* Overconsumption and the American Food Enterprise: Anthropological Insights on the Global Nutrition Transition

John Mazzeo, DePaul University

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Overconsumption and the American Food Enterprise: Anthropological Insights on Obesogenic Environments and the Global Nutrition Transition

BARRETT P. BRENTON
Department of Sociology & Anthropology, St. John's University, Queens, New York, USA

JOHN MAZZEO
Department of Anthropology, DePaul University, Chicago, Illinois, USA

An unhealthy relationship between global nutrition and the influence of the American food enterprise on worldwide food systems, including international food marketing, appears to be implicated in promoting unhealthy diets and calorie-dense low-nutrient foods to lower income people throughout the world. This contributes to a double disease burden from undernutrition and overnutrition (obesity) in middle and lower income countries. How do we confront this paradox and where does responsibility lie for protecting and representing the public’s interests? Access to food is a basic human right and central to social justice, but is that food nutritionally adequate or culturally appropriate? Is the continued selling of the American diet and food enterprise on a global scale compatible with good nutrition? How does this contribute to the formation of obesogenic environments and a rise in non-communicable disease. This chapter offers anthropological insights on the broader international health and policy implications of overconsumption, obesogenic environments, the "nutrition transition," and the role of American-based multinational food and beverage companies. In the spirit of promoting dietary diversity, we also offer recommendations for trade and commercial policies and practices affecting the responsibilities and accountability of transnational food companies in respect to diet and nutrition.

In this chapter, we review the detrimental relationship between the American food enterprise, obesogenic environments, and the global nutrition transition. Anchoring the review is the following question: Is the selling of the American food enterprise (and lifestyle) on a global scale compatible with good nutrition or is the number one export actually obesity and chronic disease? In addressing this theme we seek to promote anthropologically-derived policy insights and directions for curbing the current trends of overconsumption and promotion of unhealthy diets and calorie-dense low-nutrient foods to lower-income people throughout the world.
U.S. FOOD POLICY

These linked trends pertain to a larger process referred to as the global nutrition transition (Popkin 2009). The measureable outcomes of this dietary shift are an increase in rates of overweight and obesity along with concomitant increases in non-communicable (non-infectious) diseases such as diabetes and cardiovascular disease. The ongoing transition is facilitated by changes in lifestyle such as greater sedentary behaviors coupled with an increase in the availability and consumption of calorie-dense low-nutrient foods. These obesity-causing conditions are collectively part of a system defined as obesogenic environments (Lake et al. 2010).

The American food enterprise is essentially a global food enterprise. It affects peoples’ lives around the world through the many U.S.-based multinational corporations that via consolidation and concentration now control much of the world’s food supply. Our use of the term American food enterprise in this context then is in reference to a global corporate and industrially-based food system, along with supporting U.S. policies regarding basic commodity subsidies, which are being exported to the rest of the world by multinational food companies. Patel, in his book Stuffed and Starved: The hidden battle for the world food system (2008) cogently explains how multinational corporations have aligned to promote overconsumption while also contributing to food insecurity. This seemingly unlikely paradox is a win-win situation for corporations that secure the ability to manipulate markets through lobbying dollars and political contributions. “Supermarket shelves offer an abundance of cheap calories, even as they bleed local economies” (Patel 2008: 294). Patel’s accusations against the global food industry are instructive and reveal a battle that although seemingly hidden has stark consequences that are not. Similar vilifications of the American and global food enterprise can be found in the following works: Fat Land by Greg Critser (2003); The World Is Fat: Fads, trends, policies, and products that are fattening the human race by Barry Popkin (2009); and Globesity: A planet out of control? by Francis Delpeuch et al (2009).

All of these authors make similar recommendations. In short, to confront overconsumption food and agricultural policies are needed that challenge corporate interests supporting commodity programs from which inexpensive sources of calories are derived. For example, the manufacturing of inexpensive high fructose corn syrup permitted by U.S. corn subsidies provides the food industry with an almost endless source of “corn sugar” that is used to sweeten and increase the caloric content of thousands of food products at a lower cost. Legislation must curtail the influence of multinational food lobbies that push for policy and programs that in the end damage human health through the consumption of empty-calorie diets that have little to no nutritional value. The U.S. policies surrounding commodity crops are not driven by nutritional considerations nor are they framed as food policy. They are economic policy embedded in the U.S. Farm Bill, created originally to subsidize and stabilize farm income (Pollan 2006). However, the resulting federal government programs that support crop subsidies have enabled farming to evolve into a multi-billion dollar agro-industrial complex producing surplus channeled into highly processed and refined low nutrition food products for world export contributing to obesogenic environments and supporting the global nutrition transition. To counterbalance this trend there must be interventions supported by governmental and non-governmental agencies in tandem with food and agricultural industries to promote healthy diets and lifestyle that are in the public’s best interests. They must also be sensitive to protecting populations transitioning to a global food economy through the prevention of non-communicable diseases.
U.S. FOOD POLICY

