

INTRODUCTION

Food—A Voyage of Discovery

Food is a source of intense confusion these days. Can we justify continuing to eat steak when every cow emits greenhouse gases of the worst kind? How can we opt for cereals instead, if a bowl of muesli entails carbon emissions equivalent to a drive to the supermarket in the next village? Is it really sensible to eat more fruit if it has to be flown in from distant places, where it may have been picked in unhygienic conditions by underpaid workers, simply because the choice of seasonal fruit is inevitably limited in winter in northern latitudes? Is sugar ultimately to blame for all our health problems, and should we switch to honey? Or does honey contain the same molecules? Ought sugar to be banned altogether, or is it a cheap source of calories and a source of employment in poor countries? Anyhow, we can make biofuel from sugar, which is surely good for the environment. Or is it? Perhaps the government ought to regulate and tax the consumption of food as it does tobacco. Except that if fat is rationed or made relatively expensive, then just about everything that tastes good will have a stigma attached to it. In any case, that degree of state interference is incompatible with our love of freedom. We have a right to say what goes on in our own kitchens, at the very least, you might think. All right, so we need better information, and a ban on advertisements aimed at young children. And shouldn't we immediately stop subsidizing farmers, given that it causes poverty in the rest of the world? Or is that not how the world market works? Do we want to buy tomatoes from low-wage countries because that will help to create jobs, or from our own efficient greenhouses? Or from Spain or Italy for solidarity's sake, in light of the economic crisis in member states of the European Union? Should we cease producing meat altogether? Those horrifyingly vast milking parlors, those factory-farmed chickens. . . . Or is large-scale food production a blessing for humanity? And what about the dangers of genetically modified food? Might it soon prove to be our salvation? A small risk is acceptable, isn't it? Are we being manipulated by big business and advertising, or have the food industry and the supermarkets made our food safer

and healthier? Speaking of health, how can we live with the knowledge that there are now twice as many overweight people as undernourished people in the world?

This book looks at all these questions and more. Few subjects give rise to such contrasting visions, such uncertainty and fierce emotion. Everyone has an opinion about what we eat and how our food is produced and prepared. No one can remain indifferent to food, not a French housewife or an African politician, a farmer or a baker, a gourmet or a chef, and passions are easily roused by questions about which foods are good or bad. Food evokes profound feelings and old memories. Of course that's because food is essential; eating is something we do every day. We can't survive without it, as individuals or as a species, so it's only logical that in all ages food has been subject to value judgments and taboos, and that rulers of the past, like governments today, have always wanted to keep control of food resources, waging war over them if necessary. None of this is new.

Dis-moi ce que tu manges, et je te dirai ce que tu es. ("Tell me what you eat and I'll tell you what you are"—not "who you are," as the expression is sometimes wrongly translated.) Those oft-quoted words were first spoken in 1825 by a French chef named Jean Anthelme Brillat-Savarin, and they have lost none of their relevance. But whereas he focused on a gastronomic code and the pleasures of eating, our concerns about food are now largely a matter of ethics and of knowledge about how the world works. Agriculture and food are bound up with culture and history, wherever and whoever we may be, and therefore with issues of equality and development. It makes no sense to look at our own food choices in isolation.

In the past decade or so, confusion over food has only increased. Who in the past ever asked where their broad beans came from, or what kind of milk they were drinking? Those who worried about hunger in the world were mainly concerned about starving children and drought-ravaged harvests. Today, everything that has to do with food—from seed grain and agriculture to food manufacture, supermarkets, and home cookery—is complex and riddled with ambiguities. Behind every peanut butter sandwich lies a long story of prices and feed stocks, climate and politics, big business and small farmers, tradition and scientific innovation, touching on everything from hidden ingredients to thoughtless consumption. Knowledge about that proverbial sandwich reaches the consumer in dribs and drabs, and knowledge only adds to our confusion. After all, what

is “good,” whether for the environment, for our health, for those malnourished children, or for the animals? In this climate of confusion, modern social media provide a platform for everything and everyone: miracle diets and slimming pills, alternative fertilizers for the vegetable plot, traditional recipes for suet pudding, criticism of Europe for its E-numbers policy and its tight regulations, revelations about scientific conspiracies, moving stories by farmer’s wives, gruesome photographs of battery chickens alongside idyllic shots of cows in flowery meadows. Anyone who feels the urge can have their say.

