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Is Sugar the New Tobacco? How to Regulate Toxic Foods

Barbara L. Atwell*

*“I have eliminated refined sugar from my diet. . . . Ultimately, it’s something I can do to decrease my risk of cancer”*¹

Introduction

In May 2012, New York City’s mayor Michael Bloomberg announced a proposed ban on the sale of sugary drinks in excess of 16 ounces at certain establishments like movie theatres, restaurants and other food service facilities.² This has provoked controversy, with detractors arguing that the proposed ban constitutes governmental interference with the basic freedom to choose what to consume,³ and supporters countering that it is a creative public health initiative.⁴

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1. Gary Taubes, *Is Sugar Toxic?*, N.Y. TIMES, Apr. 13, 2011, available at http://www.nytimes.com/2011/04/17/magazine/mag-17Sugar-t.html?_r=1&pagewanted=all, (quoting the president of Memorial Sloan-Kettering Cancer Center); see also JEFF O’CONNELL, SUGAR NATION: THE HIDDEN TRUTH BEHIND AMERICA’S DEADLIEST HABIT AND THE SIMPLE WAY TO BEAT IT 79 (2010).

2. N.Y.C. DEP’T OF HEALTH & MENTAL HYGIENE, NOTICE OF PUBLIC HEARING (June 5, 2012), <http://www.nyc.gov/html/doh/downloads/pdf/notice/2012/amend-food-establishments.pdf>; see also Michael M. Grynbaum, *New York Plans to Ban Sale of Big Sizes of Sugary Drinks*, N.Y. TIMES, May 30, 2012, available at <http://www.nytimes.com/2012/05/31/nyregion/bloomberg-plans-a-ban-on-large-sugared-drinks.html> [hereinafter *New York Plans Ban*] (noting that the ban would also apply to street carts, but would not apply to sugary drinks sold in grocery or convenience stores); see also Michael M. Grynbaum, *At Starbucks, Uncertainty Over Impact of Bloomberg’s Drink Plan*, N.Y. TIMES, June 12, 2012, available at http://www.nytimes.com/2012/06/13/nyregion/at-starbucks-uncertainty-over-mayors-drink-plan.html?_r=1 (noting that drinks with more than fifty percent milk are exempt, as are fruit juices).

3. Some have referred to the proposal as an example of the “nanny state.” Frank James, *Bloomberg Becomes Nanny-State Epitome for Some, Giving Obama A Breather*, NAT’L PUB. RADIO (May 31, 2012, 3:41 PM), <http://www.npr.org/blogs/itsallpolitics/2012/05/31/154063100/bloomberg-becomes-for-some-a-nanny-state-symbol-giving-obama-a-breather>; see also *Bloomberg Has Better Idea to Tackle Obesity*, PHILLY.COM (June 3, 2012), http://articles.philly.com/2012-06-03/news/31985552_1_sugary-drinks-indoor-smoking-obesity-rates.

4. *New York Plans Ban*, *supra* note 2.

One inevitable question is why the Bloomberg administration singled out sugar.⁵ After all, foods that are high in fat, like sugar, can contribute to obesity and clog arteries,⁶ and foods that are high in sodium can cause hypertension.⁷ What health risks associated with sugar consumption are so serious that they warrant the recent wave of attention and regulation?

First, sugar, and more specifically “added sugar,”⁸ contributes to some of the most widespread chronic diseases in the world.⁹ In addition to America’s obesity epidemic, excessive sugar consumption is linked to diabetes and heart disease.¹⁰ New research suggests that sugar is also a “chronic poison” that directly contributes to diseases like cancer¹¹ and depression,¹² among others.¹³

Second, the number of people adversely impacted by excessive sugar consumption exceeds the number who are adversely impacted by tobacco use. Sugar consumption worldwide has tripled over the past fifty years,¹⁴ and the number of people suffering from chronic diseases associated with it has also grown. Approximately thirty-six percent (about eighty million) of American adults are obese,¹⁵ more than twenty-five million suffer from

5. There are various forms of sugar, including sucrose, fructose, high fructose corn syrup and glucose. *See infra* note 8 and accompanying text.

6. *Dietary Fats: Know Which Types to Choose*, MAYO CLINIC, www.mayoclinic.com/health/fat/NU00262 (last visited Jan. 8, 2013).

7. *Sodium: How to Tame Your Salt Habit Now*, MAYO CLINIC, www.mayoclinic.com/health/sodium/NU00284 (last visited Jan. 8, 2013).

8. This article addresses added sugar, sugar that is not a natural part of the food product but is added as part of food processing. This includes sugar from sugar cane and sugar beet, high fructose corn syrup and other sweeteners that add fructose to the food supply. *See* Robert H. Lustig et al., *Public Health: The Toxic Truth About Sugar*, 482 NATURE 27 (Feb. 2, 2012); *cf.* WILLAM DUFTY, SUGAR BLUES (1975) (defining refined sugar as “produced by multiple chemical processing of the juice of the sugar cane or beet and removal of all fiber and protein, which amount to ninety percent of the natural plant.”); JOHN S. YUDKIN, PURE, WHITE AND DEADLY 28 (2nd ed. 1986) (explaining that some foods, like fruits have natural sugar and do not present the same health concerns because fruits also have natural fiber that counterbalances the fructose contained in fruit).

9. Lustig et al., *supra* note 8 (noting that chronic, non-communicable diseases like heart disease and diabetes contribute to thirty-five million deaths each year).

10. *Id.*

11. *See infra* notes 48, 56 and accompanying text.

12. *See* DUFTY, *supra* note 8, at 62-63, 69-71.

13. *See infra* notes 48-57 and accompanying text.

14. Lustig et al., *supra* note 8.

15. CYNTHIA L. OGDEN ET AL., U.S. DEP’T OF HEALTH & HUMAN SERVS., PREVALENCE OF OBESITY IN THE UNITED STATES, 2009-2010, at 1-3 (Jan. 2012), *available at* <http://www.cdc.gov/nchs/data/databriefs/db82.pdf> (“Obesity increases the risk of a number of health conditions including hypertension, adverse lipid concentrations, and type 2 diabetes.”); *see also* U.S. & World Population Clocks, U.S. CENSUS BUREAU, <http://www.census.gov/main/www/popclock.html> (last viewed Sept. 27, 2012) (noting that the United States’ population is about 314,000,000.); *Profile of General Population and*

diabetes,¹⁶ and in 2008, more than 616,000 Americans died from heart disease.¹⁷ Meanwhile, approximately 45.3 million adults smoke cigarettes,¹⁸ and approximately 443,000 Americans die prematurely each year from tobacco use.¹⁹ Thus, the number of people adversely impacted by sugar exceeds the number adversely impacted by tobacco. A third (and related) reason to focus on sugar is that it is added to approximately eighty percent of processed food products on the market.²⁰ Thus, dangers associated with it are almost impossible to avoid. Added sugar's infiltration into most processed food products undoubtedly helps explain the increase in sugar consumption.

This article explores the health risks associated with added sugar. It then examines how, if at all, sugar should be regulated, by considering tobacco regulation as a possible model. Part I identifies the health risks of sugar consumption. Part II examines the reasons why sugar is added to so much of our food supply. Part III provides an overview of tobacco regulation, including educational initiatives, warning labels, advertising restrictions, age limitations, and taxes. Finally, Part IV provides a framework for sugar regulation, suggesting that most of the foregoing laws designed to discourage tobacco use should, with the exception of age restrictions and with appropriate modifications, be applied to products with large quantities of added sugar.²¹ Part IV also suggests regulatory changes within the FDA to remove sugar's classification as a substance that is "generally recognized as safe (GRAS)."²²

In addition to looking solely at sugar, Part IV also takes a broader look at how food policy can shift to improve the overall food supply in ways that enhance consumer choice, and proposes the appointment of an independent

Housing Characteristics: 2010, U.S. CENSUS BUREAU, http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=DEC_10_SF2_SF2DP1&prodType=table (last viewed Sept. 27, 2012) (approximately 80,000,000 are minors, which means approximately 234,000,000 are adults).

16. CTRS. FOR DISEASE CONTROL & PREVENTION, NATIONAL DIABETES FACT SHEET, 2011, at 1 (2011), available at http://www.cdc.gov/diabetes/pubs/pdf/ndfs_2011.pdf.

17. *Heart Disease Facts*, CTR. FOR DISEASE CONTROL & PREVENTION, <http://www.cdc.gov/heartdisease/facts.htm> (last updated Mar. 23, 2012).

18. *Adult Cigarette Smoking in the United States: Current Estimate*, CTRS. FOR DISEASE CONTROL & PREVENTION, http://www.cdc.gov/tobacco/data_statistics/fact_sheets/adult_data/cig_smoking/index.htm (last updated Mar. 14, 2012).

19. *Id.*

20. *See Here's the Thing*, *infra* note 112 and accompanying text.

21. Many of the recommendations in this article can be implemented administratively where hopefully public health considerations are more likely to outweigh political ones than they would at the legislative level. Mayor Bloomberg opted for this administrative approach, having the NYC Department of Health vote on the soda size restrictions rather than the legislative City Council.

22. *See infra* notes 209-211 and accompanying text.

National Director of Food, who would have sufficient authority to help neutralize the impact that the food lobby has on food supply.

I. THE EVIDENCE OF SUGAR'S TOXICITY – THE SCIENCE

Sugar is a carbohydrate that for many years was assumed to be no better or worse for our health than other carbohydrates.²³ Basic sugar, or sucrose, comes from sugar cane or sugar beets. Additionally, high fructose corn syrup is also included as sugar for purposes of this article.²⁴ Added sugar is unnecessary for a healthy diet.²⁵ Calories from sugar are often called “empty calories” because sugar has little or no nutritional value. Yet Americans add many calories to our diets through sugar consumption.²⁶ In fact, Americans have the highest rate of sugar consumption in the world.²⁷ The average American now consumes between 150-200 pounds of sugar a year.²⁸ Sugar is not just a source of empty calories, however, it is also a source of toxic calories.²⁹ There are biochemical reactions related to sugar consumption that make it uniquely unhealthy.³⁰ As a result, it has been described as a “chronic toxin.”³¹

23. YUDKIN, *supra* note 8, at 1 (noting that our carbohydrate consumption shifted from primarily wheat, rice and corn based starches to increased levels of sugar over the past 100-200 years).

24. See Taubes, *supra* note 1 (describing Dr. Robert Lustig's famous lecture on sugar in which Dr. Lustig explains, “[h]igh-fructose corn syrup, sugar – no difference. . . The point is they're each bad – equally bad, equally poisonous.”); see also *infra* notes 30-32.

25. DUFY, *supra* note 8, at 27 (“From the Garden of Eden through thousands of years, what we call sugar was unknown to man.”); see also YUDKIN, *supra* note 8, at 2 (noting that while we all require healthy levels of sodium, “there is no physiological requirement for sugar.”).

26. There are 49 calories in every tablespoon of sugar. Katherine Zeratsky, *Coffee Calories: Sabotaging Your Weight-Loss Goal?*, MAYO CLINIC, <http://www.mayoclinic.com/health/calories/NU00185> (last visited Jan. 8, 2013).

27. Lustig et al., *supra* note 8, at 28-29.

28. JEFF O'CONNELL, SUGAR NATION: THE HIDDEN TRUTH BEHIND AMERICA'S DEADLIEST HABIT AND THE SIMPLE WAY TO BEAT IT 2 (Hyperion 2010); cf. MARION NESTLE, WHAT TO EAT, 321 (2006) (noting the huge increase in sugar consumption between 1980 and 2004 during which time the consumption of high fructose corn syrup doubled); cf., Stephanie Strom, *U.S. Cuts Estimate of Sugar Intake*, N.Y. Times, Oct. 27, 2012, available at <http://www.nytimes.com/2012/10/27/business/us-cuts-estimate-of-sugar-intake-of-typical-american.html?pagewanted=all> (noting that many estimated sugar consumption at about 100 pounds per year and that a highly criticized USDA report placed the amount of per capita sugar consumption at 76.7 pounds per year).

29. Cf. Taubes, *supra* note 1.

30. See *infra* notes 33-41 and accompanying text.

31. See SAMANTHA QUINN, THE REAL TRUTH ABOUT SUGAR: DR. ROBERT LUSTIG'S LECTURE, “SUGAR: THE BITTER TRUTH.” 19 [hereinafter THE REAL TRUTH ABOUT SUGAR] (Quinn explains in print format what Dr. Lustig described in his lecture); see also Lustig, *supra* note 8.

