Chapter 8

Conflicts of Interest in Food and Nutrition Research

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In recent years, *JAMA, Science,* and other major scientific and medical journals have devoted entire issues to discussing conflicts of interest in research.[1,2] According to *JAMA,* "a conflict of interest exists when professional judgment concerning a primary interest (such as patients' welfare or the validity of research) may be influenced by a secondary interest (such as financial gain)."[3] My most recent book, *Unsavory Truth: How Food Companies Skew the Science of What We Eat,*[4] deals with conflicts of interest caused by funding of research by companies that make foods, beverages, or supplements or their trade associations.

One frequently asked question in the field of food studies is whether it is ethical for food and beverage companies to fund research with the potential to promote their marketing interests. The *New York Times* recently published an exceptionally egregious example of such practices. It reported that five large alcoholic beverage companies had given more than $67 million to the National Institutes of Health (NIH) to conduct a study demonstrating the effects of one daily drink of alcohol on the risk of coronary artery disease. The reporter had obtained documents demonstrating that the alcohol industry had influenced the development of this trial, and that NIH personnel has essentially promised the funders that the trial would produce the desired outcome, and would not demonstrate harm. They would not run the trial long enough to demonstrate a greater risk for breast cancer, for example. NIH administrators, presumably

embarrassed by these revelations, ordered an investigation and halted enrollment in the trial. The scathing results of the investigative report[5] caused NIH to stop the study altogether, after having spent $4 million in taxpayer money.[6] The moral: industry funding of research has consequences—especially if it's caught.

When I write about food industry funding of research, I am calling attention to the makers of all of the different brands of food and beverages that we love and buy by the billions every year. Most of these brands are owned by one of ten global food giants.[7] Food companies would like us to believe that food choices are solely a matter of personal responsibility, and it is true that companies are not forcing us to buy their products. But what I find fascinating about the personal-responsibility argument is how it completely ignores food industry marketing actions. One of the reasons why I first wrote *Food Politics* in 2002[8] was that I was tired of attending meetings about childhood obesity in which the principal topic addressed was how to get mothers to do a better job of feeding their children--as if the food industry were entirely uninvolved in directly and indirectly selling directly to children. We are not supposed to notice marketing. As advertising industry executives have told me, when they do their job well, the advertising slips below the radar of critical thinking and is invisible.

As for what we are supposed to eat: healthy diets are so easy to explain that the journalist Michael Pollan can do it in seven words: "Eat food, not too much, mostly plants."[9] But if everyone followed Pollan's advice, the makers of ultra-processed "junk" foods would go out of business. Such foods are the most profitable items in supermarkets. Food companies are up against a highly competitive food environment in part because we have so much food available.

The United States has 4,000 calories available per day per capita,[10] whereas the population needs only about half that number. With so great a surplus of calories, food companies compete with each other for sales. At the same time, they are under pressure from advocates like me who want them to stop selling unhealthful products, regulators who want to tax them, lawyers who want to sue them, and Wall Street, which simply wants them to report higher profits every quarter.[11]

At first, food companies responded to such pressures by doing nothing. Then, they denied responsibility for contributing to the obesity problem. They also reformulated some products to make them appear healthier. But now, they are fighting back, most obviously through marketing. It is not easy to find marketing figures for specific products, but every now and then *Advertising Age* publishes a few of them. In 2016, for example, Coca-Cola spent $254 million just to advertise classic Coke, and Pepsi spent $127 million just to advertise Gatorade—just in the United States and just through advertising agencies.[12] Altogether, food, beverage, alcohol, and restaurant chain companies spend about $30 billion dollars on advertising as well as more subtle activities such as trade shows, grocery store slotting fees, and the like.[13] Under U.S. tax laws, every penny of those expenditures are deductible as a business expense.

Another way to sell more food is to increase portion sizes. Many food and drink items have increased two- to five-fold since the early 1980s, as have the sizes of restaurant meals.[14] To state the obvious, larger portions have more calories. And, as a result of industry lobbying and government policies, the relative price of fruits and vegetables has increased much more than the relative price of sugars, fats, and soft drinks.[15] Altogether, it appears as if the government and the food industry are collaborating to support a food environment that encourages people to eat more

food than they need.

