect, support and invest in the local communities where we operate, by hiring local people, creating products designed for local tastes and partnering with local farmers, governments and community groups. Because a healthier future for all people and our planet means a more successful future for PepsiCo. This is our promise."[58]

RELATING TO CONSUMERS

Not only does Big Food respond effectively to multi-faceted change, but they also build potent long-term relationships with their consumers to help ensure market share. The relationship between Big Food and consumers starts early and is designed to last a lifetime. Big Food engineers their ubiquitous and omnipotent approach with the goal of permeating our culture and gaining absolute entrenchment. In *The End of Overeating: Taking Control of the Insatiable American Appetite*, David Kessler captures this idea by noting the proliferation of locations where we can now stop and fill up with a snack. This is representative of Coca-Cola's distribution goal, well known within the food and beverage industry: Be everywhere. Also, the effectiveness of technology packaged in mobile phones reveals the far-reaching impact and relevancy in all cultures for creating mass appeal for Big Food brands. For example, Coca-Cola attributes the company's success at increasing consumption in India in large part to mobile marketing campaigns.

Within Children's Reach by Design

Of equal interest is when Big Food's influence is understated and hidden. As soon as a person walks into a grocery store, he or she is being subtly charmed. To start, the shopping carts and baskets are sometimes adorned with advertisements. Newer carts are now being designed to actually encourage specific types of purchases, using labeled compartments for items such as fresh flowers or produce.

Moreover, shelving layouts employing plan-o-gram schematics map out product placement on shelves. Nielsen Media Research, based in New York, NY, produces ratings that are a common industry standard for measuring market share and help shape these shelving layouts. Nielsen's reports take on biblical authenticity with marketers and are used by retailers to determine which manufacturers receive premium eyelevel and centered placement on shelves, displays, and supplier-paid fixtures. It is by design that a billboard of brightly colored cereal boxes full of sugar meets the eye level of a child when he or she is sitting in the shopping cart seat. Should the child be on foot, the same or similar cereals can be found on bottom shelves. The intended result is that the child will influence a purchase. Meanwhile, parents and other adults will find less sugary cereal varieties on the top shelves.

The relationship between Big Food and consumers starts early and is designed to last a lifetime.

Children free to roam within the store will find sugar confections such as Starburst® Fruit Chews or Skittles® Bite Size Candies easily within reach. Companies place sugared items on aisle lower shelves and in the lower section of checkout magazine racks for easy child-access. Conversely, adults find their preferred chocolate confections higher up on aisle shelves and magazine racks. Product placements are determined by what company paid what amount, and shelves are filled with the participating company's product according to percentage of space paid. For children especially, the Robert Wood Johnson Foundation has led an effort to study specific marketing tactics affecting the purchasing and eating behavior of children and the parents who spend the money.[59]

Distribution, Promotion, and Making Memories

In order for Big Food brands to grow, distribution and promotion monies are allocated to launch new products and introduce them to consumers. Once consumers start using the products in their family activities,

memory-making and loyalty-building begins. The role of distribution outlets is highlighted in this paper to reveal the interdependency and power of the supplier-distributor partnership. What is also noteworthy, but not as well known, is that retailers like Walmart receive monies to advertise and promote brands as well as secure premium product placements within its stores. Supermarkets are like real estate divided up into parcels with premium space sold to the highest bidder, making it difficult for smaller companies to get their products seen and purchased. Even magazine racks are paid for by suppliers such as magazine publishers and confection manufacturers. Payments from suppliers including food manufacturers are in the bulk of "Receivables, Payments, and Advertising Costs," with the specific information available in the Walmart *2010 Annual Report* section "Notes to Consolidated Financial Statements." It is these monies that Big Food can afford to spend on their marketing efforts where smaller food enterprises cannot. Likewise these monies are paid to make space in a retailer's warehouse and cover administrative charges to insert new products into a retailer's inventory system.

Another aspect of distribution and product placement not often reflected upon, and perhaps not even consciously noticed, takes place when families or friends are sharing time together outside their homes. Products are paired with the emotional attachment of family and friend experiences and acquire some of the positive feelings associated with those memories. These feelings help make brand loyalty last a lifetime. As an example, let's examine the consumer experience in movie theaters. On the way between entry and the consumer's seat in an AMC theatre, perhaps a dozen or more appealing visuals of the Coca-Cola brand are displayed. This level of "ownership" in a high-traffic outlet creates impressions that can make for life-long memories and emotional attachments to brands. This is especially potent when a child is with a parent seeing a movie and having fun together. This repeated exposure cultivates the underpinning of a child's development arc of brand awareness, use, and resulting loyalty that at times may be unconscious.

Tying brands and products to entertainment moments when a parent and child share carefree time is a key practice of Big Food. Kessler states, "This common experience is supported by a substantial body of research suggesting that we're better at remembering details when they're associated with emotionally charged events. That's the food industry's goal in television advertising. We aren't being sold nutrition or satisfaction. We are being sold emotions."[60] Thus, it is not surprising that family and child advocates promote a cultural return to the family dining table where whole food is paired with the simple attention children receive from their parents. Healthy eating becomes psychologically rooted in a child's memory. The food is an after-thought, so to speak. It's merely *why* children and parents are gathered together sharing time.

Momentum Builds Billion-Dollar Brands

A testimonial to the power and impact of Big Food's success is the long-term, results orientation to marketing practices in order to effectively win market share. Many of us are aware of the ongoing "fight" between PepsiCo and Coca-Cola over soda market share. Both organizations enjoy tremendous consumer loyalty, heedless of contemporary health concerns around soda.

As of October 2011, Coca-Cola ranked in the top slot on Facebook, with 34 million fans and a growth rate of 2.6% per month. No other food or beverage company was even in Facebook's top five. [66]

At PepsiCo, advertising and marketing are investments for improving traction in brand equity with consumers via global, regional, and local brands. Defining the consumer relationship is more than merely having a website and securing purchase. Rather, it is a total entrenchment in culture and mindshare. PepsiCo's commitment to this relationship is highlighted in its *2010 Annual Report*, revealing that the company spent $3.4 billion that year marketing and advertising its brands.[61] As the second largest food-and-beverage business in the world (after Nestlé) and the largest food-and-beverage business in the U.S., PepsiCo, Inc. has 19 "mega-brands," each of which generated $1 billion or more in retail sales for 2010. With Pepsi Cola

at $21 billion, Mountain Dew at $9 billion, and Walkers® Potato Chips at $2 billion, all 19 of PepsiCo's mega-brands experienced increased revenues, attributed in part to brand-building activities.

Coca-Cola's marketing practices as presented in their *2010 Annual Review* attributes its sales growth success to its sustaining commitment to product promotion. At its inception, Coca-Cola saw nine drinks served per day in the U.S.[62] As of 2010, it enjoyed 200 million servings per day in North America. Worldwide, it had 1.5 billion servings per day in 200 countries and seeks to double that by dominating every market it enters.[63] The company is openly positioning the firm for the growing populations in the U.S. and beyond. Coca-Cola measures the opportunity of the forthcoming global middle class as one billion more consumers who will be able to buy its products. The company imagines new products and packaging that it can customize to fit cultural nuances, regional tastes, and lifestyles. By 2020, 31 million more Americans will be part of the consuming public, while 31 million more teens are expected worldwide.[64] Topping the charts in teen population growth are India, China, and the U.S., in that order.[65]

In today's environment, it is no surprise that technology is fueling this rapid growth for all products. As of October 2011, Coca-Cola ranked in the top slot on Facebook, with 34 million fans and a growth rate of 2.6% per month. No other food or beverage company was even in Facebook's top five.[66] As of the same date, Coca-Cola was also in Twitter's top slot.[67] With the number of mobile phones at five billion worldwide, the company sees mobile marketing as the premium channel for promotion, where it can touch consumers daily and drive consumption in India and Japan. To further illustrate the power of a global brand, Coca-Cola entered a new market with a regionally designed product, Minute Maid Pulpy® in China. In less than five years it surpassed retail sales of $1 billion. Minute Maid Pulpy® represents the company's 14th billion-dollar brand and its first $1 billion brand in an emerging nation.[68] The momentum and power of China's consumers are startling. As a comparison, M&M/Mars' Snickers® Bar did not achieve $1 billion status until its 60th year in the U.S.

A Marriage of Convenience

To sum up the Big Food and consumer relationship, it is a marriage of convenience. Despite health issues facing Americans today, consumers are not as concerned with receiving nutritious food from Big Food as with receiving convenience. Consumers make a strategic choice, consciously or not, to reduce the chore of food preparation and have life made easy. They are trading off their relationship to food and its source for the convenience of easy-to-buy and easy-to-prepare manufactured foods. Consequently, consumers are becoming increasingly vulnerable to health deterioration and ignorance about the quality of their food. Especially in these rapidly evolving economic times, consumers are eating manufactured foods to relieve themselves of the burden of food preparation without much concern for true nourishment or realizing the difference between whole foods versus manufactured foods. Whole foods have the stigma of taking too much time to cook and not tasting as good as manufactured food—and children are learning *this is how we eat.*

Consumers make a strategic choice, consciously or not, to reduce the chore of food preparation and have life made easy.