One strategy for building informed anthropological insights on policy utilizes the concept of local dietary diversity that is based on the following working definition: access to and consumption of a wide-spectrum of food products originating from within traditional local and/or regional food environments/food systems/food chains. Working examples would include farmers’ markets and community supported agriculture that can link urban or suburban consumers to local and seasonally appropriate rural food production. Such strategies will require a heightened awareness of local food environments through programs that work to maintain and support local foodways and traditions. The great ethnic and regional traditions and local dietary diversity of American foodways coupled with a highly monitored and fortified food system might seem at first very advantageous. However, what is actually being exported is a highly homogenized set of processed food products packed with the fat, sugar and oils found at one point in the “eat sparingly” section on the top of the USDA Food Pyramid.

In particular, the subsfield of nutritional anthropology provides an integrated biocultural approach for interpreting the complex political-economic and socio-cultural impacts of the global nutrition transition on local dietary diversity and human diet and health. The subsfield’s perspective can be central to creating applied intervention strategies through understanding the formation and development of obesogenic environments and their role in the transition. The implications of this transformation for our species, as well as indigenous groups like the Hopi, and others in economically impoverished communities, will be highlighted throughout the chapter.

What follows is a review of the implications of obesogenic environments and the global nutrition transition, the role of the American food “global” enterprise in supporting these conditions, and the use of anthropological insights on the transformation of human diets to inform policy. Once again, is the selling of the American food enterprise (and lifestyle) on a global scale compatible with good nutrition or is the number one export actually obesity and chronic disease?

OBESOGENIC ENVIRONMENTS AND THE GLOBAL NUTRITION TRANSITION

Today there are essentially as many people overweight (~1 billion) as are hungry (~1 billion), and nearly 2 billion individuals have some type of micronutrient deficiency (Allen 2003; Allen et al. 2006; Kennedy et al. 2003). For poor countries, combating both the problems of obesity and related non-communicable chronic diseases while at the same time struggling with continued food insecurity, hunger and infectious disease poses a significant challenge. The double disease paradox related to world hunger and overnutrition (both forms of “malnutrition” some would argue) can be attributed in part to the complex process of globalization and supporting policies have encourage agricultural subsidies, discriminatory trade barriers, and the aggressive marketing of processed food and beverage products by multinational companies (FAO 2004a; Popkin 2006; WHO 2002). This trend has been further exacerbated by large-scale shifts to industrial agricultural wherein mono-cropping and cash-crop production strategies have led to an erosion of dietary diversity in local food environments (Johns and Eyzaguirre 2006; Pollan 2006, 2009).

Access to safe, nutrient-dense, and culturally appropriate food linked to conditions that promote healthy and active lifestyles is important for dissipating the growth of obesogenic environments. These conditions are also key to the FAO’s Right-to-Food Unit’s voluntary guidelines that attempt to shape international food policy. Although a
global increase in available calories and energy intake has been used as an indicator of development, to date those calories do not seem to be either nutritious or leading to healthy and active lives. Clear evidence of a rapid, ongoing “nutrition transition” supports this claim (Chopra et al. 2002; Gardner and Halweil 2000; Popkin 1998, 2001, 2006, 2009; WHO 2002).

With more than 1 billion overweight adults (with at least 300 million of them obese) a major concern is the degree to which a shift to a more calorie-dense and nutrient-deficient diet poses a major risk for developing chronic diseases, including type-2 diabetes, cardiovascular disease, hypertension and stroke, and certain forms of cancer. At least 171 million people worldwide have diabetes, a figure that is likely to more than double by 2030, if not sooner (Hossain et al. 2007; Narayan 2006; Wild et al. 2004). The list of top ten diabetic countries, in numbers of those afflicted, reads like an odd mix of developed and developing nations whose dietary patterns would seem to be vastly different: from India, to China, Brazil, and Italy (WHO 2005). Key causes underly the nutrition transition are increased consumption of cheap sources of energy-dense foods high in saturated fats and sugars and reduced physical activity (Popkin 2006; WHO 2004, 2005, 2008). Ironically, poverty and urbanization are highly correlated to increasing obesity rates in many developing countries (Kim and Popkin 2006). At first this might seem counterintuitive and contradictory. However, it must be understood that the rapid pace of rural to urban migration in the developing world is leading to an expanding urban and low income population stripped of its access to rural dietary diversity and many traditional foodways. These urban dwellers then have to rely on readily accessible and imported sources of inexpensive processed foods that are high in simple carbohydrates, sugars, and fats. Such dietary shifts coupled with decreased activity patterns contribute to the creation of obesogenic environments. Again, it is these environmental conditions, including activity levels, dietary change, and urbanization that have facilitated a rise in obesity.