Advertising and large portions are visible to anyone who notices them. Less visible is the way the food industry supports marketing objectives by funding research. During the time I was preparing to write *Soda Politics*,[16] I frequently came across industry-funded studies with results that favored the sponsors' commercial interests, and began posting them, five at a time, on my website (foodpolitics.com). I did this for a year, from March 2015 until March 2016. At the end of that year, I had posted 168 industry-funded studies; 156 of them had results predictable from knowing the sponsor. This was a convenience sample, and the only scientific conclusion that can be drawn is that it is easier to find industry-sponsored studies with favorable results than it is to find studies with unfavorable results. One observation: food company sponsorship of research is widespread. I had posted studies sponsored by more than fifty companies and trade associations for products such as sugar-sweetened beverages and snack foods, but also for just about any fruit, vegetable, or nut you can think of that might be able to be marketed as a superfood. All of these companies and associations were paying for research that might produce results useful for marketing purposes.

The key event that led to my writing *Unsavory Truth* was an article published by *The New York Times* in August 2015. This was an investigative report about Coca-Cola's funding of the Global Energy Balance Network, a now defunct group of university investigators who argued that lack of physical activity is responsible for obesity--not diet—but neglected to mention their sponsorship by Coca-Cola.[17] I was quoted in the article and in the week following its publication, I was called by about thirty reporters surprised by its findings. They found it hard to

believe that Coca-Cola would fund such a group, that university researchers would accept funding from Coca-Cola, and that universities would permit their faculty to do so. If reporters were surprised by these practices, I had another book to write. Hence: *Unsavory Truth.*

The article had consequences. The CEO of Coca-Cola wrote an op-ed promising that the company would do a better job of transparency and would post the names of the individuals and groups funded by the company on its website.[18] It fulfilled that promise. On its Transparency website, the company states that from 2010 to 2018, it spent more than $146 million on "well-being related scientific research, partnership and health professional activities."[19]

Unfortunately for Coca-Cola, transparency allows analysis, and investigators can now compare studies funded by Coca-Cola to those funded by independent sources. In one such study, "Do Sugar-Sweetened Beverages Cause Obesity and Diabetes? Industry and the Manufacture of Scientific Controversy," investigators identified 60 studies examining the association between sugary drink consumption and obesity and diabetes. Of these studies, 26 found no association; 25 of those studies were industry-funded. In contrast, of the 34 studies that did find an association, only one was industry-funded.[20] This tendency of industry-funded research outcomes to favor the sponsors' interests has its own name: the "funding effect."

The scientific literature on funding effects in the tobacco, chemical, and pharmaceutical drug industries is enormous. Research on the influence of drug-industry funding, for example, dates back to the 1970s and could fill a library.[21] Studies that have examined the influence of gifts--e.g. a gift from a drug industry representative to a physician—repeatedly demonstrate that this influence operates at an unconscious level. The influence is unintentional and unrecognized. Large gifts are more influential, but even small gifts--a pen or a pad of paper--can influence

physicians' prescription practices. Research on funding effects also finds that justifications for accepting industry funding are largely, although not entirely, invalid, and disclosure of industry connections is necessary but not sufficient to prevent industry influence.

Studying the results of drug-industry funding became easier with passage of the Affordable Care Act of 2010, which required drug companies to publicly disclose the names of physicians and hospitals to which they contribute and the amounts of the payments, and to post the information on the U.S. Centers for Medicare & Medicaid Services Open Payments website (OpenPaymentsData.CMS.gov). A glance at this site reveals that in 2017, for example, 1,525 drug companies gave $8.4 billion to 628,000 doctors at 1,158 teaching hospitals. Investigators can and do correlate these payments to physicians' prescription practices, advisory committee decisions, and research outcomes, and measure the degree of influence.