Big Food caters to people whose lives are overwhelming and harried. Stressed people have an increased inclination to indulge in food as an opportunity for pleasure and reward instead of just nourishment.[69] Big Food feeds this desire for indulgence by proliferating new products that taste great and make consumers think they are eating for health. In addition, Big Food is beginning to meet the busy consumer's demand for convenience and nutrition by marketing "drinkified snacks" and "snackified" drinks.[70] PepsiCo is testing Tropolis, a squeezable juice pack, in the American Midwest. Imagine a child who doesn't want to eat carrots. Yet, if a carrot is sneaked into a drink with a "wonderful squeezable form," perhaps that child will ingest more vegetables. For adults, PepsiCo is testing oatmeal in a drinkable form under the Quaker Oats brand in Mexico and Brazil, eventually destined for

U.S. markets as well.[71] Coca-Cola has launched Hugo®, a dairy and juice drink that combines milk and fruit nectar, in Peru and Argentina.[72]

Whole foods have the stigma of taking too much time to cook and not tasting as good as manufactured food—and children are learning *this is how we eat.*

The perception that health can be attained through conveniently packaged bottles and squeeze bags lures American consumers away from practices of real health. Nooyi envisions training American consumers to eat manufactured soup as an on-the-go healthy snack. She seeks to combine convenience and aspiration to benefit the consumer, but this practice illuminates how our food system has become a proliferation of "non-food activity-based ingestibles." Imagine the beleaguered consumer choosing not to grocery shop and cook, but instead racing home from work while snacking with mobility-designed packaging.[73] The conflation of nutrition and convenience may only serve to fuel detrimental food habits in the American populace and increasing diet-related diseases.

Nooyi is also saying that consumers are trainable. When PepsiCo strategically pursues training consumers to eat something, they are highly effective. Big Food wins when they respond to the demands on the consumer and make the consumer's life easier. They make it easier for consumers by taking the thinking out of eating. They show us images and thoughtfully chosen words to transmit, "Hey, you can trust us and belong to the happy, healthy people." In this way, consumers feel like they are winners by getting food that tastes good and is healthy. However, they are being manipulated with superficial associations to purchase manufactured food instead of being physically nourished with whole food.

The perception that health can be attained through conveniently packaged bottles and squeeze bags lures American consumers away from practices of real health.

What is poignant and rather sad in this transaction is that consumers not only increasingly transmit the message, "I am trainable." They also communicate through their purchase habits that they prefer to be trained, to take what is offered, and to relinquish thinking about their responsibility for their own lives and their family's health.

CONSUMERS' FOOD CHOICES

In taking a closer look at the factors that contribute to consumers' food choices and the strategies that can be employed to encourage people to make healthier more sustainable food choices, some compelling discoveries were made. Existing research from health advocates is limited, and effective programs are difficult to identify. However, we have 100 years worth of informative best practices from Big Food. What works best to shape consumer habits is what Big Food is already doing in their marketing practices! What we consume and how we like it delivered is based in large part on consumer research. In light of the brand building activities already highlighted, anyone seeking to change consumer behavior will have to compete with the current onslaught of conspicuous and unnoticed Big Food marketing practices. What we currently know from health advocacy programs, including the non-profit realm, suggests that changing the eating practice of consumers is a normative change. It requires a similar approach to the one that undid tobacco's hold: an integrated and strategic approach over individual-based interventions.

In the non-profit realm, individual-based eating programs influencing eating practice exist. In "Tackling Obesity by Building Healthy Communities: Changing Policies Through Innovative Collaborations," the Institute of Medicine states, "It is unreasonable to expect that people will change their behavior easily when so many forces in the social, cultural, and physical environment conspire against such change." One of its recommendations advises, "Rather than focusing interventions on a single or limited number of health determinants, interventions on social and behavioral factors should link multiple levels of influence (i.e., individual, interpersonal, institutional, community, and policy levels)."[74]

Examples of Relevant Eating Programs

The following local programs are showcased to demonstrate some key lessons that inform us about consumer behavior and responses. Although these interventions are linked to single or limited health determinants and not to lasting multiple levels of influence, the discoveries about consumer choice are fascinating:

- Christopher Gardner, Associate Professor at the Stanford University School of Medicine, shared his findings for an eating program intervention that addressed lowering cholesterol. Participants included cardiac patients whose cholesterol materially decreased and whose overall health improved. That was great news: changing one's eating pattern made a difference. At the conclusion of the study, the participants were eager to have their meals cooked for them on an ongoing basis. However, when Gardner explored whether they would personally adopt the necessary cooking practices to maintain their health, he discovered that most would not.[75]

- Debra Dunn, Consulting Associate Professor of Stanford's Institute of Design, provided findings on an initiative to sell more hot food in the Stanford cafeteria. Her students who led the research and implementation design learned from focus group students that they missed home-cooked meals and having "Mom" prepare their plates. Also, symbolically, the research team discovered that this represented the attachment and emotion of being loved while at home. When the cafeteria started serving plated meals instead of self-serve food, the sales of hot foods increased.[76]

- Sylvia Drew Ivie, Senior Deputy for Human Services for Mark Ridley-Thomas of the LA County Board of Supervisors, 2nd District, was formerly a consultant at the California Endowment. While there, she explored building out a concept for community centers focused on diabetes management, healthy

cooking, and eating. Ivie found that the learning and camaraderie among neighbors enhanced cooking skills, improved diets, and formed friendships. However, she also realized that the program was cost-prohibitive for the organization to scale at that time.[77]

The Most Effective Eating Program

The biggest, most effective eating program in history comes from the commercial realm, where multiple levels of influence exist. Weight Watchers® was started in the early 1960s by Jean Nidtech, who combined nutrition science and behavioral science. Her insight was that "sustainable weight loss is more achievable with emotional support." With a simple calorie-deficient diet, developed by the New York Board of Health, she shared her ideas with overweight neighbors, and complemented the diet with weekly meetings for commiseration, progress reports, and empathy. Today, the business is a million members strong with growing sales. The success for Weight Watchers® is clearly based on the links between nutrition, weight loss, and psychology.[78]

When we take this example, even though it does not focus on sustainable food choices, what we see is a structure of science that supports lasting change. Consumers respond to it and achieve diet goals. As appealing as Weight Watchers® success is, we must also consider the potential conflict of interest in pursuing real health. Weight Watchers® is now a major food manufacturer itself, and its consumers buy in bulk. The program is effective in changing consumer eating habits because they have replaced one manufactured food for another. Consumers can purchase a month's worth of manufactured food to follow a prescribed, daily food regimen. Although this may effectively reduce their weight, is this a program of real health? What if a system like Weight Watchers® Points Plus or even Weight Watchers® itself chose to promote the use of whole and/or organic foods?

Lessons From Prevention Institute

As discussed in relation to Derek Yach, tobacco reform might well serve as a model for influencing consumer behavior toward healthier more sustainable food choices. Leslie Mikkelsen, Managing Director at Prevention Institute, suggests Chapter 1 of the Institute's book, *Prevention is Primary: Strategies for Community Well Being* (see Appendix G), to help illustrate how tobacco reform and many other social reforms came to be successful. The underlying tenet of prevention frames many cases of lasting normative change. Examples from the Prevention Institute's book of how prevention led to effective movements in the public realm include:

- Seminal prevention movement of 1842 by John Snow, a physician in London, who simply wanted to protect public health by improving water supplies and refuse and sewage disposal
- The National Minimum Age Drinking Act of 1984
- Antismoking legislation
- Routine immunizations
- Water fluoridation
- Motorcycle helmet laws[79]

Mikkelsen also highlights "The Spectrum of Prevention" structure for normative change. Lasting consumer behavior is most possible when a number of factors work together toward a common vision. This multifaceted and sustainable framework includes the following strategies:

- Influencing policy and legislation
- Changing organizational practices
- Fostering coalitions and networks
- Educating providers
- Promoting community education
- Strengthening individual knowledge and skills[80]

Although these individual elements, and some combinations thereof, exist today, what would it take for the sustainable food system movement to achieve a tipping point that will shift our food culture toward a pervasive eating practice of real health?

CONCLUSION

Declining American health and increasing concern about the future of our food system has spurred public attention on our current food manufacturing and distribution processes. Understanding how Big Food uses marketing strategies and practices in conjunction with ongoing consumer behavior research to sell their products is integral to shaping an effective response.

Upending Our Relationship To Food

As dominant forces in manufacturing and distribution, Big Food companies have dramatically influenced our society's relationship with food. By removing the effort required to grow, gather, prepare, and eat food, we have gained time but lost health. Food used to be grown on a farm to nourish our bodies, but now food has become aspirational: hopes and dreams in a box rather than nourishment. Consumers have been trained to use food as a personal reward and as aspiration fulfillment. With more brands promoting their food as "made easy," "an affordable luxury," "healthier and tastier," or "a moment of pleasure, an everyday reward," consumers are eating for psychological benefit and entertainment without regard for, or accurate knowledge of, real nutritional content. When we look at the health issues that are surfacing, indicators suggest that billions of dollars of associated health care costs are anticipated in the near term. Food and health have become divorced from each other in reality, even as they are being wed together in the public mind.

Consumer interest in health has propelled Big Food into buying and developing product lines promoting health benefits. Although health is not to be found in a box, society's perception of food and health is shaped by trusted brands. Inundated with new products and incessant marketing claims, consumers are swayed towards the idea that manufactured food is healthy. However, unlike the organic federal labeling standards, no federal standards exist for what food can currently be labeled "healthy." Public perception is influenced so much by consumer campaigns that society begins to believe brand claims of "healthy" as truth. Moreover, the scientific research indicating that products labeled "healthy" would actually appeal *more* to people with unhealthy eating habits means that our most vulnerable consumers are at risk. We have yet to really experience how far Big Food will go to capitalize on the trust they build with consumers.

By removing the effort required to grow, gather, prepare, and eat food, we have gained time but lost health.

