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Framing the Latin American nutrition transition in a historical perspective, 1850 to the present

A constituição da transição nutricional latino-americana em uma perspectiva histórica, 1850 até o presente

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Abstract

This paper argues that many of the foundations and trends that led to the rise in obesity and other diet-related health problems in Latin America began to develop in the late nineteenth century. The tendency towards presentism in the nutrition transition literature provides a much abbreviated and limited history of changes in diet and weight. Whereas medical and nutrition researchers have tended to emphasize the recent onset of the crisis, a historical perspective suggests that increasingly global food sourcing prompted changes in foodways and a gradual "fattening" of Latin America. This paper also provides a methodological and historiographic exploration of how to historicize the nutrition transition, drawing on a diverse array of sources from pre-1980 to the present.

Keywords: nutrition transition; nutrition history; obesity; foodways.

Resumo

Este trabalho argumenta que fundamentos e tendências que levaram ao aumento da obesidade e de outros problemas de saúde relacionados à alimentação na América Latina começaram a surgir no final do século XIX. A propensão ao presentismo na literatura sobre transição nutricional produz uma história abreviada e limitada das mudanças em alimentação e peso. Embora pesquisadores médicos e nutricionistas enfatizem a recente instalação da crise, uma perspectiva histórica sugere que fontes alimentares crescentemente globalizadas resultaram em mudanças na alimentação e em gradual "aumento de gordura" na população latino-americana. O artigo propõe ainda a exploração metodológica e historiográfica de como historicizar a transição nutricional recorrendo a fontes pré-1980 até o momento.

Palavras-chave: transição nutricional; história da nutrição; obesidade; alimentação.

In 2000, the World Health Organization published *Obesity: preventing and managing the global epidemic*. It was the international body's first comprehensive study of the global impact of the nutrition transition. While choosing the word "epidemic" implied a problem of recent onset, the authors in fact acknowledged that the problem in the developing world had probably been under-reported in prior decades. Indeed, public health ministries had been putting increasing attention on the matter since the late 1980s, but those reports had attracted little attention in part because of other serious and immediate public health concerns, including malnutrition and undernutrition (WHO, 2000).

This article argues that many of the trends that led to increasing rates of overweight and obesity emerged gradually; many of the building blocks of the nutrition transition were in development since the late nineteenth century. The tendency in the nutrition transition literature towards presentism provides a much abbreviated and limited history of changes in diet and weight.[1] According to nutrition researcher Corinna Hawkes (2006, p.1), of the International Food Policy Research Institute, "in a 'nutrition transition', the consumption of foods high in fats and sweeteners is increasing throughout the developing world." Whereas medical and nutrition researchers have emphasized the recent onset of the crisis, a historical perspective suggests that the "delocalization" of food, a concept that describes the way that food sourcing shifts from local farms to ever more distant sources, and the resulting changing foodways and "fattening" in Latin America, occurred over the course of more than a century (Pelto, Pelto, 1983).

This paper demonstrates that the effects of the nutrition transition, and specifically overweight/obesity, began to occur at significant rates much earlier than acknowledged by the standard nutrition literature. Therefore, the recent rate of increase of overnutrition-related problems may be less drastic than we have thought, and its onset may have begun decades earlier. Suggestive evidence indicates that the rate of change may in fact conform more closely to that seen in the United States since the 1960s. Researchers may have missed these findings because obesity only emerged as a major public health problem relatively recently and data collection previously focused on the more pressing problem of undernutrition and underweight infants and children. Paradoxically, while the obesity problem seems to be the diametric opposite of the problem of under- and malnutrition, both phenomena share many common causes, including economic inequality, monoculture, unfair trade practices, and poverty. Equally important is how cultural attitudes about ideal weight and differences in "typical" body-type across national and regional lines may have shaped the delay. Traditionally, extra weight had been associated with health and economic well-being.

Foodways change when material conditions and cultural assumptions allow it (Mintz, 1985). Globalization is hardly new for Latin America and the Caribbean, and the nutrition transition is linked to a complex historical context. Key factors considered in this paper include commodity dependence; the relationship of commodities to food consumption patterns; the transition from commodity production to tourism; cultural and class conflict and accommodation; government food and welfare policies; the long history of immigration to the United States and re-migration to countries of origin; foreign aid and investment; and environmental degradation. Therefore, while "crisis" is an effective word to provoke action,

I argue that it is more useful to think of the nutrition transition as an "intensification" of earlier patterns of changing foodways.[2] Taking a longer historical view can allow us to amplify and expand our understanding of the multifaceted nutrition transition and place it into a longer narrative of Latin American and Caribbean foodways and the social and economic structures that determined who consumes which kinds of foods.

This paper, which focuses primarily on qualitative data, also provides a methodological and historiographic exploration of how to historicize the nutrition transition. A diverse array of sources, including anthropological case studies and nutrition surveys from before 1980 as well as more recent historical and nutritional studies yield a rich body of evidence. Imbedded in this diverse array of material are clues that point to a long history of development of obesity in Latin America. Scholars and researchers have mentioned weight-gain-related issues for decades, but with a few exceptions have not dwelled on the theme. The historical study of obesity and weight-gain is in its early stages and this work does not claim to be comprehensive. Beyond the scope of the present paper, it is important to note that Latin American foodways experienced rapid and often traumatic change with the arrival of the first Africans and Europeans in 1492. As indigenous, Iberian, and African foodways reached an uneasy equilibrium and stability by the middle of the nineteenth century, new forces, many coming from outside the region, began to reshape diet and food practices (Crosby, 1972; Pilcher, 1998). Strikingly, many of the changes in diet and attitude about food analyzed here occurred in urban and export enclave zones, areas that until the 1970s held the minority of national populations. Finally, available evidence indicates what foods were produced or transported and available to consumers. Data on consumption *per se* is difficult to locate, especially prior to the advent of modern data-gathering and survey techniques. At the same time, diet itself is not the sole cause of increasing weight and food-related health problems: factors as diverse as public safety, urbanization patterns, gender inequality, and occupation can have an equal or greater impact on weight- and nutrition-related problems (Popkin, 2008).

