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COLUMN

THE ECOLOGY OF EATING: THE POWER OF THE FORK

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Treat the whole problem of health in soil, plant, animal, and man as one great subject.

—Sir Albert Howard, *The Soil and Health*

Our most powerful tool to reverse the global epidemic of chronic disease, heal the environment, reform politics, and revive economies, is the fork. What we put on it has tremendous implications, not just for our waistlines, but also for the planet and our global economy. What we do to our bodies, we do to the planet, and what do to the planet, we do to our bodies. We suffer an invisible epidemic of global sickness—162 million Americans with chronic illness, 29 million across the globe who die each year from preventable lifestyle disease, and 1 billion overweight people in the world, surpassing the number of those who are malnourished.[1] The harm we do to our bodies is linked like a web to the harm we do to the planet, to the degradation of the environment, to our air and water, to the future we steal from our children. The next time you pick up your fork, think of the personal and global impact of what you put on it.

I am not a vegetarian, but I would suggest that the cow is the 21st-century equivalent of the atom bomb, threatening our survival. A bold statement to be sure, but the cow is the nexus where food, the health of the human species, and the heath of the planet are inextricably linked. When we bite down on a hamburger or T-bone steak, we think we are eating a cow, but we are not.

Our modern cow has been transformed into a byproduct of a mountain of corn—and not just any corn, but corn that has been genetically altered to grow in vast monocultures, resistant to pesticides and herbicides, high in sugar, starch, and health-destroying polyunsaturated fats. The Native Americans gave corn to pilgrims so they could survive on this new continent, and now, ironically, it will be our demise. This "Franken corn" hidden in every processed food product and in the meat we eat blankets the nutritional landscape of America (and increasingly the world), driving epidemics of obesity, heart disease, diabetes, and cancer. Ten billion bushels of corn are grown in America each year, most of which we don't eat in a form we can recognize as corn. Sixty percent of our corn production is used to feed cows and other livestock.[2] It is also used to fuel our cars, and it is the major ingredient in processed and fast food. Gasoline in the form of biofuels, meat, and junk food are byproducts of corn.

The bulk of oil and fossil fuels we consume is not by the cars we drive, but the food we eat. One-fifth of the oil consumption in the world is for food production and transport. It takes 16 times more energy to produce 6 oz of meat than to produce a cup of broccoli, a cup of eggplant, a cup of cauliflower, or a cup of rice, and beef produces 24 times more greenhouse gases than do vegetables and rice because of the methane and nitric oxide produced by cow flatulence.[3]

Cows are ruminants meant to graze on grasses, and the bacteria in their stomachs cannot digest grains (corn), leading to fermentation. Gases produced by the fermentation of corn in cow's stomachs are the largest contribution to global warming. What you put on your fork is more important than the car you drive, for both your health and the environment.

As gas prices rise, so do food prices. Confined animal feeding operations, or "CAFOs," are the factories that produce our meat; our meat is "grown" on a bed of corn, and corn is grown on petrochemical and pharmaceutical farms. Fertilizers, pesticides, and herbicides are all oil byproducts. These factory farms produce "Franken meat" that destroys our bodies and degrades our environment.

Industrial food production not only requires more energy and contributes to global warming, but also exposes us to harm through the food we are eating not only through altered proteins, fats, and sugars, but through consumption of the antibiotics and hormones hidden in our food. We consume far more animal products than our bodies need. T. Colin Campbell from Cornell University found in *The China Study* that animal protein might dramatically increase the risk of cancer.[4] Health experts recommend maximum consumption of 8 oz of animal protein a week, yet we eat about 8 oz a day. If you were to take the 10 billion animals that are produced on factory farms every year for our consumption and line them end-to-end between the earth and the moon, they would go to the moon and back 5 times. We use one-third of the earth's surface—70% of the earth's agricultural land—to "produce" animals.[5]

We need to resize our thinking when it comes to eating plants vs animals. Animal foods, if eaten at all, should be a condiment, not the center of the meal. That we need nutritionists and doctors to learn how to eat is a sad reflection of the state of society. These are the things that our grandparents knew, that are embedded in cultural traditions: what foods to eat, how to prepare them, and to share them in family and community.

