The introduction to the book explores our remarkable food journey over the past 3 million years and details the subsequent physical and cultural evolution that has resulted from it. It also summarises the book's contents, detailing our more recent physical and cultural changes, as well as the industry's future challenges in adapting to new emerging drivers, such as health and wellness, social impact and experience, or environmental and sustainability concerns.

Introduction

It was a Persian scholar by the name of Heraclitus, who coined the phrase, "the only constant is change", some 2500 years ago. He viewed ever-present change as a fundamental essence of our universe. Think of how that same change constant has developed for you during your lifetime and or allowed you to take some time out to begin reading this book!

By way of our evolution, human change is also an integral part of that same change constant.

It has taken more than 3 million years since we learned to walk upright on two legs and evolve from hominins to our current species, Homo sapiens. Of course, all that change and subsequent evolution has been fuelled by just one key ingredient: food.

When we think of food, there are several ways to describe it: the taste, the experience, the feeling or, as our more recently created food industry would say, a product that hits our so-called "bliss point".[1] Food is one of the basic necessities of life and an integral part of our cultural identity. It makes us feel good, satisfies our hunger, nutritional needs and sometimes even our emotional needs. Indisputably, food matters for every single individual on this planet; it always has!

From the time we are born, feeding a baby is one of the first acts of love a mother bestows on her child. Growing up as children our food and nutritional intake or lack thereof has a lifelong impact on how we live, for better or worse.

Food and Us: The Incredible Story of How Food Shapes Humanity
By Seamus Higgins

Published by the Royal Society of Chemistry, www.rsc.org

As religion evolved, several cultures and scriptures called food "a gift from god(s)." From a Christian perspective, Genesis 1; 29. In ancient India, the combination of yoghurt and honey was known as the "food of the gods," just as ancient Mesoamericans believed that the cocoa tree was sacred, which is why chocolate became known as a food of the gods.

With what we know today about how our bodies have evolved and our dependent relationship between the food we eat and good health, perhaps the one ancient message that still rings through today is from Greek philosophers who advised us on the difference between *sitos,* the staple and *opson* the relish and warned against overly prizing the latter!

Beyond sustenance, it was the start of food trading that created the world's first currency some 3500 years ago. Post the egalitarian nature of hunter-gatherer societies, the ability to generate and control food distribution by way of grain surpluses became a path to power and influence in agricultural communities. Food and control of its supply laid the foundations for the critical elements of today's contemporary economies.[2]

From a cultural perspective, food has also been a centrepiece of our traditions, celebrations, and folkloric festivities. Take the word Carnival and its association with public events such as parades or street parties; it originates from a folk etymology derived from the Latin words *Carne vale*, "farewell to meat". Since the 12th century, it is still celebrated today by its original proponents, the Venetians of Italy, before fasting for what was then their 40-day catholic fasting period of Lent.

So which came first, the chicken or the egg? A popular puzzle or icebreaker topic related to food origins. Of course, in evolutionary terms, the chicken's distant dinosaur ancestors were laying eggs long before the first chickens evolved. But in today's society, a similar question about food may not be easy to answer. Was it better food availability that helped us become more populous, or was it human ingenuity with increasing medical and scientific proficiency that helped us multiply and become the most populous mammals on earth?

Global population growth changed from a linear trend to an exponential model in the 19th century. The world's population has jumped eightfold in the past two centuries, from an estimated one billion to eight billion people. This defied all Malthusian projections of the time that a growing population would outrun a limited food supply, leading to a global downward spiral [3].

The same period also saw the dawn of a new food era brought about by the Industrial Revolution. Once again, a changing food supply, led by industrialisation, changed a predominantly agricultural and rural population to a new industrialised and urban lifestyle.

Unlike other industries that developed over the same period, a key difference is that food production has always been about supplying a basic human need rather than creating a profitable income stream.

Thus began the nascent food industry's conflict with business management theories rooted in economics, which also evolved in the 20th century. The rise of capitalism and the use of other service-linked sectors, such as advertising, accountancy firms, asset investment agencies, and management consultancy. Masters of business consultancy such as Frederick Winslow Taylor, Michael Porter, Tom Peters, and Michael Hammer, would have a disproportionate effect on business management theories in general, including a growing food industry.

What is a food company's purpose and management's role? Peter Drucker, a prolific contributor to the Harvard Business Review stated in 1954, "there is only one valid definition of business purpose: to create a customer" with a more inclusive view of "stakeholder capitalism," including stakeholders, employees, and consumers [4] Alternatively, is it more as per the economist and Nobel laureate Milton Friedman, who published his famous essay in The New York Times Magazine in 1970 arguing that the sole social responsibility of businesses is to increase their profits? [5]

By the end of the 20th century, forces manifested by globalisation, trade liberalisation, and urbanisation changed the nature of our food systems further by increasing the diversity and affordability of food and consolidating corporate ownership.