Although health risks associated with sugar consumption have been discussed for a number of years,³² the biochemical process that occurs when we consume sugar has received recent attention largely due to a lecture by Dr. Robert Lustig, a professor of Pediatrics at the University of California at San Francisco.³³ In his lecture, *Sugar: The Bitter Truth*, Dr. Lustig distinguishes between glucose, which is not particularly harmful, and fructose, which is.³⁴ Table sugar, or sucrose, is comprised of fifty percent glucose and fifty percent fructose.³⁵ High fructose corn syrup, which is sweeter than sugar, is comprised of fifty-five percent fructose and forty-five percent glucose.³⁶ Because of the relative similarity in the proportion of glucose to fructose in both sugar and high fructose corn syrup, Dr. Lustig considers them to be equally harmful.³⁷

Dr. Lustig explains the biochemical difference between consuming 120 calories of glucose versus 120 calories of sucrose. When we consume glucose by eating white bread³⁸ all the organs of the body use eighty percent of the calories with only twenty percent (24 calories) being processed by the liver.³⁹ Conversely, when we consume 120 calories of sucrose (sugar) by consuming a glass of orange juice, for example, we are consuming equal

32. See e.g., YUDKIN, *supra* note 8; Xiason Ouyang, et al., *Fructose Consumption as a Risk Factor for Non-alcoholic Fatty Liver Disease*, 48 J. HEPATOLOGY 993 (June 2008) (Study found that patients with non-alcoholic fatty liver disease consumed 2-3 times as much fructose as control subjects.); Richard J. Johnson, et al., *Potential Role of Sugar Fructose in the Epidemic of Hypertension, Obesity and the Metabolic Syndrome, Diabetes, Kidney Disease, and Cardiovascular Disease*; 86 AMER. J. CLINICAL NUTRITION, 899, 904 (2007) (“[W]e propose that sugar intake, and particularly that of fructose, may have an important participatory role in the current cardiorenal disease epidemic,” because it raises uric acid levels.”); Vasanti S. Malik et al., *Sugar-Sweetened Beverages, Obesity, Type 2 Diabetes Mellitus, and Cardiovascular Disease Risk*, 121 CIRC. AMER. HEART ASS’N J. 1356 (2010), available at <http://circ.ahajournals.org/content/121/11/1356.full#sec-9> (“SSB intake is a significant contributor to weight gain and can lead to increased risk of T2DM and cardiovascular disease.”); E.M. ABRAHAMSON, *BODY, MIND & SUGAR* (1951).

33. Dr. Lustig’s lecture, *Sugar: The Bitter Truth*, was posted on You Tube and has been viewed more than 2 million times. Robert H. Lustig, *Sugar: The Bitter Truth*, YOUTUBE.COM (July 30, 2009), <http://www.youtube.com/watch?v=dBnniua6-oM> [hereinafter Lustig lecture]. This lecture is relied upon heavily by reporter Gary Taubes, in *Is Sugar Toxic?* *supra* note 1.

34. Lustig lecture, *supra* note 33.

35. *Id.*

36. NESTLE, *supra* note 28, at 318; Taubes, *supra* note 1.

37. QUINN, *supra* note 31, at 43; NESTLE, *supra* note 28, at 318; see also Taubes, *supra* note 1 (noting that Luc Tappy, a researcher at University of Lausanne in Switzerland and one of the world’s foremost experts on high fructose corn syrup, has stated that there is “not the single hint” that it is more dangerous than “other sources of sugar.”).

38. Other carbohydrates that contain glucose include potatoes.

39. QUINN, *supra* note 31, at 43.

parts of glucose and fructose.⁴⁰

The glucose is not harmful because the liver processes so little of it. Moreover, the few calories that are metabolized by the liver activate an enzyme that is converted almost entirely to glycogen, a non-toxic substance that can be stored in the liver in unlimited quantities without harm.⁴¹ The half of sucrose that constitutes fructose, however, is processed differently. The liver will process all 60 of the calories from fructose.⁴² “[O]nly the liver can metabolize fructose.”⁴³ Therefore, as a matter of volume alone, consuming sugar, fifty percent of which is fructose, causes our livers to work harder than when glucose is consumed alone.⁴⁴ The liver responds to the influx of fructose by converting a good deal of it into fat.⁴⁵ In addition, the problem is exacerbated when fructose is consumed via soft drinks because the fructose hits the liver so quickly.⁴⁶ In essence, what is being discovered is that a high sugar diet is effectively a high fat diet.⁴⁷

Understanding the metabolic processes associated with fructose consumption has given scientists a better understanding of how that consumption contributes to a variety of diseases. For example, sugar consumption is a key culprit in the obesity epidemic.⁴⁸ A time-honored

40. *Id.* at 51.

41. *Id.* at 43-44. (Glucose consumption activates an enzyme that creates Glucose 6-phosphate. This Glucose 6-phosphate is converted, in large part, to glycogen.)

42. *Id.* at 51.

43. *Id.*

44. Fructose is found naturally in fruit but is counterbalanced by the fruit’s fiber. Honey and agave are also high fructose foods and there is an ongoing debate about whether they are any better for health than sugar. Compare Dr. Joseph Mercola, *This Sweetener is Far Worse than High Fructose Corn Syrup*, HUFFINGTON POST, Apr. 15, 2010, available at http://www.huffingtonpost.com/dr-mercola/agave-this-sweetener-is-f_b_537936.html, (arguing that agave is worse than high fructose corn syrup because its fructose content is higher), with Dr. Edward Group, *Why Agave Nectar is Not Worse Than High Fructose Corn Syrup*, GLOBAL HEALING CTR. (Apr. 5, 2010, 12:30 PM), <http://www.globalhealingcenter.com/natural-health/agave-nectar/> (“There is no comparison between a natural form of fructose, such as in fruit or from agave, and the chemically-processed, pesticide-laden, genetically-modified High-Fructose Corn Syrup (HFCS). The fructose in agave is a slow release form of sugar. This means that, in comparison to HFCS, which spikes blood sugar levels, agave does not cause the stimulation insulin secretion that leads to harmful rises in blood sugar.”).

45. Taubes, *supra* note 1.

46. *Id.*

47. QUINN, *supra* note 31, at 55-56. (“[W]hile very little of the glucose ends up as fat, around 30% of the fructose consumed does. Furthermore, when normal medical students were given a high-fructose diet . . . not only was their de novo lipogenesis five times higher, but their triglycerides and free fatty acids doubled. . . . These free fatty acids . . . go on to cause insulin resistance. [Thus] when fructose is consumed, a person ultimately consumes fat and not carbohydrates.”).

48. *Populations with High Sugar Consumption are at Increased Risk of Chronic Disease, South African Researchers’ Report*, BULLETIN OF THE WORLD HEALTH ORG., Aug.

premise is that in order to maintain a healthy weight, we have to burn more calories than we consume. Dr. Lustig's theory refutes this premise; because fructose is only metabolized by the liver, fructose calories are more likely than calories from other sources to contribute to obesity.⁴⁹ As such, not all calories are created equal.⁵⁰ A study by Dr. David Ludwig of Boston Children's Hospital confirms Dr. Lustig's theory.⁵¹ This is one of the reasons for Mayor Bloomberg's initiative to limit quantity sizes of sugar-laden beverages.⁵² "Desserts and sodas and energy and sports drinks are the top sources of added sugar in most American diets."⁵³ Sugar adds calories and fat, but no nutritional value to the diet.⁵⁴ This may help explain why low-fat diets, which were promoted in the 1980s, failed to make a dent in obesity rates. When fat was taken out of many foods, sugar was often added to enhance taste. In fact, obesity rates since the 1980s have skyrocketed.⁵⁵ While correlation does not prove causation, there is substantial evidence that sugar is a primary factor in the current rates of obesity.

Sugar consumption is also implicated in diabetes, heart disease, and hypertension, all of which are connected to metabolic syndrome.⁵⁶ The liver, as the sole metabolizer of fructose, is critical in terms of insulin production, the hormone used to regulate blood sugar. When we eat, we produce insulin to keep blood sugar at normal levels. Glucose and fructose consumption impact insulin production in different ways. When we consume glucose, insulin production is stimulated, telling the brain when we are full and when to stop eating. Fructose, however, does not stimulate insulin upon entry.⁵⁷ Having the liver convert fructose to fat "apparently

28, 2003, available at <http://www.who.int/bulletin/releases/2003/PR0803/en/>.

49. Gary Taubes, *What Really Makes us Fat*, N.Y. Times, July 1, 2012, at 5, available at <http://www.nytimes.com/2012/07/01/opinion/sunday/what-really-makes-us-fat.html>.

50. See Gina Kolata, *In Dieting, Magic Isn't a Substitute for Science*, N.Y. Times, July 10, 2012 (in conversation with Dr. Jules Hirsch, Dr. Hirsch believes that the idea that not all calories are created equal in the obesity debate is an "illusion").

51. See David Ludwig et al., *Effects of Dietary Composition on Energy Expenditure During Weight Loss Maintenance*, 307 (24) JAMA 2627, 2634 (June 2012); Cara B. Ebbeling, Ph.D. et al., *A Randomized Trial of Sugar-Sweetened Beverages and Adolescent Body Weight*, 367 N. ENG. J. MED. 1407, 1407 (Oct. 11, 2012), available at <http://www.nejm.org/doi/full/10.1056/NEJMoa1203388>.

52. *New York Plans Ban*, *supra* note 2.

53. *Added Sugar: Don't Get Sabotaged by Sweeteners*, MAYO CLINIC (Apr. 5, 2011), <http://www.mayoclinic.com/health/added-sugar/MY00845>.

54. See Taubes, *supra* note 1.

55. Barbara L. Atwell, *Obesity, Public Health, and the Food Supply*, 4 IND. HEALTH L. REV., 3, 6 (2007).

56. Vasanti S. Malik et al., *Sugar-Sweetened Beverages, Obesity, Type 2 Diabetes Mellitus, and Cardiovascular Disease Risk*, 121 CIRCULATION 1356, 1364 (2010).

57. QUINN, *supra* note 28, at 52.

induces a condition known as insulin resistance, which is now considered the fundamental problem in obesity, and the underlying defect in heart disease and in [type 2] diabetes. . .It might also be the underlying defect in many cancers.⁵⁸ Our bodies respond to insulin resistance by producing more insulin, which ultimately causes blood sugar levels to rise.⁵⁹ “[H]aving chronically elevated insulin levels has harmful effects of its own – heart disease for one. A result is higher triglyceride levels and blood pressure, lower levels of HDL cholesterol (the ‘good cholesterol’), further worsening the insulin resistance – this is metabolic syndrome.”⁶⁰

The biochemical waste product of fructose consumption is uric acid.⁶¹ Excess uric acid is associated with gout, and also blocks endothelial nitric oxide synthase, “an enzyme . . . that is responsible for generating . . . our internal blood pressure.”⁶² Therefore, sugar consumption is linked to hypertension.⁶³ Sugar consumption is also associated with mental illness, including depression.⁶⁴ There is also evidence that sugar is addictive.⁶⁵

58. Taubes, *supra* note 1. There has been a debate over many decades about whether fat or sugar is the key culprit in heart disease, diabetes and obesity. Compare ANCEL KEYS ET AL., SEVEN COUNTRIES STUDY (1980) (fat), with YUDKIN, *supra* note 8 (sugar). Given the manner in which sugar is metabolized and converted to fat, it is possible that both fat and sugar are implicated, with sugar being the worst culprit. One thing is clear: rates of obesity, diabetes, and heart disease continued to climb while we focused on fat as the culprit.

59. Taubes, *supra* note 1.

60. *Id.* Diabetes occurs when the blood sugar level is too high. Risk factors for type 2 diabetes include “[o]besity, genetic predisposition, poor diet, lack of exercise, smoking [and] drinking.” O’CONNELL, *supra* note 28, at 6 (quoting Dr. Reginald Rigsby, MD). In fact, type 2 diabetes is largely preventable and sometimes reversible. *Id.* But see Denise Grady, *Obesity-Linked Diabetes in Children Resists Treatment*, N.Y. TIMES, Apr. 29, 2012, available at http://www.nytimes.com/2012/04/30/health/research/obesity-and-type-2-diabetes-cases-take-toll-on-children.html?_r=3. Type 2 diabetes can sometimes be treated effectively with changes in diet and other lifestyle patterns. Several years ago, in fact, Beth Israel Hospital in New York City began a holistic approach to treating diabetes to help patients control their blood sugar. Ian Urbina, *In the Treatment of Diabetes, Success Often Does Not Pay*, N.Y. TIMES, Jan. 11, 2006, available at <http://www.nytimes.com/2006/01/11/nyregion/nyregionspecial5/11diabetes.html?pagewanted=all>. The program educated the public on how to check their blood sugar, diet, and exercise. Beth Israel shut the program down because the holistic approach worked so well that the costs in terms of lost revenue for amputations and other complications of diabetes made the program financially unsustainable. *Id.*

61. QUINN, *supra* note 31, at 52.

62. *Id.* at 53.

63. He supports this theory with evidence from a study by Dan Feig at the University of Texas, San Antonio. *Id.* at 53-54.

64. O’CONNELL, *supra* note 28, at 79; DUFTY, *supra* note 8, at 48 (“It is quite possible to improve your disposition . . . and change your personality for the better. The way to do it is to avoid cane and beet sugar in all forms and guises.”). The so-called “twinkie defense” has been criticized as a form of “defense du jour” that has no real legitimacy. *State v. Stewart*, 719 S.E.2d 876, 903 (W. Va. 2011) (Benjamin, J., dissenting) (the majority “encourages such notable defenses as the “twinkie” defense (used in the defense of Dan White in the

Thus, efforts to stop eating sugar or to decrease the amount of sugar consumption may be very difficult for some individuals. Less well-known risks of sugar consumption are cancer⁶⁶ and tuberculosis.⁶⁷ The Department of Agriculture's 2010 Dietary Guidelines, the Department of Health and Human Services, and the American Heart association have all advised Americans to limit their sugar consumption because of the health risks associated with its excessive intake.