Food has gained an additional moral charge in recent years. Agriculture and edible produce have become the touchstone of responsible citizenship among those concerned about the state of the world. If you eat well in an ethical sense, then your heart is in the right place. Conversely, if you care about the environment and about animals, it will show through in your eating habits: seasonal vegetables and cheese from the farmers’ market, perhaps, and no cheap meat or imported fruit. Anyone who eats differently from us fails to measure up. Hamburgers? Dreadful. Or perfectly fine. Everything about food has acquired a moral dimension. Like it or not, every food choice we make has global ramifications.

We have lost our naïveté, our ability to respond naturally to food, which once demanded a great deal of hard work and absorbed a large part of our income, but about which we asked few questions other than what time the next meal would be ready and whether it tasted good. These days we’re confronted with an overwhelming number of relatively cheap options, each with ethical and political consequences that are almost impossible to assess. Every day the media tell us new stories about agriculture and food, reflecting the complexity of both. Environmentalists berate us, saying our eating patterns are costing the earth, and social activists explain how hamburgers contribute to poverty. Doctors warn of the dangers of consuming certain foods and the beneficial effects of others, and everyone worries about everyone’s weight. Scientists reassure us with promises of breakthroughs in the battle against cancer and obesity. Eat a pineapple a day and everything will be all right. And above all avoid fish ‘n’ chips (or no, that’s a pretty healthy meal).

This new complexity has to do with the globalization of the production and processing of food, today’s worldwide food network with all its

positive and negative impacts. The spread of new means of production, foods, and dietary habits is as old as human migration, but the sheer scale on which food has been arriving from all parts of the world over the past ten to fifteen years and the diversity presented to us as a result are unprecedented. As a major trading nation, my own country, the Netherlands, is an important intersection for the food chains that span the world. In our politics and in our personal choices, many of the dilemmas felt across the globe come together here.

The disappearance of a purely instinctive attitude to food creates uncertainty, but it also encourages us to try to find out what food means to us, the urban generations. Interest is growing everywhere, and it's not just a matter of politics, morality, or medicine. Food is increasingly an aspect of outlook and lifestyle. Every TV station offers a range of programs that visit farms, bakeries, and restaurants. Intimate revelations in the kitchen under the all-seeing eye of the TV camera have proven a successful formula. Stars big and small describe their favorite recipes. A newspaper or magazine without a cookery and wine section is unthinkable. Chefs with strong foreign accents perform conjuring tricks with oysters and truffles; in fact, cooks are well on their way to becoming the gurus of our day and restaurants the temples of the new food religion. Expensive delicatessens are flourishing, and even the most basic of supermarkets sells scallops, mozzarella, seaweed, and avocados. Food is now an aspect of our lifestyle that bridges the old divide between the sexes; men are just as fanatical as women (if not more so) when it comes to the culinary arts—on weekends, at least. Cooking has become a pastime for yuppies. These trends are both high-tech, with liquid nitrogen used to make all kinds of foam, and calculatedly simple, with a return to old recipes and techniques, such as the haybox. Algal foam versus stuffed tripe. So no wonder artists, architects, directors, and writers have become interested in entirely new ways in the countryside, in food and agriculture, and in cooking and eating. Writers are discovering the lamb and the pig and the enticements of making their own wine. We see film festivals devoted exclusively to documentaries and feature films about food and agriculture, about traditions preserved and lost. Gastronomic explorers recount their experiences in the farthest reaches of Macao and Marrakesh as if talking of freshly discovered continents, while architects and town planners dream of new, organic communes where gardening, eating, and work all converge.

