

# Preface

## *The phagic dimension*

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### From blade of grass to earthworm

*Imagine a blade of grass grazed by a ruminant such as a buffalo or gazelle. The gazelle is eaten by its predator – say, a lion. The lion leaves the remains of its meal to vultures, hyenas and other scavengers, and then to detritus feeders such as earthworms. Bacteria and other decomposing microorganisms subsequently intervene and further contribute to the humus enrichment process, but they may themselves be preyed upon by protozoa.*

In 1866, Ernst Haeckel coined the term ‘ecology’ to refer to the study of interactions between species and their environment. Ecologists subsequently realized that the environment (or biotope) interacts in a complex way with the species living in it (biocenosis), modifying these inhabitants while in turn being modified by them – together, this constitutes an ecosystem.

The ecosystem can thus be described in ‘phagic’ terms – that is, according to who eats whom. Researchers have designed and measured the so-called trophic index, which helps determine the position of species in the food chain – that of *Homo sapiens* is around 2.2, which is close to that of, say, anchovies or pigs (Bonhommeau et al., 2013).<sup>1</sup> *H. sapiens*’ position in the trophic chain, therefore in the ecosystem, can be measured precisely because this species is part of what is commonly called ‘nature’, which means we should have second thoughts about the nature–culture dichotomy or any other way of opposing ‘human’ and ‘natural’.

<sup>1</sup> The trophic index represents the number of intermediaries between primary producers and their predators. *Homo sapiens* would therefore not be the top predator it is commonly thought to be, unless one considers the species in non-food terms. The trophic index markedly varies depending on the diet of human groups.

The trophic (nutritional) dimension is essential to ecosystems and to our planet's ecosphere. The topic of food therefore obviously raises questions pertaining to the fundamental mechanisms of life. But it also relates to society – to the distribution of edible resources gathered or produced and therefore to social organization and the economy, to daily life and history, to solidarity and inequality, to sharing and competition and so on. Inevitably, food studies must be ecological and multi-, inter- and transdisciplinary, encompassing a diverse range of disciplines, including the social sciences and biology. Yet – and perhaps because of this – social scientists have long had little to say about food.

For almost fifteen years, the UNESCO Chair has disproved this latter statement. With food as the central issue, it has been relentlessly presenting research from multiple disciplines, fieldwork as well as reflections and 'real-life experiments' from around the world. The watchword of 'decompartmentalizing knowledge' echoes the call of the French sociologist and philosopher Edgar Morin – further relayed by UNESCO – to 'close the knowledge gap' by breaking down the 'Great Wall of China between spheres of knowledge'. As Morin once remarked, 'brain and body are studied in biology departments while the mind and social life are studied in psychology and sociology departments'. The present book wraps up a decade-long streak of relentless, painstaking research gathering knowledge on the phagic dimension of *H. sapiens*.

This preface does not aim to outline the history of food research. Instead, based on a few examples – though at the risk of overlooking some key authors – it illustrates how food can be investigated from an ecological perspective, while highlighting the project that underpins this book and reflecting on the future and the looming issues that may arise over the next decade.

We first see that food research in the social sciences has lagged, marked by indifference, prejudice or mere inertia. We then observe that food has sometimes been treated as an ancillary topic rather than a specific focus of research. Finally, we briefly review the time period during which food became a flourishing and even prolific research theme, while pondering the potential emergence of social demand.

### 'Below the belt'

Quite plainly, it seems that there has been a kind of food blindness in the social sciences. Some pioneering researchers may well have been adversely affected by this indifference, with their research lacking support or attracting little attention.

Many disciplines have long resisted exchange, communication, the free and unhampered transgression of the divide between disciplines, and even any form of mixing and merging.

Hence, in the 1930s, the British anthropologist Audrey Richards, a student of Bronislaw Malinowski and pioneer of an interdisciplinary approach to food and nutrition, was astounded that food, being the most basic biological need, received so little interest in the social sciences – unlike sexuality, which she believed psychoanalysis showcased excessively. According to Richards's so-called functionalist perspective, the 'primary biological function' – in other words, nutritional needs – underpinned much of the organization and institutions of the groups she studied. Yet at the same time, 'the biological facts of appetite and diet are themselves shaped by human relationships and traditional activities'. This was in some ways an ecosystemic vision ahead of its time, while also demonstrating that the organizational process of gathering and exploiting resources before distributing them raises issues of hierarchy, justice, solidarity, legitimacy and division of labour – all of which constitute the building blocks of social organization.