Additional research is needed to determine the level at which sugar consumption becomes toxic. Dr. Lustig points out that “[a] little is not a problem, but a lot kills slowly.”⁶⁸ While American sugar consumption is a lot higher than it is in much of the rest of the world,⁶⁹ we need controlled studies to determine at what point sugar consumption leads to fatty liver, insulin resistance and metabolic syndrome. “In . . . laboratory rats and mice, it’s clear that if the fructose hits the liver in sufficient quantity and with sufficient speed, the liver will convert much of it to fat,”⁷⁰ leading to insulin resistance and metabolic syndrome.⁷¹

One of the reasons why sugar consumption contributes to the foregoing diseases is that in many ways, we metabolize sugar the same way we metabolize alcohol. Fructose is a “chronic toxin” rather than an acute toxin like ethanol (alcohol), in that it does not cause drunkenness; rather, the harmful effects of sugar are seen over time.⁷² Fructose, however, is

killings of San Francisco Mayor George Moscone and Supervisor Harvey Milk.”).

65. DUFTY, *supra* note 8, at 24 (“Sugar Blues . . . deserves . . . to become the universal name for an addictive planetary plague.”).

66. BURTON GOLDBERG *ET AL.*, AN ALTERNATIVE MEDICINE DEFINITIVE GUIDE TO CANCER 25 (1997) (Dr. Atkins’ diet for cancer treatment begins with “sugar free” recommendation.); *see also* Dr. Douglas Brodie, *id.* at 71 (“avoid refined sugars.”); Dr. Etienne Callebout, *id.* at 98 (recommending that cancer patients avoid sugar and if sweets are eaten, not to eat them by themselves because “this practice tends to destabilize blood sugar levels and promote cancerous conditions.”).

67. There is evidence that a high sugar diet creates the conditions necessary for tuberculosis bacteria to thrive. DUFTY, *supra* note 8, at 76-77.

68. Lustig et al., *supra* note 8, at 28.

69. *Agriculture Factbook 2001-2002*, USDA, available at <http://www.usda.gov/factbook/chapter2.htm> (last visited Jan. 8, 2012) (“Per capita consumption of caloric sweeteners . . . mainly sucrose (table sugar made from cane and beets) and corn sweeteners (notably high-fructose corn syrup, or HFCS)—increased 43 pounds, or 39 percent, between 1950-59 and 2000. . . . In 2000, each American consumed an average 152 pounds of caloric sweeteners, 3 pounds below 1999’s record average 155 pounds.”).

70. Taubes, *supra* note 1; *see also* WORLD CANCER RESEARCH FUND & AM. INST. FOR CANCER RESEARCH, FOOD, NUTRITION, PHYSICAL ACTIVITY, AND THE PREVENTION OF CANCER: A GLOBAL PERSPECTIVE, (2007), available at <http://eprints.ucl.ac.uk/4841/1/4841.pdf>.

71. Taubes, *supra* note 1; Lustig et al. *supra* note 8 (“[S]ugar induces all of the diseases associated with metabolic syndrome.”).

72. QUINN, *supra* note 31, at 19, 47.

metabolized like alcohol. After all, alcohol (ethanol) is fermented sugar; they come from the same plant, and they are taken care of by the liver in the same way.⁷³

Despite the forgoing discussion, research on the health risks associated with sugar consumption remains inconclusive.⁷⁴ It will take several years to conduct double blind studies to prove Dr. Lustig's theories. Just as tobacco was thought to be dangerous for our health before it was conclusively proven,⁷⁵ sugar is now thought to be more dangerous than scientific data can prove.⁷⁶ For example, the Institute of Medicine reported that there is still no consensus on how much sugar can be consumed as part of a healthy diet.⁷⁷ The Sugar Association exploits this lack of certainty, suggesting that sugar is a safe part of a nutritious diet.⁷⁸ This is one reason, among others, why sugar remains a pervasive part of our food supply. In the case of sugar, it may be useful to apply the precautionary principle from the field of environmental law and take precautions based on the knowledge we have.⁷⁹

II. WHY ADDED SUGAR IS PERVASIVE THROUGHOUT THE FOOD SUPPLY

A. Follow the money

The old adage "follow the money"⁸⁰ applies to the addition of sugar to a large majority of our food supply, just as it applies to so many other things. Even before *Citizens United*,⁸¹ bank bailouts, the retention of private for-

73. Laura Schmidt, *Opinion: why we should regulate sugar like alcohol*, CNN.COM (Feb. 1, 2012),

<http://www.cnn.com/2012/02/01/health/opinion-regulate-sugar-alcohol/index.html>

("Many of the health hazards of drinking too much alcohol, such as high blood pressure and fatty liver, are the same as those for eating too much sugar. When you think about it, this actually makes a lot of sense. Alcohol, after all, is simply the distillation of sugar. Where does vodka come from? Sugar."); *see also* Lustig et al., *supra* note 8.

74. Taubes, *supra* note 1.

75. *See infra* Section III (describing the evolution in Congressionally required cigarette warnings based on evolving knowledge.)

76. Taubes, *supra* note 1.

77. Taubes, *supra* note 1 (noting that the FDA has not explored the health issues associated with sugar since 1986).

78. *What does the Science Say?*, THE SUGAR ASS'N, <http://www.sugar.org/sugar-and-your-diet/what-does-the-science-say.html> (last visited Jan. 8, 2013).

79. Michelle S. Turker, *Banning Bisphenol A in the United States and Canada: Epigenetic Science, the Precautionary Principle, and a Missed Opportunity to Protect the Fetus*, 8 J. HEALTH & BIOMED. L. 173, 182-83 (2012.) The precautionary principle is often used in the environmental context. It "advocates for measures to be taken before harm is proven to result from a certain activity, or more simply stated, it's better to be safe than sorry." *Id.*

80. *See* ALL THE PRESIDENT'S MEN (Warner Bros. Pictures 1976).

81. The Court overturned decades of settled law, *see* *Austin v. Michigan Chamber of*

profit insurance companies for health care coverage,⁸² and the virtual corporatization of America,⁸³ the food lobby was a strong political force.⁸⁴ The food lobby works for policies that will maximize the profitability of big food.⁸⁵ For example, the dairy industry has successfully lobbied to include dairy in the United States Department of Agriculture's (USDA) daily-recommended diet,⁸⁶ despite evidence that we do not need dairy, and that many dairy products are unhealthy for human consumption.⁸⁷ Similarly, the

Commerce, 494 U.S. 652 (1990), *overruled by* Citizens United v. Federal Election Commission, 130 S. Ct. 876 (2010), and held that corporations and unions could donate unlimited amounts of money in political campaigns pursuant to the first amendment. In the 2012 campaign season, we have seen the rise of Political Action Committees (PACS) and the millions of dollars they spend to influence election outcomes. *See Campaign Finance (Super Pacs)*, N.Y. TIMES, Aug. 6, 2012, available at http://topics.nytimes.com/top/reference/timestopics/subjects/c/campaign_finance/index.html.

82. Despite much higher administrative costs than government-run programs, we continue to have a hodge-podge of health programs that keep the private sector involved in something that is arguably a human right. Senator Edward Kennedy, *Health Care as a Basic Human Right: Moving from Lip Service to Reality*, 22 HARV. HUM. RTS. J. 165 (Summer 2009) (noting that the World Health Organization recognizes health care as a human right but that the United States does not).

83. *See* Thomas L. Friedman, *This Column Is Not Sponsored by Anyone*, N.Y. TIMES, May 12, 2012, available at <http://www.nytimes.com/2012/05/13/opinion/Sunday/friedman-this-column-is-not-sponsored-by-anyone.html> ("Over the last three decades . . . we have drifted from having a market economy to becoming a market society. A market economy is a tool . . . for organizing productive activity, but a 'market society' is a place where everything is up for sale. It is a way of life where market values govern every sphere of life," *quoting* MICHAEL SANDEL, *WHAT MONEY CAN'T BUY: THE MORAL LIMITS OF MARKETS*, (2012)).

84. Duff Wilson & Janet Roberts, *Special Report: How Washington Went Soft on Childhood Obesity*, REUTERS (Apr. 27, 2012), <http://www.reuters.com/article/2012/04/27/us-usa-foodlobby-idUSBRE83Q0ED20120427> ("Lobbying records analyzed by Reuters reveal that the industries more than doubled their spending in Washington during the past three years. In the process, they largely dominated policymaking.").

85. *Id.*

86. AMERICAN DAIRY ASSOCIATION AND DAIRY COUNCIL, <http://www.adadc.com/> (last visited Oct. 27, 2012) (noting the ADADC's mission is to "economically benefit dairy farmers."). The USDA publishes Dietary Guidelines for Americans every five years. *See* U.S. DEP'T OF AGRIC., REPORT OF THE DGAC ON THE DIETARY GUIDELINES FOR AMERICANS, 2010 E4-4 (2010) available at <http://www.cnpp.usda.gov/Publications/DietaryGuidelines/2010/DGAC/Report/E-Appendix-E-4-History.pdf>. The USDA continues to promote dairy as a separate food group for daily consumption supposedly based on scientific evidence. U.S. DEP'T AGRIC., U.S. DEP'T HEALTH & HUMAN SERVS., DIETARY GUIDELINES FOR AMERICANS 2010 38 (2010), available at <http://www.health.gov/dietaryguidelines/dga2010/dietaryguidelines2010.pdf>. This is due in large part, however, to the lobbying of the American Dairy Association and others. In fact, many officials in the USDA were former lobbyists or employees in the private food sector. Jeff Herman, *Saving U.S. Dietary Advice from Conflicts of Interest*, 65 FOOD & DRUG L.J., 285, 294-96 (2010).

87. *Cf.* Mark Bittman, *Got Milk? You Don't Need It*, N.Y. TIMES, Jul. 7, 2012, available at <http://opinionator.blogs.nytimes.com/2012/07/07/got-milk-you-dont-need-it/> (noting that many are lactose intolerant or have other allergies to milk). Dairy products are

National Cattlemen's Beef Association "works to advance the economic, political and social interests of the U.S. cattle business and to be an advocate for the cattle industry's policy positions and economic interests."⁸⁸

The sugar industry⁸⁹ also has a long history of looking out for its own interests.⁹⁰ Historically, humans ate very little sugar because it was very expensive to extract from the sugar cane plant.⁹¹ As a result, sugar was considered a luxury item and was often kept in a special covered dish and used sparingly.⁹² The commercial production of sugar in the Caribbean was initiated by Europeans who "virtually exterminated" the indigenous population and then imported slave labor from Africa to work the sugar plantations.⁹³ With modern machinery, sugar production became relatively inexpensive and the price of sugar plummeted.⁹⁴ Moreover, when high fructose corn syrup was introduced in the 1970s, it was sweeter and cheaper than sugar from sugar cane or sugar beets, and the cost of sweetening food was further reduced, especially given our agricultural corn subsidies.⁹⁵ Sweetening food shifted from a very expensive proposition to a relatively inexpensive process.

The Sugar Association, a key sugar lobbying organization, maintains that

the single largest source of saturated fat and have been linked to prostate cancer. *Id.* Moreover, milk is more difficult to digest than, for example, cheese or other dairy products. *Id.* Yet the "federal government not only supports the milk industry by spending more money on dairy than any other item in the school lunch program, but by contributing free propaganda as well as subsidies amounting to well over \$4 billion in the last 10 years." *Id.* The scientific evidence suggests that when it comes to preventing diseases like osteoporosis, other countries with less dairy consumption have much lower incidences of the disease. In fact, we can get the calcium we need from vegetables like broccoli and kale. *See Health Concerns about Dairy Products*, PHYSICIANS COMM. FOR RESPONSIBLE MED., <http://www.pcrm.org/health/diets/vegdiets/health-concerns-about-dairy-products> (last visited Dec. 15, 2012) ("Many Americans, including some vegetarians, still consume substantial amounts of dairy products—and government policies still promote them—despite scientific evidence that questions their health benefits and indicates their potential health risks.").

88. NATIONAL CATTLEMEN'S BEEF ASSOCIATION, <http://www.beefusa.org/aboutus.aspx> (last visited Dec. 4, 2012).

89. I am including both the corn and sugar industries when I use this term, although they are competitors. *See infra* note 106 and accompanying text.

90. YUDKIN, *supra* note 8, at 2.

91. DUFTY *supra* note 8, at 27-28.

92. *See Id.*

93. DUFTY, *supra* note 8, at 31-33 (noting that two-thirds of the African trade slave was for sugar plantations.). *See also id.* at 31-45 for a detailed account of the history of the sugar trade.

94. YUDKIN, *supra* note 8, at 12-13.

95. ANNA LAPPE & BRYANT TERRY, GRUB: IDEAS FOR AN URBAN ORGANIC KITCHEN 35 (2006). *Cf.* ENVTL. WORKING GRP., FARM SUBSIDY PRIMER, *available at* <http://farm.ewg.org/subsidyprimer.php> (last visited Jan. 8, 2013) (noting that corn is one of the 5 commodities most heavily subsidized by the government.). *See infra* notes 102-107 and accompanying text regarding corn subsidies.

