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### Food Policy and Cognitive Bias

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## ESSAY

### FOOD POLICY AND COGNITIVE BIAS

PAUL F. CAMPOST†

In March of 2014, a meta-analysis of nearly eighty epidemiological studies was published in the *Annals of Internal Medicine*.<sup>1</sup> The meta-analysis found neither increased risk of heart disease among people who consumed high levels of saturated fats nor lower levels of the disease among those who consumed high levels of unsaturated fats—such as those found in olive oil and avocado.<sup>2</sup> This finding flew in the face of years of advice from nutritionists and others in the medical community advocating that people avoid saturated fats and replace them with unsaturated (“good”) fats, such as those found in the so-called “Mediterranean diet.”<sup>3</sup> The meta-analysis was also a good example of Felipe Fernández-Armesto’s dictum that one of the few verifiable laws about dietetics is that the experts always disagree.<sup>4</sup>

As catalogued, amusingly and at length, in Barry Glassner’s book *The Gospel of Food: Everything You Think You Know About Food Is Wrong*, recommendations regarding “healthy eating” tend to be both ever-changing and based on tenuous evidence.<sup>5</sup> Moreover, Glassner makes the crucial point that under-valuing or ignoring the pleasure of eating overlooks that eating is, even from a purely

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1. Rajiv Chowdhury et al., *Association of Dietary, Circulating, and Supplement Fatty Acids with Coronary Risk: A Systematic Review and Meta-Analysis*, 160 *ANNALS. INTERNAL. MED.* 398, 398 (2014).

2. *Id.* at 403–04.

3. See, e.g., *Dietary Fats: Know Which Types to Choose*, MAYO CLINIC (Aug. 7, 2014), <http://www.mayoclinic.org/healthy-living/nutrition-and-healthy-eating/in-depth/fat/art-20045550>.

4. FELIPE FERNÁNDEZ-ARMESTO, *NEAR A THOUSAND TABLES: A HISTORY OF FOOD* 46 (2002).

5. See generally BARRY GLASSNER, *THE GOSPEL OF FOOD: EVERYTHING YOU KNOW ABOUT FOOD IS WRONG* (2007).

physiological perspective, a much more complex activity than filling a car up with gas:

People get more out of a meal, not just emotionally, but physiologically, when the food is a pleasure to eat. In one of my favorite studies, Swedish and Thai women were fed a Thai dish that the Swedes found overly spicy. The Thai women, who liked the dish, absorbed more iron from the meal. When the researchers reversed the experiment and served hamburger, potatoes, and beans, the Swedes, who like this food, absorbed more iron. Most telling was a third variation of the experiment, in which both the Swedes and the Thais were given food that was high in nutrients but consisted of a sticky, savorless paste. In this case, neither group absorbed much iron.<sup>6</sup>

Nutrition science is beset by contradiction, uncertainty, and complexity. Under the circumstances, the tendency of public health authorities to divide food into “good” and “bad” categories, and to prescribe homogenous dietary patterns to heterogeneous populations, is an example of both intellectual hubris and overweening public policy.

Given the deep ambiguities that beset the subject, why are people in general, and Americans in particular, so eager to tell, and be told, what to eat and drink for the sake of their health? One reason is that we have a strong tendency toward causal bias—that is, interpreting correlations as causally meaningful. Indeed, one reason people generally hate statistical reasoning is that such reasoning requires embracing the large role that random factors play in outcomes. Our minds hate randomness, because randomness is something we cannot control. Statisticians Howard Wainer and Harris Zwierling, provide an example through a study of the incidence of kidney cancer in the 3,141 counties in the United States which reveals a striking pattern.<sup>7</sup> The counties where the incidence is lowest are mostly rural, sparsely populated, and

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6. *Id.* at 1.

7. DANIEL KAHNEMAN, THINKING, FAST AND SLOW 109 (2011).

located in traditionally Republican states in the South, Midwest, and West.<sup>8</sup> What explains this pattern?

It is easy enough to come up with all sorts of plausible-sounding theories for why this might be the case: lower pollution levels, healthier food, higher activity levels, etc. Surprisingly, it turns out that the counties which have the highest incidence of kidney cancer are also mostly rural, sparsely populated, and located in traditionally Republican states in the South, Midwest, and West.<sup>9</sup> Again it is easy to come up with theories as to why this might be the case: rural poverty, no access to good health care, high-fat diets, higher tobacco use, and so forth.