Today's modern food industry can best be defined as a complex, global collective of diverse businesses that supply most of the food and drink consumed by the world's population. The $12 trillion industry represents more than 10 percent of global consumer spending and 40 percent of employment.[6]

From a profitability perspective, if one looks at returns by economic sector between 1963 and 2014, consumer staples provided a 13.3 percent compound annual growth rate (CAGR) return on investment, outperforming automotive, aeronautical and even computer industries.

A $1000 stock investment in the food industry in 1963 would now be worth $1 million plus[7].

While the food industry has achieved many successes over the past 50 years in terms of scalability and providing an abundant food supply to many parts of the world, these successes have not come without consequence or controversy.

With an industry focus developing on a commodity-driven, brand-valued, cost-driven profit model, in some cases, it even defies all nutritional food logic!

I.e. how did a pharmacist's cure for his morphine addiction become the world's most popular soft drink, selling over 10,000 soft drinks every second of every day globally? Alternatively, how did a pious American Seventh-day Adventist and eugenicist's cure for "heinous sin, self-pollution, or masturbation" become the most popular breakfast cereal in Ireland?

Similarly, with convenience food, one of our time's most iconic food logos is the McDonald's double arches or big yellow M on a red background.
In the 1960s, McDonald's hired the design consultant and psychologist Louis Cheskin to create a new logo. Cheskin is considered a pioneer in understanding how colours can affect a food brand's efficacy, positing that red triggers stimulation, appetite, and hunger and attracts attention, while yellow triggers feelings of happiness and friendliness.
He was also a subscriber to Freud's theories on how sexuality drives human behaviours and believed those impulses to be a valuable tool in marketing. As such, he claimed that the new logo would have a Freudian pull for customers, insisting that the double arches would transmit a subliminal message for "Mother McDonald's breasts," [8]
Whether it was the colours or Freudian association with the logo, extensive advertising and marketing spend, or increasing portions of cheap fast food (average portion sizes have more than doubled since McDonald's started in the 50s!), the McDonald's chain is now the largest restaurant company in the world. Globally, the fast food market is estimated at just under $1 trillion per annum. McDonald's is a market leader with approximately 21 percent share, supporting over 40,000 outlets in over 120 countries worldwide.[9]
The end of the 20th century saw the Industrial Revolution end with the realisation that nature does not have an infinite capacity to absorb the world's waste, be it greenhouse gas emissions or food waste. Likewise, the realisation that the world does not have an endless supply of natural resources such as fossil fuels or minerals for fertilisers.

The Agri-Food sector has now become the world's second-largest emitter of greenhouse gases, responsible for nearly one-third of all human-caused emissions.[10]
A third of all edible food produced goes to waste, even though 10 per cent of the global community goes hungry.[11]
Along with environmental and sustainability concerns, the more recent growth of the food industry also coincides with a dramatic shift in consumer eating habits; how the globe now eats and drinks has clashed with our biology to create significant changes in body composition.
Obesity levels in the UK and the US have more than trebled in the last 30 years. The World Obesity Federation predicts that one billion people globally, including 1 in 5 women and 1 in 7 men, will be living with obesity by 2030[12].
The cause of this rapid rise in obesity, and subsequent rise in Type 2 diabetes and other diet-related illnesses, is complex and has been blamed on, amongst others, modern lifestyles. Of course, high-calorie, energy-dense food and clever food marketing play a significant role.

Similarly, the more recent revolution in food science, modern grocery retailing, and the use of lower-cost calories and ultra-processed fats and carbs that cause protein dilution in the food supply has also contributed to the same problem. While these "ultra"-processed food products increase consumer demand by working on our innate preference for calorie-rich foods, they also disconnect the brake on our appetite systems by decreasing dietary fibre. It is perfect for getting us to eat and buy more but devastating for our longer-term health and well-being.[13]