We are at a tipping point in the relationship between food and health. Americans are handing over their health needs to the food and beverage industry. Nestlé is pioneering a new industry between food and pharmaceuticals to prevent and treat diseases and ease the burden on healthcare systems. Coca-Cola is achieving breakthrough product growth by designing fruit drinks with health benefits. PepsiCo is developing targeted food with age-related health benefits. The Nestle Institute of Health will lead biomedical research on genetics, metabolism and environment with a goal to develop personalized science-based nutrition. Consequently, American consumers are being trained to relate to beloved brands as trusted partners in their food *and their health*. Americans are living in the illusion of health as proffered by Big Food, yet they remain largely unhealthy, overweight, and undernourished by their food. As a society we are moving towards a dystopian dream where eating for health is made easy with iconic global brands and local favorites.

We are at a tipping point in the relationship between food and health. Americans are handing over their health needs to the food and beverage industry.

Learning from Big Food

With over 100 years experience, Big Food companies are multibillion dollar and multinational successes. In the process, they have learned valuable lessons about winning market share and shifting our eating behavior. To pursue an agenda of eating whole food for real health, the sustainable food movement may consider adopting some of the strategies that Big Food uses so effectively:

DEFINE WHAT "WINNING" IS.

Big Food has a quantifiable marker to define when they are winning: they are increasing their market share. Market share is directly related to profitability and to long-term, multi-generational viability. It is critical to define winning for sustainable agriculture and whole food in terms of a quantifiable outcome. Increased market share for whole food is possible, if that is a goal that can be agreed upon.

BUILD A VISION.

Having a clear vision allows Big Food companies to mobilize talent in pursuit of their goals. A clear vision that can be shared at all levels of a team drives the strategy to pursue market share on multiple fronts. Consistent reinforcement is delivered through well-trained leaders who keep the team moving towards the vision and set goals toward winning. Cultivating both the technical talent and leadership talent to pursue their vision is an integral component of their success.

It is critical to define winning for sustainable agriculture and whole food in terms of a quantifiable outcome

UNIFY.

Big Food companies are massive organizations with strong leadership and an army of people employed to achieve their visions. Cohesive teams make up company management, with thousands of people executing on their tactics. These companies have unified dozens of brands and hundreds of products to capitalize on the strength offered by a large organization. How can a movement of hundreds of disparate non-profits with small numbers of staff effectively pursue an agenda to compete with Big Food? By unifying under a common vision. The advantage of unification is the harnessing of everyone's passion to align resources, leadership, influence, and especially messaging to make a material impact.

UNDERSTAND YOUR CONSUMER.

Big Food has proven that investment in consumer research about needs and aspirations creates a massive competitive advantage. Their success has created a stiff barrier to changing consumer behavior in different directions. Consumer research also provides the language and feedback from real consumers that can effectively sway other consumers. Marketing and consumer campaigns are powerful strategies employed to shape consumer behavior. Big Food has learned how to implement them effectively by taking the results of research and applying them on a broad scale. Conducting strategic inquiry with consumers who enjoy whole food, food gathering, and food preparation can provide important feedback to market whole food as a lifestyle choice.

FINANCE AND PROMOTE AN ASPIRATIONAL LIFESTYLE.

Big Food sells dreams. They know what people want, and they provide clear messages associating their products with lifestyle aspirations. Major brands have learned that regular mainstream consumers are good at reacting emotionally. The pairing of food with emotional experiences creates a powerful basis for wanting to relive good times over and over again. The whole food movement can use direct marketing messages and images in communications that are paired with emotional experiences to promote a real health lifestyle. Promoting a whole food aspirational lifestyle helps consumers start to identify with how gathering, preparing, and eating whole foods serves their real health. It fulfills a vision of what kind of people they want to be, what kind of life they want to lead.

PLAY EVERY ANGLE.

Competing to win means utilizing varying, sometimes oppositional, strategies to achieve goals. Big Food fought against federal organic regulations even as they

developed products for the organic market. They sell health-focused products alongside unhealthy snacks. They fight more stringent regulatory standards even while hiring away the advocates for those standards to work for their companies. When competing for market share, there are no contradictions in ideology, only a search for the winning avenues. In similar fashion, whole food advocates can fight against and advertise against Big Food practices detrimental to public health while simultaneously working to turn their enemies into assets. As an example, finding ways to partner with companies such as Weight Watchers® to advance the whole food agenda may have a startlingly positive effect.

COMMIT TO A LONG-VIEW.

Winning comes from the long-term commitment of leaders and stakeholders. Each of the companies we have examined earned a commanding market share not in two years, but in 50 or 100 years. Whole food advocates can find success by taking the long-view with a strategic focus. Learn what works and what does not with measureable goals that drive whole food consumption. Plan to build that knowledge base and hone strategy across decades. Big Food also enjoys the commitment of its shareholders, employees, and consumers because they have built that commitment across decades. Building loyalty for a countermovement of health and whole food lifestyle will not be accomplished in a year—or perhaps even in five years. Success will be rooted in a long-view to learn what works, adjust what does not, and persist. If the health of our children is a priority, we must be prepared to pursue success across decades. As we have seen, marketing to youth entrenches a lifetime loyalty into young minds.

In addition to utilizing business strategies to sell whole food, part of the solution to America's health and diet problems may not lie in selling different or better food, but in reducing intake. This will necessarily conflict with Big Food's objectives and with the objectives of whole food suppliers from farmers to manufacturers. A key role of public health advocates may be to help spread the message that no one else wants to promote: Part of the solution to America's diet-related diseases is for consumers to *eat less*.

If the health of our children is a priority, we must be prepared to pursue success across decades.

An Effective Response

Reshaping our society's relationship to food means forging a common vision and shifting our thinking paradigm about the approach to achieving that vision. Sustainable agriculture resources, both financial and human, have typically been divided across organizations with their own visions and strategies. While America sits on the tipping point of handing over its health aspirations to Big Food, sustainable agriculture and public health proponents still have the opportunity to interrupt Big Food's momentum and win back attention for a real health approach to eating. To do so, they may benefit from adopting some of their competitors' practices and employing those strategies to their own end. Utilizing inexpensive ingredients and engineering products for maximal taste, convenience, and shelf life has far greater profitability than selling whole food, which means that Big Food's capital resources and solid business model will be hard to impede in the near term. Nonetheless, the persistent steps of a unified team can create a viable countermovement with the power to effect change. Aren't our children worth it?

ABOUT THE AUTHOR

As a former Mars, Incorporated salesperson and marketer, Lita Reyes provides insights into Big Food including the current activities of major manufacturers and distributors, their strategy for the future, and their stakeholder management. Most critically, she has worked in the trenches and reveals how Big Food sells their products and shapes consumers' food choices. Lita offers potential strategies to encourage both individuals and society to make healthier, more sustainable food choices.

Lita's early adventures with her Dad exploring the galley of a Naval ship, walking in commercial warehouse freezers full of food, and cooking Filipino food together for family holidays have cultivated her lifelong interest in eating culture. A volunteer service trip to Namibia in 2007 galvanized Lita's resolve to bring her business skills to bear for organizations working toward the greater good. Today, Lita is passionate about advocating for public health and whole food in the consumer's mind. Her lifelong interest in food continues to inspire Lita to listen, inquire, and report with a commitment to influence the food system for the better.

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APPENDICES

A. FACT SHEET: NESTLÉ S. A.
B. FACT SHEET: THE COCA-COLA COMPANY
C. FACT SHEET: PEPSICO, INC.
D. FACT SHEET: WALMART STORES, INC.
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F. NESTLE ROADMAP TO GOOD FOOD, GOOD LIFE
G. PREVENTION IS PRIMARY: STRATEGIES FOR COMMUNITY WELL BEING, CH. 1

A. Big Food Industry Fact Sheet: Nestlé S. A.

NESTLÉ S. A.

AVENUE NESTLÉ 55, CH-1800 VEVEY
SWITZERLAND

BRAND: "Nestlé. Good Food. Good Life."
POSITION: Largest food-and-beverage company in the world.
2010 ANNUAL REVENUES: $117.3 billion

BUSINESS UNITS

- Powdered and liquid beverages
- Water
- Milk products and ice cream
- Nutrition
- Prepared dishes and cooking aids
- Confectionery
- PetCare
- Alcon Laboratories (eye care products)
- Health and beauty joint ventures
- Associated companies not listed

Sources: Nestlé, Annual Report 2010 and John Seabrook, "Snacks for a Fat Planet," The New Yorker, May 16, 2011.

B. Big Food Industry Fact Sheet: The Coca-Cola Company

THE COCA-COLA COMPANY

ONE COCA-COLA PLAZA

ATLANTA, GEORGIA, 30313 USA

BRAND: "Coca-Cola: 125 years of sharing happiness."

POSITION: Largest beverage company in the world.

2010 ANNUAL REVENUES: $35 billion

BEVERAGE PORTFOLIO

- Low- and no-calorie sparkling beverages
- Juices and juice drinks
- Waters
- Sports and energy drinks
- Teas
- Coffees
- Dairy-based beverages

Source: The Coca-Cola Company, Advancing Our Global Momentum: 2010 Annual Review.

C. Big Food Industry Fact Sheet: PepsiCo

PEPSICO, INC.

700 ANDERSON HILL ROAD

PURCHASE, NY, 10577 USA

BRAND: "PepsiCo. The good company. Performance with purpose."

POSITION: Largest food-and-beverage company in the U. S. and the second-largest in the world, after Nestle.

2010 ANNUAL REVENUES: $57.8 billion

FOOD AND BEVERAGE PORTFOLIO

- Liquid refreshments/soft drinks division, Pepsi-Cola is second to Coca-Cola, worldwide.
- Savory snacks division, Frito-Lay is ten times larger than its largest competitor, Diamond Foods, Inc., of San Francisco.