Two other areas of potential future research by historians include the question of body image and the medicalization of overweight and obesity. The work of historians like Peter Stearns (2002) and Sander Gilman (2010) can provide useful methodologies in studying how ideal body types have changed over time. Similarly, anthropology can guide historians to consider how different body types have embodied specific cultural assumptions about race, class, and gender (Yates-Doerr, 2015). Recent work on body image in 1920s Mexico, for example, has shown how the consumer market, itself shaped by national and global influences, promoted the slender female body, and associated it with whiteness and modernity (Hershfield, 2008). A deeper dive into archives and libraries will likely also reveal an unfolding story of how and when weight became medicalized. Medicalization is a complex process wherein medical practitioners not only set the agenda, but also receive strong messages from both individual patients and society at large (Sobal, 1995). Latin America's tradition of medical pluralism, a practice that incorporates diverse forms of medical knowledge, suggests that the medicalization of weight in the region may take on contours distinct from North American or European practices (Cueto, Palmer, 2015).

Finally, I recognize that measuring and quantifying obesity is problematic. Significantly, the body mass index (BMI) was originally intended as an instrument of actuarial science; insurance companies used the formula of weight in kilograms divided by the square of height in meters in order to assess health risks for policyholders and the fees that they paid. The baseline BMI was generated from a white, male, urban North American population. Anthropologists and nutrition researchers have challenged its universal utility for diverse populaces (Gilman, 2010, p.X-XI; Czerniawski, 2007, p.275; Yates-Doerr, 2015). Finally, this essay makes no pretense of providing a quantitative history of the nutrition transition, obesity, or food- and lifestyle-related health problems facing the region. The existing nutrition research offers conclusive evidence with respect to diet changes and their effects in recent decades.

Nutrition transition literature

During the last three decades, medical researchers from diverse fields have tracked the "nutrition transition" in the developing world as the scope and depth of the problem has grown more apparent. During this transition, areas of the world where for centuries undernourishment and underweight had been the prevailing public health problem witnessed the advent of widespread overnourishment and overweight, though often accompanied by micronutrient deficiencies. While being overweight, with all the health woes that accompany it, was once the ailment of the well-off, the poor in Latin America now suffer from higher rates of heart disease, diabetes, and other ailments than their better-off compatriots. Underweight continues to also plague these same populations, though at diminished rates compared to previous periods (Popkin, 2008; Patel, 2007; Ross, 1999; Otero, Pechlaner, Gurcan, 2014).

For nutritionists, most striking has been the apparent speed with which the nutrition transition has unfolded in developing nations, as evidenced by the astonishing increase in the number of overweight and obese persons. Throughout the twentieth century, Latin America was the site of groundbreaking research and policies on nutrition. Until the 1980s, the primary focus was on malnutrition and undernourishment (Castro, 1946). Organizations like the Instituto de Nutrición de Centro América y Panamá laid a strong institutional foundation for the new research on overweight and obesity (Bourges, Bengoa, O'Donnell, n.d.). To give just one example of the dramatic transformation underway, researchers have determined that among Mexican women, rates of obesity jumped from about nine percent in 1988 to 24 percent in 1998 (Martorell, 2002, p.156). By 2008, the prevalence of obesity in Mexico was "26.7 for males and 38.4 percent for females," well above the regional average reported by the WHO; "the rate of overweight among adults over 20 years of age had grown fastest in the world since 1980, at a 31 percent increase" (Otero, 2018, p.181). Country and regional studies confirm similar trends throughout the hemisphere (Rivera et al., 2002; Kain, Vio, Albala, 2003). The consensus is that this accelerated growth in the population of persons with obesity is unprecedented in the history of nutrition, but it is consistent with the ways in which the pathologies of modernity have spread in the developing world (e.g., tobacco, urbanization, pollution etc.). Some scholars,

however, question the application of the concept of an "obesity epidemic" and worry that policymakers are exaggerating the threat that increased weight poses to public health at the expense of other more pressing issues. Excessive media attention on the "epidemic" could spark "moral panics," wherein a wide range of future disasters are laid at the feet of the overweight (Campos et al., 2006).

The consequences of the nutrition transition in poor urban and rural zones have been acute, and mirror what researchers started to detect in the United States in the 1960s (Ross, Mirowsky, 1983). Where public health practitioners were once occupied with malnourishment, they now face a whole new array of medical conditions wrought from dietary changes (Yates-Doerr, 2012b). As a rural Guatemalan medical director observed, "in the last 10 years, the diagnostic incidence of chronic illnesses like diabetes, renal failure, high cholesterol and high triglycerides has skyrocketed. So many people are coming in overweight or obese. We're doing what we can, but we're in no way prepared for this" (Yates-Doerr, 2012b, p.141). The gravity of the situation is exacerbated by the fact that persons who experienced undernutrition as children, or *in utero*, are more likely to experience the negative effects of calorie-dense diets (Shultz, 2010).

Nutrition researchers note that the groundwork for these changes emerged in the 1980s when structural adjustment programs led to rising poverty and income inequality, declining state investment in social programs, loosening of barriers to global trade, and new forms of private and state-sponsored violence. Corinna Hawkes, in 2006, provides a useful synthesis of the nutrition-related changes that accompanied the neoliberal shift. She notes how

> links between globalization and diet are generally under-researched, though analysts have suggested the following mechanisms are central to the globalization/diet nexus: food trade and global sourcing; foreign direct investment; global food advertising and promotions; retail restructuring (notably the development of supermarkets); emergence of global agribusiness and transnational food companies; development of global rules and institutions that govern the production, trade, distribution and marketing of food; urbanization; and cultural change and influence (Hawkes, 2006, p.2).[3]

Indeed, foreign trade and foreign investment have brought a host of forces that have reshaped the nutritional status of Latin Americans: inexpensive meats, grocery store chains, inexpensive soft drinks and cooking oils, etc. These same economic forces have transformed aspects of Latin Americans lifestyle that are not directly related to food but impact diet and lifestyle: "improved" and more varied television programming, immigration to the United States, urbanization, patterns of work etc. (Thow, Hawkes, 2009).