Not only petrochemicals invade our food: pharmaceuticals have become essential to our "modern" food production. Of the 24 million pounds of antibiotics produced each year in this country, 19 million are put in the factory-farmed animals' feed to prevent infection, which results from overcrowding, and to prevent cows' stomach from exploding with gas from the fermentation of the corn. Hormones produce rapid growth of animals—and of little girls' breasts, which is why we see 8-year-old girls going through puberty—as well as an increase in reproductive cancers.

The volume of antibiotics used in food production drives the development of antibiotic-resistant bacteria, or "Franken bugs." These resistant bacteria spread to humans. Methicillin-resistant *Staphylococcus aureus* (MRSA), the killer "staph" bacteria, kills more Americans than AIDS and is transferred from pigs to pig farmers to hospitals. The farmers are the source of life-threatening infections as they visit their relatives in hospitals.

The food industry comprises 17% of our economy and is controlled by Archer Daniels Midland (ADM) and Cargill, the largest privately owned company in the world. They are the creators of "food science," Orwellian double-speak for "Franken foods." Food used to just be food. Now what we eat is a byproduct of industrial manufacturing, and our $288 billion farm bill and the USDA policies associated with it fuel growth of processed foods that drive the obesity and chronic disease epidemic that is threatening the future of our children and our society.

There is no food ingredient label or bar code on broccoli or peaches or almonds or kidney beans. But somehow these foods, with which we coevolved over millennia, had to be "improved." The processed food industry and industrial agriculture changed our diet, decade by decade, not by accident, but by intention.

One hundred years ago, all we ate was local, organic food. Grass-fed, real, whole food. There were no fast food restaurants, there was no junk food, there was no frozen food—there was just what your mother or grandmother made. In fact, most meals were eaten at home. Now, 1 in 5 breakfasts is a McDonald's breakfast, and 50% of meals are eaten outside the home.[6]

The sustainability of our planet, our health, and our food supply are inextricably linked. The ecology of eating—the importance of what you put on your fork—has never been more critical to our survival as a nation or as a species. The earth will survive our self-destruction, but we may not.

At a recent National Institutes of Medicine think tank on "whole systems research," the thinking centered around complexity as a core principle of health—complexity, resilience, adaptability in biologic systems. In heart failure, if you simplify your heart rhythm with antiarrhythmic medication, you die. Reduce sympathetic tone and increase complexity of your heart rate with beta-blockers, and you live. This paradox is explained by complexity. Our monoculture, monodiet of processed food derived from corn and hydrogenated soy oil reduces our own biologic complexity. That is called disease. Yet there is no confusion about what constitutes good nutrition, despite the "conflicting" scientific studies and media reports designed to confound rather than enlighten.

If we were to gather the world's top nutrition scientists and experts (free from food industry influence), there would be very little debate about the essential properties of good nutrition. Unfortunately, most doctors are nutritionally illiterate. And worse, they don't know how to use the most powerful medicine available to them: food.

Common sense and scientific research lead us to the conclusion that if we want healthy bodies, we must put right raw materials in them: real, whole, local, fresh, unadulterated, unprocessed, and chemical-, hormone-, and antibiotic-free food. There is no role for foreign molecules such as trans fats and high-fructose corn syrup or for industrial food that interferes with our biology at every level.

That is why I believe the most important and the most powerful tool to change your health and the world is your fork. Imagine an experiment—let's call it a celebration: we call upon the world to join together and celebrate food for one week. For one week, we all eat breakfast and dinner at home with our families or friends. For one week, we all eat only real, whole, fresh food. Imagine for a moment, the power of the fork to change the world.

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