In contrast, research on the effects of industry funding on food and nutrition research is in its infancy. I was able to identify precisely 11 studies of funding effects that appeared between 2003 and 2018; these are summarized in *Unsavory Truth.* These few studies varied in the food products examined (although half dealt with sugary drinks), the health effects measured, the methods of analysis used, and in the outcomes of their analysis. Nevertheless, some general conclusions can be made, even from this small sample. Industry-funded studies generally favor the sponsor, skew the research question, and put a positive spin on the results. Food companies can bias studies at every stage of the research process, but as Lisa Bero and her collaborators have shown, this bias shows up most prominently in the development of the research question.[22] There is a significant difference between studies designed to ask how a product *benefits* health

and those asking how a product *affects* health.

Industry funding has consequences. It creates scientific risks in that it biases the research agenda, results, and interpretations. It can lead to distorted dietary advice and loss of public trust in the entire scientific process. It also creates personal risks for researchers. Researchers who accept industry funding may be disqualified from membership on prestigious committees, and run the risk of being exposed in the press and appearing "sold out".[23] Industry funding also creates personal risks for public health advocates. From emails leaked during the 2016 election, I learned that Coca-Cola had been monitoring my activities in Australia when I was a visiting scholar in Lisa Bero's group at the University of Sydney. The company also was planning to monitor Professor Bero's activities.[24]

Whether researchers should accept industry funding is a matter of intense debate in the medical and scientific literature.[25] Some scientists believe that it is appropriate to take money from food companies, while others insist that doing so risks "derailing public health nutrition".[26] Researchers who accept industry funding use many rationales, some of which are better supported by data than others. One of the more convincing arguments is declining federal spending for research at a time when universities are requiring researchers to bring in more grant money. Federal funding indeed has leveled off while corporate funding is increasing.[27]

Other arguments, however, are less well substantiated. One such argument is that industry funding is only one among many other sources of bias. Other sources include career goals, scientific beliefs, and dietary practices. Lisa Bero's group has also investigated this claim

and argues that industry funding biases research in ways that differ from those other types of bias.[28] Career and scientific beliefs are intrinsic to research; science cannot be done without them. In contrast, industry funding is extrinsic to the process, discretionary, and produces results that almost invariably favor the sponsor's interests.

Is disclosure sufficient to address conflicts of interest? Since the 1980s, scientific journals in the United States have required authors to disclose their sources of funding as well as their financial ties to the funders. Whether or not authors fully disclose is also a matter of research. Disclosure can be embarrassing, and researchers often fail to acknowledge their ties to sponsors. This failure also can have consequences. In 2018, for example, José Baselga, then chief medical officer at Memorial Sloan Kettering Cancer Center, landed on the front page of *The New York Times* because he had omitted disclosure of financial ties to numerous drug companies in research articles about their products.[29] Baselga resigned, but not before arguing that his industry contacts were public knowledge and in no way comprised his integrity as a researcher.

The appearance of a conflict of interest, however, is enough to undermine credibility. In recent years, disclosures in nutrition research have come under particular scrutiny from scientists who argue that "advocacy or activist work as well as their dietary preferences" should also be disclosed. If they are writing about dietary practices, they should disclose if they themselves follow a vegan, Atkins, or gluten-free diet or use any specific supplements.[30] While non-disclosure is a problem, this level of personal disclosure seems inappropriate in comparison to the evident value of disclosing industry funding.

Conflicts of interest in food and nutrition research need to be recognized as an ethical

problem. Because the influence of food industry funding can occur unconsciously, disclosure alone is not enough to solve the problem. In theory, the solution to the problems caused by conflicts of interest is simple: do not accept industry funding in the first place. For researchers under intense pressure to bring in grant funding, this solution may not appear realistic. In practice, addressing conflicts of interests requires much thought and work on the part of researchers, food companies, journalists who report on food studies, and eaters. At the very least, everyone should recognize that industry funding leads to conflicted interests and be skeptical of industry-funded studies. And all of us should be seeking ways to make sure that food and nutrition research is funded independently.

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