How new – or old – is the obesity crisis?

Strikingly, the contemporary nutrition transition literature often cites earlier studies that indicated rising obesity and overweight rates prior to the 1980s. For our purposes, these scattered references provide us with valuable clues that the nutrition transition was well underway earlier than previously believed. Axiomatic is the understanding that

nutrition-related health changes in a population do not occur quickly, but rather build slowly over decades. A 1992 study on nutrition in the Caribbean provided statistics from the 1970s showing high rates of obesity and diabetes in select nations. In Guyana, over thirty percent of the female population was considered obese in 1971. The rate for men was around seven percent. Similar findings were made for Saint Lucia in 1974 (although the study gave no source information for the statistics provided). This transformation occurred as malnutrition was subsiding (Sinha, McIntosh, 1992). Similarly, a 2001 study on obesity in the western hemisphere cited a 1985 study that showed forty percent of the Mapuche indigenous group of Chile were obese. The study did not dwell or elaborate on the matter (Uauay, Albala, Kain, 2001). And in 1998, Martorell et al. (1998, p.1464-1465) reported that "results from the 1988 National Nutrition Survey of Mexico suggest that obesity in women was as common in Mexico as in the United States in the 1970s." Similarly, Peña and Bacallao (2000, p.15) report that for Brazil, an increase in overweight was noted between 1974 and 1989 and was correlated with negative economic growth. In sum, in each of the articles cited, the authors provided hints as to a deeper historical context for the emergence of obesity as a public health problem. The fact that they did not elaborate on these pieces of information is not surprising; their concern was the immediate health problem.

As the previous paragraph suggests, we know that researchers were already detecting the rising problem of obesity and other nutrition-related issues before the late 1980s. Some of the region's earliest and most important studies come from the well-known Mexican nutritionist doctor Adolfo Chávez. In 1963, he and two co-authors published a study on diabetes among three sisal-producing communities in the Yucatán. He acknowledged that he suspected that diabetes was even more prevalent than his study suggested: the patients he studied had very severe diabetes and he suspected many more in the community had less severe cases (Chávez, Balam, Zubirán, 1963). While noting that the population was entirely indigenous and their diet conformed to those traditions, he remarked with alarm the growing influence of "national" and "foreign" culture, which we can presume included modern foodways. The study concluded that

> these findings show a very high incidence of the disease especially if we consider that the population over the age of 30 years [object of the study] is only 26.6% of the study area population. In these conditions, we can compare the frequency of the disease with any number of similar studies conducted in urban zones of 'well-fed nations,' in which the disease is classically considered to found at higher rates [than in countries like Mexico] (Chávez, Balam, Zubirán, 1963, p.341).

The authors cited both their own earlier work on diabetes in Mexico and North American studies on the subject. Like more recent health researchers, they also detected the disturbing trend of households that contained both underweight and overweight subjects, and a higher incidence of the latter among women (Chávez, Balam, Zubirán, 1963, p.336).

Chávez's subsequent "Frecuencia de la obesidad en algunas zonas de México," published in 1967, continued to confirm that Mexico was basically on the same nutritional and health path as its neighbor to the north. He observed that "in urban areas, the survey shows a serious problem, with the frequency of all levels of obesity at 28.5%, with 8%

at the extreme level; these statistics are similar to those reported in urban centers in the developed world" (Chávez, 1967, p.125).[4] Although more anecdotal in its methodology, the 1979 study "La obesidad en el niño" observes that "the majority of Mexican children have become accustomed to a diet high in carbohydrates, that is in sugars; these foods do not supply nutrition but rather increase the *tejido adiposo*, they fatten" (González-Galván, 1979, p.178). The study provides very little concrete data on Mexican nutritional practices but does complain about the role of television and billboard advertisers.

These reports suggest an important question: Did Latin America become fat faster than the US? Or just at a later date? (Fryar, Carroll, Ogden, 2012). The problem, in other words, may be older than we think, with the current health crisis representing an intensification of an older pattern. Finally, to what extent do we need to think about the longer trend of growing inequality in Latin America as a contributing factor? (Aguirre, 2000).

Laying the groundwork for the nutrition transition

Having offered a preliminary reassessment of the onset of obesity and diabetes and prevalent problems in the region, we now turn to the question of the factors that have shaped these changes in the biomedical profile of Caribbean and Latin American people. If BMI was increasing, along with attendant health problems, at an earlier point, then this points to the importance of rethinking the timing of political, economic, and social changes in foodways. It is an axiom of food studies that diets rarely change quickly. What follows is an analysis, based primarily on existing studies, of ways to think about the Latin American nutrition transition from a long-range approach.

The development of industrial commodity production, often in so-called enclaves, was critical to the introduction of processed foods and the development of loyal customer bases, directly into rural communities. The changes that occurred in the enclaves, however, also shaped urban foodways. Or, as historian Thomas C. Wright (1985, p.28) noted, increasing dedication to export production "further increased the demand for commercial food within Latin America."

The Caribbean region in particular embodies a historically deep example of the nexus between export-driven commodity production and the nutrition transition. The region became dependent on food imports to fuel its enslaved labor force as early as the seventeenth century. There is suggestive evidence that areas with extractive industries and export agriculture were frontiers in the nutritional transformation of the working class, itself a collective characterized by transnational movement and culture. Reflecting on his time doing fieldwork among Puerto Rican employees of a sugar *central* in 1948, Sidney Mintz (cited in Barbosa, Wilks, 2012, p.268) noted:

> I ate locally. But as has been true of plantation regions globally for centuries, much of the food I was given to eat was not local at all – it was imported. … during my stay at Barrio Jauca (Puerto Rico) I became fat, and my changed appearance was greeted with approval.