Sources: PepsiCo, Performance With Purpose: 2010 Annual Report, and John Seabrook, "Snacks for a Fat Planet," The New Yorker, May 16, 2011.

D. Big Food Industry Fact Sheet: Walmart

WALMART STORES, INC.

702 S. W. 8TH STREET

BENTONVILLE, ARKANSAS USA

BRAND: "We save people money so they can live better."

POSITION: Largest retailer in the world.

2010 ANNUAL REVENUES: $408 billion

BUSINESS UNITS

- Walmart U.S.
- Sam's Club
- Walmart International

Source: Walmart, 2010 Annual Report.

E. PepsiCo Wholesome & Enjoyable Foods & Beverages Portfolio

Source: PepsiCo, Performance With Purpose: 2010 Annual Report.

F. Nestle Roadmap to Good Food, Good Life

Source: Nestlé, Annual Report 2010.

G. Prevention is Primary: Strategies for Community Well Being

1

The Imperative for Primary Prevention

Larry Cohen
Sana Chehimi

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LEARNING OBJECTIVES

- Understand the importance of an up-front, primary prevention approach and be able to distinguish it from secondary prevention, tertiary prevention, and patient-provider education that occurs after the onset of illness and disease
- Conceptualize that primary prevention extends beyond the individual by improving health outcomes of entire communities
- Understand prevention as an upstream, or proactive, comprehensive solution
- Describe the six synergistic levels of the *Spectrum of Prevention* as a multifaceted and sustainable framework for achieving community change

4 Prevention Is Primary

Some years ago, a prominent individual suffered a major heart attack across the street from the local county hospital. Although the initial prognosis was poor, the care provided by the hospital resulted in a quick and near-complete recovery. The county board of supervisors proudly emphasized the hospital's success during its next meeting. In the presence of the media, the supervisors congratulated key health officials on the outstanding care and treatment provided, noting in particular the high quality of the hospital staff, medical equipment, and training. As the proceedings were winding down, one supervisor asked, "But what about prevention? Do we have quality prevention?" Without missing a beat, the health director answered, "Yes." Pointing to a pile of brochures titled *Staying Heart Healthy*, he proclaimed, "We have these!"

This isn't an isolated case. Many aspects of health in the United States, from how resources are allocated to who has access to care, suffer from a lack of focus on prevention. Far too often, prevention is an afterthought (Cowen, 1987). The predominant approach to health and well-being in this country focuses on medical treatment and services—after the fact—for the many Americans who are sick and injured each year. Unfortunately, there is a lack of corresponding emphasis on quality community prevention efforts, those that prevent people from getting sick and injured *in the first place*. Furthermore, prevention is often relegated to a message in a brochure or to a few moments during a medical visit. Such approaches are not quality prevention efforts. Human behavior is complicated, and awareness of a health risk does not automatically lead to taking protective action (Ghez, 2000).

Effectively addressing the range of health and social problems of the twenty-first century requires a fundamental paradigm shift that generates equity for the most vulnerable members of society and maximizes limited resources. This paradigm shift results in moving from medical treatment after the fact to prevention in the first place—and from targeting individuals to moving toward a comprehensive community focus. The imperative for this shift in thinking is best described by the psychologist and noted prevention advocate George Albee (1983), who noted that "no mass disorder afflicting mankind is ever brought under control or eliminated by attempts at treating the affected individual" (p. 24).

This chapter moves prevention beyond brochures by presenting an alternative to the dominant individual-based prevention and treatment model. We begin by defining *primary prevention* and offering recent and historical examples of prevention successes, demonstrating that prevention is the basis of public health and that prevention works. We then make the case for primary prevention, emphasizing that prevention supports the health care infrastructure, is an effective use of health care resources, and assists those most in need by decreasing disparities in health. Finally, we describe the six complementary levels of the *Spectrum of Prevention*, which provide a multifaceted and sustainable framework for achieving community change.

MOVING UPSTREAM WITH PRIMARY PREVENTION

In a 2002 speech to the Commonwealth Club in San Francisco, Gloria Steinem observed, "We are still standing on the bank of the river, rescuing people who are drowning. We have not gone to the head of the river to keep them from falling in. That is the twenty-first-century task." Steinem's remark refers to a popular analogy, "moving upstream," which is used to highlight the importance and relevance of primary prevention (Ardell, 1977/1986).

MOVING UPSTREAM

While walking along the banks of a river, a passerby notices that someone in the water is drowning. After pulling the person ashore, the rescuer notices another person in the river in need of help. Before long, the river is filled with drowning people, and more rescuers are required to assist the initial rescuer. Unfortunately, some people are not saved, and some victims fall back into the river after they have been pulled ashore. At this time, one of the rescuers starts walking upstream. "Where are you going?" the other rescuers ask, disconcerted. The upstream rescuer replies, "I'm going upstream to see why so many people keep falling into the river." As it turns out, the bridge leading across the river upstream has a hole through which people are falling. The upstream rescuer realizes that fixing the hole in the bridge will prevent many people from ever falling into the river in the first place.

The act of "moving upstream" and taking action before a problem arises in order to avoid it entirely, rather than treating or alleviating its consequences, is called primary prevention. The term *primary prevention* was coined in the late 1940s by Hugh Leavell and E. Guerney Clark from the Harvard and Columbia University Schools of Public Health, respectively. Leavell and Clark described primary prevention as "measures applicable to a particular disease or group of diseases in order to intercept the causes of disease before they involve man . . . [in the form of] specific immunizations, attention to personal hygiene, use of environmental sanitation, protection against occupational hazards, protection from accidents, use of specific nutrients, protection from carcinogens, and avoidance of allergens" (Goldston, 1987, p. 3). Although Leavell and Clark's definition is mostly disease-oriented, the applications of primary prevention extend beyond medical problems. These include the prevention of other societal concerns that affect health and well-being and that range from violence to environmental degradation. Primary prevention efforts are proactive by definition and should generally be aimed at populations, not just at individuals. Returning to the

upstream analogy, fixing the hole in the bridge will benefit not only those at greatest risk of falling in but everyone who crosses the river—as well as the rescuers on the riverbank and those who help pay for rescue costs.

Leavell and Clark further identified two other degrees of prevention termed *secondary* and *tertiary prevention*. Secondary prevention consists of a set of measures used for early detection and prompt intervention to control a problem or disease and minimize the poor health consequences, while tertiary prevention focuses on the reduction of further complications of an existing disease or problem, through treatment and rehabilitation (Spasoff, Harris, & Thuriaux, 2001).

Leavell and Clark's "overarching concept of prevention," described in Exhibit 1.1 through the example of childhood lead poisoning, actually refers to three distinctive activities that might be better termed "prevention, treatment, and rehabilitation" (Goldston, 1987, p. 3). As noted by Albee (1987, p. 12), "all three forms of preventive intervention are useful and defensible." However, whereas primary prevention alone is not enough to address pervasive health and social problems, it remains the foremost method we can employ in order to eliminate future health and social problems. Albee goes on to note that "any reduction in incidence [of disease] must rely heavily on proactive efforts with large groups, and such actions involve primary prevention approaches" (p. 12).

EXHIBIT 1.1 THREE LEVELS OF PREVENTION FOR CHILDHOOD LEAD POISONING

Lead poisoning occurs when the body absorbs too much lead by breathing it in or swallowing it. Children are exposed to lead primarily through the lead-based paint that is frequently found in older homes and through soil that has been previously contaminated by lead-based paint. Lead affects nearly every system in the body and in high enough quantities can cause irreversible neurocognitive damage in developing children under six.

Primary Prevention

Data from the National Health and Nutrition Examination Survey (NHANES) showed that blood lead levels in children younger than thirteen years of age declined nearly 90 percent from 1976 to 2002 (Jacobs, Wilson, Dixon, Smith & Evens, 2009). This dramatic decrease is attributed to population-based environmental policies that banned the use of lead in gasoline, paint, drinking-water pipes, and food and beverage containers. The decrease in blood lead level from 1990 to 2000 is associated with trends in housing demolition and substantial housing rehabilitation (Jacobs, Wilson, Dixon, Smith & Evens, 2009). Primary prevention is the only way to reduce the neurocognitive effects of lead poisoning (Lee & Hurwitz, 2002).

Secondary Prevention

Lead-level screening programs for at-risk children are followed by the treatment of children with high levels and removal of lead paint from households. Screening can prevent recurrent exposures and the exposure of other children to lead by triggering the identification and remediation of sources of lead in children's environments (New York State Department of Health, 2004).

Tertiary Prevention

Tertiary prevention refers to the treatment, support, and rehabilitation of children with lead poisoning who manifest complications of the disease. Lead chelation of the blood and soft tissues of exposed individuals can reduce morbidity associated with lead poisoning. Chelation can reduce the immediate toxicity associated with acute ingestion of lead but has limited ability to reverse the neurocognitive effects of chronic exposure (Lee & Hurwitz, 2002).

THE HISTORY OF EFFECTIVE PREVENTION EFFORTS

In practice, primary prevention involves policies and actions that fix the metaphorical holes in the bridge that lead to sickness and injury. Primary prevention works to reduce the ailments that would otherwise require treatment.

One well-known and very successful modern example of primary prevention is the National Minimum Age Drinking Act of 1984, which required all states to raise the minimum age to purchase alcohol to twenty-one or risk losing major transportation funding. The National Highway Traffic Safety Administration (NHTSA) estimates that as a result of minimum-drinking-age laws, 18,220 lives were saved between 1975 and 1999 (U.S. Department of Transportation, 1999), and 4,242 people between eighteen and twenty years old were saved between 2004 and 2008 (NHTSA, 2009).

