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Reconsidering acculturation in dietary change research among Latino immigrants: challenging the preconditions of US migration

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Abstract

BACKGROUND—Dietary changes among Latino immigrants are often attributed to acculturation. Acculturation-diet research typically assumes that migration to the US is necessary for negative dietary changes to occur in Latino immigrants' diets.

OBJECTIVE—The goal of this article is to demonstrate that extant acculturation research is not adequate in capturing changes in Latino immigrants' diets. This is due to the role of globalization and transnational processes in modernizing their diets in Latin America.

DESIGN—Utilizing an interactionist cultural studies approach, this exploratory situational analysis based on 27 in-depth interviews with Latino immigrants, nutrition reports, and transnational food companies' websites, examines how Latino immigrants were already engaging in negative dietary practices in their former country.

RESULTS—Latino immigrants who resided in urban areas in their former countries and migrated to the US on or after 2000 were fully engaged in negative dietary practices prior to migration. Such practices included consuming food outside of the home and integrating processed food into their cooking. Their dietary practices were also informed by nutrition discourses. The *modernization of food production and consumption* and the *transnational transmission of nutrition* are transnational processes changing Latino immigrants' diets prior to migration.

CONCLUSION—Researchers should approach the study of dietary change among Latino immigrants in the US through a transnational perspective in order to avoid overlooking potential confounders such as current food insecurity, new socioeconomic positions as undocumented, low-income persons, and increased hours worked outside of the home.

Keywords

acculturation; diet; globalization; transnational approach; Latino immigrants

Introduction

The diets of Latino immigrants became an object of study because they were perceived to be a possible explanation for Latino immigrants' "healthier" statistics (Markides and Coreil 1986; Scribner 1996). Today, however, diet is examined among Latino immigrants in the US because Latinos have a higher prevalence of overweight/obesity than non-Hispanic Whites (Flegal et al. 2010; Ogden et al. 2010) and Latinos are now the largest ethnic minority in the US. This is important because overweight/obesity is a risk factor for many

chronic diseases such as diabetes, cardiovascular disease, and certain cancers (Ayala et al. 2008; Pérez-Escamilla 2011).

Researchers assert that Latino immigrants adopt negative dietary practices with more acculturation (Aldrich and Variyam 2002; Neuhauser et al. 2004; Edmonds 2005). Negative dietary practices consist of consuming a diet high in fat, low in fiber, with less fresh fruits and vegetables, and with the regular consumption of processed snack foods (Popkin 2001). In contrast, some report that Latino immigrants eat healthier with more acculturation (Otero-Sabogal et al. 1996). However, Akresh (2007, p. 404) found Latino immigrants' dietary changes resulting from US migration to be "positively correlated with both better and worse health." Common to acculturation-diet research is the assumption that immigrants consumed healthier diets prior to migration (Mainous et al. 2006; Ayala et al. 2008; Pérez-Escamilla 2011). Researchers from the UK (Hartwell et al. 2011) and Europe (Darmon and Khlat 2001; Nicolaou et al., 2006; Méjean et al. 2008) often examine dietary changes among their immigrant populations through acculturation. Similarly, their research assumes that their immigrants adopt negative Western dietary practices from their host society. Beyond the limitations with measures (Hunt, Schneider, and Comer 2004; Pérez-Escamilla and Putnik 2007) and the applicability of the theories (Park 1995; Berry 1996), acculturation-diet research assumes that migration to Western countries is necessary for negative dietary changes to occur in Latino immigrants' diets.

The relationship between acculturation and dietary change remains unclear and may not fall into expected epidemiological patterns, particularly that of the nutrition transition. The nutrition transition captures the phenomenon in which the prevalence of overweight/obesity is surpassing malnutrition in lower-to-middle income countries (Popkin 2001), particularly in Asia, Africa (Delisle 2010), Latin America (Rivera et al. 2004), and the Middle East (Satia 2010). The nutrition transition is partly attributed to the global availability of energy-dense, nutrient-deprived, processed foods in these regions (Popkin 2001; Rivera et al. 2004; Caballero 2005; Hawkes 2006). Specifically, in Latin America, there is much variability in the diffusion of food-related transnational corporations, foreign direct investment in food processing, and the local production of processed food. There is less research that actually describes how the increased presence of processed foods has affected diets in countries other than Mexico (Chavez et al. 1993; Pilcher 2002; Leatherman and Goodman 2005) and Peru (Mayer 2002). There is also evidence demonstrating the exponential proliferation of supermarkets in both rural and urban regions of Latin America (Reardon and Berdegue 2002).

The goal of this article is to demonstrate that extant acculturation research is short of capturing Latino immigrants' dietary changes as Latino immigrants engaged with negative dietary practices prior to migration, partly due to the *modernization of food production and consumption* and the increasingly *transnational transmission of nutrition*. I propose that researchers use a transnational approach (Appadurai 1996; Ong 1999; Morawska 2003; Brettell 2010) to examine dietary changes because multiple modernities exist across global communities and Latino immigrants are able to reenact everyday cultural practices across borders. I examine dietary changes through a transnational perspective by drawing from a larger exploratory study examining the lay health practice of *comiendo bien*, or *eating well* (Martinez 2010), among a diverse group of Latino immigrant families living in San Francisco.