This mass of culinary trends and obsessions does not make our decisions any easier. We remain confused about what good food is, in the sense of both healthy—for people, animals, and the environment—and morally acceptable. The more we think we know, the less clear it all becomes. Knowledge, far from breeding acceptance, makes us want to give things up. Confusion often leads to a kind of paralysis, a sense that in the end it doesn't matter what we choose as individuals, that we can never get it right whatever we do, because it's impossible to predict all the consequences of our actions. There's a temptation to seize on one simple guideline that makes everything black-and-white: we glorify vegetarianism, believe in organic apples and tomatoes, or swear by keeping our own chickens; we extol the virtues of Buddhist bread making, or propose that nursery schools start teaching children about vegetables. Better a few rules of our own, even superstitions, than disorder or dilution.

The tragedy of our time—and I do not use the word lightly—is that most people in the rich and emerging economies, even in the countryside, are barely conscious any longer of how their daily food actually reaches their plates. Food demands both consciousness and a conscience. We can't discuss or judge food without knowing its story, a tale of origins and production, of ancient traditions and modern science and technology, of values and taboos, of sharing meals, and of eating alone. With food, the personal is always political, to use an old slogan of the feminist movement. But we can only make genuinely personal choices if we have some understanding of how it all works, nationally and internationally, technically, economically, and socially. We struggle to find our way out of a maze of facts and opinions, knowledge and ignorance, values and traditions, because wherever we may have our origins, food connects us with rest of the globe. In fact food is all about connections, among farmers, manufacturers, retailers, and consumers: from farm to fork, as the saying goes.

Hamburgers in Paradise arose from a desire to do something about the disparity between scientific advance and social insecurity in relation to farming and food, a disparity made all the more stark by our tendency to adopt black-and-white attitudes and simple slogans. I have described this tendency as shadow thinking. The gloom of the shadow thinkers can be found everywhere, but the two best examples are Thomas Malthus and Lester Brown. Malthus claimed at the start of the nineteenth century that the growth of the human population would be limited by a shortage of land, forgetting

that yields can increase. In our own era, Lester Brown predicted that China would fall prey to widespread famine by 2000, and he still makes a similar claim, in a variety of new ways. Shadow thinkers often voice perfectly justified concerns, but they extrapolate problems without seeing that circumstances, morality, knowledge, policy, and much else can change. They are to be found in the media, inside and outside government, and in science. As an academic researcher or as an essayist, you'll be far more popular if you come out with supposedly hard facts about aggression in meat eaters and butterfly deaths caused by pesticides than with cautious and nuanced conclusions. Unfortunately, there are no cut-and-dried, universally valid guidelines. We need to understand all the devilish details and subtle distinctions and to accept that sometimes no perfect solution exists, that everything comes at a price.

There's no single good way of dealing with food responsibly. If only there were. Then I could write out a list of ingredients for a twenty-first-century diet. If life were that simple, I'd be able to design the agriculture and food industry of the future. What counts in the end, as ever, is full awareness when dealing with choices, based on insights into how food supply chains work. Hardly any food or agriculture is inherently bad—apart from rotting or contaminated produce and farming that requires the felling of rainforests, the mistreatment of workers and animals, or the excessive use of chemicals. Which is why it makes no sense to forbid specific food items. It would be nonsense, for example, to place a total ban on fast foods, because in some situations they may be a sensible option for a family or an individual, and moderate consumption need not be a problem. Nor does it make sense to stick rigidly to a vegetarian diet. Nonetheless, there are undoubtedly some irresponsible and unhealthy eating habits and production methods, and we should find out which they are and put a stop to them, or at least reduce their prevalence. This book offers ingredients for a fully conscious way of thinking about farming and food, about shopping and cooking, for all of us, as both citizens and consumers.