This law is far from the first example of primary prevention. In fact, public health has always been founded on prevention. The first public health measures were vast environmental improvements aimed at keeping entire populations healthy. *The Sanitary Conditions of the Labouring Population of Great Britain*, a seminal report published in 1842 by the English civil servant Edwin Chadwick, noted that widespread preventive measures were necessary to preserve the health of England's workforce (Duffy, 1990). Initial public health efforts focused primarily on improving water supplies, refuse and sewage disposal, housing, ventilation, disinfection, and general cleanliness in a community (Vetter & Matthews, 1999). Labor, housing standards, and other health regulations were also developed during this period in an effort to curtail disease and premature death (Duffy, 1990).

What many experts recognize as the seminal event of the prevention movement was a simple but exceptionally effective action taken by John Snow, a physician, during

England's 1854 cholera outbreak. Cholera spreads rapidly, causing diarrhea, vomiting, and, if untreated, eventual death from dehydration. During the 1854 outbreak, five hundred people from an impoverished section of South London died within a ten-day period as a result of the disease. Many people needed treatment. However, instead of just treating his patients individually, Snow, who is credited with some of the initial investigative work in epidemiology for his work during an earlier cholera outbreak, also decided to "move upstream" and locate the source of the problem (Summers, 1989).

By studying the trends of the particular outbreak, Snow mapped the origin to a specific water pump on Broad Street. He used the information he had collected about the source of cholera to prevent its spread. Instead of warning locals not to drink water from the contaminated pump or attempting to treat the water for drinking, Snow took his initial efforts a step further and had the pump's handle removed to prevent new cases of cholera from the pump (Summers, 1989).

Snow's story illustrates the importance of taking environmental factors into account when diseases or other problems occur in a community and the importance of also displaying the common sense associated with prevention.

EXAMPLES AND CHALLENGES OF PRIMARY PREVENTION

Actions like Snow's are behind many public health successes. Many injuries have been averted and lives saved by such primary prevention measures. In addition to the minimum-drinking-age law, recent examples of primary prevention include the following:

- **Antismoking legislation.** California's aggressive antitobacco effort under Proposition 99 has resulted in 33,000 fewer deaths from cardiovascular disease in the first three years (Kuiper, Nelson, & Schooley, 2005).
- **Routine immunizations.** As childhood immunizations against diphtheria, tetanus, pertussis (whooping cough), polio, measles and tuberculosis have become increasingly routine, an estimated 2.5 million young lives are being saved every year. (UNICEF, 2009).
- **Water fluoridation.** Water fluoridation has been effective in reducing tooth decay by 50 to 60 percent (Centers for Disease Control and Prevention, 2009).
- **Motorcycle helmet laws.** Motorcycle helmet laws, enacted in six states (California, Maryland, Nebraska, Oregon, Texas, and Washington) since 1989, have successfully reduced motorcycle fatalities by an average of 27 percent in the first year (NHTSA, 2008b). On the other hand, states that have weakened their motorcycle helmet laws since 1997 to cover only those under a specific age showed an average increase in fatalities of more than 50 percent in the first year (NHTSA, 2008b).

These examples provide compelling evidence that primary prevention is effective. But despite this evidence, there is resistance to primary prevention. Unfortunately, primary prevention is often treated as if it were a distraction from the real and urgent pressure to meet the needs of those who are presently ill.

Why is this the case? One reason is that until prevention efforts succeed, it is generally difficult to conceptualize what prevention looks like. Meanwhile, the need to provide treatment services to affected individuals is clear. Thus it is easy to understand that someone who experiences domestic violence may need counseling and other supportive services, but harder to understand how to change whole populations to prevent occurrences of domestic violence before they begin.

We can learn how to overcome obstacles and to create effective prevention initiatives by studying previous successes. Most prevention efforts, including those mentioned in this chapter, were at their initiation viewed as "impossible." The first antismoking advocates routinely heard "You're crazy!" and "That will never work!" as they attempted to pass no-smoking laws for restaurants and public places. Indeed, in light of the powerful tobacco industry and the skepticism of the general public, the passage of no-smoking laws seemed ambitious at best. Today, however, we often take for granted what once seemed impossible. Many (but certainly not all) public spaces are smoke-free, from airplanes to hospitals and increasingly bars and restaurants (Loftus, 2002).

Another common but unfounded criticism is that the impact of primary prevention is invisible: How can we know if an illness or injury has been prevented or simply did not occur? Although prevention is often difficult to quantify on an individual level, when viewed in aggregate at the population level, the significant impact of prevention becomes immediately quantifiable. Consider the impact that mandatory use of seat belts and infant and child safety seats has had in the primary prevention of death and injury from automobile crashes. Between 1978 and 1985, every state, beginning with Tennessee (see box about Dr. Robert Sanders in Chapter Six for more on these efforts), passed laws requiring safety seats for child passengers (Harvard Injury Control Research Center, 2003–2006). Between 1975 and 2008, mandatory car seat use resulted in the prevention of close to eight thousand deaths and injuries in the United States (NHTSA, 2009).[1] Early prevention at the community level has a substantial impact.

THE CASE FOR PRIMARY PREVENTION

Primary prevention offers the hope of eliminating unnecessary illness, injury, and even death. Nearly 50 percent of annual deaths in the United States—and the impaired quality of life that frequently precedes them—are preventable in part because they are attributable to external environmental or behavioral factors (McGinnis & Foege, 1993; McGinnis, Williams-Russo & Knickman, 2002; Mokdad, Marks, Stroup, & Gerberding, 2004; Thorpe, Florence, & Joski, 2004). A focus on primary prevention can reverse this current trend by

converting some of the resources used to treat injuries and illnesses into efforts that effectively prevent them in the first place.

According to the noted public health expert Henrik Blum (1981), medical care and interventions "play key restorative or ameliorating roles. But they are predominantly applied only after disease occurs and therefore are often too late and at a great price" (p. 43). Despite the widely held belief in the United States that the state of being healthy is derived primarily from health care, Blum notes that, in reality, there are four major determinants of health: environment, heredity, lifestyle, and health care services. Of these four, Blum found that "by far the most potent and omnipresent set of forces is the one labeled 'environmental,' while behavior and lifestyle are the second most powerful force" (p. 43).

HEALTH CARE NEEDS PREVENTION

"Simply put, in the absence of a radical shift towards prevention and public health, we will not be successful in containing medical costs or improving the health of the American people," noted then-Senator and Presidential Candidate Barack Obama (2008). Although they are often viewed as an after-the-fact add-on to treatment, primary prevention strategies are a natural complement to medical care and treatment. As the capacity of the U.S. health care system approaches a breaking point (Cooper, Getzen, McKee, & Prakash, 2002), prevention becomes even more critical. This is demonstrated in Exhibit 1.2. A systematic investment in prevention decreases the burden on the health care system, translating into higher-quality care and treatment services for those truly in need.

EXHIBIT 1.2 TRANFORMING THE U.S. HEALTH CARE SYSTEM INTO A HEALTH SYSTEM

A U.S. health system that addresses health along a continuum beginning with prevention is vital to improving population health. Most major diseases and conditions are largely preventable. Thus, primary prevention could support healthy development and minimize the risk of a lifetime of treatment for injury and chronic disease. A system that values and promotes disease prevention would help to contain mounting health care costs. Medical treatment is critical, but it is not enough to keep people healthy in the first place.

Why a Comprehensive Approach to Health Through Prevention Is Needed

- Health and wellness are determined by far more than what occurs in the hospital and doctor's office. Despite high levels of spending, access to health care—although vital to the U.S. population and economy—does not affect

health status as much as one might expect. In fact, access to care is estimated to contribute only to 10 percent of individuals' health outcomes (McGinnis, Williams-Russo & Knickman, 2002). Meanwhile, behavioral factors account for 40 percent; genetic predispositions, 30 percent; social circumstances, 15 percent; and toxins and infectious agents, 5 percent (McGinnis, Williams-Russo & Knickman, 2002).

- Current health care spending is rising alarmingly. In 2007, the U.S. spent $2.2 trillion on health care, approximately $7,421 per person. This amount was more than twice as much as most other industrialized countries (Centers for Medicare and Medicaid Services, 2008). The percentage of gross domestic product (GDP) devoted to health care expenditures in the United States has risen from 7.2 percent in 1970 to 16.3 percent in 2007. Projected spending may reach 20.3 percent of GDP by 2018 (Centers for Medicare and Medicaid Services, 2008).
- The health care system is prone to making avoidable mistakes. Medical errors and hospital-acquired infections cause more deaths than AIDS, breast cancer, firearms, diabetes, and auto accidents combined; recent estimates place the number of annual deaths attributable to medical error at 195,000 and the number attributable to hospital infections at 103,000 (American College of Emergency Physicians, 2004).
- Treatment costs will continue to rise unless incidences of disease and injury are reduced. Since the 1960s, major advances in heart attack treatment have occurred and death rates from coronary heart disease have declined (Brown, 2009; Lloyd-Jones et al., 2010). During the same period, the costs for treating heart attacks increased from $5,700 in 1977 to $54,400 in 2007 (without adjusting for inflation) (Brown, 2009). Providing greater access to medical care will do little to reduce these costs but instead will increase associated medical payments for treatments (Brown, 2009). Although advances in medical treatment may extend someone's life by years, his or her quality of life and levels of productivity are not guaranteed. Health promotion and disease prevention could reduce outright the burden of illness, acute events, injury, and their sequelae.