“[s]ugar has been an important ingredient in people’s diets for centuries and the subject of countless studies. When the full body of science is evaluated during a major review of scientific literature, experts continue to conclude that sugars intake is not a causative factor in any disease, including obesity.”⁹⁶ The sugar industry, unlike some other food industries, has made no effort to conduct studies to evaluate the health risks associated with sugar consumption.⁹⁷ In 2003, the World Health Organization was poised to suggest that sugar should constitute no more than ten percent of a daily diet.⁹⁸ The Sugar Association lobbied so extensively against the recommendation that it was dropped and replaced with a much weaker and more vague recommendation that we eat sugar in moderation.⁹⁹ Without regard to health consequences, corporate lobbying focuses on maintaining or increasing quarterly profits for industry members by attempting to advance policies that maximize sales,¹⁰⁰ including food subsidies that adversely impact the food supply.¹⁰¹

Food subsidies have substantially contributed to the widespread addition of sugar to our food supply. Since 1933, Congress has passed a farm bill

96. *What Does the Science Say?* THE SUGAR ASS’N, <http://www.sugar.org/sugar-and-your-diet/what-does-the-science-say.html> (last visited Jan. 8, 2013).

97. YUDKIN, *supra* note 8, at 14 (“Other industries which produce foods like meat or dairy products or fruits have spent a great deal of money over the years to carry out or support nutritional studies on their products, even though these foods form a smaller proportion of the western diet than sugar now does. But the sugar people seem quite content to spend their money on advertising and public relations, making claims about quick energy and simply rejecting suggestions that sugar is really harmful to the heart or the teeth or the figure or to health in general.”).

98. Fernando Vio & Ricardo Uauy, *The Sugar Controversy*, FOOD POLICY FOR DEVELOPING COUNTRIES (2007), available at <http://cip.cornell.edu/DPubS?service=UI&version=1.0&verb=Display&handle=dns.gfs/1200428197>.

99. *WHO Attacks US Sugar Lobby*, BBC NEWS, <http://news.bbc.co.uk/2/hi/americas/2966187.stm> (last updated Apr. 22, 2003, 12:26 GMT). See also Sarah Boseley, *Sugar Industry Threatens to Scupper WHO*, THE GUARDIAN, <http://www.guardian.co.uk/society/2003/apr/21/usnews.food?INTCMP=SRCH> (last updated Apr. 22, 2003). Cf. Editorial, *Big Sugar*, THE WASHINGTON POST, Apr. 16, 2005, at A18, available at <http://www.washingtonpost.com/wp-dyn/articles/A57782-2005Apr15.html> (noting the huge influence of the sugar lobby and United States policy that bows to that influence in the form of import quotas that keep United States sugar prices higher than it is for most of the world. The author notes that the victims of United States policy include “ordinary supermarket visitors [who] are made to subsidize welfare for corporations. At the same time, efficient foreign sugar producers, many of them in poor countries, are denied a fair chance to export their way out of poverty.”).

100. Arguably, re-writing corporate law should be a high priority. Rather than focus on quarterly profit for investors, corporations should have a legal incentive to balance profit with good corporate citizenship. LYNN STOUT, *THE SHAREHOLDER VALUE MYTH: HOW PUTTING SHAREHOLDERS FIRST HARMS INVESTORS, CORPORATIONS AND THE PUBLIC* (2012).

101. Julie Foster, *Subsidizing Fat: How the 2012 Farm Bill Can Address America’s Obesity Epidemic*, 160 U. PA. L. REV. 235, 240-41 (2011).

every five years that has a significant impact on what farmers grow and on the ultimate price of food.¹⁰² Initially designed to provide income protection for small farmers during the Depression, farm subsidies now go primarily to huge agribusiness enterprises.¹⁰³ Moreover, crops like corn, which are high in calories but relatively low in nutrition, are subsidized rather than whole grains and produce. “We’re subsidizing the least healthy calories in the supermarket – high fructose corn syrup . . . [-] and we’re doing very little for farmers trying to grow real food.”¹⁰⁴ The impact of these subsidies is multifaceted. The subsidies encourage overproduction of crops like corn because

[t]he government guarantees a minimum price for program crops, creating a compelling incentive to grow more of these crops because government subsidies negate the risk of market collapse. As the supply increases, prices fall. . . [Although the cost to produce a bushel of corn exceeds its market value f]armers continue to produce corn because government payments exceed the difference. . . The reduction in the price of commodity crops has harmed consumers by encouraging overproduction of corn,

102. See J. Amy Dillard, *Sloppy Joe, Slop, Sloppy Joe: How USDA Commodities Dumping Ruined the National School Lunch Program*, 87 OR. L. REV. 221, 224 (2008) (pointing out that food subsidies now benefit large agribusiness rather than small farmers.); Jodi Windham, *Putting Your Money Where Your Mouth Is: Perverse Food Subsidies, Social Responsibility & America’s 2007 Farm Bill*, 31 ENVIRONS ENVTL. L. & POL’Y J. 1, 3 (2007); Congress recently went on recess without passing the 2012 Farm Bill.

103. Windham, *supra* note 102, at 6; Foster, *supra* note 101, at 240, 242.

104. Nicholas D. Kristof, *Obama’s ‘Secretary of Food’?*, N.Y. TIMES (Dec. 11, 2008), http://www.nytimes.com/2008/12/11/opinion/11kristof.html?_r=0. Attributing much of the problem to the farm lobby. *Id.* See also Foster, *supra* note 101 at 239 (questioning “the value of using the third-largest federal benefits program to reduce the cost of commodities that contribute to \$147 billion in annual obesity-related health costs.”); Michele Alexandre, *We Reap What We Sow: Using Post-Disaster Development Paradigms to Reverse Structural Determinist Frameworks and Empower Small Farmers in Mississippi and Haiti*, 14 U. PA. J. L. & SOC. CHANGE, 135, 139 (“[D]omestic and international trade policies. . . [including] the encouragement of mass production of energy-related products like corn, through subsidies to large farming entities and international restrictions on exportation – have contributed to the disenfranchisement of small farmers around the world.”). *Cf.* FARM SUBSIDY PRIMER, *supra* note 95. The subsidies not only protect against risk, but ensure profitability for large farmers, while small farmers settle for a “pittance” in terms of governmental assistance. *Id.* Our agricultural policy has led to an agribusiness that produces ninety-eight percent of our food supply. Windham, *supra* note 102, at 4. In addition to noting the policy favoring large farming which causes pollution and other problems, the author notes that “agribusiness is arguably America’s largest corporate welfare recipient.” *Id.* See Margaret Sova McCabe, *Foodshed Foundations: Law’s Role in Shaping our Food System’s Future*, 22 FORDHAM ENVTL. L. REV. 563 (Fall 2011) (discussing the need for more state and local power over the food supply, a model she labels the foodshed model.); Phoenix X. F. Cai, *Think Big and Ignore the Law: U.S. Corn and Ethanol Subsidies and WTO Law*, 40 GEO. J. INT’L L. 865 (2009).

wheat, rice and soy. In response to the overabundance of these crops, manufacturers have found inventive ways to process these commodities, creating unhealthy foods that are highly processed. . . Farmers who grow fruits and vegetables are not subsidized, and are ineligible even for most conservation programs, because they do not grow program crops.¹⁰⁵

While the focus of this article is on the health hazards of both sugar from sugar cane and sugar beets, as well as high fructose corn syrup, the sugar and corn industry are competitors.¹⁰⁶ Each is trying to convince consumers that it has the healthier sweetener.¹⁰⁷ The USDA engages in direct efforts to keep the sugar industry stable.¹⁰⁸ By limiting import of foreign sugar, the USDA keeps domestic prices at a level that helps maximize corporate profitability.¹⁰⁹ Therefore, both the corn and sugar industries profit substantially from government food policies.

In addition to food subsidies, humans have a natural, evolutionary affinity for sweet foods.¹¹⁰ There is also some evidence that sugar is addictive, so once we begin to consume large quantities of sugar, we want to continue the habit.¹¹¹ Thus, there is a great deal of money to be made from sugar-sweetened products, making it an especially attractive food additive from the industry's standpoint. As a result, an estimated eighty percent of the approximately 600,000 processed food products on the

105. Foster, *supra* note 101 at 240-42 (2011) (suggesting that the focus of the farm bill should shift from quantity of the food supply to quality of affordable food.).

106. See Abe Rosenberg, *Sugar Industry Sues Corn Industry in LA Federal Court, Claiming False Advertising*, S. CAL. PUB. RADIO (Mar. 20, 2012), <http://www.scpr.org/news/2012/03/20/31712/sugar-industry-sues-corn-industry-la-fed-court-cla/>.

107. *Id.*

108. U.S. DEP'T OF AGRIC., FACT SHEET: SUGAR LOAN PROGRAM AND SUGAR MARKETING ALLOTMENTS AND FEEDSTOCK FLEXIBILITY PROGRAM 1 (2011), available at http://www.fsa.usda.gov/Internet/FSA_File/sugar_ln_prog_mktg.pdf ("The Sugar Loan Program provides nonrecourse loans to processors of domestically grown sugarcane and sugar beets. This program helps to stabilize America's sugar industry."); Stephen J. Powell & Andrew Schmitz, *The Cotton and Sugar Subsidies Decisions: WTO's Dispute Settlement System Rebalances the Agreement on Agriculture*, 10 DRAKE J. AGRIC. L. 287, 290 (2005); Lauren Fox, *Farm Bill Fight to Cut Sugar Subsidies: Millions of Dollars Go to Lobbying to Keep U.S. Sugar Program Afloat*, U.S. NEWS & WORLD REPORT (June 8, 2012), <http://www.usnews.com/news/articles/2012/06/08/farm-bill-fight-to-cut-sugar-subsidies>; NESTLE, *supra* note 28, at 322 (noting importation restrictions from foreign sugar producers and a loan program that supports the price of domestic sugar. Meanwhile, corn subsidies make sweetening with high fructose corn syrup extremely inexpensive.).

109. Fox, *supra* note 108.

110. There are no bitter plants that are acutely toxic, so as a matter of human survival, we evolved to favor sweet foods. Yudkin, *supra* note 8, at 8;

111. DUFFY, *supra* note 8, at 30 (Some "viewed sugar addiction among the sultan's armies in much the same way as modern observers discovering American forces in Asia hooked on heroin and marihuana.").

market contain added sugar,¹¹² severely limiting consumer choice.¹¹³ These products are not only on supermarket shelves, but they are in vending machines, schools, convenience stores and virtually everywhere one looks. Sugar is even added to products not normally considered as sweet, like bread and ketchup. The sugar lobby has a vested interest in keeping it that way. With this ready availability, sugar consumption has drastically increased over the past 50 years.¹¹⁴ The average American consumes 152 pounds of sugar annually.¹¹⁵

III. PUBLIC HEALTH LAW AND TOBACCO¹¹⁶

*[S]ugar . . . resembles alcohol and tobacco in that it is a material for which people rapidly develop a craving, and for which there is nevertheless no physiological need.*¹¹⁷

Tobacco use is the single largest cause of premature death in the United States, killing more than 400,000 people annually.¹¹⁸ In addition to those

112. See Robert Lustig: Transcript, *Here's the Thing: With Alec Baldwin*, <http://www.wnyc.org/shows/heresthething/2012/jul/02/transcript/> [hereinafter *Here's the Thing*] (In a discussion with Alec Baldwin, Dr. Lustig notes that Dr. Barry Popkin "has just done a study that shows that 80 percent of the food items, there are 600,000 food items in America, 80 percent of them are laced with sugar, added sugar.") It bears repeating that any regulation should address only foods with added sugar. Foods like fruit that naturally contain sugar, also contain fiber, which appears to counteract the negative impact of sugar consumption. Fruit also contributes to the body's natural cleansing process. See YUDKIN, *supra* note 8.

113. Lustig et al., *supra* note 8.

114. See *supra* note 28 and accompanying text. Cf. YUDKIN, *supra* note 8, at 8-14 (describing the evolution of the human diet over thousands of years, and focusing on our shift from proteins and fats toward carbohydrate starches and sugars). Our diet is now focused more on palatability than nutrition. *Id.* at 11.

115. See U.S. DEP'T OF AGRIC., OFFICE OF COMMUNICATIONS, AGRICULTURE FACTBOOK (2001) available at <http://www.usda.gov/factbook/chapter2.htm>.

116. This section focuses on the legal regulation of cigarettes. Other tobacco products, like cigars and chewing tobacco are subject to some, but not all of the same regulations.

117. YUDKIN, *supra* note 8, at 13 (noting that many countries have taxed sugar, along with tobacco and alcohol.) Like tobacco, alcohol is also subject to various public health laws, like the twenty-one year old age restriction for alcohol purchases and DUI laws. While sugar and alcohol are metabolized in essentially the same way, sugar is not an acute toxin that can impair such basic functions as the ability to drive. Moreover, tobacco regulations are more extensive than alcohol regulations. For these reasons, this article compares sugar to tobacco rather than alcohol.