My ultimate message is optimistic: even though we have much to worry about, there's also a great deal that's going well or could yet change for the better. In the end, barring disaster on a global scale, we will be able to feed present and future generations in ways that are sustainable and healthy as well as balanced and equitable. There's no justification for

the doom-mongering so popular with some, or for disaster scenarios or draconian laws. There is certainly a need—and potential—for many improvements, and they will require a combination of modern science and valuable tradition, but more than anything this book is an ode to human progress. The majority of human beings today have enough food, and it's safe and varied. My main concern is to offer an unprejudiced view—whether of artificial fertilizer, biotechnology, organic farming, or meat—and where necessary some criticism of recent developments, such as the dominance of supermarkets and the effects of large-scale farming. Science in the broad, interdisciplinary sense, rather than ideology, forms the first pillar on which this book rests. But although I have tried to give a scientific grounding to every assertion, this is not an academic book, because another, equally important pillar is the evolutionary, historical, and cultural context of farming and food. Which is not to suggest this is a historical cookery book, or an encyclopedia of foodstuffs, or a textbook on the philosophy of food, or a guide for allotment holders.

I'm fascinated by the evolution of farming and the food supply, by how humanity in an evolutionary blink of an eye has built up a complex and generally efficient food network after hundreds of thousands of years of scarcity. To this day an important part is played by culture and religion, and especially the three main monotheistic religions. It may not seem obvious that agricultural science should include culture as part of its field of study, but I've become convinced that no better way exists to understand the current confusion surrounding food.

The title *Hamburgers in Paradise* points to the archetype of carefree abundance and to a product that symbolizes contemporary culinary transgression. Paradise is among other things a metaphor for our planet's landscapes, for the loss of innocence and a pre-industrial past that seems so much more attractive than the confusion we find ourselves in today. Although paradise is primarily associated with Judaism, Christianity, and Islam, the concept exists in almost all cultures. My thesis is that, implicitly or explicitly, we are deeply influenced by it as a metaphor, in both a positive and a negative sense. Paradise still resounds through art, and art is perhaps better than science at revealing those things that give shape to our thoughts. Art sometimes has other, allegorical dimensions, and they don't make it any less pertinent, which is why I've included a number of pictures of artworks that portray the essence of paradise, farming, food, and landscape, and have started each chapter with literary quotations. I've

treated some of the sources fairly freely, especially the Book of Genesis, by reading them selectively and as far as possible with an open mind. Although some of the stories in this book may be anecdotal or, as befits stories, contain contradictory and speculative elements, the value, pleasure, and opportunities for reflection lie in the quest itself. I have therefore attempted to make the chapters more or less self-contained, so that each can be read independently. We do not live by knowledge alone. Knowledge cannot always provide an explanation, nor can it answer ethical questions, which arise time and again in matters of food.

The world's food production, processing, and consumption add up to such a broad subject, about which so much has been written, that I was continually forced to make choices and impose constraints. To judge from the piles of unused material I've collected over the years, each chapter could easily have grown into a book in its own right. This is the kind of book that can never really be finished. Every day, further books, articles, and research results are published that ought to be given a place in it. I've selected what I see as relevant right now, but I'm more aware than anyone of the lacunas and of the eclectic nature of the subjects I've chosen. There is plenty of room for debate over the selection of artworks. I realize that the liberties I've taken will not sit well with everybody.

This book is a personal account of the many years I have devoted to farming and food, sometimes in my own country, the Netherlands, but mainly beyond. I regard my many travels and the unique observations and extraordinary meetings that have arisen from them as a privilege. They have enriched my life. This experience is reflected in the personal style of the book, in which I do all I can to avoid jargon. I've been forced to compromise by using such terms as "developed," "Western," "OECD countries versus developing countries," "rich versus poor and emerging economies," or "middle classes and the poorer classes," all of which I use rather loosely, as there are no unambiguous distinctions. I didn't want to downplay the pleasure I take in looking at landscapes, in cooking, and in food as a cultural expression, nor my admiration for and interest in farming life and the kitchen, wherever in the world they may be.

Hamburgers in Paradise has turned into a voyage of discovery, with the aim of finding the meaning of farming and food, and therefore it is a search for the stories behind what ends up on our plates. Those stories sometimes emerge from science, sometimes they are cultural or histor-

ical in nature, and often they are personal. For the sake of readability I decided in the end against using footnotes, but the book includes an extensive bibliography as well as the acknowledgments at the end of this introduction. Above all, I wanted this to be a book for anyone looking for nuanced reflection, anyone genuinely interested in farming and food, anyone who understands that the food they eat is not self-explanatory.