First, I provide an epistemological justification for approaching *comiendo bien*, or Latino immigrants' healthy eating practices, through interactionist cultural studies (Denzin 1992) and situational analysis (Clarke 2005). Second, I discuss how these immigrants' pre-immigration diets challenge the migration assumptions often found in acculturation-diet

research, particularly, that Latinos have healthier dietary behaviors prior to settling in the US. Here, I present how nutrition discourses shaped these Latino immigrants' dietary beliefs before arriving to San Francisco. I conclude by recommending that researchers examine Latino immigrants' dietary changes through a transnational approach and suggest measures for doing so. A detailed ethnographic account of the discourses informing the performance of *comiendo bien* is beyond the scope of this paper, but is weaved into pertinent areas of the manuscript.

Methodological approach

Interactionist cultural studies

Unlike other sociology of food projects conducted through a functionalist, structuralist, or post-structuralist approach (Mennell, Murcott and van Otterloo 1992; Lupton 1996), I utilized an interactionist cultural studies (ICS) approach (Denzin 1992) to examine the lay health practice of *comiendo bien*. ICS is an expansion of symbolic interactionism that addresses criticisms that it is astructural, apolitical, and value-laden. An ICS approach consists of examining how objects are given meanings and enacted through these meanings by critically engaging questions of subjectivity, politics, embodiment and emotion, while also examining how media information and other objects are used to shape meanings and cultural acts.

The emphasis of ICS is to understand how cultural products and texts are constructed, produced, and consumed. I believe that food and healthy eating are cultural constructs or recalcitrant symbols and representations that shape everyday life for Latino immigrants. *Comiendo bien* is a way these Latino immigrants *practiced* health in Latin America and in San Francisco, using objects (e.g., stove, food, spices, etc.) and discourses (belief systems, health information, media, etc.) available in both regions (Martinez 2010). This project proceeds through this interpretive approach acknowledging that no single discourse, social position, and/or geographic location can determine how people enact representations, as people reflexively interpret and perform actions in heterogeneous ways. For this reason, the goal is not to produce generalizable results, but to create a comprehensive conceptualization that addresses the issue under study (Charmaz 2006). Despite these complexities, one can still uncover similar processes in the way people act (Strauss 1993).

Parallels between interactionist cultural studies and situational analysis

Hunt, Schnieder, and Comer (2004) recommend that researchers examine cultural change in relation to health behaviors through qualitative research. So, this current project is an exploratory situational analysis (Clarke 2005) describing *how* Latino immigrant families practiced *comiendo bien* before and after migration. As a supplement to constructivist grounded theory (Strauss and Corbin 1997; Charmaz 2006) the emphasis in situational analysis is to examine how action is created and transformed. Examining Latino immigrants' diets as a social process presents the participants as an ethnic group that performs healthy eating through ethnicity, rather than a list of attributes. Furthermore, situational analysis is congruent with an ICS emphasis to study media and objects (i.e., non-human elements) used to shape meanings and facilitate cultural acts because it examines social phenomena through the human, nonhuman, and discursive elements present in a situation. To do this, one is encouraged to examine multiple data sources, acknowledge heterogeneities in one's data, and acknowledge that participants are embodied and situated (Clarke 2005). Ethnographic data alone, such as interviews and field notes, could not fully recognize the structural and historical elements present in constructing *comiendo bien*. The additional data sources will be discussed below.

Data collection and data sources

To examine *comiendo bien* through ICS, I conducted 27 in-depth interviews and over seven months of participant observation with 15 Latino immigrant families living in San Francisco, California between 2008 and 2009. Families, in their multitude of formations (e.g., single parent, step-family, adopted) were included in this sample because food is central to family life, culture, and wellbeing (Horowitz et al. 2006). A purposive sample of families from Mexico, Central America, and South America were recruited to include parents from different countries and ages (Table 1). The goal was to recruit at least two families from each of the foreign-born Latino subgroups represented in San Francisco, including Mexicans (41% of this population), Salvadorans (22%), and other Central Americans, from Guatemala, Honduras, and Nicaragua (21%). South Americans were also in this sample although they are less than 3% of the total Latino/Hispanic population in California (ACS 2006). The UCSF Committee on Human Research approved the data collection and consent process.

Two in-depth interviews with key informants, and three occasions of participant observation with each family provided information about families' meals and their representation of healthy eating. Three Time 2 interviews could not be completed because the key informants' phones were disconnected. The interviews took place in Spanish and were 60–90 minutes in length. The median time between Time 1 and Time 2 interviews was three months. All interviews were audio-recorded and then transcribed verbatim in Spanish. Key informants were those persons 18 years or older, responsible for purchasing and preparing food for their family, and who migrated from one of the 21 Spanish-speaking Latin American countries. The family cook was considered a key informant because they seemingly knew what their family members liked to eat and executed ethnic foodways through migration and settlement.