Export agriculture, especially when connected with multinational corporations, infused local economies with cash, fostered social change, and transformed environments in ways

that commodified subsistence foods and introduced foreign foods at a rapid pace (Pelto, Pelto, 1983, p.524-525). Case studies by historians of the Colombian banana zone, the Ford Amazonian rubber plantations, and even among rubber tappers, confirm that export economies generate increases in local consumption of imported food (LeGrand, 1998, p.345; Grandin, 2009; Tully, 2011, p.81).

In Costa Rica, United Fruit Company became concerned that both local and Afro-Caribbean laborers were suffering from chronic malnutrition in the first decades of the twentieth century. To remedy the problem, they began to import canned and processed foods from the United States. The solution to high infant mortality in the banana zone was the introduction, in 1925, of Lactogen, an "artificial infant food" that had been developed by Nestlé Company (Chomsky, 1996, p.127; Cole-Christiansen, 1997).

One strikingly overlooked consumable has been sugar, especially in the regions where it was produced. An otherwise exemplary study of food policy from 1985 thought sugar important, but perhaps not worthy of deeper consideration.

> Sugar is one of the most controversial foods in the new Latin American diet. It was a cheap substitute for honey, the traditional sweetener in the nutritional regime, and by the end of the XVI it was consumed in enormous quantities. Certainly, sugar influenced health and behavior in early Latin America, contributing to obesity, hypoglycemia, and dental caries; but perhaps it did not do so to the extent argued by Carlos Malpica Silva Santiesteban, who sees it as causing everything from increased diabetes to severe social and psychological disorientation (Super, Wright, 1985, p.18, footnote 8).

The brief reference to doctor Malpica Silva-Santiesteban gives short shrift to his contribution to the field of agronomy and nutrition. Radicalized during the 1950s and 1960s, he wrote *Crónica del hambre en Peru* (Silva-Santiesteban, 1970) while imprisoned in Peru. His analysis of the intersection of poverty, inequality, and nutrition proved prescient in our understanding of the problems of overnutrition. His work also indicates a longer history of researchers and activists thinking about the dynamic between hunger and obesity. The reference to sugar is even more striking when we consider that since the development of sugar as a mass-produced crop, these areas of monoculture have often struggled to be food self-sufficient. They typically became importers of consumables, not just on the small Caribbean islands where most arable land was destined for sugar or coffee, but also in continental enclave zones.

Richard Wilk's comprehensive study of Belize is suggestive of patterns likely found in other colonies or export enclaves in larger nation-states. Since the arrival of the first buccaneers and their slaves, who came to cut valuable timber, the British royal policy discouraged subsistence farming in favor of food importation. By the late industrial revolution, and at the height of the British Empire, Belizeans had become enthusiastic consumers of all manner of canned goods, from milk, to meat, to lobster. As Wilk recounts, advertising, British imperial propaganda, and the colonies' subordinate status colluded to create a strong market for all things British. Imported foodstuffs became everyday staples for urban and rural peoples starting in the 1920s (Wilk, 1999). By 1980, at independence, 29 percent of the average Belizean family budget went on imported foods (Wilk, 2007). One of Wilk's major contributions are his insights, based on both historical research and

field work, that Belizeans adopted imported foods, but slowly those foods were adapted into both foodways but also into a deeper set of cultural practices and identity.

The nutritional imprint of this historical dependence on food imports was revealed during the oil crisis of the 1970s. Like elsewhere in the Caribbean, skyrocketing oil prices translated into dangerously high food prices. The government of Jamaica promoted a return to subsistence farming as a way out of the crisis. Reports that followed up on the process suggested that the nutritional status of children improved markedly in a short time span (Pelto, Pelto, 1983, p.522). Direct foreign control, however, was not a prerequisite for changing foodways. The relationship between export and extractive industries and between rising food costs and declining access to local foods seems timeless. Starting in the 1950s, for example, the cattle export industry arrived in Central America. As land was cleared for cattle, local food prices rose (DeWalt, 1983). Economically marginal zones could also experience aspects of the nutrition transition. Evidence from economically peripheral zones, however, like the Miskito Coast of Nicaragua, suggests that environmental degradation of fragile coasts and the decline in sea turtle populations contributed to a growing dependence on imported and processed food. In 1969, thirty percent of their foodstuffs were imported and/or processed, but within four years that figure had doubled (Pelto, Pelto, 1983, p.518).

Coca-Cola

Although one of the great culprits of the obesity epidemic, and one with strong links to export economies, was the introduction of soft drinks to the diets of Latin Americans, the nutrition literature has largely failed to chart its historical development from the early twentieth century. Coca-Cola, and later Pepsi, made their entrée into the region very early in the twentieth century, in 1906 in Cuba and Panama, with the rest of the Caribbean following suit in the next decade (Coca-Cola Corporation, 2006) Coca-Cola was being produced in Belize by 1907, a striking fact given that the colony did not produce enough food to sustain its populace (Wilk, 2007, p.95). Despite the drinks' notoriety and ubiquity, we know little about these transnational corporations. Coca-Cola's archives are closed to serious researchers and function to promote nostalgia about the drink and to promote the brand (Matthews, 1973). The existing scholarship on these companies has relied primarily on newspaper and government sources (Blanding, 2010).

These drinks are a critical example of how the foreign integrated into national foodways in a sense became "local." Obviously, Coca-Cola benefited from the early version of free trade, imperialism, and the soft drink followed the opening of markets by gunships and trade alike. Little has been written to date, however, outlining how the US-import beverage entered the diets of the poor and working class that could compare in scope to the work of Sidney Mintz on Great Britain (Mintz, 1985).