118. See U.S. DEPARTMENT OF HEALTH AND HUMAN SERVICES, PREVENTING TOBACCO USE AMONG YOUTH AND YOUNG ADULTS: A REPORT OF THE SURGEON GENERAL, EXECUTIVE SUMMARY (2012), available at <http://www.surgeongeneral.gov/library/reports/preventing-youth-tobacco-use/exec-summary.pdf>. The tobacco industry, however, is expressly protected by federal law. See 15 U.S.C. § 1331(2), (noting that one of the purposes of the Cigarette Labeling and Advertising Act is to protect commerce and the national economy by not

who die, many others who smoke suffer from a variety of illnesses that adversely impact their quality of life.¹¹⁹ Additionally, second-hand smoke threatens the health of those in the vicinity of the smoker because there are no safe levels of exposure to second-hand smoke.¹²⁰ The health care costs and lost productivity associated with tobacco use is estimated at approximately 193 billion per year,¹²¹ with another ten billion in costs associated with second-hand smoke.¹²²

Due to the number of people who smoke, the danger it presents to others, and the financial costs associated with tobacco use, there are many legal restrictions on tobacco products.¹²³ These restrictions include mandated warnings, advertising and age restrictions, and geographic limitations on where smokers can light up. Tobacco laws mirror public health laws in general, as they include every level and type of government entity.¹²⁴

requiring non-uniform labeling requirements). Moreover, the 1998 Master Settlement Agreement between the states and the tobacco industry, gave the industry assurance that if it paid the requisite sums of money, state and local governments could not sue them for future actions unless criminal in nature or to enforce the terms of the settlement agreement. C. Stephen Redhead, *Tobacco Master Settlement Agreement (1998): Overview, Implementation by States, and Congressional Issues*, CRS REPORT FOR CONGRESS (last updated Nov. 5, 1999), <http://www.law.umaryland.edu/marshall/crsreports/crsdocuments/RL30058.pdf>. Thus, tobacco companies were permitted to stay in business, for a price. States that sell the most tobacco products receive the greatest amount of money under the settlement agreement, so they may have conflicting interests in terms of limiting sales. As noted above, sugar consumption rivals tobacco in public health deaths and costs when the entire range of diseases with which it is linked is taken into account.

119. See SURGEON GENERAL, U.S. DEPT OF HEALTH AND HUMAN SERVICES, EXECUTIVE SUMMARY, *THE HEALTH CONSEQUENCES OF SMOKING* (2004) (In addition to lung cancer, smokers are at greater risk for other diseases, including emphysema, aneurysms, pancreatic, kidney and stomach cancers, and heart disease).

120. U.S. DEP'T OF HEALTH & HUMAN SERVS., *THE HEALTH CONSEQUENCES OF INVOLUNTARY EXPOSURE TO TOBACCO SMOKE: A REPORT OF THE SURGEON GENERAL* 65 (2006).

121. CENTERS FOR DISEASE CONTROL AND PREVENTION, *Smoking & Tobacco Use: Fast Facts*, http://www.cdc.gov/tobacco/data_statistics/fact_sheets/fast_facts/#cost (last visited Sept. 27, 2012).

122. *Id.*

123. See *infra* notes 125-163 and accompanying text.

124. Public health laws exist at every level of government. In addition to federal legislation, federal agencies like the National Institutes of Health, Centers for Disease Control and Food and Drug Administration (FDA), all of which are encompassed within the Department of Health and Human Services, play a role in protecting public health as do agencies like the Federal Trade Commission (unfair and deceptive trade practices), Federal Communications Commission, The Department of Alcohol, Tobacco and Firearms (illegal sales), and Internal Revenue Service (taxing unhealthy products). States and municipalities also play a central role in promoting public health. See *Jacobson v. Massachusetts*, 197 U.S. 11, 25 (1905) (Court upheld a state statute empowering local boards of health to require smallpox vaccinations if they felt it necessary. The Court broadly construed state police power to regulate public health and safety. The regulations must not be "arbitrary or oppressive" and must substantially relate to the public health threat.). In addition, private

Federal, state and local legislative and administrative initiatives permeate the tobacco regulation landscape.

A. Federal

At the federal level, the Cigarette Labeling and Advertising Act (Cigarette Labeling Act) was first passed in 1965.¹²⁵ A key purpose of the Cigarette Labeling Act was to educate the public about the risks of smoking.¹²⁶ Accordingly, it required a warning on every package of cigarettes to make smokers aware of health hazards associated with smoking.¹²⁷ The required warning was strengthened in 1969 as scientific understanding of the risks associated with smoking evolved.¹²⁸ In 1984, four rotating warnings were implemented to include some of the specific diseases linked to smoking and to emphasize the potential benefits of quitting.¹²⁹ In 2009, Congress acted once again by requiring nine rotating textual warnings.¹³⁰ In addition, Congress included a requirement that fifty percent of every cigarette package include graphic warnings depicting negative aspects of smoking.¹³¹ The tobacco industry has challenged these

organizations like the Institute of Medicine, a not-for-profit organization, provide “unbiased” advice that the government and the public alike may look to for guidance. *See* INST. OF MED. OF THE NAT’L ACAD., *About the IOM*, <http://www.iom.edu/About-IOM.aspx>.

125. Cigarette Labeling and Advertising Act, 15 U.S.C. §§ 1331-1341 (1965). The FTC regulates cigarette warning labels. *See* 15 U.S.C. § 1333 (2012).

126. 15 U.S.C. § 1331 (2012).

127. The initial warning stated: “Caution: Cigarette Smoking May be Hazardous to Your Health.” Federal Cigarette Labeling and Advertising Act, Pub. L. No. 89-92, §4, 79 Stat. 282, 283 (1965).

128. In 1969, the required warning was strengthened to read, “The Surgeon General has determined that cigarette smoking is dangerous to your health.” Public Health Cigarette Smoking Act of 1969, Pub. L. No. 91-222 § 2 84 Stat. 88. (amending, 15 U.S.C. §1333 (1969)).

129. Congress mandated the following four rotating warnings: (1) SURGEON GENERAL’S WARNING: Smoking Causes Lung Cancer, Heart Disease, Emphysema, and May Complicate Pregnancy; (2) SURGEON GENERAL’S WARNING: Quitting Smoking Now Greatly Reduces Serious Risks to Your Health; (3) SURGEON GENERAL’S WARNING: Smoking By Pregnant Women May Result in Fetal Injury, Premature Birth, and Low Birth Weight; (4) SURGEON GENERAL’S WARNING: Cigarette Smoke Contains Carbon Monoxide. Comprehensive Smoking Education Act, Pub. L. No. 98-474 § 4, 98 Stat. 2200, 2202 (1984). (amending 15 U.S.C. § 1333 (1984)).

130. The nine rotating warnings are: “WARNING: Cigarettes are addictive,” “WARNING: Tobacco smoke can harm your children,” “WARNING: Cigarettes cause fatal lung disease,” “WARNING: Cigarettes cause cancer,” “WARNING: Cigarettes cause strokes and heart disease,” “WARNING: Smoking during pregnancy can harm your baby,” “WARNING: Smoking can kill you,” “WARNING: Tobacco smoke causes fatal lung disease in nonsmokers,” “WARNING: Quitting smoking now greatly reduces serious risks to your health.” Pub. L. No. 111-31, § 201 (amending the Federal Cigarette Labeling and Advertising Act, 15 U.S.C. § 1333 (2009)).

131. Tobacco Control Act, 15 U.S.C. §§ 1333, 4402(a)(2)(A). The Tobacco Control Act

graphic warning requirements with mixed results.¹³²

The 1965 Cigarette Labeling Act, along with later amendments, not only mandates cigarette warnings but also places advertising restrictions on tobacco products.¹³³ Additionally, it preempts state laws related to labeling and advertising as long as the requisite warnings are in place.¹³⁴ The Cigarette Labeling Act bans advertising on “any medium of electronic communication subject to the jurisdiction of the Federal Communications Commission (FCC),” including television and radio.¹³⁵ Although the tobacco industry raised first amendment challenges to the ban, the law was upheld.¹³⁶ The foregoing rule has also expanded to cover the internet because the FCC asserted jurisdiction over it, albeit adopting a “nonregulatory approach.”¹³⁷ The 1998 Master Settlement Agreement explicitly prohibited advertising that targeted people under eighteen years of age.¹³⁸ Nevertheless, in part because of the need to heighten protection

requires manufacturers to apply graphic warnings to the top fifty percent of the front and back of cigarette packages for graphic, color health warnings. The FDA is charged with issuing regulations for graphic images that will “[depict] the negative health consequences of smoking.” Tobacco Regulation, Federal Retirement Reform, Pub. L. No. 111-31, § 201(d), 123 Stat. 1776 (2009). Other tobacco products have different requirements.

132. *Compare* Discount Tobacco City & Lottery, Inc. v. United States, 674 F.3d 509 (6th Cir. 2012) (upholding the graphic warnings), *with* R.J. Reynolds Tobacco Co. v. FDA, 845 F. Supp. 2d 266, 268 (D.D.C. 2012) (required graphic warnings constitute compelled speech in violation of the First Amendment). The ultimate determination on the validity of the graphic warnings will undoubtedly be decided by the Supreme Court.

133. 15 U.S.C. §1335 (2012).

134. 15 U.S.C. §1334 (2012). *See also* 23-34 94th St. Grocery Corp. v. New York City Bd. of Health, 685 F.3d 174, 177 (2nd Cir. 2012) (NYC Board of Health adopted a resolution “requiring all tobacco retailers to display signs bearing graphic images showing certain adverse health effects of smoking.”).

135. 15 U.S.C. § 1335 (2012). (“After January 1, 1971, it shall be unlawful to advertise cigarettes and little cigars on any medium of electronic communication subject to the jurisdiction of the Federal Communications Commission.”).

136. The television and radio ban on advertising was upheld in *Capital Broadcasting Co. v. Mitchell*, 333 F. Supp. 582 (D.D.C.1971), *aff’d* 405 U.S. 1000 (1972). *Cf.* *Lorillard Tobacco v. Reilly*, 533 U.S. 525 (2001). *Cf.* *American Legacy Foundation v. Lorillard Tobacco Co.*, 886 A.2d 1 (Del. Ct. Chan. 2005) (dispute regarding 1998 settlement agreement that prohibited ALF from advertising that “vilified” tobacco companies or employees). Today, commercial speech must satisfy the well-established *Central Hudson* test. *Central Hudson Gas & Electric Co. v. Public Serv. Comm’n*, 447 U.S. 557, 566 (1980). Under *Central Hudson*, the court determines first, whether the commercial speech concerns a lawful activity and is not misleading. If the speech passes muster under this analysis, the Court proceeds to determine whether the government has met its burden of showing that it has a substantial interest in regulating the speech. If it does, the regulation must directly advance that interest and be no more extensive than necessary to achieve its purpose. *Id.*

137. Anthony Ciolli, *Joe Camel Meets YouTube: Cigarette Advertising Regulations and User-Generated Marketing*, 39 U. TOL. L. REV. 121 (2007).

138. Charles King, III et al., *The Master Settlement Agreement with the Tobacco Industry and Cigarette Advertising in Magazines*, 345 NEW ENG. J. MED. 533, 538 (2011),

of adolescents, Congress later enacted the Family Smoking and Prevention and Tobacco Control Act (Tobacco Control Act).¹³⁹

Congress passed the Tobacco Control Act in 2009¹⁴⁰ which goes beyond labeling and advertising by broadly regulating tobacco products on several levels. For example, it grants regulatory authority over tobacco products to the Food and Drug Administration (FDA), authority the FDA lacked prior to 2010.¹⁴¹ Furthermore, the Tobacco Control Act required the FDA to re-issue regulations it had attempted to implement, unsuccessfully, in 1996. Among the FDA's regulations now in place are age restrictions mandating that purchasers of tobacco products be at least eighteen years old. In 1996, the FDA found that eighty-two percent of adult smokers began smoking prior to their eighteenth birthday, and half had become regular smokers by the time they turned eighteen.¹⁴² Thus, key to reducing the incidence of

available at <http://www.nejm.org/doi/full/10.1056/NEJMsa003149> (finding that the Master Settlement Agreement had little impact on magazine advertising).

139. "The government has . . . copious documentation of the practices used by the industry, oftentimes directly aimed at juveniles and other times seriously effecting them, to maintain and increase tobacco use and dependency." *Discount Tobacco*, *supra* note 131 at 519. See also Kate E. Wigginton, *Will The Supreme Court Knock Tobacco Advertising Out Of The Park For Good?: The Commercial Speech Implications Of The Family Smoking Prevention And Tobacco Control Act*, 21 SETON HALL J. SPORTS & ENT. L. 533 (2011); *Commonwealth Brands v. U.S.*, 678 F. Supp. 2d 512 (W.D. Ky. 2010).