Participant observation augmented interviews. Since this was a situational analysis utilizing an ICS approach, I focused on examining culture as arising from interaction, but not devoid of history or shared collective meanings. This was also a food studies project, so I integrated Goode, Theophano, and Curtis' (1984) framework for examining continuity and change in ethnic foodways by comparing the key informants' ideal narratives of eating well to their actual practices. For example, key informants may have stated during their interviews that they never bought processed foods, but then packaged foods were spotted on top of their refrigerator. One visit was dedicated to observing each family during a time when a meal was being prepared and shared. This visit provided information about the way maternal cooks negotiated family members' food preferences and how they integrated lay and nutritional health beliefs into their cooking practices and final menu. Observation of the family meal always took place after completing key informant interviews to gain the families' trust.

During the observations it was important to identify the produce, spices, and processed food visible in their cupboards and refrigerators, and those items from their former countries. I asked family members *who* ate the food and *how* and *when* it was consumed before the actual meal was served. Field observations were handwritten immediately after leaving the family's home. These field notes were soon transcribed into a text document for later coding in *Atlas.ti 5.2*.

I used a semi-structured interview guide to gather information about the family's a) migration trajectory to the US, b) prior exposure and orientation to the US, c) health, eating and food, and d) cooking and food preparation. These areas were chosen to address the main aims of the larger project, which were to: 1) provide a processual description of the lay health practice of *comiendo bien* among 15 diverse Latino immigrant families living in San

Francisco; and 2) identify the transnational situations and processes that sustain and transform this practice. As data collection continued, other clarifying probes and interview questions were added that came to be important such as the types of stores people purchased groceries in their former country and San Francisco.

To deal with the difficulty of recruiting immigrants, I contacted six non-profit organizations in San Francisco serving Latino immigrants to facilitate study recruitment. Two non-profit organizations, *Mujeres Unidas y Activas* (MUA) or United and Active Women, and CARECEN (Central American Resource Center) were most supportive of this project. These organizations are spaces that Latino immigrants in San Francisco trust and actively seek social, legal, and health services. By posting flyers about the study in these organizations, recruitment was not limited to the most vulnerable immigrants, either. Flyers were also posted in other businesses in the Mission District, which has the highest concentration of foreign-born Latino residents in the City of San Francisco (ACS 2006).

This recruitment strategy led to a sample of fifteen families representing six Latin American countries: El Salvador ($n=3$), Guatemala ($n=1$), Honduras ($n=1$), Mexico ($n=6$), Nicaragua ($n=1$), and Peru ($n=3$). There were five families in which parents were from two different countries, México and El Salvador ($n=3$), México and Peru ($n=1$), or Guatemala and Peru ($n=1$). Eight of the parents entered the US between 1992 and 1999, while seven of the parents entered between 2000 and 2008. The key informants who entered the US before 1999, I grouped as “earlier immigrants,” while those who arrived in and after 1999, I grouped as “recent immigrants.” Eighty-six percent of the mothers had worked in Latin America, while 50% of the mothers exclusively from Peru and Central America, had a post-secondary education and were in professional occupations such as marketing associates, bank tellers, and schoolteachers.

Secondary data sources were “theoretical samples” (Glaser and Strauss 1967) of federal annual reports on nutrition, between 2000–2007, from the National Institute of Public Health (INSP) in Mexico and the Nutritional Institute of Central America and Panama (INCAP), and websites of multinational food companies. Theoretical sampling is a technique developed by Glaser and Strauss (1967) in which the researcher chooses new cases to gain a better and deeper understanding of an emergent phenomenon under study. For example, the nutritional archives were included in this analysis because the key informants, or their family members, participated in nutrition interventions in Latin America. I used these reports to discern whether the nutrition interventions and fast food in Latin America resembled those in the US. This is congruent with the conceptualization of grounded theory in which theorization and analytic questions are developed abductively from the data.

Transnational food companies’ websites were theoretically sampled in order to capture processed foods found in the participants’ home during the interviews or observations. The foods identified in the family’s homes were searched on the Internet to identify if the food products were from European, US, or Latin American transnational food companies. I recorded the origin of the food product, its ingredients, its distribution in other countries and how it was marketed based on the company’s website or the webpage of a particular product. Therefore, the participant observation induced theoretical sampling and informed the overall analysis by providing information about how families consumed and used transnational products and their availability in both regions. Both the nutrition reports and the transnational food websites facilitated identifying structural and historical elements informing the transnational construction of *comiendo bien* among Latino immigrants.

Analysis

Atlas.ti 5.2 was used to store and find codes and categories labeled onto the interview transcripts and field memos, as well as to map relationships between the codes, categories, and cases. Codes, categories, interview excerpts, and other texts were primarily coded in Spanish and later translated into English. Data were systematically analyzed using constructivist grounded theory techniques (Strauss and Corbin 1997; Charmaz 2006). The first stage was open coding of the initial interview transcripts, field notes, reflexive memos, and archival memos. Archival memos described the nutritional reports and the websites.

Having a set of codes consistently identified in the data, codes with similar content were collapsed into concepts in the second stage. In the third stage, concepts that could be used to describe or explain an action or condition were grouped as categories. Throughout the analysis, situational maps (Clarke 2005) were created to identify all of the human, nonhuman, discursive elements that were present in the data. Categories were used to analyze the ethnographic and textual materials together. Categories were used to describe how the data converged or diverged. For example, comparisons were made between key informants, and their family's foodways compared to economic information available about food and transnationalism in their country.