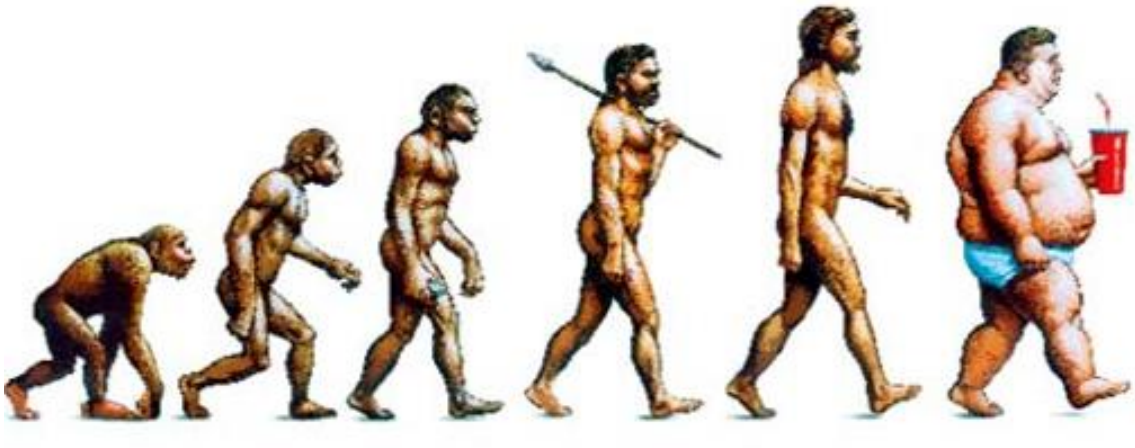

Figure 1.1. The evolution of Man. [14] Reproduced from ref. 14, with permission from Elsevier, Copyright 2019.

The Ellen MacArthur Foundation puts a number on it: For every dollar spent on food, society now pays two dollars in health, environmental, and economic costs [15]. The World Food and Agricultural Organisation (FAO) calculates the global price of hidden health and environmental costs of our present agri-food systems to be at least $10 trillion annually[16].
Whether these concerns are viewed from an economic, social, political, or individual perspective, our present food model needs to change direction.

Before, the food industry's growth and profit drivers were solely based on taste, price, and convenience. The challenge now is how we, as individuals, civil society, industry, and indeed, governments, ensure that a future food industry can adapt to new emerging drivers, such as health and wellness, social impact and experience, or environmental and sustainability concerns.

The book explores our remarkable food journey over the past 3 million years and details the subsequent physical and cultural evolution that has transpired because of it.
It also explores the rich history of how our favourite foods evolved and developed over the past millennia and how the more recent growth of the food industry and its products now clash with our biology, creating a significant mismatch for our body's physical evolution.
Are we still evolving? Well, yes! Humans constantly evolve and will continue to do so as we continue to reproduce successfully. Think of evolution as heritable change over time, or as Heraclitus said, the only constant is change. We are also witnessing how the current rate of change in cultural evolution is now changing in decades rather than thousands of years as per our physical evolution. If one reviews some of our recent physical evolutionary changes from a time perspective, the chance of Steve Earl or Ed Sheeran meeting their blue-eyed Galway girl 6000 years ago could never have happened! Originally, we all had brown eyes, and a genetic mutation in a single individual in Europe 6,000 to 10,000 years ago led to the development of blue eyes [17]
From a food perspective, 4,000 years ago, virtually no adult human could properly digest animal milk. However, through evolutionary change, northern Europeans began to inherit a genetic mutation that enabled them to do so.[18]
More recently, researchers have found another genetic variant in populations in India and East Asia that have favoured vegetarian diets over many generations. This new genetic variant allows these people to efficiently process omega-3 and omega-6 fatty acids from a plant-based diet [19].
Conversely, when one looks at more recent cultural evolution, that difference becomes personified with our shift from rural to urban, agriculture to commerce, isolation to interconnectedness, less to more technology and education, lesser to greater wealth and smaller families/household units. On a positive note, unlike the physical attributes of evolutionary change, a significant advantage of social change is the ability to change it and adapt to new circumstances.
As my earlier question asks about increasing medical and scientific proficiency helping us to multiply, could that same resource of sociotechnical innovation and immense human ingenuity assist us in achieving the change in direction our current food system requires?
Before outlining a more positive and sustainable possible future food scenario, the book also details a better understanding of our DNA makeup and how we measure the energy value and composition of the foods we eat. It also explores the intricate interplay between our genetic and physical makeup and our enteric nervous system and brain cells, which work in unison to regulate how our body digests food.

These intriguing new discoveries are revolutionising our understanding of how digestion, mood, health, and even the way we think are intricately linked to the food we eat.

Chinese is one of the oldest written languages in the world, with at least six thousand years of history. Unlike other cultures that use alphabetic systems, Chinese writing is logographic, meaning each symbol or character represents a word.

I have always found it remarkable that all those years ago, the originators of the Chinese character for vitality or "Jing" (精) chose the two characters "米" (rice), which would have been brown rice at that time, and "青" (plant or vegetables) to represent the same word.

It was also a Chinese philosopher, Confucius (500 BCE), who said, "Study the Past if You Would Define the Future."

I hope you enjoy your deep dive into "Food & Us" and trust that our future food choices can evolve further to create a new global vitality or "Jing" (精) for both ourselves and the only planet we have!

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