According to *Global reach,* a study published in 1974, consumption of soda was by then completely integrated into the foodways of Mexican rural people. Its authors, Richard J. Barnet and Ronald E. Muller, cited in Michael Blanding's history of Coca-Cola, reported that "it is not uncommon, doctors who work in rural [Mexican] villages report, for a family

to sell the few eggs and chickens it raises to buy Coke for the father while the children waste away for lack of protein" (cited in Blanding, 2010, p.156).

Given its deep economic and cultural imprint and its powerful transportation and communication networks, it is not surprising that Coca-Cola's distribution was controlled in places like Guatemala and Honduras by United Fruit Company (Prendergast, 1993, p.172). Yet curiously, the best studies of the introduction, reception, and adaptation of foreign soft drinks have focused not on the early "contact sites," but on zones best characterized as peripheral to capitalist development. Anthropologist June Nash's study of religion, consumption, and gender in the Chiapas highlands of Mexico, for example, offers a superb model of how to study the beverage's adaptation to local culture. She suggests that Coca-Cola replaced alcohol as a ritual and social drink, in part because of the growing influence of Protestantism, especially among women, as in the United States, especially the Deep South, beverages like Coca-Cola gained status as hygienic drinks that also promoted an abstemious and sober morality. Coca-Cola also had strong institutional linkages to Protestant denominations both in the United States and in Latin America. The company, for example, helped found the Cuban Methodist Candler College in 1898 (Prendergast, 1993, p.95). In places like rural Mexico, conversion to Protestantism since as early as the 1940s was often a strategy employed by women to push their husbands away from alcohol abuse and the domestic violence that accompanied it (Nash, 2007; Thomas, 2008, p.294). Eventually, male village elders began to accept the new drinks, and often collectively established concessions. Nash highlights how the shift from alcohol production to soda distribution was controlled by the caciques of the town, hence highlighting the ways in which Coca-Cola and Pepsi's diffusion has been linked to political elites (Blanding, 2010).

Jeffrey Pilcher's "Industrial tortillas and folkloric Pepsi: the nutritional consequences of hybrid cuisines" examines how Mexicans' appropriation of industrial foods was a response to both practicality, but also close cooperation between the state and private enterprise. For the case of Coca-Cola and Pepsi, as well as bottled beer, Pilcher traces the various currents that brought soda to hitherto remote villages in Chiapas: post-revolutionary road building, marketing, and indigenous appropriation of new products. His case study of the Chiapan village of San Juan Chamula is suggestive of the long-term nutrition transition. Bottled beverages arrived in 1942, six years after the opening of the first road. Villagers at first used Pepsi for ritual purposes, as dowries and as a ritual drink (Pilcher, 2001).

A number of scholars have observed that Coca-Cola distribution networks, both national and local, fell to economically powerful groups. Particularly at the local level, coercive marketing systems accompanied the soft-sell approach. Moreover, as mentioned earlier Coca-Cola distribution in the early years was often controlled by large multinational firms, most notoriously United Fruit Company, such as the recent case of Urubá, Colombia (Blanding, 2010). The coercive nature of marketing is also seen at the village level, as explored by June Nash in her study of Chiapas. The system of marketing employed by caciques-turned-distributors was reminiscent of the colonial *repartimiento de bienes*. As important as these studies are, there is a striking disconnect between what we can presume were the initial contact zones for soft-drinks, major urban areas, and enclaves with links

to foreign capital, and the arrival of the sugared drinks to rural and isolated areas with weak links to global capital (Nash, 2007).

Advertising

The nutrition literature often notes the recent growth of Latin Americans' exposure to advertising. Yet following the lead of Coca-Cola, North American and European firms learned early to market their wares to Latin American consumers. By the 1920s, Coca-Cola's Foreign Sales Department understood clearly that hygiene, prestige, and cultural adaptation were to be the linchpins for promoting the drink. And in response to rising nationalism by the 1930s, Coca-Cola adopted the strategy of setting up national subsidiaries. More broadly, US advertisers contracted in the 1920s to help sell finished goods to the south recognized that the Latin American consumer was not the same as their North American counterparts (O'Brien, 1999; Wright, E., 1985, p.164-166). Exemplary of this flexibility was Pepsi's reworking of the "Pepsi Generation" campaign into "Pepsi Revolution" in its (successful) targeting of politically disenfranchised youth in Brazil and the subsequent development of Brazilian soft drink brands (O'Brien, 1999, p.145).

Another important example of the early links between advertising, neo-imperialism, and globalization was the marketing of infant formula. Frequently invoked as emblematic of US food imperialism, this other sugary liquid's entrée dates to the early twentieth century. The early marketing of formula was modest until US birthrates went into decline in the late 1960s and foreign companies began to search out growing markets (Bader, 1976). The marketing of infant formula shares several parallels with that of Coca-Cola: its promotion as a hygienic and therefore safe substance and its association with modernity and science. These practices were not confined to Latin America (Kimura, 2008). Unlike soft drinks, however, infant formula enjoyed support from United States governmental and non-governmental foreign aid organizations. Companies' search for markets and profits then enjoyed a thin veneer of selflessness. For many critics, support for infant formula embodied a narrower, or selective, approach to public health that ignored structural forces (Cueto, 2004, p.1870).

Government and international aid and policy

As early as the mid-nineteenth century, modern Latin American states became preoccupied with the nutrition of their citizens, and yet paradoxically they helped set the stage for the obesity crisis. Indeed, there is compelling evidence that governments created policies and platforms upon which foodway changes were facilitated, by privileging foreign foods and even processed foods, often for reasons that mixed nutritional policy with larger economic goals.