140. Family Smoking Prevention and Tobacco Control Act, Pub. L. No. 111-31, 123 Stat. 1776 (2009).

141. See The Tobacco Control Act, 21 U.S.C.A. §§ 387a(a)-(f), 123 Stat. 1788, (2009). (A decade earlier, the Supreme Court denied the FDA's attempt to assert jurisdiction over tobacco products on the theory that nicotine is a drug and the tobacco products are drug delivery devices. *FDA v. Brown & Williamson Tobacco Corp.*, 529 U.S. 120 (2000). The Court held that Congressional intent precluded FDA jurisdiction. The Court reasoned that if the FDA had jurisdiction, it would have to classify tobacco products in a class that would bar them from being marketed because of their health risks. The Court pointed out that Congress explicitly foreclosed that result under 7 U.S.C. § 1311(a), which provides, "the marketing of tobacco constitutes one of the greatest basic industries of the United States, . . . and stable conditions therein are necessary to the general welfare."). *Id.* at 137. For additional history surrounding the FDA's role in tobacco regulation, see Matt Shechtman, *Smoking Out Big Tobacco: Can the Family Smoking Prevention and Tobacco Control Act Equip the FDA to Regulate Tobacco Without Infringing on the First Amendment?*, 60 EMORY L. J. 705, 708-711 (2011). Among Congress' findings under the Tobacco Control Act is the following: "Neither the Federal Trade Commission nor any other Federal agency except the Food and Drug Administration possesses the scientific expertise needed to implement effectively all provisions of the . . . Tobacco Control Act." Section 2 of the Tobacco Control Act – Findings, ¶ 45, Pub. L. No. 111-31, 123 Stat. 1776 (2009), <http://www.fda.gov/TobaccoProducts/GuidanceComplianceRegulatoryInformation/ucm261832.htm>. See also 21 U.S.C. § 387n (2009) (clarifying FDA jurisdiction and coordination with the FTC).

142. Regulations Restricting the Sale and Distribution of Cigarettes and Smokeless Tobacco to Protect Children and Adolescents, 61 Fed. Reg. 44396-01, 44398 (Aug. 28, 1996).

smoking are initiatives targeted to adolescents.¹⁴³

The Supreme Court has also acknowledged that smoking, and especially “underage smoking, poses perhaps the single most significant threat to public health in the United States.”¹⁴⁴ Adolescent feelings of invincibility make it less likely that they will take the dangers of smoking as seriously as an adult.¹⁴⁵ But if they make it to adulthood without smoking, it is unlikely that they will begin smoking thereafter.¹⁴⁶ In recognition of adolescent vulnerability, the Tobacco Control Act prohibits outdoor advertising within one thousand feet of a school or playground, mandates that purchasers of tobacco products be at least eighteen, and prohibits tobacco companies from sponsoring sports and entertainment events.¹⁴⁷ It also restricts distribution of free samples of tobacco products¹⁴⁸ and bans flavored cigarettes.¹⁴⁹

There are other federal regulatory controls on tobacco use implemented by various agencies. For example, taxing and spending are also used in the tobacco context, as they are in other public health contexts. Thus, the IRS has played a role in taxing tobacco products,¹⁵⁰ while other agencies spend money to educate the public about the dangers of smoking.¹⁵¹ The Bureau

143. See, e.g., U.S. DEP’T OF HEALTH AND HUMAN SERV., PREVENTING TOBACCO USE AMONG YOUNG PEOPLE; A REPORT OF THE SURGEON GENERAL, 5 (1994) (“Nearly all first use of tobacco occurs before high school graduation; this finding suggests that if adolescents can be kept tobacco-free, most will never start using tobacco”); Cf. Lorillard Tobacco Co. v. Reilly, 533 U.S. 525, 564 (2001) (the government has a substantial interest, even a compelling interest in preventing underage smoking).

144. Food & Drug Administration v. Brown & Williamson Tobacco Co., 529 U.S. 120, 161 (2000); see also Discount Tobacco City & Lottery v. United States, 674 F.3d 509, 519 (6th Cir. 2012) (noting that the government provided extensive evidence that “the use of tobacco, especially by juveniles, poses an enormous threat to the nation’s health, and imposes grave costs on the government.”).

145. INSTITUTE OF MEDICINE REPORT, ENDING THE TOBACCO PROBLEM: A BLUEPRINT FOR THE NATION, 93 (2007) (“research suggests that adolescents misperceive the magnitude of smoking harms and the addictive properties of tobacco and fail to appreciate the long-term dangers of smoking, especially when they apply the dangers to their own behavior. . . . These distorted risk perceptions are associated with adolescents’ decisions to initiate tobacco use, a decision that they will later regret.”).

146. CTRS. FOR DISEASE CONTROL & MGMT., OFFICE ON SMOKING & HEALTH, *Preventing Tobacco Use Among Youth and Young Adults, A Report of the Surgeon General*, http://www.cdc.gov/tobacco/data_statistics/sgr/2012/consumer_booklet/pdfs/consumer.pdf. (“[N]early 9 out of 10 smokers start smoking by age 18, and 99% start by age 26.”).

147. Wigginton, *supra* note 139, at 536-537.

148. 21 U.S.C. § 387a-1 (2009).

149. Tobacco product standards, 21 U.S.C. § 387g (a)(1) (2009).

150. See Jennifer Costello, Comment, *The FDA’s Struggle to Regulate Tobacco*, 49 ADMIN. L. REV. 671, 678, n 42 (1997).

151. This includes local government initiatives. New York City, for example, has a variety of tobacco related regulations, including those focused on education. See *Legal Action*, N.Y.C. DEPT. OF HEALTH AND MENTAL HYG., <http://www.nyc.gov/html/doh/html/smoke/smoke2-legal.shtml>.

of Alcohol, Tobacco, Firearms, and Explosives (ATF) is charged with fighting illegal tobacco sales,¹⁵² and the Department of Agriculture regulates tobacco farming.¹⁵³ Therefore, the research and education efforts explicitly set forth in the Cigarette Labeling Act should not be overlooked.¹⁵⁴

B. State and Local

In addition to federal laws governing tobacco use, state and local regulations impose wide-ranging restrictions. For example, like the Tobacco Control Act, states have traditionally required purchasers to be at least eighteen years of age,¹⁵⁵ with some states and localities mandating a nineteen year age minimum.¹⁵⁶ States have also imposed their own cigarette taxes.¹⁵⁷ In addition, since the 1970s many states and municipalities have restricted the physical locations where smoking is permitted in an effort to address second-hand smoke exposure.¹⁵⁸ Many municipalities do not permit smoking in restaurants, bars or workplaces.¹⁵⁹ Others have gone further, banning smoking in some outdoor spaces. San Luis Obispo, California, for example, banned smoking in some county parks and parking lots located near county-owned property.¹⁶⁰ New York City also implemented a smoking ban in public parks and beaches.¹⁶¹

152. *Alcohol & Tobacco Diversion/Smuggling*, BUREAU OF ALCOHOL, TOBACCO, FIREARMS AND EXPLOSIVES, <http://www.atf.gov/alcohol-tobacco/>.

153. *Farm Service Agency*, USDA, www.fsa.usda.gov.

154. Smoking, research, education and information, 15 U.S.C. §1341 (2007).

155. See e.g., Ind. C.L. § 35-46-1-10.2; TEX. HEALTH & SAFETY CODE §161.082; Wash. Rev. Code § 70.155.080.

156. CTRS. FOR DISEASE CONTROL, *State Laws on Tobacco Control – United States, 1998*, <http://www.cdc.gov/mmwr/preview/mmwrhtml/ss4803a2.htm> (Alabama, Alaska and Utah).

157. For an account of state taxing provisions, among others, see AMERICAN LUNG ASSOCIATION, STATE OF TOBACCO CONTROL, available at http://www.stateoftobaccocontrol.org/SOTC_2012.pdf. (last visited Jan. 7, 2013).

158. *Id.*

159. See, e.g., NYC Smoke Free Air Act of 2002, N.Y.C. Admin. Code § 17-502. This statute, which banned smoking in most restaurants and bars, was later amended to add hospitals and the grounds immediately outside hospital buildings. See also AMERICAN NON-SMOKERS' RIGHTS FOUND., <http://www.no-smoke.org/pdf/mediaordlist.pdf>. (“Across the United States, 22,434 municipalities, representing 81.1% of the US population, are covered by a 100% smokefree provision in non-hospitality workplaces, and/or restaurants, and/or bars, by either a state, commonwealth, territorial, or local law.”).

160. Bob Cuddy, *Supervisors Narrowly Ban Smoking at San Luis Obispo County Parks*, THE TRIBUNE, July 17, 2012, available at <http://www.sanluisobispo.com/2012/07/17/2146263/supervisors-narrowly-ban-smoking.html#storylink=mirelated>.

161. Atlanta recently imposed a ban on public parks with \$1,000 fine and up to six months in jail or community service for violators. Robbie Brown, *In the Tobacco-Rich South, New Limits on Smoking*, N.Y. TIMES, Jul 21, 2012, at A14. Sometimes, preemption

Additionally, there are some residential buildings in New York City that are smoke-free, meaning that an individual who smokes may be barred from smoking in his or her own home.¹⁶² Despite the varied regulatory approaches to cigarettes, the tobacco industry itself receives governmental support for its continued existence¹⁶³ Thus, it continues to market its products.¹⁶⁴

IV. REGULATING SUGAR/REGULATING FOOD

*[I]f we judge by its impact on human health, the American food supply is a disaster.*¹⁶⁵

A. Regulating Sugar

Regulating sugar would undoubtedly prove controversial. People have been consuming sugar for more than two thousand years¹⁶⁶ and most, presumably, do not associate any significant harm with its consumption. Consequently, any intrusion into personal freedom will likely be met with resistance. Former New York Governor David Patterson proposed a soda tax in 2009, for example, but lobbying and political conflict killed it.¹⁶⁷ Likewise, Mayor Bloomberg's proposal to limit portion sizes of sugary

challenges are made to municipal restrictions, with plaintiffs arguing that the restrictions are preempted by more lenient state laws. *See, e.g.,* Entertainment Industry Coalition v. Tacoma-Pierce Cty Health Dep't., 153 Wash.2d 657, 105 P.3d 985 (2005) (local ordinance was preempted by more lenient state law). Subsequent to this decision the state legislature imposed stricter rules regarding smoking. *See* Wash. Rev. Code § 70.160.011.

162. SMOKEFREEHOUSINGNY, <http://www.smokefreehousingny.org/> (last visited Jan. 8, 2013).

163. 15 U.S.C. § 1331 (2). The Master Settlement Agreement Between the States and Tobacco Manufacturers also gives the tobacco companies assurance that in exchange for the payment of money, they will be permitted to continue their business enterprises. KENNETH WING, ET AL. Public Health Law 459 (LexisNexis 2007).

164. At least one person has noted that the industry itself could be abolished while keeping tobacco products legal, forcing smokers to grow their own products. *See* Raj Patel, *Abolish the Food Industry*, *infra* note 200.

165. *Transcript: Reforming the 2012 Farm Bill: Subsidies, Food Assistance and America's Health: Food Quality Disaster*, FORUM HARVARD SCH. PUB. HEALTH (Oct. 20, 2011), <http://www.hsph.harvard.edu/forum/sites/default/files/downloads/transcripts/transcript-20111020.pdf>.

166. Yudkin, *supra* note 8, at 12.

167. Nicholas Confessore, *Patterson Lowers Expectations on Soda Tax, Calling Approval Unlikely*, N.Y. TIMES, Feb. 14, 2009, available at <http://www.nytimes.com/2009/02/14/nyregion/14sodatax.html>; Joseph Berger, *New Strategy for Soda Tax Gives Diet Drinks a Break*, N.Y. TIMES, May 19, 2010, available at <http://www.nytimes.com/2010/05/20/nyregion/20sodatax.html>.

drinks has critics referring to a developing “nanny state.”¹⁶⁸ Most regulations, therefore, should be at the level of production, focusing on improving the food supply rather than restricting consumer freedoms at the retail level. However, there are enough similarities between sugar and tobacco to warrant applying some, but not all, of the same regulatory approaches to sugar that are already applied to tobacco.

Tobacco generates direct health hazards for anyone in the vicinity of the user because of the dangers of second-hand smoke.¹⁶⁹ The over-consumption of added sugar also harms more than just the person consuming it. The societal health costs associated with obesity, diabetes, and heart disease, among others, are huge.¹⁷⁰ Everyone pays higher health insurance premiums to help pay for those who suffer from these illnesses.¹⁷¹ Thus, the societal economic harms associated with sugar consumption, while arguably more indirect than the threat of being near a smoker are quite real.¹⁷² Using tobacco as a model for addressing the health risks associated with added sugar through regulatory channels, a combination of federal, state, and local initiatives is likely to have the most significant impact.

First, given the large number of diseases linked to sugar consumption, obesity, heart disease, diabetes, and others, public health agencies are obligated to educate the public. After all, providing information is a central reason why public health agencies exist. Federal, state and local public health agencies can use their spending power for public health announcements and other initiatives to warn of the health hazards of sugar consumption, just as they have been used extensively to educate and warn of the dangers associated with smoking.¹⁷³ Knowledge that smoking is bad

168. *See supra* note 3.

169. *See* REPORT OF THE SURGEON GENERAL, *supra* note 120.

170. The United States Surgeon General estimated that the costs associated with obesity were 117 billion dollars in 2000. *See infra* note 187.