PRIMARY PREVENTION HELPS THOSE MOST AT RISK

> All members of a community are affected by the health status of its least healthy members.
>
> —*Institute of Medicine, 2002, p. 37*

The burden of illness and lack of access to care in the United States is not borne equally across the population. Both frequency of illness and quality of care are often a reflection

of socioeconomic status, ethnicity, and race (Agency for Healthcare Research and Quality, 2000). According to the Centers for Disease Control and Prevention (CDC), "The demographic changes that are anticipated over the next decade magnify the importance of addressing disparities in health status" (2006). A greater proportion of the total U.S. population will experience poorer health status; therefore, since we are all cared for by the same system—and so share limited resources—the future health of America will be influenced substantially by our success in improving the health of members of these relatively less healthy groups. A national focus on disparities in health status is particularly important as major changes unfold in the way in which health care is delivered and financed.

African Americans, Hispanics, American Indians, Alaska Natives, and Pacific Islanders consistently face higher rates of morbidity and mortality, and compelling evidence indicates that race and ethnicity correlate with persistent and often increasing health disparities compared to the U.S. population as a whole. Research has now shown that after adjusting for individual risk factors, differences remain in health outcomes among various communities (PolicyLink, 2002). Primary prevention can serve to eliminate underlying health disparities through its upstream population focus; as Albee (1996) notes, "Logically, prevention programs should include efforts at achieving social equality for all" (p. 1131). For example, improving access to healthy foods in order to prevent the onset of diabetes due to poor nutrition for at-risk individuals in a community would result in positive health benefits for other community members as well.

Furthermore, inequalities affect entire societies, not just those who disproportionately share the burden of disease. Wilkinson and Pickett (2009) present a compelling argument for the ways in which income inequality is correlated with worse health outcomes in unequal societies. The fact that some people earn higher incomes than others does not protect them from the corrosive effects of income inequality; in other words, everyone suffers from inequality. Wilkinson and Pickett report that psychosocial factors, including stress, anxiety, shame, self-deprivation, among others, prevail in societies where a social gradient exists. Moreover, countries with greater income inequality have greater rates of homicide, conflict in childhood (for example, bullying), substance abuse, imprisonment, teenage pregnancies, and obesity. Quality of life also suffers for all, as countries with greater differences between "haves" and "have nots" are more likely to have citizens who are less likely to trust one another. Unfortunately, the United States is among the worst of unequal societies. The richest 20 percent in the United States earn more than 8 times what the poorest 20 percent earn. Moreover, the U.S. states with greater income inequality have residents with worse health status. States with more difference in the incomes of the very wealthy and the very poor have a larger population of people who are sicker. If there were even a 1 percent redistribution of income from the richest to the poorest, this move toward equity could improve death rates for all (Berkman & Kawachi, 2000).

PRIMARY PREVENTION IS A GOOD INVESTMENT

Currently, health care spending is growing at an unsustainable rate driven up by rising costs and a growing burden of disease. The costs are bankrupting families and small businesses, putting corporations and industry at a competitive disadvantage, and straining public resources. The long-term solution must involve both cost containment and reduced demand for services. However, of the more than $2.2 trillion in health care spent nationally every year, fewer than four cents of every dollar are spent on prevention and public health (Lambrew, 2007). Table 1.1 lays out specific cost savings associated with different forms of primary prevention.

Table 1.1 A lesson in responsible spending

	Every $1 invested in:	Produces savings of:
Government	Water fluoridation	$37.24 in communities with more than 20,000 people (Griffin, Jones, & Tomar, 2001).
	High-quality preschool programs	$16.41 from averted crime, remedial services, and child welfare services (High/Scope Educational Research Foundation, 2005).
	Breastfeeding support by employers	$3 in reduced absenteeism and health care costs for mothers and babies, and improved productivity (United States Breastfeeding Committee, 2002).
	Women, Infants, and Children (WIC) services	$2.91 in Medicaid for newborn medical care (Buescher, Larson, Nelson, Lenihan, 1993).
Community	Child safety seats	$41.52 in direct medical and other costs to society (Children's Safety Network, 2005).
	Bicycle helmets	$30 in direct medical and other costs to society (National Highway Traffic Safety Administration, 2008a).
	California Tobacco Control Program	$50 in total personal health care spending (Lightwood, Dinno, & Glantz, 2008).
	Walking and biking trails	$2.60 in direct medical costs of physical inactivity (Wang et al, 2004).
	Physical activity programs for older adults	$4.50 on hip fractures (National Governors Association, 2009).
	Worksite wellness programs	$15.60 in reduced absenteeism (Aldana, Merrill, Price, Hardy, Hager, 2005).
	Family- and school-based addiction prevention programs	$10 in employer and community benefit (Iowa State University News Service, 2009).

(*Continued*)

Table 1.1 (*Continued*)

	Every $1 invested in:	Produces savings of:
Clinical	The seven-vaccine routine childhood immunization schedule	$16.50 in direct medical and other costs to society (Zhou et al., 2005).
	The chickenpox vaccine	$4.37 in direct medical costs and other costs to society (Zhou, Ortega-Sanchez, Guris, Shefer, Lieu, & Seward, 2008).
	Screening and brief counseling interventions for alcohol misuse among pregnant women	$4.30 in healthcare costs (Fleming et al., 2002).
	Hospital needlestick prevention program	$6.20 in medical and associated costs (Hatcher, 2002).
	Vaccinations for older adults	$2.44 in hospitalization costs due to influenza (Maciosek, Solberg, Coffield, Adwards & Goodman, 2006).
	Hospital program (handwashing promotion, education of staff) to prevent the spread of infection	$6.00 in hospital medical costs (Macartney, Gorelick & Manning, 2000).

Primary prevention has a track record of improving health and reducing costs and has the potential to save more lives if applied comprehensively and strategically. A landmark 2008 study, *Prevention for a Healthier America: Investments in Disease Prevention Yield Significant Savings, Stronger Communities*—produced through a partnership between Trust for America's Health, the New York Academy of Medicine, the Urban Institute, The California Endowment, the Robert Wood Johnson Foundation, and Prevention Institute (2008)—validates that prevention saves money. The study demonstrates that investments of $10 per person per year in programs to increase physical activity, improve nutrition, and prevent tobacco use could save the country more than $16 billion in annual health care costs within five years. Out of the potential $16 billion in savings, Medicare could save more than $5 billion, Medicaid could save more than $1.9 billion, and private payers could save more than $9 billion. Furthermore, the return on investment for prevention is substantial; for every $1 invested in community-based prevention, the return amounts to $5.60 in the fifth year. Prevention investments result in savings for both public and private health care payers.

Prevention can also help improve productivity and competitiveness. Good health is fundamental to broad-based economic sustainability. In order to remain competitive with other countries, the United States needs a healthy workforce and, because employers are the

main purchasers of health insurance for workers, health care costs must remain within the range of other industrialized nations. The United States has the highest per capita health care spending in the world, nearly double the spending in Switzerland, which has the next highest. In recent years, many companies have moved their operations overseas, laying-off thousands of workers in the process, in part, to be spared the burden of skyrocketing health care costs. Comprehensive year-round health programs have the potential to yield cost savings of $3 for every $1 spent (University of Michigan Health Management Research Center, 2000). By adopting worksite wellness programs—with elements such as fitness classes, stress management, ergonomic equipment policies, and on-site farmers' markets (at over 20 Kaiser Permanente sites in California)—companies have improved employee health and productivity, while reducing employee absenteeism and the business costs associated with poor health conditions. As Safeway's Chief Executive Steve Burd notes, "If we can create a health care plan that contains costs or drives them down, that improves the health of the employee and extends their life, and avoids catastrophic illness and doesn't cost them any more money, why would anybody quarrel with that plan?" (Colliver, 2007).

MAKING HEALTH MANLY

"Health matters are women's matters." "Only women pamper their bodies." There is substantial evidence, at least in the United States, that asking for help and caring for one's health are widely considered to be the province of women (Courtenay, 2000c). Collective beliefs and assumptions such as these are what social scientists refer to as *social norms* (Berkowitz, 2003) or *subjective norms* (Ajzen, 2001).

Given the existence of these norms, it is not surprising that in most Western industrialized countries, women are the greatest consumers of health-related products and services. Women are often first to take responsibility, not only for the health and well-being of themselves and their offspring, but also for the health of men. This helps explain why single men have the greatest health risks—and why the benefits of marriage are consistently found to be greater for men than for women (who can suffer substantial stress in caring for their spouses) (Courtenay, 2000a).

Ultimately, men need to take greater responsibility for their own health. But here is the problem: men receive strong social prohibitions against doing *anything* that women do (Courtenay, 2000c).

Men and boys who engage in behaviors representing feminine gender norms risk being perceived as "wimps" or "sissies." Consequently, men often seek to prove their manhood by *actively rejecting* doing anything that women do—and this includes caring for their health (Courtenay, 2000b). Not surprisingly, there is solid

evidence that masculinity is associated with health behavior and even predicts mortality (Courtenay, 2003).

Of course, many men *are* concerned about their health. But as long as men believe that their peers are unconcerned about *their* health, they will be less likely to attend to their own health needs. What this means is that for men to change, social norms will have to change.

Results of a survey of more than five hundred men on one U.S. college campus indicated that these men believed most (55 percent) of their peers were either not at all concerned or only a little concerned about their health. In reality, only 35 percent of the men were unconcerned about their health; most (65 percent) reported being either somewhat or very concerned (Courtenay, 2004). Dissemination of these data could promote the more accurate norm that men at this particular college are indeed concerned about their health.