One of the central and perennial problems in the entire hemisphere (despite notable exceptions) was the effect of inflation and high food costs on working class people. An International Labor Organization report from 1940 concluded that the Latin American working class, on average, spent seventy percent of their wages on food, about double that

of their Canadian and US counterparts (Wright, E., 1985, p.31). Generally, governments all over the world took an approach that privileged quantity over quality because of concerns about hunger and gross malnutrition (League of Nations, 1936); that was based on a belief that local and national cuisine may in some way be deficient in comparison with that of Europe and a tendency to medicalize those assessments (a practice detected elsewhere, including China) (Cullather, 2007, p.4; Gilman, 2010, p.138-139); that monitoring food prices and providing cheap food was a matter of national well-being and the preservation of the national "race" (Wright, E., 1985, p.34-35); and that was based on a belief that said local cuisine may be responsible for economic underdevelopment and the "laziness" of the local populace, a tendency to associate industrial foods with better overall health and food safety, and the advocacy of food processing as a solution to both problems of food and a path to greater industrial development (Wright, T., 1985, p.28).

Before the identification of specific vitamins and revolutionary discoveries such as the causes of pellagra, food policy and ideas about good and bad food were often deeply colored by social prejudices. Ironically, many of the foods deemed inferior by food researchers, thanks to subsequent advances in chemistry, were determined to be in fact invaluable to human nutrition (Yates-Doerr, 2015). And as historian Nicholas Cullather (2007) notes, even the calorie was defined and redefined to meet the desire of states to regulate and administer food policies at home and abroad. Advances in food science have not protected food policy from being shaped by political and social agendas.

A classic case of government food policy having unintended consequences is Mexico. As historian Jeffrey Pilcher (1998, p.77) observes, Senator Francisco Bulnes's 1899 *El porvenir de las naciones hispanoamericanas* "explained the native's weakness, using the recently developed science of nutrition, by dividing mankind into three races: the people of corn, wheat, and rice." Bulnes concluded that the source of Mexico's underdevelopment rested with the indigenous population's diet of corn and beans. And as Jeffrey Pilcher notes, even after the Revolution, when Bulnes was denounced as a racist, the belief that the indigenous diet should be transformed in the interest of national development persisted. Thus, the so-called tortilla discourse "served as a subterfuge to divert attention away from social inequalities." It also drove an effort to switch Mexico from corn to soybean (Pilcher, 1998, p.78). Ironically, at the same time, Chinese nutritionists were trying to wean their population off of soy (Gilman, 2010, p.139).

Historian Sandra Aguilar-Rodriguez has examined the persistence of negative views of traditional indigenous and mestizo foodways. While the Porfirian racist doctrine that gave birth to these ideas was absent, revolutionary food policy shared its policy recommendations, which we might sum up as advocating the adoption of "western" diets with an emphasis on wheat and protein. The newly created Ministry of Public Health and the Institute of National Nutrition essentially adopted a Neo-Lamarckian perspective that a "sick" population could be improved through changes in diet, housing, and education. Through public dining halls and cooking lessons, the state advocated the foreign over the national in the cause of the nation (Aguilar-Rodriguez, 2007).

The perennial concern of modern Latin American states with inexpensive urban food provisioning is clearly spelled out by historian Paulo Drinot. In the case of Peru, such

projects often had heavy overlays of promoting nationalist identities and also embodied a "civilizing mission" (Drinot, 2005). His observation could apply across the region:

> The unbalanced diet of the working class was a result of the low purchasing power of average Limeños and the high prices of food products. However, and most import, the unbalanced diet of Limeños was blamed not only on poverty, but also a shift in food culture towards 'Asian,' particularly Chinese food (Drinot, 2005, p.255).

In the face of rising food prices and riots, and hoping to counteract the influence of Chinese popular restaurants, the state enacted a program of government-run cafeterias in 1932 to forge a more clearly defined notion of Peruvian food while emphasizing "energetic" foods. Similar processes were at play in neighboring Chile (Drinot, 2005, p.248). Interestingly, Peruvian officials were influenced by the same nutritional discourse that held Asian diets to be inferior to those of the West. Drinot argues that "working class Limeños perceived the restaurants as a welcome solution to material and moral needs (p.246)." The anti-Chinese dimension of the project "came to play an important role in both the politics of consumption and the construction of working-class identity in early twentieth-century Peru" (p.247). Such efforts at food populism were a common feature in the hemisphere and translated in many cases into much more ambitious projects to subsidize worker well-being whilst avoiding changes to the structural forces of export-driven economies (Escudero, 1942).

Paradoxically, the discovery of the benefits of the traditional diet coincided with the intensification of industrial food development in Mexico. As Pilcher notes, it had its start in the late Porfiriato, gained steam during the post-revolution industrial boom, but also received critical assistance from the State Food Agency starting in the 1960s through the establishment of government-sponsored grocery stores in rural and poor zones (Pilcher, 1998; Ochoa, 2000). During this same period, "the government has also conceded to food manufacturers the educational power of the mass media" (Pilcher, 1998, p.119). As a result, as Pilcher notes, "the development of a Mexican food industry therefore brought not a shift from corn to wheat, as predicted by Bulnes, but from starch to sugar" (p.121). Similarly, post-1950 governments in Mexico both launched public health campaigns against sugar-drinks while supporting the sugar agrarian sector (Zazueta, 2012). At the same time, the state began to promote the consumption of milk as a critical source of protein (Aguilar-Rodriguez, 2011).

The relationship of food to industrialization policy is complex. Urban workers need cheap and plentiful food, but the industrialization of food processing can generate economic development and employment opportunities. Similar developments occurred in the larger national economies of the region. Across the region, national governments began to believe that food processing could afford the double benefit of cheaper food prices and promote relatively inexpensive projects of industrialization. In Mexico, the State Food Agency, founded in 1937, was conceived "to help small farmers compete in the marketplace, [but] was diverted to support the goal of industrialization" (Pilcher, 2001, p.240). Specifically, the agency "provided cheap food to the cities to win populist political support while at the same time containing union demands for higher wages, thereby indirectly subsidizing

private industry. For example, the agency supplied low-cost corn to the politically powerful *nixtamal* millers in Mexico City, who then sold *tortillas* to the public at fixed prices" (Pilcher, 2001, p.240; emphasis in the original).