For anthropologists, the reason for the lack of interest in food lay precisely in its primary and basic nature, which these specialists considered self-evident and even trivial. Some of the 'founding fathers' of anthropology and the social sciences before Audrey Richards (as she herself pointed out) had in fact shown an interest in food, but had focused on aspects that were 'naturally' perceived as being of key importance to their discipline – that is, sacred, ritualistic, symbolic, festive, Dionysian or, in a nutshell, extraordinary events. The ordinary features all but fell to the wayside. Émile Durkheim (1982 [1895]), the fervent founder of French sociology who was always keen to delineate, appropriate and legitimize the academic scope of his discipline, sternly stated: 'Each individual drinks, sleeps, eats and reasons, and society has a vital interest in ensuring that these functions are regularly fulfilled. If such matters were social, sociology would have no purpose on its own, and its sphere of activity would overlap that of biology and psychology'. This staunch defence of an academic turf that had only recently been conquered was rooted in an archaic and fairly universal view of food as a 'lowly' and trifling function, which relegates the human condition to the realm of animality – the same stance that sees fasting as a pathway to enlightenment and spirituality.

As the biblical maxim goes, 'Man does not feed on bread alone' but also needs the word of God (Deut. 8:3; Mt. 4:4). Is it therefore any wonder that food has long been literally regarded as a 'below-the-belt' research topic?

## An ecology of social bonds

It took an atypical researcher – renowned in his time (somewhat belatedly) yet not as well regarded within as outside academia and keen to stress the fundamental sociological importance of intimate and everyday life – to try to reinstate the ordinary meal as a major sociological and anthropological focus. Georg Simmel (1992 [1910]) wrote an essay on ‘The Sociology of the Meal’ (*Soziologie der Mahlzeit*). He showed in particular that the daily meal inextricably combines a highly individual act (what is ingested by one individual cannot be ingested by anyone else) and an event of far-reaching social and collective significance – namely the sharing of a substance and an experience that is repeated, codified and ritualized, while engendering a sense of belonging. In France, Simmel was only slowly and belatedly (re)discovered (around the 1980s). Much later, the sociologist Philippe Joron (2017) noted that Simmel had actually heralded ecosystemic thinking. He wrote that, according to Simmel, ‘the social bond is thus situated at the interface between individuals and society, which are embedded in the natural environment. It is in this all-encompassing system – what Edgar Morin later called “an ecology” and Augustin Berque referred to as *mesology* – that social bonds are forged’.

Half a century after Audrey Richards and six to seven decades after Simmel, the humanities were in a state of flux, caught up in debates and discussions around Marxism, psychoanalysis and structuralism, as well as the events of May 1968 and their aftermath in the case of France. Claude Lévi-Strauss and Mary Douglas had sought to grasp cultural structures – and even culture as a whole – through the prism of cooking and table manners. In his book *Mythologies*, Roland Barthes (1972) had delved into the semiology of steak and chips, wine and milk, culinary photographs in *Elle* magazine and – with morose delight – displays of ‘petty bourgeois ideology’ with regard to food. In this context, the topic of food began acquiring an inkling of legitimacy, though more as a gateway than as a subject *per se*.

A little later, in the 1970s, Pierre Bourdieu (1984 [1979]), in *La Distinction: Critique Sociale du Jugement* (*Distinction: A Social Critique of the Judgement of Taste*), approached culinary tastes and table manners in the same way and on the same terms as artistic tastes or political preferences, aiming to show that the same class logic applies to social criteria of taste and disgust in these different domains: judgements of taste reflect social position and involve the corresponding habitus. In other words, once again, food is used rather than considered as a specific object. It carries a theoretical challenge that either goes beyond it or reduces it, but it is not envisaged as a scientific object in its own right.