In 2003 WHO adopted a “Global Strategy on Diet, Physical Activity, and Health.” The document targets lifestyle modifications that can combat the increase in non-communicable diseases (WHO 2005). This strategy was updated in 2008 with the “2008-2013 Action Plan for the Global Strategy for the Prevention and Control of Noncommunicable Diseases.” The plan outlines tactics for limiting the creation of obesogenic environments and thus lessening the impact of the nutrition transition. However, we must not forget that the globalization of consumption is leading to a trinity of high-calorie food, tobacco and alcohol. Not surprisingly, in 2003 the sugar industry lobbied to cut U.S. funding to WHO unless they scrapped guidelines on healthy eating that included the recommendation that sugar should not account for more than 10 percent of a healthy diet (Popkin 2007; 2009).

Table 1 provides a sampling of BMI (Body Mass Index = kg/m²) data in countries in which we have conducted fieldwork or have a working knowledge of dietary and health transitions. In all cases BMI has steadily increased over the past 30 years (Finucane et al. 2011). The seemingly high levels of overweight and obesity (and overall rise in non-communicable chronic diseases) for some countries present a very different perspective from what their political-economic and socio-cultural histories would reveal. For example, in Zambia and Zimbabwe (formerly Northern and Southern Rhodesia, respectively) where there are high rates of HIV/AIDS, childhood malnutrition, and periodically high levels of food insecurity, BMI figures indicative of being overweight (greater than or equal to 25 kg/m²) account for 18.6 percent of the females and
indicator of leading to sition” sup- 1998, 2001, them obese) nd nutrient-type-2 dia- f cancer. At or more than et al. 2004). like an odd seem to be Key causes sources of ical activity on are highly and Popkin or, it must be sing world is its access to rs then have d foods that coupled with environments tary change, and Health.” ease in non- 2008 with the Control of e creation of on transition. ding to a tri- 03 the sugar guidelines on t account for n countries in ur and health s (Finucane et ill rise in non- nt perspective d reveal. For m Rhodesia, nutrition, and ng overweight s females and 7.5 percent of the males in Zambia, while it accounts for 48.9 percent of the females and 15.3 percent of the males in Zimbabwe (WHO Global InfoBase).

These figures highlight dramatic distinctions by country and gender that need further investigating through the development of anthropological research models that can reveal the foundation of obesogenic environments and articulate the relationship between local and regional food and agricultural environments, dietary diversity, and obesogenic behaviors. There is no doubt that the radical land reform policies of post-independence Zimbabwe, hyperinflation, rural-to-urban migration, and the resulting need for and political control of food aid have played major roles in creating differential obesogenic environments fostering a country-wide difference in BMI rates that are 2-3 times greater than in Zambia. However, upon closer inspection by region for females aged 15-49, overweight BMI rates for the urbanized Zambian capital district of Lusaka are 33 percent, much higher than the country-wide average, but close to the rate of 37 percent for a similar population sample in the urbanized Zimbabwean capital district of Harare (WHO Global InfoBase). It is not uncommon for a heavy reliance on food aid along with a rise in urbanization to lead to an increase in BMI (Delpeuch et al. 2009; Popkin 2009).

Obesogenic environments also differ in Zambia with respect to regions with far more diverse ecosystems that are less urbanized and not as susceptible to periodic drought and reliance on food aid associated with intensive maize production. These distinctions were noted early on by the pioneering nutritional anthropologist Audrey Richards (1939). Again, for females aged 15-49, overweight BMI rates were as low as 7 percent in the dry grasslands of the Western Province and only 10 percent in the wetter woodlands of Lupula Province in the north of the country (WHO Global InfoBase). Similar distinctions in BMI rates can also be found in the urban and rural dichotomies and highly diverse microclimates across both Haiti and Ecuador.

THE AMERICAN FOOD “GLOBAL” ENTERPRISE AND THE CREATION OF OBESOCIC ENVIRONMENTS THAT FACILITATE THE NUTRITION TRANSITION

Perhaps no one has elucidated the link between the epidemiology of the “nutrition transition” and obesogenic environments more than Barry Popkin. The following draws heavily from his work (summarized in Popkin 2007; 2009). He argues that both “industry and government are dumping cheap sweeteners, oils and meat on the world market while doing nothing to promote healthier alternative such as increased fruit and vegetable consumption” (Popkin 2007: 90). He believes that the influence of American culture and media can begin to explain the problem in part on a global scale.

As income increases people adopt a series of obesogenic behaviors, including watching television and shopping in multinational supermarket chains. Even highly impoverished urban and rural communities from China to Ecuador to Haiti to the U.S. and South Africa have ready access to highly processed, shelf-stable, and inexpensive empty-calorie convenience foods. The supply chain of this global marketing enterprise from black market distributors to regional wholesalers can be seen at the most micro level in the form of door-front or window stands. A small selection of items are sold out of one’s house through an open front door or window, and the same goods are sold block-to-block along every major highway and back alley. What is so striking is that it doesn’t matter whether one is in a remote Andean highland town in Ecuador, an isolated hillside community in Haiti, a rural village in China, or a peri-urban township in

125
South Africa, essentially the same products and often brands are being sold, from candy to soft drinks to chips and instant noodles. This bears witness to the deep penetration of the American food enterprise at the most local level on a global scale. With little variety and a narrowing of dietary options to empty-calorie, subsidy-supported, processed foods, “food deserts” emerge in locations that lack access to dietary diversity and nutrient-dense foods. This raises a number of concerns related to the creation of obesogenic environments and dietary transitions.