Once most of the ethnographic data collection was complete, data were selectively coded with the categories resulting from axial coding. Relationships were drawn between categories to conceptualize what was part of *comiendo bien*. Social worlds/arenas maps facilitate meso-level analysis by capturing activity between collectivities (Clarke 2005). For example, I drew a map to show how food and economic arenas shape Latino immigrants' diets. Figure 1 provides an example of my coding scheme. Analytic memos at this stage were drafts of the future narrative. There was a set of social processes, categories, and relationships that I worked with to develop my grounded theory. The ethnographic and textual data were "integratively analyzed" (Clarke 2005, p. 176) to synthesize the economic, discursive and cultural elements involved in the production and transformation of *comiendo bien* among Latino immigrants.

Results

The findings challenge assumptions in acculturation-diet research that a) migration to the US is necessary for Latino immigrants to develop negative dietary practices, and b) pre-immigration diets were healthier. Immigrants migrating after 1999 and coming from urban areas regularly consumed global fast food and processed food, and their diet was informed by nutrition discourses. However, upon observing the preparation of the rural immigrants' meals and documenting the modernized changes they perceived in their food environments they, too, were engaging in some negative dietary practices in their former countries that would be indicators to researchers of US acculturation. Global and transnational processes can be linked to these families' negative dietary practices in their former countries and in San Francisco.

The modernization of food production and consumption

The modernization of food production and consumption represents transnational processes that modernize food acquisition, production, and consumption across Latin America and the US, but not necessarily at the same pace. The modernization of food production signifies the creation of mechanically-produced and chemically-enhanced food for the purposes of industrializing and rationalizing food systems and facilitating the hasty lifestyles of an active workforce. It is important to note that transnationalism is not limited to foreign direct investment (FDI) in Latin American food production or the expansion of processed food to

international markets. It also encompasses the appropriation of modernized production by entrepreneurs or government agencies in the countries represented in this sample.

The modernization of food consumption refers to the use of globally- or locally-produced processed food to prepare meals or the consumption of food prepared outside of the home. The changes in Latin America's food system and subsequent dietary changes varyingly represent the tenets of modernity (Hamilton 1995), particularly scientific advancement, rationalization, industrialization, and individualism. Here we focus on the integration of processed foods into recipes, the consumption of foods outside the home, and the adoption of rationalized production of food at the local and national level.

For example, family cooks utilized processed food to prepare their "ethnic dishes" without being conscious of it. In her initial interview Vicky¹, a Mexican immigrant from a town in Durango, said her mother did not need to season her dishes because the food was so "natural" and flavorful in their village. However, while Vicky was preparing a meatball stew during a home visit, she seasoned it with Knorr beef bouillon cubes and Del Monte canned vegetables. After adding these ingredients she shared how pleased she was to be able to find the Knorr bouillon in San Francisco. Likewise, 73% of the participants' family recipes utilized a flavor enhancer, canned or frozen food, despite claims that they ate "unprocessed" food in Latin America. The family cooks and some of the husbands defined "processed food" as food that was hormonally-, chemically-, or nutrient-enhanced whole food. Even packaged whole foods such as canned and frozen produce was considered unnatural and hence, unhealthy. The cooks were often unaware that many of their personal recipes required a "processed" food of some sort. Only four of the cooks during their interview indicated that they regularly consumed processed food in their former country such as powdered milk, cereal, juice, sweetened carbonated beverages, and flavored yogurts.

Interviews demonstrated that all of the urban immigrants ate transnational fast food on a regular basis. In contrast, rural immigrants may have never eaten at restaurants, but they did consume street food. Local street vendors in rural villages were not short of producing interpretations of US fast food such as pizza, fried chicken, and hamburgers. After ten years, Malena returned to her pueblo, south of Guadalajara, and noticed that there were more street vendors and families eating dinner outside of the home.

Malena: Like during the daytime, it remains the same, the process of going to school, making tortillas and making the other thing, and then that they make it as a dinner.

Interviewer: Oh, yes? Instead of cooking?

Malena: Instead of cooking the traditional, what people would make before, a small hominy soup, or something like that, [or] that one goes to the bakeries to eat hominy soup...Now, no. Now, you can go and eat your hamburger, a pizza. It is very different from before.

Likewise, when Maricruz returned to her pueblo in Tinga María, Perú, after an eleven-year absence, she immediately noticed the growth of street vendors and her family's new eating habits.

Oh! I think I found it different... lots of businesses, lots... the food, too. Lots of food, lots of small business people who sell food, restaurants. That is what I found. And like I told you, also over there, the food they sell as traveling food vendors. They sell chicken from the grill ...[Eating street food] is also not contested. They

¹All names in the manuscript are pseudonyms.

only ate rich things like I told you, grilled chicken, tacacho [banana fritter with pork cracklings]. That is what I really saw, that they ate pure grease!

