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## **Poverty, Obesity, Diabetes: Are They the By-Products of Liberalization of Global Economy?**

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### **Abstract**

The paper briefly describes the causes of a global rise in obesity and diabetes. In so doing, it establishes links between (1) poverty and obesity, and (2) obesity and diabetes. The paper also presents data from a survey (N=147) conducted in a depressed economy in Texas where cases of obesity and diabetes are among the highest in the US. The paper argues for a paradigm shift in viewing the role of policymakers in regards to food and pharmaceutical industries, both locally and globally.

**Keywords:** diabetes, nutrition, obesity, public health policy, national development and public health

**JEL Classification:** F63, F68, I15, O24, Q18

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### **1. Introduction**

Until recently, in many cultures, being overweight, or fat, was associated with good health, prosperity, affluence, and belonging to a higher socio-economic class. This was true not only in the US and the western countries but also in the developing regions such as the Indian subcontinent, Africa, South America, and China.<sup>1</sup> Being skinny or ‘boney’ were indicators of ill health, lack of food, and poverty. Global outlook towards obesity may have reversed; the problem of obesity has not.

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<sup>1</sup> F. Li, *Obese: to be or not to be*, Econointersect.com, 2012, <http://econointersect.com/b2evolution/blog2.php/2012/06/15/obese-to-be-or-not-to-be> (accessed December 2015).

According to the recent report by the Center for Disease Control and Prevention, 15 percent of the US population was obese in 1990.<sup>2</sup> The State of Obesity Foundation reported that by the end of year 2014, 45 states had obesity rates of 25 percent or higher, and 25 of these states had over 30 percent obese populations; Arkansas topped the list with 35.9 percent and Colorado was at the bottom with 21.3 percent obesity<sup>3</sup> – still an alarming increase from 1990. All told, 31.8 percent Americans are overweight. What is of a bigger concern is that fact that obesity is no longer an issue with the adults only. Children and adolescents are becoming overweight and obese in their early years. Ogdon, Carroll, Kit, & Flegal estimated that nearly 16 percent of the population between the ages of 2 to 19 is overweight.<sup>4</sup> It is well documented that early obesity increases the chances of obesity in later years, and the condition is linked to cardiovascular complications such as hypertension, elevated levels of LDL, and diabetes.<sup>5</sup> Obese people are three times as likely to become diabetic.<sup>6</sup> In the US obesity is an even greater issue among the minorities such as African Americans, Mexican Americans, and Hispanics.

The United States used to hold the title of the world's most obese country. In the last five years, according to a United Nations report, Mexico has surpassed the US in terms of obesity and overweight. Mexico has 32.8 percent of its population in the overweight category.<sup>7</sup> Fox News reported that Mexico has seen an upwards trend in cases of diabetes – a condition linked to obesity – ‘with 400,000 new cases every year, and nearly 70,000 deaths from weight-related diabetes.’

The World Health Organization has reported that there are ‘more than 30 million overweight children and over 115 million people suffering from obesity-related problems. In some regions, such as Latin America and the Middle East, approximately 30% of adults are obese.’<sup>8</sup> Among the developing nations, nearly 12.5 percent of the population is undernourished, and 25 percent of the children are stunted. Hence, developing countries with large segments of populations living in poverty face a complex crisis of malnutrition in all its forms: under-nutrition, micronutrient deficiencies, and obesity.

<sup>2</sup> Center for Disease Control and Prevention, *Overweight and Obesity: Adult Obesity Facts*, 2010, <http://www.cdc.gov/obesity/data/adult.html> (accessed December 2015).

<sup>3</sup> J. Levi, L. Segal, R. St. Laurent, J. Rayburn, *The State of Obesity: Better Policies for a Healthier America 2014*, Trust for America's Health, 2014, <http://www.rwjf.org/content/dam/farm/reports/reports/2014/rwjf414829> (accessed March 2016).

<sup>4</sup> C.L. Ogdon, M.D. Carroll, B.K. Kit, K.M. Flegal, *Prevalence of obesity and trends in body mass index among US children and adolescents, 1900-2010*, “Journal of American Medical Association” 2012, Vol. 357, pp. 2329–2337.

