

# Chapter 54

## Re-Thinking Meat: How Climate Change Is Disrupting the Food Industry

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### ABSTRACT

*This chapter describes how among vegetarian, vegan and animal advocates, it has been a common practice for many decades to cede the terms “meat” to livestock producers, and to ask people to sacrifice meat. Yet during those decades, global consumption of livestock products has exploded. People have often overlooked the fact that “meat” has been defined for centuries as an essential food that includes vegan versions, and plant-based meat has always been framed as equivalent or superior to animal-based meat. In fact, replacing animal-based foods with better alternatives is said to be the only pragmatic way to stop climate change quickly as needed. However, it is unlikely to happen through efforts to reduce meat consumption. It is much more likely to happen through efforts to disrupt meat production and consumption by making and marketing meat and other foods directly from plants.*

### INTRODUCTION

The invitation to write this chapter started with the following introductory claims: “Our understanding about the benefits and negatives related to the consumption of meat... is influenced by dietary habits and social norms but also by their marketing. There is however ample scientific evidence that excessive meat consumption is not good for the natural environment and can be detrimental to human health”.

However, this chapter explains why the abovementioned claims are themselves detrimental. First, vegan food producers sometimes market their products as “meat” (Field Roast, 2017), and dictionaries define “meat” as an essential food that includes plant-based meat (Merriam Webster Dictionary, 2017); so a critique of “excessive meat consumption” is unnecessarily ambiguous if it does not specify whether the meat in question is animal-based or plant-based. Second, the abovementioned claims imply that moderate animal-based meat consumption could be good for the natural environment, when there is plenty

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of evidence to the contrary. Third, those claims wrongly imply that it could be good for the environment for people to switch from consuming animal-based meat to consuming dairy products and eggs. Fourth, those claims suggest that advocating against excessive meat consumption could be successful, but this is contradicted by history. Fifth, those claims omit any reference to climate change, though plenty of evidence indicates that climate change is unique among environmental risks in being large-scale, trans-boundary, potentially irreversible, and potentially catastrophic in the near term.

While this chapter provides evidence to contradict the abovementioned claims and their implications, it also proposes ways in which some common views of animal- and plant-based meat might be constructively reassessed.

## **SHORT HISTORY OF “MEAT”**

In English, the word “meat” was used in the early Middle Ages as a generic term to describe foods in general. Later in the Middle Ages, the word gradually became focused on various types of flesh used for food, including the flesh of vegetables (Online Etymology Dictionary, 2017). These days, food companies market products such as “grain meat” (Wegmans, 2017) and “nut meat” (Veggie Delights, 2017), practically always as being equivalent or superior to animal-based meat.

The phenomenon by which plant-based meat is considered equivalent or superior to animal-based meat is not new. Soyfoods started to be considered superior foods in China during the Han dynasty (206 BC–220 AD), when soy sprouts began to be used alternately as both food and medicine. During this period, the introduction of the hand-turned stone mill helped in developing and expanding the production of soymilk, fermented black soybeans, fermented soybean paste, soy sauce, and fermented tofu (Shurtleff et al., 2014).

Starting in the ninth century AD, a form of soy meat called Yuba was created from the film formed when soybeans are boiled; this began first in China and soon after in Japan (Tsutsumi & Tsutsui, 2009). Around the same time, soybean oil and cake – as well as tofu – also started to be created in China (Shurtleff et al., 2014). The earliest known document to use the word “tofu” was written by Tao Ku around the year 965 (Shurtleff et al., 2014). The document was called *Qing Yilu* – which translates to “Anecdotes, Simple and Exotic” – and it framed soyfoods as superior to animal-based foods. Several centuries later in China, an encyclopedic document entitled *Jujia Biyong Shilei Quanji* – which translates to “Essential Arts for Family Living” – described methods of making plant-based sausage using wheat gluten. From then through to modern times, soybeans have been rarely used in whole form in Asian cuisine (Shurtleff et al., 2014).

In modern times, disruption of one industry occurs after another has become prevalent. However, this was not always so. In fact, the history of meat shows that its production generally developed in phases of evolution and consolidation, rather than through rapid disruption.

Originally, in Paleolithic societies, people’s success in hunting wild animals was never assured; shooting an arrow and missing the target was often as likely as success. As technology for hunting improved, success still was highly variable, notably dependent on seasonality, local climatic conditions, and the local availability of desired animals (Chiles & Fitzgerald, 2017). Later, after the transition from hunting to animal agriculture, animals were first used for draft labor, eggs, milk, wool, and soil fertilization more than for meat. Feed crops were generally considered too valuable to feed to animals. Livestock products

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