Although the food Maricruz described from her pueblo was not a replica of US fast food, those street vendors were using the tenets of efficiency and replicability from an economic discourse, resembling McDonaldisation (Ritzer 1993) to provide cheap food fast. The transnational process of adapting McDonaldisation does not stop with street vendors. As the participants mentioned, there were Latin American entrepreneurs that have adopted this discourse to create fast food restaurants like Guatemala's *Pollo Campero*, Nicaragua's *Tip-Top*, and Peru's *Bembo*.

All of the recent immigrants from urban environments ate fast food weekly. Mariela was a marketing associate in Lima. While she judged the US diet as full of "junk food," she revealed that she consumed Kentucky Fried Chicken in Peru.

Mariela: ...because the hamburgers, the French fries, the fast food, the junk food and the...

I: But, they have those foods in Peru, too?

Mariela: Yes, but they eat that during the weekend. For example, you can go eat a McDonalds or a Kentucky but on a Sunday, and you go on an outing with your children. But, Monday through Friday the people cook, the grand majority of the people cook. A Kentucky or a McDonalds it is like going to [silence]... because it is very expensive in Peru.

Mariela, like so many of the parents in this sample, minimized her consumption of fast food in Latin America by indicating that prices in Latin America limited family outings to the weekend. Consuming fast food once a week was a regular pattern of consumption that continued in San Francisco. These participants condemned the consumption of any food prepared outside the home for being unhealthy or unsanitary, but still ate fast food.

It is that in Perú the doctor does not prohibit [fast food]. Here, yes, because of the overweight, whatever, no? But in Perú they do not prohibit that from you. On the contrary, in Peru the doctors tell you: "Go to Kentucky and distract your child," because in all of the Kentuckies there are games, and, "Go to McDonalds because there are games." So, the children eat their potatoes, and their fries, and they eat and they go to their games and play.

Recent immigrants' consumption and food preferences were also modern because their food memories are that of fast food restaurants.

I: Tell me about your favorite restaurants in Honduras.

Maria: They were fast foods and continue to be that here, Pizza Hut.

I: Oh yeah? You like Pizza Hut? That is your favorite restaurant in all of Honduras?

María: In the whole world!

Maria, like other participants, acquired the preference for fast food in Latin America, not from her settlement to San Francisco. In Latin America, most of these families ate a combination of homemade meals prepared with processed food and fresh ingredients, national dishes, and fast food.

The increase of income during the past two decades in developing countries has encouraged transnational food corporations to expand to Latin American markets (Frazao et al. 2008). Free trade agreements and foreign direct investment by agribusiness have increased the prices of staples such as wheat, corn, and beans in Latin America, making the prices of

processed food lower (Chavez 1993; Hawkes 2006). The results demonstrate that healthier pre-immigration diets depended on the parents' year of migration and how isolated a rural settlement was from businesses and technologies. Nevertheless, the modernization of food production and consumption may continue to support unhealthy diets among poor Latin Americans if local produce continues to be primarily produced for export (Hawkes 2006). Latino immigrants' pre-immigration diets need to be assessed if we want to discern how dietary changes while living abroad affect health.

Researchers may not be able to decide whether acculturation produces healthier or deleterious diets because some Latino immigrants intentionally abandon the consumption of salty snacks, carbonated beverages and fast food living in the US. Although, most families continued with similar dietary practices in San Francisco, some restricted their consumption of processed and fast food in San Francisco because of a shared discourse representing US food and drink as "fattening." Particularly, recent immigrants shaped their generalizations of US food based on in-person, e-mail, and phone communication with family and friends living in the US. Despite watching the Food Network in Latin America, several of the recent immigrants imagined the US diet consisting solely of processed food and fast food. For example, Denise from Nicaragua obtained her information about the US diet from her friends: "Oh! In other countries they say that the United States is a country which all [food] makes you fat, even the water that you drink. So, one comes here to take care of themselves." This diasporic discourse, via transnational cell phone and Internet usage, mediated whether families continued their previous negative dietary practices in San Francisco. Key informants' often attributed their family's weight gain in San Francisco to US food being fattening.

Discourses about obesity-laden US food are created within diasporic, transnational engagement and can be found in popular media and in public health. Figure 2 is a visual from a pamphlet distributed to patients in Mexican clinics intended to raise awareness of health issues that migrant Mexican families can develop during their stays in the US (INSP 2006). One of the warnings it places is on reducing the consumption of fats and sugary drinks in order to reduce the incidence of overweight/obesity. The image INSP provides represents a fast food meal as American and associates it to overweight/obesity. Regardless of socioeconomic or rural/urban origins, this discourse had the potential to transgress pre-immigration unhealthy diets. There warrants further investigation about the influence transnational diaspora has in maintaining or changing immigrants' dietary practices.

Transnational transmission of nutrition

Nutrition discourses are those collectivities, institutions, and companies that *appropriate* nutrition science to legitimate "healthy diets," that provide nutrients to the body or a specific body part. Nutrition discourses are increasingly becoming a transnational process because they manifest themselves through different institutions to produce parallel public health interventions, fad diets, and dietary beliefs across borders and diaspora. Nutrition discourses are manifested through public health agencies, the popular media, and the food industry. Acculturation-diet research often concludes with recommendations for practitioners to develop interventions that encourage Latino immigrants' "traditional" diets (Ayala et al. 2008). Traditional diets are assumed to be informed by lay knowledge and healthier than the US diet. This section is meant to demonstrate how the transmission of nutrition discourses also modernized the participants' eating habits and dietary beliefs in Latin America.