In Mexico, the push by the state for cheap food accelerated in the post-Second World War period with the push toward industrialization. As the center of economic activity shifted to urban areas, the state "needed adequate supplies of cheap food, foreign exchange, accumulation of funds, and works, and all this was to be gained through agriculture" (Austin, Esteva, 1987, p.36). Such practices were commonplace throughout Latin America and emerged from shifts in population and economic activities.

The case of Venezuela also shows the ways in which state policy aided and subsidized the development of processed food industries and the consumption of processed food by middle- and lower-income groups. In both cases, the origins lay in the perennial problem of lowering food costs in inflationary and industrializing economies. By the 1950s, the Acción Democrática government in Venezuela had also begun to engage in food politics. With tepid land reform, a thriving oil industry, and growing cities, the Venezuelan state confronted the perennial problem of rising food prices and an agricultural sector unable to keep up with consumer demand. But the nature of consumer demand was changing, with higher-income groups desiring more US-style processed foods. By the late 1950s, the top third income tier of the population (mostly urban) heavily consumed canned and packaged imported foods, the majority of which was produced by three national and nine international food processing firms (Wright, E., 1985, p.153). At the same time,

> As incomes increase, a smaller proportion is spent on food. In order to counter this tendency and to profit from consumers with the greatest increase in income, the firms developed more expensive luxury and convenience foods. The success of this marketing approach diverted the firms from concentrating on cost-effective production of food staples, as envisioned by government planners (Wright, E., 1985, p.163).

Meanwhile "multinational firms enhanced their position through changes in their structure, cooperation with other large-scale firms, support from international policymaking organizations, and the absence of a strong Venezuelan antitrust policy" (Wright, E., 1985, p.151). In the face of efforts to regulate the purchase of foreign food items, the VBEC Supermarket chain, Cada, simply procured those items through foreign-owned subsidiaries. Witte Wright (1985, p.157-158) found that the Venezuelan government tended to encourage such practices by not prosecuting monopolistic practices. Accordingly, "by the early 1960s, a corporate annual report stated that locally produced 'Rice Crispies and Sugar Frosted Flakes had made it to the Venezuelan table'; Cheez Whiz, Miracle Whip, Kool-Aid, Royal Puddings and Heinz' spaghetti sauces soon arrived as well" (p.162).

Nation-states also sought out US and other foreign investors in the food processing industries, based on the belief that such endeavors would boost national well-being on many different fronts. This takes us back to Coca-Cola, whose plants were seen as potential sources of economic development. "In Brazil, even the ardent nationalist Getúlio Vargas proved anxious to attract the US beverage company, providing special tax breaks and other legal concessions" (O'Brien, 1999, p.145).

US and domestic development programs

By the 1950s and 1960s, food processing had come to be seen as a critical part of any program of national economic development and industrialization. Furthermore, there was a strong bias by international organizations towards multinationals and large firms in general. USAID believed large-scale industry, alongside effective public health and nutrition programs, would promote productivity and income growth, and stop communism. Briefly, these programs reflected a conceptual framework that held that rising standards of living inoculated populations against the influence of leftist thoughts and movements (Cueto, 2008). In that same vein, the food industry was correlated with better nutrition and higher hygiene standards (Wright, E., 1985, p.158, footnote 19). Simultaneously, USAID, including PL 480 (started in 1957), was heavily weighted toward cash outlays to be used to purchase US goods. Such policies served to limit local food production while simultaneously giving food processors a larger market share and greater economic power (Wright, E., 1985, p.160; Garst, 1991). And not surprisingly, private US firms were deeply involved in the project to increase consumers' access to processed foods. There are two areas of convergence with older ideas about how food is valued. First, USAID shared the older traditional concern about the need to increase protein and fat in the target populations. And in keeping with foreign aid's close ties to domestic US industrial needs, USAID promoted infant formula, in part as a response to the saturation of the domestic market (Moore, Padovano, 1967; Khazan, 2018).

Government campaigns that either promote or discourage particular foodways have often produced paradoxical or unintended consequences. An important case study in this respect is food fortification programs like Nutrimex. "Yucátan was the first state to receive sugar fortified with Vitamins A and C and niacin. Since SOEs [State Owned Enterprises] process most Mexican sugar, access was not a problem. ... Nutrimex's other main food product was rehydratable powdered baby food made from soy protein concentrate, imported nonfat dry milk, and sugar." Distributed through SOEs, Diconsa, Impecsa, and private supermarket chains, "although intended to benefit lower-income people, it tried to avoid the perception of its products as inferior goods" (Austin, Esteva, 1987, p.83). Diconsa expanded from 6,660 rural stores in 1979 to 11,201 by 1982. The stores afforded prices 30% below market rates but were often set up in more affluent areas, in contrast to their goals of serving the poor (Austin, Esteva, 1987, p.65).

The paradoxical impact of government food policy is also seen in the strange case of vitamin additive policies. In Guatemala, vitamin-enriched sugar as a government policy inadvertently led population to consume more sugar and to associate sugar with health: "Sugar with Iron," with a green triangle on its packaging, was instituted in 1974. Over time, the program inadvertently produced the perception among many Guatemalans that packaged (and processed) white sugar was in fact a nutritious substance. Yates-Doerr (2012a, 2012b) unpacks the relationship of such policies and their unintended consequences to the tendency of governments to attempt to create rigid and culturally inappropriate food categories.

Government policies continue to have an impact on how the notion of "good" food unfolds. Seemingly objective terms like "vitamin" and "nutrition" can take on divergent

meanings. Studies suggest that nutrition policies that focus on single issues and that attempt to effect change in a hierarchical fashion produce unintended consequences. As Yates-Doerr (2012a, p.308) notes, "nutritional black boxes eventually lead to the tautologies of recursive definitions: a vitamin is a vitamin. Nutritional black boxes give an appearance of stability to the otherwise processual experiences of nourishment."