A similarly effective way to change social norms is for prominent members of a particular group to account for how they became involved in their health. Research shows that people can be persuaded to behave in ways they believe credible, influential colleagues or peers want them to behave (Petty, Wegener, & Fabrigar, 1997). Perhaps then men will begin to see health and well-being as *human* concerns and recognize that following good health habits can be manly as well as lifesaving.

Source: Courtesy of Will Courtenay.

PUTTING PRIMARY PREVENTION INTO PRACTICE

Communities are addressing increasingly complex social and health problems, from HIV to violence to diabetes. Practitioners face the challenge of devising new services and programs in response to these issues, yet the commitment to preventing them in the first place lags. Prevention initiatives and efforts often focus on changing individual behaviors alone while ignoring the societal context surrounding them. An effective prevention strategy to respond to these challenges must target not just individual behaviors but also the environment in which they occur. Primary prevention requires a shift from a focus on programs to a focus on more far-reaching prevention initiatives and from a focus on the individual to a focus on the environment.

Far more than simply air, water, and soil, the term environment refers to the broad social and environmental context in which everyday life takes place. According to Dorfman, Wallack, and Woodruff, "many health and social problems are related to conditions outside the immediate individual's control. A focus limited to personal behavior change ultimately fails us as a society because it narrows the possible solutions inappropriately . . . Personal

choices are always made in the context of a larger environment. Prevention can address both ends of the spectrum" (2005, pp. 328–329).

The importance of an integrated, multifaceted approach to prevention is also recognized by the Institute of Medicine, which concluded in its 2000 report *Promoting Health*, "It is unreasonable to expect that people will change their behavior easily when so many forces in the social, cultural, and physical environment conspire against such change (Institute of Medicine, 2000, p. 4). It is therefore essential for a successful prevention initiative to be comprehensive; it must address the environmental as well as individual factors that influence health in a community.

How do we craft comprehensive solutions? *The Spectrum of Prevention*[1] offers a systematic framework for developing effective and sustainable primary prevention programs (see Figure 1.1). The six levels of the Spectrum allow practitioners to move beyond the common "brochures as prevention" approach by defining a variety of areas in which prevention can be implemented. The levels of the Spectrum are complementary. When used together, each level reinforces the others, leading to greater effectiveness. According to Ottoson and Green (2005), "one of the lessons of successful efforts in community-based health information has been that activities must be coordinated and mutually supportive across levels and channels of influence, from individual to family to institutions to whole communities. This is the lesson of an ecological understanding of complex, interacting, community program components and the causal chains by which they affect outcomes" (p. 53).

To illustrate, let's use the example of breastfeeding. Breastfeeding is beneficial for boosting an infant's immune system and is also considered one of the best forms of nutrition for infants (Reynolds, 2001). A century ago, nearly 100 percent of babies were breastfed. Despite slight increases in recent years, today only 17 percent of women adhere to the recommended guidelines of exclusively breastfeeding a child for a full six months after

Figure 1.1 The spectrum of prevention

The Spectrum of Prevention
Influencing policy and legislation
Changing organizational practices
Fostering coalitions and networks
Educating providers
Promoting community education
Strengthening individual knowledge and skills

birth (Wolf, 2003). Rates have declined dramatically over the past century for a number of reasons, including lack of accommodations for working mothers who are breastfeeding, social mores about the acceptability of breastfeeding in public, and the development and marketing of baby formulas as a primary source of infant nutrition (Wolf, 2003). As more evidence becomes available to clinicians, breastfeeding is again being promoted in order to improve the public's health.

The cultural context surrounding breastfeeding, however, is still a significant barrier in the United States. As sociologist Joan Retsinas noted, "While it is known that breastfeeding is better, our society is not structured to facilitate that choice" (quoted in Wright, 2001, p. 1). Groups like the Women, Infants and Children's (WIC) Program funded by the U.S. Department of Agriculture to improve birth outcomes and early childhood health have prioritized breastfeeding for low-income women and children through nutritional support programs (Ahluwalia & Tessaro, 2000).

Making progress requires more than simply helping mothers with the skills to successfully breastfeed. Creating and maintaining widespread social norms for breastfeeding is critical. This requires activities along each level of the Spectrum of Prevention.

The first level of the Spectrum, *strengthening individual knowledge and skills*, emphasizes enhancing individual skills that are essential in healthy behaviors. Clinical services are one common opportunity for delivering these skills, although there are many avenues of importance. Individual skill building is essential to the success of breastfeeding for new mothers. Women need support before and after their child is born in order to successfully initiate and maintain breastfeeding. Often an ob-gyn, presenting expectant parents with information on the benefits of breastfeeding for themselves and their infants, can have an early influence on the decision to breastfeed. In-hospital support, round-the-clock hotlines, and lactation counselors help troubleshoot the challenges a mother encounters and motivate her to continue in her breastfeeding commitment.

The second level of the Spectrum, *promoting community education*, entails reaching people with information and resources in order to promote their health and safety. Typically, many health education initiatives focus on developing brochures, holding health fairs, and conducting community forums and events. Such onetime exposures can be a valuable element of a broader campaign but often don't have a big impact. We need to understand that today the mass media are the primary sources of education for almost everyone. Although there have been creative efforts to use the media to improve health, the massive expenditures of corporations far overshadow public health efforts in the mass media. As Ivan Juzang (2002) of MEE Productions points out, word of mouth can be a powerful and effective tool. It's the best advertising money can't buy. Creating positive word of mouth allows your prevention message to live on, even after a formal campaign is over, as community members take ownership of the message and begin to initiate their own activities that support it.

Educating a larger community about the benefits of breastfeeding helps create community environments that encourage breastfeeding and view it as normal. Posters have

been used in health care settings to signal the value of breastfeeding. One example of a large-scale community media campaign is the one coordinated by the U.S. Department of Health and Human Services and the Ad Council (U.S. Department of Health and Human Services, Office of Women's Health, 2001).

Locally, the news media can provide rich—and free—opportunities to emphasize public health. A great example of this was the Berkeley, California, Public Health Department's event to enter the *Guinness Book of World Records* by bringing together the largest number of breastfeeding mothers in history (BBC News, 2002).

Advocates also cite corporate advertising as one of the roadblocks in encouraging social change toward increased breastfeeding. Manufacturers often idealize the use of formula for infant nutrition by touting convenience; Derrick Jellife coined the term *commerciogenic malnutrition* to describe the impact of industry marketing practices on infant health ("Baby Milk Action," n.d.). A resulting boycott, and the media attention it engendered, created large-scale awareness that the decline in breastfeeding was not simply a matter of unfettered individual choice.

The third level of the Spectrum is *educating providers*. Because health care providers are a trusted source of health-related information, they are a key group to reach with strategies for prevention. Similarly, teachers and public safety officials are often identified as key groups to reach with new information and methods. The notion of who is a provider should be approached more broadly, however, and extends beyond the "usual suspects" to include faith leaders; postal workers and other public servants; business, union, and community leaders; and cashiers—and anyone who is in a position to share information or influence others.

Because of their contact with expectant mothers, a first place to start is with the ob-gyn and pediatric staff. Maternity staff have been trained that a good practice is to encourage breastfeeding within a half hour of birth. In California, Riverside County's Nutrition Services Department has created a marketing team modeled on pharmaceutical company representatives that visit prenatal and pediatric care providers to supply them with educational materials, displays, takeaway cards, and training to ensure they have the resources necessary to help their patients choose to breastfeed their babies and continue to do so. An additional approach is the involvement of business leaders who can assist mothers in transitioning back into the workplace. Training includes helping business leaders understand their role when mothers return to work and how to set up facilities that allow breastfeeding in the workplace. Another innovative model of provider education, developed in some African American communities, involves sharing information about the benefits of breastfeeding with beauty shop employees and their clients, who in turn share it with their neighbors (Best Start Social Marketing, 2003).

Level four of the Spectrum, *fostering coalitions and networks*, focuses on collaboration and community organizing. Fostering collaborative approaches brings together the participants necessary to ensure an initiative's success and increase the "critical mass" behind a community effort. Coalitions and expanded partnerships are vital in successful

public health movements, including breastfeeding promotion. The metaphor of a jigsaw puzzle is appropriate, with each piece having value but taking on a greater significance when all the pieces are put together in the right way. Collaboration is not an intrinsic outcome like the other levels of the Spectrum, but rather a tool used to achieve an objective. Often the best way to ensure a comprehensive strategy is to build a diverse coalition.

Collaborations may take place at several levels: at the community level grassroots partners may work together in community organizing; at the organizational level nonprofits may work together to coordinate the efforts of business, faith, or other interest groups; and at the governmental level different sectors of government may link with one another. Typical partnerships include elements of all three. In health fields, interdisciplinary and intergovernmental partnerships are probably less common than collaborations between community-based organizations and grassroots efforts, which hold enormous promise for advancing the work of primary prevention (Cohen, Baer, & Satterwhite, 2002). Often the best way to ensure a comprehensive strategy is to build a diverse coalition. *Eight Steps to Effective Coalition Building* (Cohen et al., 2002) is a framework that guides advocates and practitioners through the process of coalition building, from deciding whether or not a coalition is appropriate to selecting the best membership and conducting ongoing evaluation.

An important objective of coalition building is to identify and work toward goals that can have greater impact on the community overall than any coalition participant might achieve alone. A key part of leadership, then, is finding an interest common to most or all groups and facilitating work toward achieving vital shared goals.