<sup>5</sup> A.S. Singh, C. Mulder, J.W. Twisk, W. van Mechelen, M.J. Chinapaw, *Tracking of childhood overweight into adulthood: a systematic review of the literature*, “Obesity Reviews” 2008, Vol. 9, pp. 474–488; J.L. Baker, L.W. Olsen, T.I. Sorensen, *Childhood body mass index and the risk of coronary heart disease in adulthood*, “New England Journal of Medicine” 2007, Vol. 357, pp. 2329–2337.

<sup>6</sup> D. Witters, *U.S. diabetes rate climb above 11 %; could hit 15% by 2015*, Gallup Report, 2009, October 27th, <http://www.gallup.com/poll/123887/u.s.-diabetes-rate-climb-above-11-could-hit-15-2015.aspx> (accessed December 2015).

<sup>7</sup> Food and Agriculture Organization of The United Nations, *The state of food and agriculture*, Rome 2013, p. 77, <http://www.fao.org/docrep/018/i3300e/i3300e.pdf> (accessed December 2015).

<sup>8</sup> A. Gonzalez, *Obesity among the Hungry: The Weighty Paradox of Poverty*, 2013, <http://www.classywards.org/exchange/obesity-among-the-hungry-the-weighty-paradox-of-poverty/> (accessed March 2015).

The aim of this article is to shed some light on the issues related to obesity and diabetes in the less developed countries by analysing these phenomena in Mexico and within the population of Hispanics in the US. In the next section of the paper the factors contributing to obesity are briefly characterized. The problem of growing obesity in Mexico is outlined in the third section of the article, whereas the results of a survey carried out in Brownsville, Texas, a city located at the American-Mexican border, are presented in the fourth part. The place of conducting the survey has been chosen due to the fact that it has been ranked fourth among the places of 100,000 or more total population with the highest percentage of Hispanics in the US.<sup>9</sup> Being aware of all the limits of such a research, the author believes it permits drawing some initial conclusions about the analysed problems. Both the conclusions and certain recommendations are presented in the final section of the article.

## 2. Obesity among the Poor

There are 557 million obese and overweight adults in the developed nations, and 904 million in the less developed countries. While obesity is on the rise worldwide, it is doubly problematic for developing countries unable to provide the healthcare for conditions associated with obesity. Since 1980, obesity rates have doubled in Mexico and China; increased by a third in South Africa. Obesity is increasing in North Africa, the Middle East, and Latin America at the same rate as in Europe.<sup>10</sup> Several factors contribute to obesity. Among these, urbanization, diets, physical activity, and early life are among the more prominent ones.

### 2.1. Urbanization

In the past 50 years, the world's population living in the cities has doubled.<sup>11</sup> People have abandoned rural areas and farm related work in favour of cities and working in factories.<sup>12</sup> Large companies that cultivate for maximum yields using genetically altered seeds, fertilizers, and unsafe pesticides absorb small farms. Heavy farm machinery replaces manual labour forcing the farmers to move to the cities. Use of steroids and special feeds cause poultry and other animals to grow more rapidly and larger in size and weight; same is the case with fruits and vegetables. Food is grown at a faster speed and to unnatural sizes. Most of the chemicals used to expedite the

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<sup>9</sup> According to the 2010 Census data, it reached 93.2 percent. U.S. Census Bureau, *The Hispanics Population: 2010. Census Briefs*, 2011, p. 11, <http://www.census.gov/prod/cen2010/briefs/c2010br-04.pdf> (accessed December 2015).

<sup>10</sup> Overseas Development Institute, *Obesity soars to alarming levels in the developing countries*, "The Guardian" 2014, January 3rd, <http://www.theguardian.com/global-development/2014/jan/03/obesity-soars-alarming-levels-developing-countries> (accessed December 2015).

<sup>11</sup> United Nations, *World urbanization prospects: the 1999 revision*, United Nations Population Division, New York 1999.