171. *As America's Waistline Expands, Costs Soar*, REUTERS (Apr. 30, 2012, 6:00 AM), <http://www.reuters.com/article/2012/04/30/obesity-idUSL2E8FO3MV20120430>. The Affordable Care Act retains our substantial reliance on private, for-profit insurance companies, whose main mission is to make a profit. Therefore, they will raise premiums as needed to keep profits high. The public option, which failed to make it through the final round of the Act, would have created a source of competition for the private health insurance industry.

172. In addition to the economic hardships associated with the consumption of sugar, there are also emotional challenges for those living with people who are obese, suffering from heart disease or one of the many other ailments associated with sugar.

173. *Cf. Am. Legacy Found. v. Lorillard Tobacco Co.*, 886 A.2d 1 (Del. Ch. 2005) (discussing a series of smoking advertisements funded by the American Legacy Foundation as an outgrowth of the 1998 Master Settlement Agreement.).

for one's health is virtually universal.¹⁷⁴ The same cannot currently be said of sugar. Therefore, making the public as aware of the dangers of sugar as they are of the dangers of smoking would be a worthwhile initiative.

In addition to educational initiatives, labeling and advertising restrictions that apply to tobacco products should be embraced and applied to sugar. This will help inform the public about the foods they are eating. Nutrition labels detailing sugar and fat content, should be enhanced to include not just the total number of grams of sugar per serving but also the number of grams of *added* sugar per serving. Natural sugars, such as those from fruit,¹⁷⁵ usually contain fiber and are not unhealthy in the same way that added sugars are.¹⁷⁶ Just as the nutritional facts break down saturated, unsaturated and trans fats, they should also distinguish between the number of grams of added sugars versus natural sugars and state the total grams of sugar per serving. This will facilitate intelligent consumer decision-making.

Warning labels required on cigarette packages can be used as a model for warning labels on foods with added sugars. The warnings should contain current information about the risks associated with sugar consumption. Instead of requiring warnings on every food product with added sugar, the warning labels could be limited to products with, for example, more than ten grams of added sugar per serving.¹⁷⁷ The warnings should be mandated at the federal level, as they are under the Cigarette Labeling Act, so they can be standardized throughout the country.¹⁷⁸ This will help educate the public, and commercial speech considerations are more easily overcome for warning labels, which disclose information, than they would be for advertising restrictions.¹⁷⁹

In conjunction with improved nutrition labels and warnings, advertising

174. *Second Hand Smoke*, NEMOURS, http://kidshealth.org/teen/drug_alcohol/tobacco/secondhand_smoke.html (last visited Jan. 8, 2013).

175. *See Here's the Thing*, *supra* note 112.

176. *Cf. STEWARD ET AL., SUGAR BUSTERS: CUT SUGAR TO TRIM FAT*, 63-64 (1995).

177. Ten grams is being used as an example. The scientific evidence should dictate the actual number. Most soft drinks have more than twenty grams of sugar, so this change would require warnings on most soft drink containers.

178. *See supra* notes 125-26 and accompanying text.

179. *Zauderer v. Office of Disciplinary Counsel*, 471 U.S. 626, 673 (1985) (explaining that “[t]he courts have regularly held that mandating disclosure is a less burdensome imposition on commercial speech than placing prohibitions on such speech.” Thus the court rejected appellant’s contention that we should subject disclosure requirements to a strict “least restrictive means” analysis.). *But see R.J. Reynolds Tobacco Co. v. FDA*, 2012 U.S. Dist. LEXIS 26257 (2012) (striking down FDA regulations requiring the display of textual warnings and graphic images that would cover the top fifty percent of every package of cigarettes). *Cf. Jonathan Mincer, Court Misapplies First Amendment to Strike Down FDA Cigarette Warning Labels*, REG BLOG (Mar. 3, 2012), <http://www.law.upenn.edu/blogs/regblog/2012/03/court-misapplies-first-amendment-to-strike-down-fda-cigarette-warning-labels.html>.

restrictions on food companies can be used strategically to limit sugar consumption, just as tobacco advertising restrictions attempt to discourage smoking. Every parent knows that Saturday morning television programming is filled with advertisements for junk food. Restricting advertisements targeted to young children who are easily influenced would be a start. Smokers usually begin smoking during adolescence, and the data shows that youths are more easily influenced by advertising and less likely to take seriously the health threats associated with their behavior.¹⁸⁰ Due to this vulnerability and the pervasiveness of sugar-related illnesses, sugar-advertising restrictions are appropriate.

Advertisers will likely claim that such restrictions violate their first amendment right to commercial speech.¹⁸¹ Since advertising restrictions have been successfully implemented in the tobacco industry, one key question will likely be whether sugar is as harmful for health as smoking, and whether any proposed advertising restrictions pass muster under the *Central Hudson* test.¹⁸²

Pursuant to the *Central Hudson* test, the deciding court must first determine whether the commercial speech concerns a lawful activity and is not misleading.¹⁸³ If the speech satisfies this analysis, the Court must determine whether the government has met its burden of showing that it has a substantial interest in regulating the speech.¹⁸⁴ If it does, the regulation must directly advance that interest and be no more extensive than necessary to achieve its purpose.¹⁸⁵

Sugar consumption contributes to a variety of illnesses, including obesity, diabetes and heart disease.¹⁸⁶ Given that the economic costs associated with obesity alone (not to mention the many other diseases associated with sugar consumption) was an estimated 117 billion dollars in 2000,¹⁸⁷ the government arguably has a substantial interest in regulating sugar consumption, including advertising restrictions. And while sugar consumption is a legal activity, it could be argued that when advertisements focus only on the tastiness of the product without also disclosing its harms,

180. See *supra* note 139 and accompanying text.

181. Tobacco companies have resisted advertising restrictions. See, e.g., *Lorillard Tobacco Co. v. Reilly*, 533 U.S. 525 (2001).

182. *Central Hudson Gas & Electric Co. v. Public Service Comm'n*, 447 U.S. 557, 565 (1980).

183. *Id.*

184. *Id.*

185. *Id.*

186. See *supra* Part I.

187. *Overweight and Obesity: At a Glance*, U.S. DEP'T HEALTH & HUMAN SERVS., http://www.surgeongeneral.gov/library/calls/obesity/fact_glance.html (last visited Jan. 8, 2013).

they are misleading.¹⁸⁸ Prescription drug advertisements must include side effect warnings in addition to the potential benefits of the medication.¹⁸⁹ Similar requirements should be imposed for products in excess of a set number of grams of sugar per serving.

In order to satisfy the *Central Hudson* requirement that any regulation directly advance governmental interest and be narrowly drawn, advertising restrictions may initially be limited solely to advertisements directed to minors, on the theory that adults are capable of making their own informed choices. Alternatively, advertising restrictions could be imposed more broadly, but only to products with sugar content that exceeds a specified limit.

Age restrictions, which apply to tobacco products and alcoholic beverages, should not apply to added sugar. While tobacco and alcoholic beverages are consumed by choice, food is a necessity. And until we drastically change the food supply, most children will consume sugar before they are old enough to understand nutritional information. Once they are old enough to shop independently, it will be difficult to prohibit something they have grown accustomed to. It may be feasible to impose age restrictions; many grocery stores sell cigarettes, beer and wine while imposing the necessary age restrictions. But because added sugar is present in so many products, an age restriction may be difficult to monitor. For example, the entire cereal aisle of the typical grocery store might be off-limits, along with the soda, ice cream, and bakery sections.¹⁹⁰ Therefore, monitoring age restrictions may be difficult and costly.¹⁹¹ A better approach would be to restructure grocery stores in a manner that embraces our understanding of how product placement influences purchasing decisions.¹⁹²

Perhaps the strongest argument against imposing an age restriction on

188. *Central Hudson Gas & Electric Co. v. Public Service Comm'n*, 447 U.S. 557, 565 (1980) (“[T]here can be no constitutional objection to the suppression of commercial messages that do not accurately inform the public about lawful activity”). This is why prescription drug advertisements generally end with a person informing of possible side effects associated with advertised drug.

189. 21 U.S.C. §§ 301 et seq.

190. *See Here's the Thing*, *supra* note 112.

191. Moreover, if the age restriction applies only to products with, for example, more than ten grams of added sugar per serving, manufacturers will likely re-formulate their products to come in just under the restrictive number of grams of sugar. Of course, this would be a good thing, especially if the number of sugar grams subject to an age requirement was continually adjusted downward so that eventually very few products contain excessive amounts of sugar.

192. RICHARD H. THALER & CASS R. SUNSTEIN, *NUDGE: IMPROVING DECISIONS ABOUT HEALTH, WEALTH, AND HAPPINESS* 2-3 (2008) (noting that where items are placed has a significant impact on choice).

sugary products is the political backlash likely to occur¹⁹³ that could nullify its impact. At a time when much of the population is concerned with too much governmental regulation, the quest for freedom would make age restrictions unlikely to succeed.¹⁹⁴ Ideal regulations will focus at the level of production and limiting availability of unhealthy products in the first place. Even Mayor Bloomberg's proposal to limit the size of sugary drinks, which arguably is less intrusive than age restrictions, is nonetheless controversial.¹⁹⁵

Mayor Bloomberg's limit on container sizes of soft drinks is a creative approach to tackling the sugar problem.¹⁹⁶ Portion sizes have grown over the years, embracing the notion that bigger is better.¹⁹⁷ The original Coca-Cola bottle was 6.5 ounces.¹⁹⁸ From there it went to ten ounces, then to the twelve ounce can, and now the standard twenty ounce bottle—more than three times the quantity of the original bottle.¹⁹⁹ It is common knowledge on the part of anyone entering a grocery store, that finding a soft drink less than twelve ounces is difficult, limiting consumer choice. Therefore, even

193. Given the strong objections to relatively mild forms of regulation, like a soda tax or size restrictions, age requirements, which impact free choice much more directly, would likely be subject to a great deal of opposition.

194. First Lady Michelle Obama, for example, was criticized for her initiatives designed to combat childhood obesity. While she did not suggest laws restricting choice, some suggested that the government should not involve itself in any way in what we choose to eat. *See, e.g.*, James Oliphant, *Conservatives Dig Into Michelle Obama's Anti-obesity Campaign*, L.A. TIMES, Feb. 26, 2011, available at <http://articles.latimes.com/2011/feb/26/nation/la-na-michelle-obama-obesity-20110227>.

195. *See supra* note 3 and accompanying text.

196. NOTICE OF PUBLIC HEARING, *supra* note 2. Virtually all snack foods have gotten larger over the past 50 years—candy bars, bagels, muffins—yet we eat these products and think that eating just one is reasonable. But eating one today is often the equivalent of 2 or 3 several years ago. *Cf.* Lisa R. Young and Marion Nestle, *The Contribution of Expanding Portion Sizes to the U.S. Obesity Epidemic*, 92 AM. J. PUB. HEALTH 246 (Feb. 2002), available at <http://ajph.aphapublications.org/doi/pdf/10.2105/AJPH.92.2.246>. Ironically, while efforts are being made to reduce the size of sugary beverages, cigarettes cannot be sold in packages of less than 20 cigarettes. If you want one, you must purchase another 19, which seems counter-intuitive. From a public health perspective, the cigarette purchaser should be permitted to buy just one. On the other hand, requiring the purchase of a full pack keeps the price high and is will arguably discourage use.

197. Definition of “the bigger the better”, CAMBRIDGE DICTIONARIES ONLINE, http://dictionary.cambridge.org/dictionary/british/the-bigger-the-better?q=the+bigger+the+better#the-bigger-the-better__1 (last visited Dec. 8, 2012).

198. *History of Bottling*, THE COCA-COLA CO., <http://www.thecoca-colacompany.com/ourcompany/historybottling.html> (last visited Dec. 9, 2012).

199. Brian Palmer, *When Did Sodas Get So Big?*, SLATE (Sept. 14, 2012, 2:03 PM), http://www.slate.com/articles/news_and_politics/explainer/2012/09/new_york_city_soda_ban_when_did_soft_drinks_get_so_big_in_the_first_place.html; *See also* NOTICE OF PUBLIC HEARING, *supra* note 2. In addition, coca-cola and other sodas have high levels of sodium, which, as the companies know, makes people thirsty. This, they hope, will lead to higher sales volumes.

the absence of regulation does not necessarily enhance consumer choice.

The reality is that unfettered corporate marketing actually limits our choices about the products we consume. If what's mostly available is junk food and soda, then we actually have to go out of our way to find an apple or a drinking fountain. What we want is to actually increase people's choices by making a wider range of healthy foods easier and cheaper to get²⁰⁰

Portion control can be an important tool for regulating sugar and other calorie consumption.²⁰¹ It does not preclude anyone from buying a product, and if the purchaser wishes, he or she can buy more than one. But many consumers will likely purchase a soft drink or candy bar or other sweetened product and eat it based on the portion size in which it is produced.²⁰² If the drink is ten ounces, they will stop when they have finished the ten ounce bottle.²⁰³ If it is a twelve ounce can, they will likely stop when the can is empty.²⁰⁴ While portion size control may be effective, the public perception that choice is being restricted may limit its impact, and it is unclear what impact that backlash may have.²⁰⁵

The Food and Drug Administration (FDA) is the agency charged with

200. Laura Schmidt, *Opinion: Why we should regulate sugar like alcohol*, CNN.COM (Feb. 1, 2012, 1:12 PM), <http://www.cnn.com/2012/02/01/health/opinion-regulate-sugar-alcohol/index.html>. See FORUM HARVARD SCH. PUB. HEALTH, *supra* note 165 (discussing whether consumer choice is the root of the problem, a panelist points out that what is "affordable and available is junk."). See also Raj Patel, *Abolish the Food Industry*, THE ATLANTIC, Feb. 6, 2012, available at <http://www.theatlantic.com/health/archive/2012/02/abolish-the-food-industry/252502/> ("[O]ur choices are far from free, in no small part because of the commercial and cultural power of the food industry." Analogizing to tobacco and the power of the tobacco industry, Patel points out that most smokers would not smoke if they could choose freely). Amy Dillard, *supra* note 102 (discussing children's preference for healthy foods when it is provided as one of their options and the obstacles to including those healthy options under the 2007 Farm Bill.).