One can also follow this system’s scaling up to market stalls, corner bodegas or local “convenience” stores, and supermarket chains. These shrines to the food processing industry, both large and small at the micro and macro level, are themselves a rapidly expanding concentration of calorie-dense, low-nutrient foods that encourage the consumption of processed goods with added sugar and oils. Still, it can be argued that this supply chain brings significant improvements in standards of food quality and safety at competitive prices and convenience. However, as Popkin points out, value-chain formalization occurs in the absence of access to education, healthier foods, recreational activities or adequate healthcare that would help individuals control their weight. Furthermore, “Whereas, Western countries can afford to monitor and provide drugs for diabetic and hypertensive patients, the illnesses go mostly untreated in developing countries” (Popkin 2007: 91).

Technological advances in the production and processing of vegetable oils, for example, have made cheap alternatives for the poor. These coupled with agricultural subsidies that promote ever cheaper sweeteners and grains for livestock (and ultimately inexpensive animal sources of food and saturated fats) have led to the resulting shift to energy-dense foods. A key problem, however, is that humans regulate their consumption by volume rather than by calories. This is especially problematic when it comes to sweetened beverages, which some call “liquid candy.” It is a basic fact of human physiology that we stop drinking not because we are full of calories and satiated but because we are no longer thirsty. Quenching one’s thirst (and the thousands of calories one could potentially swallow) takes on a whole new meaning in the context of a global soft drink industry whose advertising promotes refreshing and thirst relieving drinks with little regard for the caloric content that their beverages.

Hawkes’ (2002) review of the impact of marketing activities by soda and fast food companies in emerging markets emphasizes the concept “glocalization,” where firms push growth by implementing global standards and leveraging global brands, while also manufacturing, managing and marketing locally. Her analysis sheds light on strategies utilized by the American-based companies Coca-Cola, Pepsi, McDonald’s, and Yum! (KFC and Pizza Hut) to target all possible consumption occasions over time and space. The glocalization of brands can be classified into a strategy of “SPs” (2002:7): 1) Place: the availability of the product (distribution) and location of sales points; 2) Price/package: the price of the product and its relationship with package; 3) Product expansion: creating and diversifying products; 4) Promotional activities: market entry marketing, advertising, sales promotions, websites; 5) Public relations: promoting the brand with good service; associating the brand with TV programmes, movies, sports, music and events, competitions and philanthropy.

Perhaps it is best to let the companies speak for themselves. The Coca-Cola Company’s 2006 Annual Review is clear about the glocalization approach:
U.S. FOOD POLICY

One of our greatest assets is our local roots. Around the world, in almost 90 percent of more than 200 countries, our beverages are produced by local people with local resources. We create brands that embrace distinct tastes and local preferences. Our 71,000 associates around the world live and work in the markets we serve. In this geographically diverse environment, we learn from each market and share those learnings quickly (Coca-Cola Company 2007: 10-11).

We think that one could easily substitute the word earnings for learnings and tag it as a linguistic conflation, but to further put this approach in perspective we note that the company touts 1.4+ billion servings each day with 2600+ beverage products worldwide, 367 new ones for 2006 alone; more than one a day. Coca-Cola spends well in excess of 1 billion dollars a year in marketing and advertising. From this flagship symbol of the American food and drink industry (and what has been called the process of coca-colonization (Leatherman and Goodman 2005)) comes a most telling motto: Think Locally. Refresh Globally.

Usaitalo et al. (2002) criticize these approaches: “Massive marketing and advocacy of Western values and products including high-fat, high-sugar and low-fibre fast foods and soft drinks are carried out by multinational corporations through modern mass media and other sales promotions” (2002:8). They are especially concerned that these marketing efforts target youth and urban populations, and are critical of the highly elaborate means by which the billions spent in marketing and lobbying influence food policy guidelines.

Multinational firms also go to great lengths to create and market new products that seemingly conform to local cultural tastes and traditions but are often calorie-dense and nutrient-poor alternatives to the traditional foodstuffs. It is this most local level penetration of the market that reaches all the way to window stands and corner stores that creates the foundation of a global network of obesogenic environments across generations. As an outgrowth of a WHO (2006) report and the 2007 World Health Assembly, one movement to call for an end of abusive marketing strategies targeting children in particular (directly or indirectly) has been spearheaded by the non-profit organizations Consumers International and the International Association for the Study of Obesity (IASO) and its subsection the International Obesity Taskforce (IOTF) (2008). They have put forth a set of recommendations to create an “International Code on Marketing of Foods and Non-Alcoholic Beverages to Children.” “This Code aims to protect present and future generations from the damaging health, social and economic consequences of consumption of energy dense, nutrient poor foods high in fat, sugar or salt, and to promote responsible food marketing to children that supports the Global Strategy on Diet, Physical Activity and Health by restricting the marketing of these products to children” (2008:7). Less diplomatic in tone, Patel simply states that “Through processed food, consumers are engorged and intoxicated. The Agribusiness's food and marketing have contributed to record levels of diet-related disease, harming us today and planting a time-bomb in the bodies of children around the world” (2008: 294).