In 1993, Chavez and colleagues documented an epidemiological paradox in Mexico, in which polarities of underweight and overweight existed, and non-communicable chronic diseases were increasing in the urban centers and northern regions of Mexico. Some public health interventions currently taking place in Latin American countries are meant to reduce

or prevent overweight/obesity (J.A. Rivera Dommarco, personal communication, November 11, 2008). Some of the interventions are even similar to those that the participants encountered in San Francisco. For example, the children of recent immigrants from Mexico or Peru participated in an intervention in their former country, which prohibited the consumption of junk food and unhealthy meals in school.

Both INSP and INCAP use similar strategies as the US to reduce negative dietary habits that cause overweight/obesity. This may be because USDA standards are required to justify the effectiveness of interventions or protocols that are being reviewed by international funders, like the World Bank or USAID. The transnational transmission of nutrition is modernizing Latin American public health because scientists were already creating scientifically informed solutions to address the modernization of Latin American diets. If US health researchers were more familiar with epidemiological trends in Latin America, they would reconsider their recommendation for Latino immigrants to revert to their “traditional” diets.

Scientific breakthroughs in nutrition travel through international media circuits and industrial outlets of communication. These pieces of scientific information often spur the creation of fad diets and the creation of nutritional supplements and functional foods, which were part of some of these participants’ experiences abroad, whether in rural or urban environments. For example, Mariela was obese when she lived in Lima. She started, and continues to follow, a low-carbohydrate diet that she learned about from health segments of a news program.

I started to lose weight and from there I started to eat vegetables, pure vegetables. I started to eat pure vegetables without salt, only with lemon...I did not eat rice twice because Peruvians, we eat lots of potatoes and rice... Because clearly, the mixture of carbohydrates, that is what makes you gain weight.

Although Mariela was adhering to a fad diet, it is adapted from nutritional knowledge that the cessation or restriction of carbohydrates causes significant water weight loss. Interestingly, Mariela’s adherence to a low-carbohydrate diet also transformed the commensal practice of *comiendo bien*. She hired a cook to prepare her family’s meals while she ate her own. The transnationality of fad diets can modernize Latino immigrants’ commensality prior to living in the US.

Scientific breakthroughs in nutrition can be appropriated to create nutraceuticals. Nutraceutical companies produce supplements and functional foods that are supposed to provide health benefits, prevent disease, or treat an illness. The consumption of these functional foods are also a way that Latinos were integrating processed foods into their diets. Lorena, a recent immigrant from Michoacán had been treating her GERD with Herbalife nutraceuticals. Herbalife not only claims to provide the body with “cellular nutrition” but also has behavioral interventions in the form of nutrition clubs, where customers tell personal success stories and consume supplements and meal replacement shakes collectively. From visiting several of these nutrition meetings, I learned that Lorena and her colleagues started using Herbalife in their respective Latin American countries.

Similar to the Mariela, Lorena’s adherence to Herbalife’s diet and supplements re-conceptualized her beliefs about what makes food healthy:

But I ate to fill myself. I would finish my food to not feel hunger, not because it would simply be to benefit and nourish my organism ...If I ate pancakes, two eggs, and three slices of bacon for breakfast, I would leave that for my nutrition of 114 nutrients.

Lorena evaluates the health benefits of any food by how much fiber, micronutrients and macronutrients it provided her body, not simply because it satiated her. The transnational consumption of nutraceuticals allows Latin Americans who can afford it to convert their notions of healthy eating to one that is scientific and rational.

It may appear as if Latino immigrants had healthier diets in Latin America, but this cannot be proven if researchers do not collect data about Latino immigrants' pre-immigration dietary practices. This paper demonstrates that Latino immigrants' preparation of meals, consumption of food, and rationalization of healthy food, are transnational in nature. Many of these Latinos were already engaging in negative dietary practices prior to their migration, as shown in the modernization of food production and consumption. Moreover, their previous exposure to nutrition created modernized approaches to evaluating food. Interestingly, Latinos' diasporic engagement before immigration can be a potential force in mediating their dietary practices and their preconceived notions of US food.

Conclusions and recommendations for examining dietary changes among Latino immigrants

In this situational analysis of *comiendo bien*, or eating well, I discovered how Latino immigrants' eating practices were dissimilar to assumptions often made in acculturation-diet research, particularly, that they come to develop negative dietary practices in the US and that they possess "traditional" dietary beliefs and practices. These family's pre-immigration experiences reveal that similar human, non-human, economic, and discursive elements are present in both San Francisco and Latin American localities that can shape dietary practices, such as the presence of fast food, the increased accessibility to processed and convenience food, and nutrition. Examining dietary change among Latino immigrants cannot be limited to ethnic affiliation, language, and time in the US.