Globalization, tourism, and migration

The nutrition transition, understood here to be a process lasting at least a century, has involved transfers of foodways and technologies across national frontiers, but has also involved the movement of hitherto luxury or costly items into the diet of the poor. Whereas, until the middle of the twentieth century, foods from overseas were mostly introduced through middle- and upper-class people who had travelled abroad, the migration and return of working-class people has shifted the source of new foodways. According to anthropologist Richard Wilk (1999, p.246), "now all classes have direct access to foreign culture, and the foreign is no longer as closely associated with wealth and power."

A place where this process occurs with greater intensity is tourist enclaves, which ironically are often located in the very areas where monocultural food production for export got its start. A variety of forces are at play, including the transition from subsistence farming to wage labor, the increased cost of food (and the role played by hotels in making fresh foods more scarce for local people), access and exposure to processed foods, and worker housing, which often segregates local people from their families and traditional foodways (Letherman, Goodman, 2005). In the case of Puerto Rico, US government policy and the rise of tourism served to weaken and undermine local agriculture. Puerto Rico finds itself almost completely dependent not only on food imports, but on food imports from mainland United States (Carro-Figueroa, 2002).

This trend is also seen in the negative health effects experienced by Mexicans who migrate to the United States. Most notably, recent arrivals from Mexico generally experience higher rates of diabetes, heart disease, and weight gain (Antecol, Bedard, 2006). Given the longstanding history of Mexican migration to the United States, we can expect that the health effects of this migration will be long-lasting. US nutritionists began to observe and study the weight of Mexicans and Mexican Americans as early as the 1970s and reported rising body weights on both sides of the border (Yanochik-Owen, White, 1977, p.151-154). Preliminary research also suggests that children from "sending communities" are more likely to acquire obesity than other populations (Baker, Altman, Van Hook, 2010).

Final considerations

The nutrition transition has a longer and deeper history than has been acknowledged by the nutrition literature. Two factors are critical to consider. First, significant changes in foodways, and especially in the consumption of processed foods with high sugar and/or fat content, were well underway by the early twentieth century. These changes developed earliest in major cities and in export zones with frequent contact with the United States

or Europe. This paper has outlined some of the ways that those changes took place and how we know that they did. Second, Latin American and Caribbean populations began to experience the problems associated with the nutrition transition much earlier than the nutrition literature has acknowledged. Studies dating back to the early 1960s provide us with invaluable hints to this effect.

This paper has suggested that the methodology required to deepen our understanding of the historical roots of the nutrition transition requires a careful re-examination of existing nutrition studies. The nutrition transition literature is aware of the earlier work on obesity and diabetes, but, likely for practical reasons, does not dwell on this evidence. Older anthropological sources are also invaluable: anthropology pioneered interest the cultural and social importance of food. Field studies have focused a great deal of attention on food, foodways, and food sourcing. Finally, there is a rich body of work on the history of food that has emerged in the last few decades that allows us to historicize the current nutrition situation.

The history of the nutrition transition also may be of practical use. A 2009 report from the Milbank Foundation found striking parallels between the nexus of capital and power in the tobacco industry and that of "Big Food:"

> In 1954 the tobacco industry paid to publish the 'Frank Statement to Cigarette Smokers' in hundreds of US newspapers. It stated that the public's health was the industry's concern above all others and promised a variety of good-faith changes. What followed were decades of deceit and actions that cost millions of lives. In the hope that the food history will be written differently, this article both highlights important lessons that can be learned from the tobacco experience and recommends actions for the food industry (Brownwell, Warner, 2009, p.259).

In many ways, the power of US food and beverage companies overseas is greater than tobacco companies, since the former form a critical element of exports and foreign aid. The political nature of nutrition policy became starkly clear when US President George W. Bush's Department of Health and Human Services went after the World Health Organization's 2000 recommendations, which were set for adoption in 2004. The US administration rejected the latter's set of policy guidelines, arguing that the solution rested with personal responsibility and not with government policies (CSPI, 18 Feb. 2004; Popkin, 2008, p.134-135; Gratzer, 2005).[5] Similar attacks came from representatives of the sugar industry and manufactured food interests in Europe, Asia, and even South Africa (Popkin, 2008, p.134-135). The underlying thesis of the attacks was a neo-liberal premise that there is no such thing as public health, only individual choice. The parallels to US government opposition to United Nations resolutions in favor of breastfeeding campaigns – a project closely linked to support for infant formula – are striking (Jacobs, 8 July 2018).

In conclusion, historical consciousness can form a key ingredient in shifting foodways and state food policies. For example, many groups committed to reversing the negative effects of the nutrition transition have employed historical memory to reshape attitudes towards traditional and healthy diets. Many of these efforts situate the return to "traditional" diets with larger socioeconomic efforts to achieve food sovereignty (Beckford, 2012). Groups like the Sin Maiz No Hay País organization in Mexico, and the Abuelas films sponsored by

the Ecuadorean State, Tara Rodriguez's El Departamento de Comida in Puerto Rico, and the Brazilian Movimento dos Trabalhadores Rurais Sem Terra all operate with the central goal of food sovereignty. These groups recognize that the nutrition transition did not occur overnight and its ill effects, likewise, will take decades to reverse.

NOTES

[1] Raschke and Cheema (2007) is an essential model, even if the East African context is radically different in many respects from the region under consideration here. For Britain, see Otter (2012).

[2] I am indebted to Jorge Garcia Nunez, Universidad San Francisco de Quito, for this suggestion.

[3] For an elegant and literary treatment of the relationship between globalization and obesity, see *El peso de la tentación* (Shua, 2007).

[4] One excellent study that briefly discusses these early works by Chávez and his team is Bastarrecha-Sosa, Laviada-Molina, Vargas-Ancona (2001).

[5] For a view of the declassified memorandum sent to the WHO in the days leading up to the vote on approval of the organization's report and recommendation, see: <http://www.commercialalert.org/bushadmincomment.pdf>.

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