Returning to our example, collaboration between organizations and the fostering of coalitions are vital in the promotion of breastfeeding. To effect not only individual behavioral changes but social norm changes as well, leadership is needed from health experts, grassroots advocates, social service workers, politicians, business groups, and the media. On the international level, a broad collaboration of community members around the world led to the effective challenge of corporations promoting infant formula ("Challenging Corporate Abuses," 1993). At the local level, building on public knowledge of the importance of breastfeeding and engaging the business and medical community led to changes in the organizational practices of businesses and hospitals.

The fifth level of the Spectrum, *changing organizational practices*, deals with organizational change from a systems perspective. Reshaping the general practices of key organizations can affect both health and norms. Such change reaches the members, clients, and employees of the company as well as the surrounding community and serves as a model for all. Changing organizational practices is easier than changing policy in many cases, so can serve as the testing ground for policy change. Government and health institutions are key places to make change because of their role as standard setters. Other critical arenas include media, business, sports, faith organizations, and schools. Nearly everyone belongs to or works in an organization, so this approach gives collaborators an immediate place to initiate change surrounding a particular issue.

Two key areas for changing organizational practices that support breastfeeding are the Baby-Friendly Hospital Initiative and workplace policies around maternity leave and lactation support. As part of the Baby-Friendly Hospital Initiative, participating hospitals provide an optimal environment for the mother to learn the skills of breastfeeding, including allowing mothers to keep their newborns in the same room rather than in the hospital nursery, and encouraging initiation of breastfeeding within a half hour after birth. These hospitals stop the standard practice of sending mothers home with discharge packs that include artificial baby formula. This initiative has resulted in significant increases in breastfeeding initiation rates (Phillip et al., 2001).

For mothers who work, breastfeeding can be difficult unless their employers adopt policies that facilitate breastfeeding. Such organizational policies include allowing enough maternity leave to solidly establish breastfeeding practices and designing environments that make it easier for mothers to pump and store breast milk while at work. Media portrayals of breastfeeding as normal, as opposed to portraying breasts as almost entirely sexualized, could also facilitate breastfeeding.

The sixth level of the Spectrum, *influencing policy and legislation*, has the potential for achieving the broadest impact across a community. Policy is the set of rules that guide the activities of governmental or quasi-governmental organizations. Policy thus sets the foundation or framework for action. By mandating what is expected and required, sound policies can lead to widespread behavioral changes on a communitywide scale that may ultimately become the social norm. Over the course of the past several years, major health improvements have occurred as a result of policy changes, including a reduction in diseases associated with cigarette smoking, a decrease in workplace and roadway accidents due to dramatically greater use of safety equipment, and reductions in lead poisoning.

Although policy is frequently thought of as either state or federal, evidence indicates that highly effective prevention policy can be developed on the community level and that local policy development is integral to the success of prevention programs (Holder et al., 1997). As a result, sound policies can lead to widespread behavior change on a community-wide scale. As noted by the Municipal Research and Services Center of Washington (2000), "Policy making is often undervalued and misunderstood, yet it is the central role of the city, town, and county legislative bodies."

Using our breastfeeding example, policies that support breastfeeding mothers include laws mandating maternity leave and requiring workplaces to make accommodations for employees who breastfeed. Additional legislation at the state level can help modify the existing structure of a system in order to promote the healthier choice for a mother and her newborn infant. A California policy proposed in 2004 would have provided comprehensive education about infant feeding options to new mothers and would have banned the marketing of infant formulas in California hospitals. However, despite widespread support, the bill failed to receive adequate votes for passage.

Local, state, and federal policies are still needed to protect a woman's right to breastfeed in public and to encourage and achieve adequate nutrition for our society's children in

their earliest years of life. Although many barriers to breastfeeding exist, the sixth level of the Spectrum is an essential piece to achieving such social change.

One reason the Spectrum can be a powerful tool for prevention is that it is helpful in designing efforts that change norms. Norms shape behavior and are key determinants of whether our behaviors will be healthy or not. More than habits, often based in culture and tradition, norms are regularities in behavior to which people generally conform (Ullmann-Margalit, 1990).

Typically, the tipping factor for normative change requires efforts at the broadest levels of the Spectrum to change organizational practices or policies, because such actions change the community environment. (The other elements of the Spectrum are usually important also, contributing to and building on this momentum for change.) As Schlegel (1997) points out, policy change can trigger norm change by altering what is considered acceptable behavior, encouraging people to think actively about their own behavior, and providing relevant information and a supportive environment to promote change. The emergence of new social norms occurs when enough individuals have made the choice to change their current behavior.

Norm change regarding smoking behaviors is probably the most frequently cited example of this tipping factor and makes the importance of interplay between elements of the Spectrum visible. After the Surgeon General's report in 1964 found that smoking harms health—and after numerous reports of research implied that secondhand smoke was risky (*promoting community education*)—local communities formed coalitions to shape policy in restaurants, public places, and workplaces (*influencing policy*). The ensuing policy controversy received media attention that explained the law and that explained why smoking is risky (*promoting community education*), and the newfound attention led to more requests for training for health and civic leaders (*educating providers*). Doctors started to change their practices. More offered stop-smoking clinics and warned patients about the dangers of smoking (*strengthening individual knowledge and skills*). Once passed, the implementation of the policy required changing organizational practices to comply with the policy. This led to training, conducted by coalition partners for government employees, restaurateurs, and business owners. This spurred an increase in people wanting to quit, and quit-smoking clinics became busier. As the number and extent of policies grew, momentum built for further changes. "What's next?" asked policymakers and enterprising reporters. And the process started again. Policies were adopted that banned vending machines, boosted tobacco taxes, and forbade smoking in bars and public recreation areas. Individual choice still exists, and people still behave according to their own personal preferences. What has changed is society's perception about what is acceptable smoking behavior. This shift in the social norms changes the preference and improves the health of millions.

A well-designed strategy, while seizing opportunities that may arise, always considers a variety of levels of the Spectrum. Also, data and evaluation are key. They are not levels of the Spectrum because they are not inherently outcome-related activities, but they are critical in informing and enhancing the Spectrum strategy.

HUMAN RIGHTS FRAMEWORK AND PRIMARY PREVENTION

Vivian Chávez

Human rights are basic standards without which people cannot survive and develop in dignity. They are inherent to the human person, inalienable and universal. A human rights framework is central to health equity. A human rights framework declares that all people deserve to be treated with dignity, compassion, and support, wherever they are on the Spectrum of Prevention.

Learning about human rights can put power in people's hands to achieve social change by knowing their human rights and claiming them. Every woman, man, youth and child has the human right to the highest attainable standard of physical and mental health, without discrimination of any kind. Human rights relating to health are set out in basic human rights treaties and include:

- The human right to the highest attainable standard of physical and mental health, including reproductive and sexual health.
- The human right to equal access to adequate health care and health-related services, regardless of sex, race, or other status.
- The human right to equitable distribution of food.
- The human right to access to safe drinking water and sanitation.
- The human right to an adequate standard of living and adequate housing.
- The human right to a safe and healthy environment.
- The human right to a safe and healthy workplace, and to adequate protection for pregnant women in work proven to be harmful to them.
- The human right to freedom from discrimination and discriminatory social practices, including female genital mutilation, prenatal gender selection, and female infanticide.
- The human right to education and access to information relating to health, including reproductive health and family planning to enable couples and individuals to make their own responsible decisions about all matters of reproduction and sexuality.
- The human right of the child to an environment appropriate for physical and mental development.

Adapted from UNICEF, *Convention on the Rights of the Child* (http://www.unicef.org/crc/index_framework.html), and *The Human Right to Health: The People's Movement for Human Rights Education* (http://www.pdhre.org/rights/health.html)

CONCLUSION

Former U.S. Surgeon General David Satcher (2006) once explained, "There is still a big gap between what we know and what we do, and that gap is lethal. When it comes to the health of our communities, we must never be guilty of low aim." We cannot afford to aim low because our own well-being and that of our friends, families, and communities is at stake. We are getting seriously injured and ill unnecessarily far too often. When seeking care to address these ills, we are not served optimally by the health care system. This is especially the case for those most in need, but increasingly for all of us, the system does not perform adequately.

Prevention is necessary to address this situation. Through high-quality prevention, we can create community environments that foster good health. Prevention is our best hope for reducing unnecessary demand on the health care system. Healthy environments also provide optimal support for people who are injured or ill to heal and recover their health. Chronic disease among members of the American population is on the rise, new communicable disease threats have appeared, and former Surgeon General Richard Carmona has predicted that due to chronic diseases related to poor eating habits and physical inactivity, the current generation of children may be the first generation whose life expectancies will be lower than those of their parents (U.S. Department of Health and Human Services, 2004). Effective prevention strategies are needed to reverse these alarming trends.

Some people say that the easy problems have been solved. In fact, until they were solved, none of them were easy. But, in retrospect, we can understand the key elements that made past problems solvable. The problems we face today are, in fact, made easier by what we have learned through earlier prevention efforts. Applying these lessons to emerging health concerns is vital as public health leaders help communities flourish in the current century.

DISCUSSION QUESTIONS

1. The text mentions tobacco-free legislation, routine immunization, water fluoridation and motorcycle helmet laws as compelling evidence that primary prevention is effective. Can you name other primary prevention examples?
2. How might you implement the six *Spectrum of Prevention* levels to address poor nutrition and physical inactivity in your community? How could you ensure that your chosen activities are synergistic?
3. How would you make the case to a decision maker about the importance of investing in primary prevention? What evidence would you cite? What examples?

NOTE

1. The *Spectrum of Prevention* was originally developed by Larry Cohen in 1983 while working as director of prevention programs at the Contra Costa County Health Department. It is based on the work of Marshall Swift (1975) in preventing developmental disabilities.

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