<sup>12</sup> D.R. Phillips, *Urbanization and human health*, "Parasitology" 1993, Vol. 106, pp. S93–107; B. Caballero, S. Rubinstein, *Environmental factors affecting nutritional status in urban areas of developing countries*, "Archivos Latinoamericanos de Nutricion" 1997, Vol. 47, No. 2, Suppl. 1, pp. 3–8.

growth of animals and plants remain in the food products and are ingested by humans. These steroids and similar chemicals may manifest themselves into diseases such as cancer, high blood pressure, sugar imbalance, and cholesterol issues. Large, multinational corporations control world agriculture. Similarly, companies that produce processed foods too are multinational corporations. These are driven by profit – pure and simple. These corporations move their agriculture, production, and processing activities to areas that are rich in resources and inexpensive in labour costs. Developing countries, in an attempt to improve the quality of lives for their people, invite these multinational corporations to establish their operations and create employment for the people.<sup>13</sup> The result is that people are ‘compelled’ to desert their rural lifestyles and migrate to the cities. They find employment but are exposed to increased levels of pollutions, chemicals and sugar-laden processed foods, overcrowding, disease, and less than satisfactory healthcare. The adults gain weight; their children gain weight while the big corporations reap the financial gains.

## 2.2. Diets

Many food habits are related to urbanization. While people living in the rural areas are more self-reliant in raising poultry and other animals as well as vegetables and fruits. Their diets are rich in grains and natural foods. They do most of their cooking at home and used small amounts of fat, salt and sugar. Once they move to the cities, they rely on produce grown by the big agricultural companies. These meats and produce are heavy in chemicals and pesticides. For most low-income factory workers in the urban areas, fresh fruit and vegetables are beyond their means. They buy canned and processed foods that have excessive amounts of salt and sugar. Such a ‘western’ diet is ‘associated with diabetes, heart disease and excessive caloric intake and obesity.’<sup>14</sup>

These mass movements have strong effects on the economies as well as on people’s physical health and well-being. Steady employments and higher incomes allow people a greater access to food, but not necessarily better food. Fresh and organic ingredients are replaced by processed foods with preservative and harmful chemicals.

## 2.3. Physical activity

As developing nations make industrial progress, fewer and fewer of the people are employed in jobs requiring physical activity. Even the workforce in farming, construction, and manufacturing industries use machines to move, lift, and carry heavy objects. Workers remain in one place, either sitting or standing while operating their

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<sup>13</sup> Hoffman D.J., *Obesity in developing countries: causes and implications*, “Food, Nutrition and Agriculture Review” 2001, Food and Agriculture Organization of the United Nations, Volume 28, <http://www.fao.org/docrep/003/y0600m/y0600m05.htm> (accessed December 2015).

<sup>14</sup> B.M. Popkin, S. Paeratakul, F. Zhai, K. Ge, *A review of dietary and environmental correlates of obesity with emphasis on developing countries*, “Obesity Research” 1995, Vol. 3, Suppl. 2, pp. 145S–153S; A. Drewnowski, B.M. Popkin, *The nutrition transition: trends in the global diet*, “Nutrition Review” 1997, Vol. 55, No. 2, pp. 31–43.

equipment. With reduced physical activity, one should reduce caloric intake. However, the diets in the urban areas are richer in carbohydrates, fats, salt, and sugar – elements that contribute to weight gains, elevated blood pressure, higher levels of LDL, and sugar imbalance leading to diabetes.

Adult males are not the only ones that become at-risk in the urban environments. Women and children are also subject to lower levels of activity and fat-heavy diets.<sup>15</sup>

Machines wash the clothes; machines do the dishes. Machines clean the house; machines grind the grain and spices. Electrical appliances open the tin cans, chop the vegetables, mix the dough, and extract the fruit juice. Most of the employment for the women in the cities is either behind-the-desk jobs, or low-activity jobs in sales and light industry.

Due to heavy traffic and high levels of crime, children no longer walk to school or play in playgrounds. Most of their time is spent sitting in front of a TV, a computer screen, or some sort of a portable digital device connecting them to the world through the Internet.

#### 2.4. Early Life

Insufficient nutrition in early life may cause stunting. These individuals are more likely to become obese in their adolescent and adult years.<sup>16</sup> This places a dual burden on the transitional countries: food shortage and under-nutrition, and ‘western’ diets and over nutrition lead to a health crisis that needs attention from policymakers, and health and economic agencies.