In respect to poor countries, another important issue to consider is the degree to which state systems for regulating processed foods have the capacity to evaluate labeling claims about ingredients (such as the inclusion of genetically modified foods), nutritional value, health benefits or even the standardization of package size. How much are multinational food companies promoting not only a food item but a whole
dietary system of convenience and/or status? What local food traditions are being replaced at a cost to the long-term public health of a community?

In the U.S. a majority of the knowledge and opinions about nutrition that the public hold come from the food processing industry and food packages, not through nutrition education (Nestle 2003). This clearly raises concerns about a similar pattern worldwide and the role of the food industry. The result can be that the seductive marketing of “selling nutrition” leads consumers to buy a product based on the manufacturer’s nutritional recommendation and advertised values. A case in point is Coke’s Beverage Institute for Health & Wellness that partners with universities and other organizations (such as the China Academy of Chinese Medical Sciences) on clinical trials and research to develop the next generation of beverages to “refresh, energize and nourish.” Their products have embraced the world of functional foods with both medicinal and nutritional beverages. Diet Coke Plus, as one example, is a non-calorie drink fortified with niacin, vitamins B6 and B12, magnesium, and zinc.

We can learn a great deal about the growth of processed foods in developing countries by investigating commodity imports over the past ten years. Drawing from the same countries shown in Table 1, Table 2 highlights the general commodity category of Food Prepared net (not elsewhere specified) which excludes standard commodities from maize to soybean oil. In other words, this category reflects the spectrum of highly processed foods that are entering a market separated out from the traditional staple food imports. We can see the magnitude of the global food processing industry’s impact, without even putting a corporate name to a specific brand or food item. For example, from 1994-2004 there has been a 269 percent increase in Zambia and a 365 percent increase in Zimbabwe of imported prepared food as measured in metric tons (FAO Statistical Yearbook 1994, 2004b). As in these cases and the other countries shown in the table, community, household, and individual level data is greatly needed on the degree to which this information can be correlated to a concurrent rise in BMI and non-communicable chronic diseases.

ANTHROPOLOGICAL INSIGHTS ON OBESOGENIC ENVIRONMENTS AND THE GLOBAL NUTRITION TRANSITION

There is no better discipline than anthropology to address the fundamental biocultural question of how we got to this point in human history. Anthropologists long supported the “Thrifty Genotype” hypothesis as a way of explaining the disproportionately high rates of diabetes among indigenous peoples. It was argued to be an evolutionary genetic adaptive advantage to periods of food insecurity through an ability to produce high levels of insulin for the uptake of macro-nutrients as fat to be stored for later use during periods of famine (Neel 1962). Diabetes now emerges as the insidious outcome of the “nutrition transition” to over-consumption with a mode of essentially full-time feasting.

We are now coming to realize that the genomic signature that eluded James Neel (1962) for nearly 40 years before his death in 2000 will not be found in the genetics of any one population, but is most likely a core trait of our entire species. Neel himself eventually concluded that the rise in diabetes rates were more a function of rapidly changing dietary environments, not natural selection (Neel 1999). However, we are still puzzled as to why historically the rates have been so different. For instance, populations from South Asia, Latin America, and Africa currently seem to carry a disproportionate
number of "thrifty genes" and are at higher risk for diabetes than other regions (at least for now).

One answer may come from an increased understanding of what has been called the "Thrifty Phenotype" or the "Barker Hypothesis" (Hales and Barker 2001). In essence it argues that the impaired nutritional status of a mother during pregnancy will lead to intrauterine growth disruptions and a low birth weight child who is better adapted to chronic food shortages (We will not revisit the "Small But Healthy Debate" here, but see Pelto and Pelto (1989) and Stinson (1992) for a review of the topic). If conditions improve and the child develops in an obesogenic environment with a more affluent food system, s/he is more likely to develop diabetes and other chronic diseases later in life. With rapidly changing food environments this may occur even before s/he reaches the age of ten. In other words, although better adapted to chronic food shortages, the child suffers high risk for developing non-communicable chronic diseases coupled with micronutrient deficiencies in more energy-dense food and agricultural environments (Kim and Popkin 2006). Additional research on epigenetic factors leading to chronic disease may provide further clues as to when and where a rapid rise might be expected (Kuzawa and Sweet 2009) and the biocultural linkages between obesogenic environments and the nutrition transition.