In 2006 I published a collection of pieces under the title *Nieuwe spijswetten* (New Dietary Laws). It prompted reactions from many quarters, from chefs and housewives, from environmentalists and nature lovers, farmers, clergymen, bureaucrats, and urban activists. Readers of *Nieuwe spijswetten* will see that several points I touched on in that book are dealt with again here, if at greater length and with updated knowledge. My curiosity as to the meaning of food and the gaping chasm between what we find on our plates and how it got there has only grown since then. This book was written over a long period, so I've taken up some themes from my earlier work, including my inaugural lecture for the Cleveringa chair in Leiden, where I built on the image of Eve and paradise; my Huizinga lecture; the Groeneveld lecture; the Kohnstamm lecture; my TED talk in Long Beach; countless lectures to more academic audiences; and several columns originally written for the Dutch daily newspaper *NRC Handelsblad*. (See www.louiseofresco.com for work of mine not mentioned in the Bibliography.)

Acknowledgments

I'm extremely grateful to many people for their inspiration and for the debates we've had, some over many years, others limited to specific occasions but nevertheless crucial. They will not always have realized how much they meant to me. There are many I won't name here but will instead thank in person when the opportunity arises. Over the years I've met students, young farmers, and chefs, all of whom set me thinking. Along with the continually stimulating interaction I've enjoyed with countless colleagues and former colleagues in Amsterdam, Stanford, and Wageningen, and at the Food and Agriculture Organization of the United Nations, the Consultative Group on International Agricultural Research, the Social and Economic Council of the Netherlands, Rabobank, and Unilever, I would like to mention in particular conversations with Bruce Ames, Joachim von Braun, Joy Burrough, Roel Coutinho, Wout Dekker,

Marcel Dicke, Robbert Dijkgraaf, Sam Dryden, Shenggen Fan, Elias Fereres Castiel, Anna Ferro-Luzzi, Claude Fischler, Joop Goudsblom, Louise Gunning, Martijn Katan, Frans Kok, Salomon Kroonenberg, Fouad Laroui, Rachel Laudan, Samuel Levi, Sijbolt Noorda, Frits van Oostrom, Henk van Os, Dick Plukker, Rudy Rabbinge, Prakash Shetty, Mahmoud Solh, Loretta Sonn, Bram de Swaan, Bonno Thoden van Velzen, Kraisid Tontisirin, Cees Veerman, Pamela Watson, Mieke van der Weij, Peter Westbroek, and Helen Westerik. Each of them has helped distill my thinking, although they are not responsible for any shortcomings of the final result. Like all contemporary works, this book was made possible in part by the existence of that inexhaustible, almost paradisiacal abundance of information available to us on the Internet, especially in the form of Wikipedia, Google Scholar, and Wikicommons. The infectious enthusiasm of Marjoleine Boonstra and Lies Janssen, with whom I saw all manner of things during the making of our TV documentary, was a pleasant distraction during the many months of writing. At the University of Amsterdam, Renée Bakkerus, Simonetta Gerritsen, Pauline van der Hoeven, Anna Holland, and Yvonne Sanders all patiently supported me, each in their own way, especially with regard to the source material, the Bibliography, and the illustrations. As a critical reader of the manuscript, Joost van Kasteren helped guard me against imbalance. Lodewijk Brunt, partly inspired by his knowledge of India, supplied critical commentary and over the years repeatedly brought interesting points to my attention. I thank Liz Waters for her excellent translation and many suggestions. I am also grateful to the staff of Princeton University Press for their great support for the English version of the book and its launch. I'm extremely grateful to the University of Amsterdam for the space my position as university professor there gave me to write this book. Cuban painter Julio Breff Guilarte, whom I first discovered at the time of my Huizinga lecture and quoted in it, was kind enough to allow me to use a picture of his painting, as was Berend Strik. Without the encouragement of Mai Spijkers, more than twenty years my publisher, and the patience of Job Lisman, who greeted each chapter with joy, all the material for this book would have been put out with the waste paper long ago, where perhaps it might have been of more use as part of the eternal ecological cycle.