Ethnic affiliation is used to measure immigrants' likelihood to associate with those from their ethnicity, or who speak their language. The idea being that those who primarily associate and fraternize with English-speaking Americans are more likely to learn negative dietary practices. However, these immigrants had few opportunities for cross-cultural engagements with other English-speaking Americans as they often worked low-skilled, low-wage labor for documented Latinos and rarely spoke or understood English (Table 1). These families mostly engaged with other Latino immigrants from other countries because they shared a similar language and shared common goals for living in the US. Furthermore, their exposure to US food and Westernized dietary practices does not start or stop with fraternizing with members of the host society.

If family cooks used the same Knorr flavor enhancers, refined rice flour, Klim powdered milk, or Kellogg's Frosted Flakes in their country, it does not require them to be more or less acculturated to US society. From a transnational perspective the consumption of fast and processed food among these families was a learned practice in their former country. For example, all of the key informants that had lived in the US for seven years or less at the time of their interviews stated eating fast food regularly in their country. It would be more reasonable to think that length of time in the US is associated with *reinforcing* negative dietary practices. Many immigrants work multiple part-time jobs or demanding jobs that do not allow them meal breaks. In turn, replacing meals with convenience foods may become more routine.

The more significant indicators are *when* the participant migrated to the US, where they lived in Latin America, and their socioeconomic position pre-immigration. During the 2000s, Latin America experienced a wave of technological, information, and commodity

globalization that affected the procurement and consumption of food (Hawkes 2006; Frazao et al. 2008; Gereffi et al. 2009).

Rarely have scholars examined immigrants' cultural adjustment and health through a transnational approach, with few exceptions (Hilfinger-Messias 2002; Colby et al. 2009). The transnational approach is an attempt to humanize dominant macro-economic (Wallerstein 1974; Caro et al. 2004) and political approaches (Faist 2001) to globalization by examining the relationship between larger economic and political activities to people's everyday lives (Appadurai 1996; Ong 1999; Brettell 2010). A transnational approach assumes that economic globalization, development, democracy, and technological advances travel unevenly across borders, but have the potential to produce shared, ethnic activities. These shared activities among diasporic communities are reproducible through modernized technologies, as well as health, economics, politics and diasporic exchange between the recipient city and the former country. Projects should be open to novel transnational processes identified in their data sources.

Although examining a diasporic community between two nation-states produces pertinent information about how the flow of remittances affects local consumption (Schouten 2003; Colby et al. 2009), a transnational approach identifies how globalization and transnational flows create global locales that share modern ways of communicating, mass-producing, purchasing, preparing, and consuming food. A transnational approach also identifies how global and transnational flows create divergences and resistance in transnational cultural practices like *comiendo bien*. Scholars have demonstrated transnationalism and assimilation happen simultaneously, albeit unevenly, among immigrant enclaves and their families abroad (Morawska 2003). This complicates how acculturation approaches immigrants' adjustment to the host culture.

The most comprehensive model of dietary change is Satia-Abouta and colleagues' Model of Dietary Acculturation (2002). Their model would be transnational if the variables assessing "Exposure to Host Culture" (p. 1107) would also assess: 1) pre-immigration changes in psychological factors and taste preferences, and 2) environmental factors in immigrants' former country. In conjunction with their variables, I recommend additional variables listed in Table 2. These variables were chosen because they can clarify conundrums in acculturation-diet research, in particular if acculturation worsens immigrants' diets (Pérez-Escamilla 2011).

If one is compelled to utilize acculturation then examine it through "pragmatic acculturation" (Quah 2010), by which people adapt to the host society to *enrich* their own cultural practices and their movement in everyday institutions. Transnationally similar diets are not an indication of US cultural homogenization because the dietary changes that these families experienced living in San Francisco were changes that resulted from interacting with multiple private and public institutions, as undocumented immigrants of color with low-incomes. For example, food insecurity encouraged them to eat more processed food distributed at food banks and the structure of their workday necessitated eating outside of the home. One cannot merely assume that dietary changes are attributed to acculturation of US diet and lifestyle behaviors.

Limitations and future directions

This study is a preliminary construction of how Westernized, negative dietary practices are transnational among a diverse group of Latino immigrants in San Francisco. The categories presented perhaps do not provide an exhaustive list of transnational processes at the macro level. Presenting them is beyond the scope of the data collection strategies and goals in this study. However, after a thorough literature review on the economic development of Latin

American food consumption and agribusiness, I found limited data on how FDI of food processing, the growth of local food processors, or the increase of local chain retailers in Latin America has affected diets at the household level (Phillips 2006). Hopefully, this exploratory study provokes such research.

Initially, I assumed that major differences among families would lie between countries and between the parents' different age groups. There were more similarities among urban, more educated parents, regardless of nation. Since most people in this study were from higher socioeconomic positions and were urbanites prior to migration, their experiences may not reflect the data that largely represents low-income Latinos in the Southwestern US (Ayala et al. 2008). I also found similarities between the Mexican and Peruvian rural immigrants' accounts of changes to their villages' diets and food environments after the year 2000. Since most modernized changes to the food system and technology happened within the 1990s in Latin America (Reardon and Berdegue 2002), it is no wonder those participants from rural areas discovered changes to their previous food systems and their families' dietary practices. These observations should not be ignored as it may indicate that Western countries in the future may receive more Latin American immigrants with more pronounced modernized dietary practices. Nonetheless, there is a need to examine how the rapid proliferation of modernized food systems in rural Latin America is transforming the local diet. These projects would create a baseline of data needed to further test how these transnational processes create similar food environments.