Brewis (2010) reminds us that weight gain is a universal human condition. We should not be surprised then that the rise in rates of obesity is a biocultural expression of evolutionary inclinations being realized within the "modern" global food system (Brewis 2010; Lieberman 2003; Ulijaszek and Lofink 2006; Wissinger and Schiefenhövel 1998). Anthropology is ideally situated to provide the cross-cultural ethnographic insights needed for understanding the unique culture histories of obesity around the world, and to place these in a context that is culturally relevant, meaningful and appropriate for informing policy in the public interest. The discipline can also address questions such as why obesity is more prone to manifest in some areas than others, to what degree is it stigmatized and medicalized, and identify some of the predictable health outcomes?

Again, the fundamental set of circumstances that have led to the alarming increase in obesity and chronic disease could not occur without a massive and rapid shift in local food systems. This can be conceptualized as the emergence of conditions favorable to weight gain facilitated through the transformation of local food systems to obesogenic environments. The impact of the dramatic and accelerated transformation of Native American diets from the early to mid-twentieth century and onwards has long been a focal point of research. The high rate of diabetes present intensified the nature and scale of those investigations.

An anthropometric analysis conducted by Brenton in 1991 (Brenton 1994) documented the extent of pediatric obesity among a sample of Native American children living on the Hopi Reservation in northeastern Arizona. One goal of the study was to relate how this might affect long-term health problems. Weight, height, age and sex data were compiled for Hopi elementary school students grades K-6 (ages 5-13 years). A ninetieth percentile and greater distribution of weight for height was used as an indicator of childhood obesity. Using this criterion, 42 percent of Hopi children (N=170) were classified as obese. Not surprisingly the results indicated that the overall obesity rate among Hopi children was quite high. This reflected a general trend in childhood obesity that was on the rise for the U.S. as a whole although it was still more prevalent among Hopi and other Native American children (Eisenmann et al. 2003).
High levels of obesity were a warning signal for the potential diet-related health problems that these children will likely encounter in the future, especially with respect to diabetes. In the same year as this study, the first teenager was identified with “Adult Onset” Type II diabetes. The prevalence of diabetes is a trend that has continued into ever younger age sets and today it is not unusual to find it among children under age 10.

It was noted at that time that in addition to a change in the diet to high fat, high calorie and low nutrient density foods, less physical activity and more sedentary behavior were contributing to the children’s obesity. Some of the salient cultural practices related to this change included more time spent watching television, the use of motor vehicles for transportation, and a decrease in farming and sheep herding which in the past kept children highly active.

Over ten years later a study conducted by Eisenmann et al. (2003) on a similar sample of Hopi children reported a combined incidence of overweight and obesity at 47 percent. Although the later study utilized BMI as a measure, the methodology used by Brenton (1994) can be used to approximate BMI levels by collapsing both overweight and obesity into one category. Thus we hold that the results of the two studies are similar (42 percent in 1991 compared to 47 percent in 2002) and that very little change had occurred in the intervening decade. Building upon that premise we argue that the profile of the obesogenic environment may have stabilized in this community. Bear in mind that the rate of obesity is still very high compared to other populations as are the risks for developing a host of diet-related health problems (Eisenmann et al. 2007).

Has a biocultural threshold for the intersection of obesogenic environments and rates of realized obesity been reached? Clearly we would not expect rates to climb to 100 percent in any population. If one were to postulate that a ~50 percent rate of overweight and obesity is the maximum level for human populations we can be better prepared for the expected medical costs and more effectively intervene in public health nutrition campaigns and policies regarding the American food enterprise. This may also temper some of the alarmist reactions that treat the consequences of overconsumption as a medically defined epidemic (Julier 2007; Oliver 2006).

Along these lines it is important to raise a few questions concerning such an intense and heavy focus on the obesity crisis. The pharmaceutical and medical communities as well as the American food enterprise have a great deal to gain by referring to the crises as an epidemic. Fat-reducing procedures and drugs along with calorie-reduced food products are a profitable business with an expanding global market (Oliver 2006). Funding opportunities for research and public health programs and avenues for publication in several obesity-themed journals, including Childhood Obesity supported by the W.K. Kellogg Foundation and launched in 2010, attest to this growth industry. We also cannot lose sight that the stigmatization of obesity further marginalizes those groups already vulnerable to health disparities that, because of their lower socioeconomic status, are most likely to be negatively affected by the American food enterprise (Julier 2007).

STRATEGIES FOR PROMOTING DIETARY DIVERSITY AND POLICY RECOMMENDATIONS

Vital policies that target lifestyle modifications related to activity and dietary behavior (WHO 2005, 2008) must be placed in combination with sustainable mechanisms for
U.S. FOOD POLICY

producing both affordable and nutritionally diverse food crops. An emphasis on the interactive and synergistic relationship between agriculture and health in education and community planning initiatives is imperative to their success (Flores and Gillespie 2001; Hawkes and Rue 2006; IFPRI 2007). For urban and peri-urban regions in particular, the promotion of household and community garden plots among women has been one strategy for raising awareness of the health benefits of diverse diets (FAO 2001; WGG 2005). Although it is true that no one can expect community gardens to meet all potential local food demands, they are an effective means of promoting education and action around food justice. They can, literally, establish the groundwork for a localized food sovereignty movement by expressing the fundamental right to determine what foods are produced and consumed.