### 3. The Cost of Free Trade for Mexico

Developing countries see trade and investment agreements as essential to their economic development. Such initiatives are strongly supported by the IMF and the World Bank. These agencies treat liberalization of trade policy as one of the key requirements imposed on the developing countries to receive any financial support from those institutions. For transnational corporations, such Free Trade agreements serve as licenses for expansion and growth. Such agreements guarantee new markets and if accompanied with free movement of capital, an access to inexpensive labour. For the developing countries, these agreements have led to new problems and challenges such as mass migrations from rural to urban areas, health issues related to altered lifestyles, and a constant brain drain. Mexico is a country that finds herself in a free-trade trap.<sup>17</sup>

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<sup>15</sup> A. Case, A. Menendez, *Sex differences in obesity rates in poor countries: Evidence from South Africa*, “Economics and Human Biology” 2009, Vol. 7, No. 3, pp. 271–282.

<sup>16</sup> D.G. Schroeder, R. Martorell, R. Flores, *Infant and child growth and fatness and fat distribution in Guatemalan adults*, “American Journal of Epidemiology” 1999, Vol. 149, pp. 177–185.

<sup>17</sup> S. Barquera, I. Campos-Nonato, C. Aguilar-Salinas, R. Lopez-Ridaura, A. Arredondo, J. Rivera-Dommarco, *Diabetes in Mexico: Cost and management of diabetes and its complications and challenges for health policy*, “Globalization and Health” 2013, Vol. 9, No. 3, <http://www.globalizationandhealth.com/content/9/1/3>; R.M. Herrera, *What has free trade done for Mexico? Create an obesity and diabetes epi-*

While 31.8 percent of the Americans are overweight, 32.8 percent of the Mexicans are overweight. Childhood obesity has tripled from 2003 to 2013. One in three Mexican youths is obese. Two percent increase in obesity among the adult population is ‘the largest increase documented worldwide.’<sup>18</sup> United Nations’ report blamed the increase on consumption of processed and calorie-rich foods.<sup>19</sup> One consequence of the dietary practices is that there is an addition of 400,000 new case of diabetes each year, and 70,000 lives are lost to diabetes-related conditions. Not unlike the US, obesity and weight problem is more prevalent among the poor than among the more affluent. For the poor nations, such is a case of growth in the negative direction.

Table 1. Costs Associated with Diabetes in Mexico (2006)

| Type of costs            | Costs Associated with Diabetes<br>(in millions of USD) |
|--------------------------|--------------------------------------------------------|
| Outpatient               | 717.8                                                  |
| Inpatient                | 223.6                                                  |
| Indirect                 | 177.0 (2005)                                           |
| From other complications | 109.6 (2010)                                           |

Source: S. Barquera, I. Campos-Nonato, C. Aguilar-Salinas, R. Lopez-Ridaura, A. Arredondo, J. Rivera-Dommarco, *Diabetes in Mexico: Cost and management of diabetes and its complications and challenges for health policy*, “Globalization and Health” 2013, Vol. 9, No. 3, <http://www.globalizationandhealth.com/content/9/1/3> (accessed December 2015).

One could ask: Who benefits from the free trade agreements? Certainly, not the general population in a developing country. Who, then? Since The North America Free Trade Agreement (NAFTA) of 1993, Mexico has risen to be among the top-ten producers of processed foods in the world<sup>20</sup> with sales reaching \$124 billion in 2012. Multinational corporations that own these food processing operations are Danone, Unilever, Nestle, and PepsiCo. These corporations have also taken control of the local distribution of food in Mexico. There were 700 convenience stores in 1987. The number reached 5730 in 2004.<sup>21</sup> At the time of present writing (2015) Walmart has 2,290 store in Mexico and a Coca-Cola owned convenience store chain, Oxxo, owns 14,000 stores in Mexico. Another Texas-based company, H-E-B, operates two food distribution centres and 45 stores. Some of H-E-B stores are operated under a local banner: *Mi Tienda del Ahora*. H-E-B’s annual sales in Mexico exceed US\$1.2 billion. Foreign interests have acquired near-total control of the food industry in Mexico. Similar trends continue in other developing countries in Asia, South America, and Africa.

The biggest argument in favour of NAFTA was its ability to create jobs and raise the GDP in Mexico; as a result, of lobbying from the giants Proctor & Gamble, Coca-Cola, and Walmart, the policymakers in Washington and Mexico City overlooked the health risks and their toll on the local economy.