These various theories completely contradict each other. The real explanation for Wainer and Zwierling's findings turns out to be a purely statistical artifact.

[C]ounties with low populations are, as a consequence of their low populations, much more likely to produce statistically outlying results. In other words, the correlations observed have no causal significance at all. But we resist this explanation. We like causal reasoning, because causal reasoning produces a sense of control ("don't live in a polluted area; don't eat high-fat food"), while embracing randomness leads to the opposite sensation ("don't be unlucky enough to contract kidney cancer.").<sup>10</sup>

In addition to causal bias, confirmation bias—the tendency to pay attention to evidence bolstering one's views and to ignore evidence undermining those views—and optimism bias—the tendency to over-estimate the extent to which one's efforts to accomplish something are likely to succeed—combine to create a cultural atmosphere in which various sorts of public health intermediation in regard to food are undertaken; despite little evidence that the efforts make sense from a cost-benefit

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8. *Id.*

9. *Id.*

10. LawProf, *Special Snowflake Syndrome and the Spirit of Capitalism*, INSIDE THE LAW SCHOOL SCAM (May 29, 2012, 10:06 AM), <http://www.insidethelawschoolscam.blogspot.com/2012/05/special-snowflake-syndrome-and-spirit.html>.

perspective.<sup>11</sup> For example, consider the spate of recent efforts by public health authorities to lower rates of “childhood obesity,” by improving the eating habits of American children, primarily through various school-centered programs.<sup>12</sup> In fact, it is very unclear that even the most aggressive intervention policies would produce any weight loss among children.<sup>13</sup> For example, perhaps the largest and most comprehensive school-based anti-obesity initiative yet undertaken in America was the five-year Pathways program, sponsored by the Johns Hopkins School of Public Health from 1997 through 2002.<sup>14</sup> Pathways involved putting children in seven largely Native American elementary schools in New Mexico (many Native American groups in the Southwest feature high rates of obesity) on specially designed diets, rich in highly nutritious yet low-calorie food.<sup>15</sup> The schools instituted extensive physical education programs, and the children were given a great deal of counseling regarding nutrition and physical activity.<sup>16</sup> At the same time, a family involvement initiative tried to ensure that the children’s parents supported the broader program’s goals.<sup>17</sup>

In short, Pathways did almost everything that anti-fat warriors want done in American schools to make the nation’s youth slimmer. Yet, at the program’s conclusion, the researchers found that, while the children were eating a more nutritious diet, exercising more, and “recit[ing] chapter and verse on the importance of activity and proper nutrition,”<sup>18</sup> they had lost no

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11. See KAHNEMAN, *supra* note 7, at 81, 255.

12. In the United States, the most prominent of these efforts is Michelle Obama’s Let’s Move! program. See LET’S MOVE!, <http://www.letsmove.gov> (last visited Oct. 26, 2014). Michael Gard has suggested that the worldwide tendency of government officials to place the burden of combating “childhood obesity” on schools suggests that those officials do not actually consider anti-obesity efforts to be nearly as important as the officials’ rhetoric suggests. See Michael Gard & Carolyn Vander Schec, *The Obvious Solution*, in MICHAEL GARD, *THE END OF THE OBESITY EPIDEMIC* 83 (2011).

13. Gard & Vander Schec, *supra* note 13, at 84.

14. See Benjamin Caballero et al., *Pathways: A School-Based, Randomized Controlled Trial for the Prevention of Obesity in American Indian Schoolchildren*, 78 AM. J. CLINICAL NUTRITION 1030, 1030 (2003).

15. *Id.* at 1030–31.

16. *Id.* at 1030.

17. *Id.*

18. Gina Kolata, *Thinning the Milk Does Not Mean Thinning the Child*, N.Y. TIMES, Feb. 12, 2006, <http://www.nytimes.com/2006/02/12/weekinreview/12kolata.html>. In this story Gina Kolata, one of America’s best journalists covering issues of weight, health, and nutrition, observes that the Pathways Study has literally never been cited in the medical

weight in comparison to a control group of students who were not enrolled in the program.<sup>19</sup> Essentially the same results were obtained in a similar recent study, the Child and Adolescent Trial for Cardiovascular Health, which involved more than 5,000 children in nearly one hundred schools in California, Louisiana, Minnesota and Texas. Here too, exceptionally aggressive anti-obesity measures produced no weight loss.<sup>20</sup>