Johns and Ezaguierre (2006) suggest that we must recognize "...dietary diversity as a fundamental, cost-effective and sustainable way of resolving health problems related to malnutrition" (2006:186). The same argument can be made for a diversity-based approach to combating the formation of obesogenic environments and the rapidly emerging nutrition transition, the impact of non-communicable chronic diseases, and the influence and control of multinational food corporations on even the most highly localized markets. The adverse impacts of the penetration of processed foods into low-income and food insecure communities could be countered by incorporating household livelihoods models that seek to enhance nutrition and subsequent health outcomes through promoting dietary diversity via improved urban agricultural practices (e.g., use of garden plots) while also promoting local marketing opportunities and other poverty reduction strategies.

Overall, food policy must be sensitive to recognizing shifts in the nutritional environment through which local populations are transitioning to a global food economy. There is a need to move away from heavily subsidizing agricultural industries whose primary focus is to generate profits by manufacturing cheap sources of calories. If anything subsidies should encourage global consumption of whole grains, fruits and vegetables.

Unfortunately, the passage of the 2008 U.S. Farm Bill did little to change the status quo of subsidies for the major commodities to the benefit of U.S. agribusiness. Although minor provisions were put in to support, for example, local U.S. production and consumption of fresh fruits and vegetables as way of dealing with its own nutrition transition, it is ironic that this does not translate into supporting local agriculture in developing countries. The continued massive support of commodities programs stipulated in this most recent Farm Bill clearly undermines the ability to promote local dietary biodiversity in the U.S. and abroad. While corporate responsibility units of agribusiness giants such as Cargill support adoption of responsible and sustainable practices in their supply chains this does not address their role in supporting obesogenic environments.

We cannot completely understand the full impact of selling the American food enterprise without placing it in the context of the rapid increase in food prices and even food riots that emerged as a significant issue in early 2007, but did not really capture much media and political attention until early 2008. The resulting world food problems were exacerbated by an increase in fuel oil costs, high demand for once cheap (commodity supported) food crops being channeled to biofuel and animal production, climatic fluctuations impacting crop yields and pest resistance, and unbridled commodities market speculation after the U.S. sub-prime mortgage crisis began to
unfold (Brenton 2008). One might even speculate that as basic crop prices increase processed foods may become even more attractive. With a high margin of profit in place for processed foods, companies will be able to capitalize on this situation by not raising prices. For any multinational food company this would be an ideal strategy for creating a new global customer base.

Popkin has made the dire prediction that: “If left unchecked, the nutrition transition will cause horrendous increases in illness and devastating reductions in life expectancy (2007:94).” How do we begin to restructure current trade and marketing policies in order to monitor and affect transnational food companies’ responsibility and accountability to diet, nutrition and health?

Popkin offers very aggressive and no doubt controversial recommendations for food policy that tackles the global obesity epidemic, including making meat expensive again, promoting consumption of whole grains, and taxing caloric sweeteners and vegetable oils/fats. He suggests that this is the only way that we can begin to stop the rapid abandonment of traditional low-fat, high-fiber diets for meals of calorie-rich fats, sweeteners and refined carbohydrates. At the same time we must avoid being trapped in a blame game that does not take into account the complex and diverse biocultural dimensions of obesity and the corporate entities that profit from its existence at both ends of the food chain from production to consumption.

The WHO (2008) action plan for the global strategy for the prevention and control of noncommunicable diseases provides a foundation for public health nutrition interventions. There is a great need for developing national policy and action plans on food and nutrition that emphasize national nutrition priorities. This will require the establishment and implementation of food-based dietary guidelines that support the healthier composition of foods by promoting healthy diets that reduce salt levels, eliminate industrially produced trans-fatty acids, decrease saturated fats, and limit free sugars. Appropriate interventions should also provide “…accurate and balanced information for consumers in order to enable them to make well-informed, healthy choices” (WHO 2008:13).

Following Popkin’s lead, additional policy measures are imperative for confronting the nutrition transition and the selling of the American food enterprise by corporate interests. They include:

- Food policy must be sensitive to recognizing shifts in the nutritional environment through which local populations are transitioning to a global food economy.
- Both the U.S. government and multilateral agencies such as the World Bank must move away from heavily subsidizing agricultural industries whose primary focus is to produce cheap sources of calories and meat. If anything subsidies should encourage global consumption of whole grains, fruits and vegetables.
- The food industry lobby’s long-held assumption that governments should not regulate individual dietary choice must be confronted. In fact we need to usher in a partnership between governments, companies, the public health community, the media, and the individual that educates consumers on how to control diets and become more physically active.