*demic*, “The Guardian” 2015, April 6, <http://www.theguardian.com/commentisfree/2015/apr/06/global-south-has-free-trade-to-thank-obesity-diabetes-epidemic> (accessed December 2015).

<sup>18</sup> S. Barquera, I. Campos-Nonato, C. Aguilar-Salinas, R. Lopez-Ridaura, A. Arredondo, J. Rivera-Dommarco, op. cit.

<sup>19</sup> Food and Agriculture Organization of The United Nations, op. cit.

<sup>20</sup> R.M. Herrera, op. cit.

<sup>21</sup> *Ibidem*.

## 4. The Survey

Texas ranks among the top-ten states with the highest increases in obesity in the recent years.<sup>22</sup> Texas is also among the top-ten states with a Hispanic population.<sup>23</sup> The health of the Hispanic population in the US poses serious challenges. Hispanics have the highest risk of diabetes among all the ethnics and racial groups in the United States. Four counties in the lower Rio Grande Valley (Cameron, Hidalgo, Starr, and Willacy) where 90 percent of the population is Hispanic, are among the poorest counties, and with the highest rates of obesity and diabetes.<sup>24</sup> These areas, with their depressed economies, are oftentimes referred to as ‘food deserts,’ suggesting lack of sufficient fresh food for its population<sup>25</sup> are also unable to provide adequate healthcare or education for their people.

To assess the gravity of the link between poverty, obesity, and diabetes, the present author conducted a survey of 147 college students in a city of 180,000 people with a high percentage of diabetes and sugar related health issues and the common problems associated with the treatment of diabetes. The study found that 72 percent of the subjects had, at least, one person in their families that suffered from diabetes and diabetes-related illnesses. Nearly 67 percent of the respondents were unaware of any benefits from common herbs. The number of respondents (67%) were unaware of any alternative medicine except for acupuncture. In an open-ended question, the subjects were asked to list the causes/factors that attributed to diabetes. The subjects’ responses were grouped into four categories. These were: hereditary, lack of financial resources, eating habits, and lack of physical activity. Percentages of responses and frequently identified causes are presented below.

Table 2. The causes/factors attributed to diabetes by the respondents of the survey.

| Cause/factor                                                             | Percentage of responses to the survey |
|--------------------------------------------------------------------------|---------------------------------------|
| Hereditary                                                               | 36 %                                  |
| Inability to afford healthier foods and/or prescribed medicine/treatment | 27 %                                  |
| Traditional eating habits                                                | 23 %                                  |
| Lack of physical activity                                                | 14 %                                  |
| <b>Total</b>                                                             | <b>100 %</b>                          |

Source: the results of the survey.

Most frequently mentioned reasons for each were:

(1) Hereditary:

- *It runs in the family.*
- *I got it from my mother’s side of the family.*
- *Men in my family have a history of sugar problems.*

<sup>22</sup> D. Witters, op. cit.

<sup>23</sup> U.S. Census Bureau, op. cit.

<sup>24</sup> R.M. Herrera, op. cit.

<sup>25</sup> J.A. Levine, *Poverty and obesity in the US*, “Diabetes” 2011, Vol. 60, No. 11, pp. 2667–2668.

## (2) Lack of Resources:

- *People can only afford inexpensive food.*
- *Cannot afford a doctor's visit.*
- *Have no health insurance.*
- *Can't buy the prescribed medicine.*
- *Take only half the prescribed dose to save money.*
- *There's nothing one can do about diabetes. It's going to happen.*

## (3) Eating Habits:

- *Many people have been eating these foods (lard, bread from processed corn flour, red meat, sugar) for generations. It's not the food.*
- *We've never eaten much vegetables except potatoes.*
- *Fruits are for special occasions, not every day food.*
- *I stay away from beer, I only drink Coke.*
- *I always get diet-Coke.*

## (4) Lack of Physical Activity:

- *I have no time to exercise. I have two jobs.*
- *Kids sit in front of their computers, they don't play like we used to.*
- *It's not safe for kids to be playing in the street or in a park.*
- *My work is waiting tables, standing up, walking around, for 8 hours every day. That's my exercise.*
- *Exercise bores me.*

## 5. Conclusions

A majority of the responses lead to two key factors: lack of financial resources, and lack of education. Both are tied to poverty; both are policy issues. Policymakers shed their responsibility by claiming that it's neither their place to tell people what they should eat nor to tell the food industry what to produce and how to market their product. The author of this paper begs to differ. It is very much the duty of the policymakers to provide people the healthiest guidance and impose regulations to control the ingredients in processed foods.