## The role of history

The discipline of history specifically devoted attention to food quite early on. The subject was at first treated as a ‘minor anecdotal history’,<sup>2</sup> flourishing in an indifferent or even condescending vacuum and disregarded by legitimate academic authorities (Toussaint-Samat, 1992). It was also sometimes regarded as a form of highly specialized or marginal history. For instance, in 1932, the Swiss doctor of Polish origin Adam Maurizio (2019 [1932]) published a book on the history of plant food in German, later translated into French as *Histoire de l'alimentation végétale de la préhistoire à nos jours* (History of Plant-Based Food, from Prehistory to Present Days) and reprinted several times.

With the French *École des Annales* and its successive historical currents (‘quantitative history’, ‘history of mentalities’, ‘new history’ etc.), the discipline initially focused on the material history of food, particularly the provisioning and management of castles, monasteries and other institutions, and, when sources were available, on the food of ‘common people’. With Fernand Braudel, then later Jacques Le Goff and Michel Foucault, and subsequently Georges Vigarello, Alain Corbin and many others, history began opening up to new topics (the body, senses and sensibility etc.) and above all to other disciplines in the social sciences. History – perhaps because it is a time-honoured discipline with a sound sense of legitimacy and capable of assimilating and incorporating contributions without feeling overly threatened by them – has embraced anthropo- and socio-historical approaches. Roland Barthes (1961), for instance, published *Pour une psycho-sociologie de l'alimentation* (For a Psychosociology of Food) in a special issue of *Annales*.

In the book *L'invention du quotidien* (The Practice of Everyday Life [1998]), Michel de Certeau helped legitimize the study of everyday cooking. Somewhat of a maverick, Jean-Paul Aron (1976) then proposed a history of food sensitivities in *Histoire de la sensibilité alimentaire (Le Mangeur du XIXe siècle)* (History of Food Sensibility [The Eater of the Nineteenth Century]), and a little later Jean-Louis Flandrin began focusing his research on a history of taste, the scope of which eluded many of his colleagues (see in particular Flandrin, 1992, 2007).

<sup>2</sup> About which the leading historian of food and taste Jean-Louis Flandrin (pers.com) often expressed some degree of annoyance.

## Growth and its limits

In 1972, the Club of Rome published the Meadows Report on *The Limits to Growth*. In the same year, Edgar Morin and Nobel Prize-winning biologist Jacques Monod convened a transdisciplinary conference titled *Unity of Man*. Morin later expanded his paper into a book, *Le Paradigme perdu: la nature humaine* (Paradigm Lost: Human Nature), in which he gathered the threads he had been weaving for several years between biology and the social sciences, ecosystems, information and self-organization. The topic of food was only touched upon occasionally, but it seemed apt for an approach similar to that applied in the book, articulating biology and the social sciences. This is how it appeared to this author – still a novice researcher at the time – and it was largely guided by these influences that food became the subject of his PhD thesis and further research (Fischler, 1979, 1990). Other researchers adopting a similar stance on food had to contend with mocking condescension in academic circles regarding the subject of their dissertations, thereby forcing them to assert their legitimacy through the rigorous application of sociological and anthropological tenets (Poulain, 2017b).

## Food studies and social trends

In the following years and decades, research on food in the social sciences and humanities grew steadily, to the extent that between 1990 and 2000 a new academic field, food studies, emerged in the United States and Europe. In 2015, thirty-nine universities in nineteen countries worldwide were offering master's degrees on food with a humanities and social sciences (HSS) focus, while eight were titled food studies, most retained the name of a core discipline (Poulain, 2017a).

Many of these programmes are still quite a-theoretical, sometimes leaning towards minor anecdotal history. Food as an object of study nevertheless seems to have gained a certain legitimacy. This could be explained by the ongoing twofold process of individualization and problematization of food.

After 'giving' people the freedom to choose their career, spouse or romantic partner, and in the wake of the legitimization of self-esteem, the historical process of individual empowerment has now reached food, with impacts on consumption patterns, table manners and their transmission to children, relationships between eaters and forms of commensality.