This study has wider implications for the examination of other immigrant populations in other Western countries because acculturation-diet research in these countries also assumes that the healthy migrant hypothesis is attributed to healthier pre-immigration diets. The immediate empirical resolution would be to assume that immigrants had exposure to Western culture and diet prior to migration. Researchers should assume that global and transnational flows of goods, services, knowledge, and practices move across borders and manifest globally to produce similar situations and subjects. It may not be completely erroneous to assume that immigrants from lower-to-middle countries consumed less processed and fast food in their former country, but the modernization of food production will continue to support negative dietary practices among persons living in the developing world. The nutrition transition in multiple continents may indicate that transnational processes are also transforming the diets of other immigrant populations in similar ways pre-immigration. Examining immigrants' diets in Western countries can lead to fruitful information about ways to prevent chronic illness, but we must keep in mind that similar environmental risk factors may have already affected immigrants' diets in their former countries.

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Key Messages

- Challenges the assumption in acculturation-diet research that migration is a precondition to developing unhealthy diets.
- Demonstrates how multinational, Latino immigrants' food and health beliefs were modernized in Latin America.
- Identifies economic and discursive processes modernizing diets transnationally.
- Recommends approaching immigrants' dietary changes through a transnational approach, instead of acculturation.

Figure 1.
Coding scheme example
The transnational modernization of food production in Latino immigrants' negative dietary practice

Figure 2.

Illustration of Overweight/Obesity Warnings to Migrant Mexican Families

Source: Cuida tu familia: Información para la familia migrante. (2006). Instituto Nacional de Salud Pública, México.

Table 1

Key Informant and Family Demographics

Key Info *	Country	Time in US	Family Size	Marital Status	Partner's Country	Single-Parent	Rural/Urban	English	Key Informant Education
Mariela	Peru	4 months	2	Divorced	Peru	yes	Urban	N	College
Maria	Honduras	1 year	3	Partnered	Honduras	no	Urban	N	Some college
Margarita	El Salvador	2 years	5	Married	El Salvador	no	Urban	N	Some college
Mari	Peru	3 years	2	Divorced	Mexico	yes	Urban	N	Secondary
Denise	Nicaragua	3 years	2	Married	Nicaragua	yes	Urban	N	Vocational
Claudia	Mexico	4 years	4	Divorced	Mexico	yes	Urban	N	Some Secondary
Ashley	Guatemala	7 years	4	Divorced	Peru	yes	Urban	N	Some college
Lorena	Mexico	9 years	3	Partnered	El Salvador	yes	Rural	Y	Secondary
Mari Cruz	Peru	11 years	4	Married	Peru	no	Rural	N	Some college
Susana	Mexico	11 years	5	Married	Mexico	no	Urban	N	Some primary
Rosa	Mexico	12 years	4	Married	Mexico	no	Urban	N	Some primary
Veronica	El Salvador	13 years	4	Married	Mexico	no	Rural	Y	Secondary
Vicky	Mexico	12 years	5	Divorced	El Salvador	yes	Rural	Y	Secondary
Selena	Mexico	15 years	4	Married	Mexico	no	Rural	N	Secondary
Malena	Mexico	16 years	4	Divorced	El Salvador	yes	Rural	N	Some primary

* Pseudonyms used at all times

Table 2

Examining Latino immigrants' diet through a transnational approach

Concept	Variable
Socioeconomic position in former country* *family cook and others adults	<ul style="list-style-type: none"> • Former occupation • Highest educational attainment (Abroad and in US)
Identify sender community(ies) in US and Latin America	<ul style="list-style-type: none"> • Prior cities/town in the US and abroad • Rural or Urban area of former country
Year of Migration	In each country of an immigrants' migration trajectory
Access and technology use former country	Days per week of Internet usage (communicate with family/friend abroad to obtain health and diet information). <ul style="list-style-type: none"> • Contents of the internet information sought • International telephone communication with family/friends abroad • Contents of discussion food, diet, or health-related • Satellite or cable television viewing of US television shows
Food consumed in the Home	<ul style="list-style-type: none"> • Homemade meals • Processed/Convenience food • Food from a street vendor or restaurant
Food consumed outside of the Home	<ul style="list-style-type: none"> • Homemade meals • Processed/Convenience food • Food from a street vendor or restaurant
Food Brands	Identify transnational food companies Identify rate of FDI in food processing in sender country
Commensality	Among Friends or Family Co-workers Alone
Food Acquisition	<i>Where they bought or obtained food for their family in their former country</i> Cafeteria Convenience store Garden Local bakery or tortillería Local butcher Open markets Restaurants Fast food establishments Street vendors Supermarkets School
Healthy Food Beliefs	Reasons for eating healthy: <ul style="list-style-type: none"> • To obtain vitamins, minerals, nutrients • Maintain overall physical and emotional wellbeing • Avoid medical costs • What is worse to eat? • What is the best to eat? • What is worst to eat too much of?

Concept	Variable
Source of health information	Family, word-of-mouth, public health programs, healthcare provider, print media, television programs, the Internet, nutrition clubs