Laws are in place dictating what one may not consume through imposing age restrictions on the consumption of tobacco products and alcoholic beverages, by putting a total ban on the use of certain habit-forming substances, and limiting the purchase of certain medication without prescriptions. There could be similar restrictions against food products that contain harmful chemicals and substances. These laws are to protect the consumers from becoming addicted or becoming susceptible to certain health risks.

There are laws requiring all automobiles to be equipped with safety belts, reinforced doors, frames, and bumpers. There are laws for motorcyclists requiring them to use helmets, and drivers and passengers in automobiles to use safety belts. These laws are to protect the drivers and passengers from being injured if involved in a traffic accident. The whole purpose of laws and regulations is to protect the people.



At the expense of oversimplification, one can say that the people that remain healthy not only have a better chance of enjoying a happier life but also continue to contribute to their economy. It can be argued that a healthy population is in the best interest of an economy. Nations that have taken the steps to encourage better diets stand to gain from such practices.

During the WWII, rationing in the UK led to balanced diets among the poorest.<sup>26</sup> The South Korean government launched a campaign to teach women how to prepare low-fat meals. The resulting change from 1980 to 2009: an average South Korean consumes 300 percent more fruit and 10 percent more vegetables.

To discourage consumption of red meat, Sweden, recently, imposed higher taxes on beef; Mexico has also put higher taxes on carbonated soft drinks. In 2013, Denmark put a total ban on trans-unsaturated fatty acids forcing fast-food chains such as McDonald's to serve healthier fries and other meals. Following that lead, in 2015, the U.S. Federal Food and Drug Administration initiated a ban on artificial trans-fat in the food supply requiring that by 2018, food manufacturers must remove the primary source of artificial trans-fat – partially hydrogenated oils (PHOs) – from their products.<sup>27</sup>

While most of the countries (developed and developing) continue to see an increase in the consumption of salt, sugar, and fats,<sup>28</sup> certain Mediterranean countries (e.g. Greece and Cyprus), Japan, and some of the east Asian countries by keeping themselves isolated from processed foods, moderate use of salt and sugar, and refrained from unnecessary amounts of animal fats have avoided undue weight gains.

Despite the illusion of a 'free press,' the news media (newspapers, magazines, radio, and television) are entirely dependent on the advertising dollars from the likes of Bayer, Pfizer, General Foods, and Proctor & Gamble. It is not likely that the news media will bite the hand that feeds it. The manufacturers of saturated, fat-heavy processed foods with dangerously high levels of salt and sugar will continue to feed the poor their unhealthy products causing weight gains, raised blood pressure, obesity, heart conditions, insulin imbalance, and diabetes. Food and pharmaceutical industries continue to profit from global epidemics of obesity, diabetes, and high blood pressure. As long as the policymakers are dependent on campaign funding from the food, pharmaceutical and healthcare industries, the public health will continue to deteriorate and national expenditures to combat obesity and diabetes will continue to soar. Let there also be a call to policymakers in the developing nations that industrial development and creation of jobs at the expense of the overall health of a nation are unsound. Such policies have shown to have lowered the overall quality of life rather than raise it.

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<sup>26</sup> S. Wiggins, *Obesity soars to 'alarming' levels in developing countries*, "The Guardian" 2014, January 3rd, <http://www.theguardian.com/global-development/poverty-matters/2014/jan/03/weighty-problem-halt-obesity-developing-world> (accessed December 2015).

<sup>27</sup> A. Sifferlin, *This is why FDA is banning trans fats*, "Time" 2015, June 16th, <http://time.com/3922629/this-is-why-fda-is-banning-trans-fats/> (accessed December 2015).

<sup>28</sup> A. Gonzalez, *op. cit.*

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