In hunter-gatherer societies – as in the past memories of baby boomers and their parents – what was eaten was clearly considered to be a share, that is, a part

of a shared or shareable whole for which the eater was essentially accountable. There was no question of eating more than one's share, loudly voicing a preference or aversion, or expressing disgust (except to forewarn others of a danger), and especially of declaring an intention to shun a particular food or food category. Eating alone was to be avoided and was even viewed with suspicion or repressed in many cultures.

In our individualized world, however, the main driver is freedom of choice rather than the obligation to share. A form of individualist–utilitarian utopia is unfolding in which choosing is paramount, yet choices must be responsible. In this utopia, food would be just another consumer product, if not simply a commodity. Food consumers would then have the freedom to make choices – assuming that they are good, responsible choices – while being supported and protected by public authorities. In a book published in 2010, we mentioned this utopia of the perfect food consumer but may have underestimated its reality:

In a world of perfect eaters (as understood in this implicit worldview), consumers would walk through the supermarket aisles reading labels, noting the nutritional information and composition of products, comparing their nutrient and calorie contents to recommended nutrient intake levels or to guidelines issued by relevant official bodies, consumer organizations and scientific publications. A pocket computer would clearly be an indispensable shopping accessory for this task. (Fischler and Masson, 2010)

Our mention of a pocket computer shows that we underestimated the potential of the nascent smartphone and did not foresee the advent of the Nutri-Score system,<sup>3</sup> though we did anticipate the emergence of what are now widespread apps.

The truth, however, is that food does not readily fit the consumer product mould, especially as the growing trend towards industrial food processing has led to increasing wariness and even active distrust of processed foods, often marked by outbursts of anger and disgust. A call for standards has been mounting for decades, with people asking: What and how should we eat, how do we choose and how and whom should we trust?

Moreover, this free-choice environment has given rise to issues in dealing with the array of choices, a situation which the psychologist Barry Schwartz (2005) refers to as the paradox or even tyranny of choice and which he contends to be a recipe for disarray, anxiety and even depression. All this begs

<sup>3</sup> The Nutri-score is a five-level French nutritional labeling system, ranging from A to E and from green to red, placed on the front of food packaging, based on the nutritional value of a food product.

the question: Will it ever be possible to create a new status for food as another consumer product – based on total transparency of product information, from farm to fork? This is a complex challenge, given the deluge of innovations emerging worldwide – cellular agriculture, plant-based meat, in vitro meat (also known as ‘cellular meat’) and so on. Yet this world is in the throes of an ecological transition, with the development of agroecology, the rise of organic farming and nutritional education campaigns. Meanwhile, industrial processing is being challenged with growing fury. This world will most likely be very wary of new products which, despite being plant based, seem to fall into the ultra-processed category.

## A profoundly changing world

We are living in a time of global transition. Major civilizational changes are unfolding at an accelerated pace. IT, digitization and now AI are reshaping the world, lifestyles, lives, knowledge and understanding. A gender revolution is also underway, with an increasingly radical contestation of gender relations. Another no-less radical challenge has also emerged as the question of humans’ relationships with animals has been explicitly placed on the global agenda, with major implications for food and potentially for ecosystems in general.

The current pandemic crisis has put the brakes on some aspects of globalization, prompting border closures and curbing trade and travel. But it may also have heightened awareness of the importance of global unity in dealing with health issues as well as environmental threats and their climate impacts.

We are witnessing a dizzying watershed moment for biology, neo-Darwinism, heredity, the key concepts that shape them and their relationship with the social sciences. Let us now look at recent developments in two areas and consider their implications for food.

## Biological revolutions

In the early twentieth century, Elie Metchnikoff, vice-director of the Pasteur Institute in Paris and winner of the 1908 Nobel Prize for his seminal work on immunity (phagocytosis), was convinced that the apparent and remarkable number of centenarians in the Balkans could be explained by their traditionally high consumption of fermented dairy products – he believed certain lactic acid

bacteria found in such products could play a role in protecting the digestive tract (he practised what he preached by consuming a lot of yoghurt and other fermented dairy products). More than a century later, although there now seems to be greater interest in the Japanese centenarians of Okinawa than in those of the Balkans, Metchnikoff's obsessive whim almost seems like early intuition: what was then called 'intestinal flora' has now come to be known as the 'gut microbiome'.