Or consider some recent legislative attempts to impose special taxes on junk food, and to make such food ineligible for purchase through social welfare programs.<sup>21</sup> Snack taxes are highly controversial, in part because proposals to enact them draw enormous opposition from the food and beverage industry, but also because such taxes are fraught with definitional and pragmatic difficulties.<sup>22</sup> Economists note that the demand for food tends to be insensitive to price: it is estimated that a 10 percent tax on a particular food will on average produce a less than 1 percent drop in demand.<sup>23</sup> Translated into practical terms, this means that one would have to double the price of soda to produce a 10 percent drop in the levels at which it is currently consumed.<sup>24</sup>

Furthermore, defining what sorts of foods are healthy and unhealthy is extremely difficult, and indeed some nutritionists reject that distinction altogether.<sup>25</sup> Such controversies are

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literature since its publication three years ago. *Id.* She quotes David Freedman, a University of California statistician as saying scientists and the public “have this wonderful capacity for ignoring negative evidence.” *Id.*

19. Caballero et al., *supra* note 14, at 1030, 1033.

20. See Johanna T. Dwyer et al., *Prevalence of Marked Overweight and Obesity in a Multiethnic Pediatric Population: Findings from the Child and Adolescent Trial for Cardiovascular Health (CATCH) Study*, 100 J. AM. DIETETIC ASS'N 1149, 1151 (2000).

21. Kelly D. Brownell & David S. Ludwig, *The Supplemental Nutrition Assistance Program, Soda, and USDA Policy: Who Benefits?*, 306 JAMA 1370, 1371 (2011); G. Sacks et al., *'Traffic-light' Nutrition Labelling and 'Junk-Food' Tax: A Modelled Comparison of Cost-Effectiveness for Obesity Prevention*, 35 INT'L J. OBESITY 1001, 1002 (2011).

22. See Brownell & Ludwig, *supra* note 21, at 1370.

23. Tatiana Andreyeva et al., *The Impact of Food Prices on Consumption: A Systematic Review of Research on the Price of Elasticity of Demand for Food*, 100 AM. J. PUB. HEALTH 216, 216 (2010).

24. See generally JAMES SEALE, JR. ET AL., US DEP'T AGRIC., INTERNATIONAL EVIDENCE ON FOOD CONSUMPTION PATTERNS (2003), available at [http://www.crs.usda.gov/media/285613/tb1904\\_1\\_.pdf](http://www.crs.usda.gov/media/285613/tb1904_1_.pdf).

25. A recent \$415 million government study, described as “the Rolls Royce” of epidemiological studies, failed to find any health benefit associated with maintaining a low-fat diet, after decades worth of claims that such diets lessen the risk of heart disease and cancer. See Gina Kolata, *Low-fat Diet Does Not Cut Health Risk, Study Finds*, N.Y. TIMES, Feb. 8, 2006, at A1.

reflected in Minnesota's recent petition to get the Department of Agriculture to remove certain unhealthy foods, such as candy and soda, from the list of what can be bought with food stamps.<sup>26</sup> Leaving aside the controversial assumption that poor people should be required to eat more virtuously than everyone else, the Minnesota proposal illustrates the definitional difficulties that beset such "sin taxes."<sup>27</sup> For instance, under the proposal a Nestle Crunch bar could not be bought with food stamps, but a Nestle Kit Kat bar could, because it contains flour.<sup>28</sup> For this, and other reasons, the USDA turned down the state's petition.<sup>29</sup>

The relationship between food, eating, and health is extraordinarily complex, and remains in many ways little-understood. Confirmation, causal, and optimism biases all tend to obscure the complexity of this relationship—but we should not allow such cognitive distortions to cause us to underestimate the extent to which trying to legislate what Americans do and do not eat is likely to prove futile at best, and positively damaging at worst.

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26. Anne Barnhill, *Impact and Ethics of Excluding Sweetened Beverages from the SNAP Program*, 101 AM. J. PUB. HEALTH 2037, 2038 (2011).

27. Jason M. Fletcher et al., *Can Soft Drink Taxes Reduce Population Weight?*, 28 CONTEMP. ECON. POL'Y 23, 24 (2010).

28. *Candy: Taxable Subcategory of Food—Fact Sheet 102B*, MINN. DEP'T REVENUE, available at <http://www.revenue.state.mn.us/businesses/sut/factsheets/FS102B.pdf> (last revised Dec. 2012).

29. Anemona Hartocollis, *Plan to Ban Food Stamps for Sodas Has Obstacles*, N.Y. TIMES, Oct. 8, 2010, at A21.