While turning points of the U.S. economy are strongly a function of the domestic environment, people’s choices are not.

One example of local food systems that have been highly successful and effectively created a regional food system, is a food cooperative based in the middle of the U.S. of field crops.

In closer terms, one food system that has been created, rather as they leads to a change in the environment of food systems in the United States.

ACKNOWLEDGMENTS

Our sincerest thanks to our colleagues at the Center for Food and Agriculture Policy and to those who have contributed to the development of this project.
U.S. FOOD POLICY

While the above recommendations are general they do capture the essence of “talking points” that serve as the beginning of policy discussions much needed in the halls of the U.S. Congress, chambers of the United Nations, and corporate boardrooms where the future of the American food enterprise will be negotiated. We can however strongly argue that these discussions would be best served by anthropological policy insights that integrate and reveal the biocultural realities of obesity and obesogenic environments.

One example would be in preserving and promoting dietary diversity through the use of local seed banks. In Haiti which has high BMI rates in urban areas, rural farmers prefer to use local seed adapted to an array of microclimates and will purchase them in the marketplace. These seeds produce plants that are considered more healthy and nutritious. The variety of seed types, however, is diminishing and as a result, the variety of crops is becoming more homogenous. This decrease in seed biodiversity restricts dietary choice, increases susceptibility to crop failures, food insecurity and reliance on processed foods. In Borgne, Haiti a local grassroots peasant organization has responded to this challenge by successfully creating a seed bank for collecting local varieties of field crops which are then distributed to local farmers. This project is a sustainable approach to dietary diversity, food security, and rural livelihoods in these communities (see Mazzeo and Brenton, forthcoming).

In closing, let’s hope that the future does not judge the selling of the American food enterprise as a primary means for exporting global obesity and chronic disease, but rather as one that upholds the public interest by supporting safe, nutritious food that leads to healthy and active lives.

ACKNOWLEDGEMENTS

Our sincere thanks go out to Tom Marchione in memoriam for his guidance and ability to convey his passion and zeal for addressing the critical issues that confront our global food system. We would also like to express our gratitude to John Brett and Lisa Markowitz for their editorial leadership and going forward with this special volume after the loss of Tom.
Table 1. Overweight and Obesity BMI* Status for Selected Countries 2005 (WHO)

<table>
<thead>
<tr>
<th>Country</th>
<th>%BMI ≥ 25</th>
<th>%BMI ≥ 30</th>
<th>Mean BMI</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Females</td>
<td>Males</td>
<td>Females</td>
</tr>
<tr>
<td>Ecuador</td>
<td>52.6</td>
<td>41.7</td>
<td>16.7</td>
</tr>
<tr>
<td>Haiti</td>
<td>50.6</td>
<td>15.1</td>
<td>15.0</td>
</tr>
<tr>
<td>China</td>
<td>24.7</td>
<td>33.1</td>
<td>1.9</td>
</tr>
<tr>
<td>South Africa</td>
<td>67.2</td>
<td>39.3</td>
<td>35.2</td>
</tr>
<tr>
<td>Zambia</td>
<td>18.6</td>
<td>7.5</td>
<td>1.3</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>48.9</td>
<td>15.3</td>
<td>15.3</td>
</tr>
<tr>
<td>U.S.</td>
<td>72.6</td>
<td>75.6</td>
<td>41.8</td>
</tr>
</tbody>
</table>

*BMI (Body Mass Index) = kg/m²
1. Overweight (Body Mass Index greater than or equal to 25 kg/m²)
2. Obesity (Body Mass Index greater than or equal to 30 kg/m²)
3. Mean Body Mass Index (kg/m²)

Table 2. Prepared/Processed Food Commodity Imports for Selected Countries 1994-2004 (FAO)

<table>
<thead>
<tr>
<th>Country</th>
<th>Food Prepared net* in Metric Tons (MT)</th>
<th>Percent Change</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecuador</td>
<td>4049</td>
<td>25995</td>
</tr>
<tr>
<td>Haiti</td>
<td>1000</td>
<td>18425</td>
</tr>
<tr>
<td>China</td>
<td>44009</td>
<td>81137</td>
</tr>
<tr>
<td>South Africa</td>
<td>13338</td>
<td>31753</td>
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<tr>
<td>Zambia</td>
<td>1909</td>
<td>5134</td>
</tr>
<tr>
<td>Zimbabwe</td>
<td>1311</td>
<td>4780</td>
</tr>
<tr>
<td>U.S.</td>
<td>None Reported</td>
<td>None Reported</td>
</tr>
</tbody>
</table>

*not elsewhere specified (nes).
NOTES

1 An earlier version of this paper was originally presented in the AAA Presidential Symposium “The Public Interest and the American Food Enterprise: U.S. Legislative Issues” American Anthropological Association Annual Meetings, Washington, DC. December 1, 2007. This article also draws upon a piece that appeared in Anthropology News on how overconsumption contributes to world food insecurity (Breton 2008).

REFERENCES