201. *Decrease Portion Sizes*, U.S. DEP'T AGRIC., <http://www.choosemyplate.gov/weight-management-calories/weight-management/better-choices/decrease-portions.html> (last viewed Jan. 7, 2013).

202. *Beating Mindless Eating*, CORNELL UNIV. FOOD & BRAND LAB, <http://foodpsychology.cornell.edu/research/beating-mindless-eating.html>.

203. *Id.*

204. NOTICE OF PUBLIC HEARING, *supra* note 2. ("When people are given larger portions they unknowingly consume more and do not experience an increased sense of satiety. In one study, people eating soup from self-refilling bowls ate seventy-three percent more.")

205. The portion size proposal is less intrusive than another Bloomberg initiative that attempted to prohibit the use of food stamps for the purchase of sugary beverages. This would have had the effect of limiting choice based on income level. The U.S.D.A rejected the proposal. See Patrick McGeehan, *U.S. Rejects Mayor's Plan to Ban Use of Food Stamps to Buy Soda*, N.Y. TIMES, Aug. 19, 2011, available at <http://www.nytimes.com/2011/08/20/nyregion/ban-on-using-food-stamps-to-buy-soda-rejected-by-usda.html>.

protecting our food supply.²⁰⁶ Currently, the FDA classifies sugar as a substance that is “generally recognized as safe” (GRAS).²⁰⁷ Without the GRAS classification, added sugar would be considered a “food additive” subject to FDA regulation.²⁰⁸ With the GRAS classification, it is not.²⁰⁹ The discussion in Part I points out that sugar is not safe unless consumed in small quantities. Otherwise, it can cause a great deal of harm. The FDA should re-classify sugar as a food additive and regulate it accordingly, just as it has taken a broad approach to regulating tobacco.

Taxing and spending are tools that have traditionally been used to modify behavior in the public health context. Cigarettes, as noted above, are heavily taxed to make them more expensive, in an effort to discourage use.²¹⁰ Likewise, in an attempt to discourage the use of soda, former New York Governor, David Patterson, proposed a tax on sodas.²¹¹ Sodas have more added sugar than any other product, so they have been targeted because they contribute heavily to obesity and other diseases associated with excessive sugar consumption.²¹² And research suggests that when it comes to optional food items like sodas, consumers are sensitive to prices.²¹³ They will consume less when prices are high and more when the prices are low.²¹⁴ Therefore, at the very least, taxes should be imposed on sodas and other soft drinks with equally high sugar content. In addition, taxes should be imposed on products with ten or more grams of added sugar

206. *Food*, FOOD & DRUG ADMIN., <http://www.fda.gov/Food/default.htm> (last visited Jan. 7, 2012).

207. Substances Generally Recognized as Safe, 21 C.F.R. § 184.1857 (1997).

208. Food, Drug and Cosmetic Act, 21 U.S.C. §§ 301 et seq. *See also Generally Recognized as Safe (GRAS)*, FOOD & DRUG ADMIN., <http://www.fda.gov/Food/FoodIngredientsPackaging/GenerallyRecognizedasSafeGRAS/default.htm> (last visited Nov. 13, 2012) “[A]ny substance that is intentionally added to food is a food additive, that is subject to premarket review and approval by FDA, unless the substance is generally recognized, among qualified experts, as having been adequately shown to be safe Under . . . FDA . . . regulations in 21 CFR 170.3 and 21 CFR 170.30, the use of a food substance may be GRAS either through scientific procedures or, for a substance used in food before 1958, through experience based on common use in food.”).

209. *Generally Recognized as Safe*, *supra* note 208.

210. *See supra* note 150 and accompanying text.

211. *See Confessore*, *supra* note 167.

212. NOTICE OF PUBLIC HEARING, *supra* note 2. (“Sugary drinks are the largest source of added sugar in the average American’s diet, comprising nearly 43% of added sugar intake.” (citing J.F. Guthrie & J.F. Morton, *Food Sources of Added Sweeteners in the Diets of Americans*, 100 J. OF THE AM. DIETETIC ASS’N 43 (2000))).

213. FORUM HARVARD SCH. PUB. HEALTH, *supra* note 165; Foster, *supra* note 101, at 262 (“Clinical studies show that altering the price of foods significantly impacts consumer food choices.”) (citing HEATHER SCHOONOVER & MARK MULLER, INS. FOR AGRIC. & TRADE POLICY, *FOOD WITHOUT THOUGHT: HOW THE U.S. FARM POLICY CONTRIBUTES TO OBESITY* 8 (2006)).

214. *Id.*

per serving. Increased taxes will likely encourage manufacturers to limit the amount of added sugar per serving in their processed foods. And even if they do not limit the sugar content, the increased price will shift consumer-purchasing patterns to lower priced healthier products.²¹⁵ In fact, those healthy products should also be subsidized through government spending.²¹⁶ The targeted use of taxing and spending can significantly reduce consumers' added sugar consumption.

B. Regulating Food

While sugar is toxic in itself, some of the challenges associated with it are symptomatic of a much larger problem. Added sugar is a symptom of a generally unhealthy food supply.²¹⁷ To adequately address the problem of the food supply, we must engage in an honest assessment of what created it. First, farm bill food subsidies result in the overproduction of corn and other subsidized crops.²¹⁸ They occupy so much of the agricultural landscape that we would have to “more than double our fruit and vegetable acreage” to satisfy the USDA’s recommended daily allowance of these items.²¹⁹ The government, like the medical profession, should first “do no harm,” yet farm subsidies do a lot of harm. When we subsidize corn, it becomes attractive not only for farmers to over-produce but also for manufacturers to over-use in food processing, because the large supply reduces the price. The farm bill encourages agricultural growing patterns that are a disservice to consumers because the food supply becomes inundated with products made, for example, with high fructose corn syrup.²²⁰

Our food system is fundamentally broken. A few companies dominate the market, prioritizing profits over people and our planet. Government policies put the interests of corporate agribusiness over the livelihoods of farm families. Farm workers toil in unsafe conditions for minimal wages. School children lack access to healthy foods—as do millions of Americans living in

215. *Id.*

216. *See generally*, Atwell, *supra* note 55, at 3.

217. For example, approximately eighty percent of the 600,000 food products examined by Dr. Larry Popkin are laced with sugar. *Here's the Thing*, *supra* note 112. Any major grocery store will have far more shelf space for processed food products than whole foods like meats, fruits and vegetables. Ted Bendixson, *Get Rid of Processed Food at the Grocery Store*, SLATE, Feb. 22, 2011, available at <http://hive.slate.com/hive/time-to-trim/get-rid-of-processed-foods-at-the-grocery-store>.

218. *See supra* notes 85-87 and accompanying text.

219. Mark Bittman, *Local Food: No Elitist Plot*, N.Y. TIMES, Nov. 1, 2011, available at <http://opinionator.blogs.nytimes.com/2011/11/01/local-food-no-elitist-plot/>.

220. *For a Healthier Country, Overhaul Farm Subsidies*, SCI. AM., Apr. 19, 2012, <http://www.scientificamerican.com/article.cfm?id=fresh-fruit-hold-the-insulin>.

poverty. From rising childhood and adult obesity to issues of food safety, air and water pollution, worker's rights and global warming, our current food system is leading our nation to an unsustainable future.²²¹

A number of policy changes could help to address some of the current food industry challenges. For example, the 2012 farm bill should shift agricultural policy by decoupling production from income support,²²² which should assist small farmers. This will assure farmers that their incomes will be reasonable, while allowing them to diversify their crops. This will not only lead to an increase in acreage dedicated to healthier crops, like fresh produce, but will also help protect farmers who will be less dependent on the market price of a single crop.²²³

Furthermore, policymakers should create a system that minimizes the influence of outside lobbying.²²⁴ This could be achieved through the creation of an independent national Director of Food.²²⁵ The Director of Food could be a non-political appointee within the FDA. Alternatively, the Director of Food could be entirely independent of current administrative agencies. The key will be to appoint the Director in a manner that shields him or her from political pressure, while providing sufficient authority to

221. FOOD DEMOCRACY NOW, <http://www.fooddemocracynow.org/about/> (last viewed Jan. 13, 2013). Efforts to address some other food supply problems are underway.

222. *See supra* notes 102-109 and accompanying text; *see e.g.*, Food Safety Modernization Act, 21 U.S.C. § 2201 (2011) (giving FDA power over imported foods and ability to create standards to prevent food contamination.).

223. Foster, *supra* note 101 and accompanying text.

224. Lobbying efforts helped defeat the soda tax proposed by New York's former Governor David Patterson. Lobbying is used extensively in this country for a whole host of things. For example, lobbyists may try to keep corporate tax rates low in general. *Cf.* Alex Marshall, *How to Get Business to Pay Its Share*, N.Y. TIMES, May 3, 2012, available at http://www.nytimes.com/2012/05/04/opinion/solving-the-corporate-tax-code-puzzle.html?_r=1 (arguing for a National Companies Act, Marshall notes that “[w]hile the company is a symbol of private enterprise, its existence is made possible by a charter that some government writes and grants. It should serve public as well as private ends – and pay its rightful share in taxes.”); *see also Food Safety on Hold*, N.Y. TIMES, Apr. 27, 2012, available at <http://www.nytimes.com/2012/04/28/opinion/food-safety-on-hold.html>. (criticizing Congress for failing to act on an interagency committee's recommendations on “voluntary standards for manufacturers on the nutritional content of food marketed to children under age 18.”); INTERAGENCY WORKING GROUP ON FOOD MARKETED TO CHILDREN, PRELIMINARY PROPOSED NUTRITIONAL PRINCIPLES TO GUIDE INDUSTRY SELF-REGULATORY EFFORTS: REQUEST FOR COMMENTS, <http://www.ftc.gov/os/2011/04/110428foodmarketproposedguide.pdf> (describing the voluntary standards).

225. *Cf.* Kristof, *supra* note 104 (suggesting that the Department of Agriculture be renamed and its mission refocused on food. Kristof points out that today, only two percent of Americans are farmers, compared to thirty-five percent when the Department of Agriculture was formed.).

make real change.²²⁶ The Director of Food would replace the USDA in making recommended daily dietary guidance.²²⁷

In order to change the food supply it may also be necessary to rethink what it means to be a good corporate citizen. Current lobbying efforts on the part of big food appear to have no regard for public health.²²⁸ Fundamentals of corporate law should shift, incorporating regulations to encourage corporate accountability to more than just shareholders.²²⁹ Corporate laws that emphasize profit maximization to the exclusion of all else should be re-evaluated. If other considerations were taken into account, perhaps lobbying would be brought under control.

CONCLUSION

At first glance, most would say that sugar is not the new tobacco. After all, we do not hear about more than 400,000 people dying annually from sugar consumption, a statistic commonly associated with smoking. However, the evidence suggests that sugar contributes to obesity, diabetes, heart disease, and some cancers. Therefore, sugar adversely impacts as many, or more, people than tobacco use. Accordingly, many of the legal restrictions applicable to tobacco products – warning labels, advertising restrictions and excise taxes – should also apply to processed foods with large quantities of added sugar. In addition, sugar is symptomatic of a larger food supply problem. To address the broader problem, food subsidies must be re-evaluated and changed. An independent, national Director of Food could alleviate some systemic problems. These changes would help create a food supply that improves public health, which is the appropriate role of a variety of governmental agencies at the federal, state and local levels.

226. While it may be impossible to ensure complete independence, there are other models, like the Congressional Budget Office, that could provide guidance. *See Overview*, CONG. BUDGET OFFICE, <http://www.cbo.gov/about/overview> (last visited Jan. 13, 2013) (“Since its founding in 1974, the Congressional Budget Office has produced independent, nonpartisan, timely analysis of economic and budgetary issues. . . . All CBO employees are appointed solely on the basis of professional competence, without regard to political affiliation.”). The Surgeon General is also charged with advancing the public health and could be a key participant in making necessary changes. *Duties*, SURGEONGENERAL.GOV, <http://www.surgeongeneral.gov/about/duties/index.html> (last visited Jan. 13, 2013).

227. The USDA has arguably become an honorary member of the food industry rather than a regulator of it. Steve Johnson, *The Politics of Meat*, PUB. BROAD. SYS., <http://www.pbs.org/wgbh/pages/frontline/shows/meat/politics/>.

228. *See* Patel, *supra* note 200.

229. *See generally* STOUT, *supra* note 100.