While Metchnikoff had envisioned a linear and univocal determinism based on a category of foods, discoveries over the last decade or so have shown that the gut microbiota consists of 50–100 billion bacteria and other microorganisms (the genes of which are known as the microbiome) and is involved in a complex way in shaping our immunity, in the functioning of our central nervous system, with which it communicates, and in regulating our moods and mental states. Moreover, dysbiosis (an imbalance or depletion of the gut microbiota) is associated with conditions ranging from obesity to type 2 diabetes and depression, and the microbiome may also play a role in autism and even schizophrenia.

The community of bacteria, yeasts and other microbes that reside in our digestive tract is now regarded as both an organ and an internal ecosystem. In addition to inhabiting the digestive tract, the microbiome is an integral part of the body: it interacts with it, communicates with its cells, co-produces metabolites (which in turn communicate with other organs), informs and is informed, regulates and is regulated. Food is the vehicle of communication with the external ecosystem that informs – or distorts – its composition and functioning.

We live on and in a global ecosystem that is itself a collection of ecosystems. Each of us consists of or harbours one or more diverse ecosystems – the skin, the respiratory system, the mouth and the vagina all host microbiota. The microbiome interacts with our brain – the organ within which representations and beliefs emerge, thrive and spread – which drives our individual and social behaviours while being influenced by collective norms, rules, traditions and practices. We can begin to picture how a continuum from microorganisms to the social and macrosocial might look like.

The biological revolution was ushered in by growing insight into the microbiome, yet another, even more fundamental, sea change is also unfolding with the rise of epigenetics. The natural selection-based genetic evolution paradigm is being forced to change or, at the very least, one might say, to add a touch of Lamarckism to its Darwinism – or rather, neo-Darwinism.

Epigenetics is the study of the set of mechanisms that fine-tune gene expression. Various environmental mechanisms may activate or inactivate

(i.e. silence) the expression of certain genes, particularly through food. It is now recognized that some traits acquired through food can be passed on for several generations. Obesity is a typical example. This condition has a strong social dimension. It is linked to a poor diet and an overly sedentary lifestyle and may also lead to type 2, adult-onset diabetes. Young men who develop this condition because of poor diet and lack of physical activity could produce offspring who may in turn be overweight and diabetic regardless of their lifestyle (see, for instance, Danchin, 2021, p. 72). These findings come after the discovery of prions during the mad cow crisis, when research into Creutzfeldt-Jakob disease revealed that misfolded proteins are the cause of the disease and that this defect can be transmitted to other proteins with which they come into contact. This illustrates the joint hereditary and dietary transmission of a disease through the ingestion of contaminated tissues.

## The medium and the message

Food plays a pivotal role in these closely related scientific revolutions or revelations. It can be considered in terms of not only the provision of energy (calories) and biochemicals (nutrients, micronutrients) but also information. Food is both medium and message, vector and content, information and informed. This understanding calls into question – or complexifies – reductionist and linear models of causality. Our internal ecosystems communicate with external ecosystems through our food. Moreover, heredity is now approached less as being exclusively genetic and more from the perspective of its cultural, environmental and epigenetic dimensions. Conclusions warrant the utmost caution, as they are sometimes drawn too hastily and could lead to the kinds of stigmatization seen in the past – for instance, regarding the hereditary nature of the pathogenic impacts of inequalities.

Still, it is now absolutely essential to contemplate the world and food from an ecological and ecosystemic perspective. History, anthropology, sociology and social psychology initially showed little interest in one another and progressed separately before attempts were made to forge closer links, marked by the late emergence of food studies. Throughout this process, the HSS were initially sidelined or overlooked by the medical discipline of nutrition, even though the latter was itself in its infancy and lacked recognition among the other established fields of medicine. At first, only modest attempts were made to bridge the disciplinary divide on specific issues such as obesity and eating disorders.

But the rise of the environmental question – slow at first but increasingly inexorable since the turn of the millennium, and now reaching the point of critical urgency – has brought to light the striking need to link approaches, points of view, research questions, acquired knowledge and emerging issues: to grasp food not only in terms of an emerging ‘bio-social nutrition’ but also within those of a generalized ecosystemic thinking.

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