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Metaphysics of Natural Food

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Synonyms

Compound foods; Organic foods; Philosophy of nature; Whole foods

Introduction

The adjective "natural" is often employed to characterize a food or beverage, and consumers tend to associate a positive value to it (Siipi 2013). The understanding of the adjective, however, varies across countries, and, in some circumstances (e.g., in the United States), "natural" is considered vague to the point that it cannot be defined and its usage cannot be strictly regulated. The *Codex Alimentarius* – a chief collection of internationally significant standards, practices, and regulations pertaining to food, which is maintained by the FAO (Food and Agriculture Organization) – does not acknowledge the term "natural" as significant to characterize a product; it contains, instead, a standard for organic foods. At any rate, as a first approximation we may define the adjective "natural," when used in connection to food labels, as "produced or existing in nature." That which is natural, that is, is seen in contrast with that which is artificial, where the definition of "artificial" is "made by human work." When the human work in question is a chemical synthesis, then the product is said to be "synthetic." Synthetic products are made from parts or elements that do not occur in nature or, at the very least, from parts or elements that do not occur independently in nature. A material formed by chemical synthesis has a characteristic chemical structure that was, at some point, invented within a specialized laboratory; that is, the parts or elements of the material are combined to form a whole whose chemical structure does not occur spontaneously.

"Natural" Foods

Two sorts of foods can be bestowed the "natural" label: *whole* and *compound* natural foods (cfr. also Bozicevic 1987). Whole foods are those that can exist also spontaneously – that is, without human intervention – such as honey, milk, apples, or blueberries. Though by now we have well-developed techniques for the production of some of these foods, the production does not crucially alter the identity of the food. The current British labeling system for natural foods, which is inspired by this twofold distinction, can be useful to illustrate it a bit further. A whole food that is natural is a food that is natural without qualification. This is when a food has not been subject to any modification during its production and packaging, other than those procedures that would make it suitable for human consumption. For instance, a natural dairy product is a food manufactured from milk alone, with the possible aid of traditional cultured bacteria that are necessary for the fermentation process. A natural milk yogurt, under this understanding of "natural," is a milk yogurt obtained solely from milk and *Lactobacillus bulgaricus* and *Streptococcus thermophilus*; no additives, such as preservatives, flavorings, or colors are allowed.

Between whole and compound foods, there are some ingredients whose naturalness

needs to be assessed on separate grounds. Belong to this list of ingredients additives and flavorings. Thus, a natural additive is one deriving from a natural whole food, or from a natural organism, by a traditional process (e.g., sugar extracted from sugar cane) or by a process that does not alter its naturally occurring chemical structure.

The second sort of natural food is compound foods made from natural ingredients. These foods differ from whole foods in that, without human intervention, they would not exist on their own. An apple pie, a portion of spaghetti with pesto, and a salad of red beets and walnuts are examples of this second sort of foods. Compound foods derive their naturalness from their ingredients. Compound foods, that is, are "natural" when all of their ingredients are natural. Thus, a natural bread would be a bread whose ingredients are all either whole natural foods or natural flavorings and additives.While "artificial" products require human intervention, some artificial foods are made from natural ingredients and are hence regarded as natural. "Natural," when applied to foods – or, at least, to compound foods – does not stand for an entity that occurs spontaneously in nature. On the other hand, "synthetic" products not only require human intervention, but they must be arrived at by means of chemical synthesis performed by humans.

An alternative labeling system has been in use in Israel. In this case, the naturalness of a product is defined by means of a list of 33 processes. The processes identify the only allowed manners of modifying a whole natural food. The processes are all physical treatments, such as freezing, drying, cleaning, and blending; none of the allowed processes are chemical modifications.

Some countries have remained skeptical with respect to the meaningfulness of the adjective "natural," when used to describe a food. In the United States, the Food and Drug Administration (FDA) agency discourages producers from using it. The agency attempted to define natural foods in 1991 but gave up in 1993, noticing that the term "natural" was too vague and indefinite. A similar attitude is held by the United States Department of Agriculture (USDA), which has standards to define organic produce, but no standard for natural produce. Of course, both the FDA and the USDA disapprove of, and can take action against, claims that falsely describe a product, including claims that falsely portray a food as natural. But without some standards for naturalness, it is difficult to hold producers accountable for misleading consumers. A notable example in the United States is chicken meat labeled as "all natural" even when it has been injected with a saline solution that increases its weight up to 25%. Consumers and institutions, such as the Center for Science in the Public Interest, have objected to this use of the adjective "natural," without significant governmental responses.

Finally, "natural" can also be employed in complex expressions, such as "natural goodness," "nature's way," or "naturally better;" it may also be substituted or implicitly implied by terms such as "real," "genuine," or "pure." Most legislation dissuade or prevent the usage of such expressions and terms, which can easily misguide a consumer because of their ambiguity. On the other side of the spectrum, the use of "natural" to describe some products – mostly fresh products – is subject to no specific labeling restrictions. When it comes to such products, the consumer is left on her own to determine the naturalness of the food.

Natural Misunderstandings

The adjective "natural" can have several misleading implications. Four of them are considered here (cfr. Siipi 2013 for a further discussion). The first feature is *nutritional suitability or superiority*. Natural foods are not necessarily nutritionally suitable, or more suitable than their non-natural counterparts, however. Some natural foods, such as sugar and lard, need be used in moderation and may not be suitable for someone's diet. Also, synthetic foods, such as vitamins and amino acids, may be as nutritious as their natural counterparts.

Secondly, "natural" may imply some *health claim* (cfr. Siipi 2013). While it is the case that, in

some states, the adjective indicates that the food has not been substantially altered or processed, this is not sufficient to establish a general health claim. For instance, it may be believed that "natural" equals "nontoxic," but this is not always the case. Depending on the soil or the specific characteristic of the product, a food may be toxic even when natural. Also, some natural whole foods – such as sugar and lard – and some natural compound foods – such as lasagna or apple pie – may be unhealthy, if eaten without moderation.

Thirdly, "natural" may suggest the *lack of human influence*. However, this is not the case for all natural compound foods. Moreover, in the case of natural whole foods that are farmed, the product is obviously the result of human effort.

Finally, "natural" may suggest *authenticity* (See entry on "▶ Authenticity in Food") or *familiarity*. Not all natural foods, however, fit these adjectives. Consider, for instance, the case of natural breads. As the number of ingredients found within a loaf of bread grows high, and their processing becomes increasingly cumbersome, the tendency is not to regard the bread as familiar or authentic, even when all of its ingredients qualify as natural.

Often there is a gulf between the legal understanding of a term, the scientific understanding of a term, and the term's everyday meaning. Terms used to characterize foods are no exception; in fact, they offer several prominent case studies. "Organic" (See entry on "▶ Trade Policies and Organic Food") is another term whose usage is often misleading. In its scientific understanding, organic stands for a living organism, a part of a living organism, or that which is derived from an organism. However, in its everyday and legal usage, the term stands for the product of a plant or an animal grown without synthetic pesticides, synthetic fertilizers, hormones, antibiotics, and meeting all other standards issued by the country in which the product is grown. Obviously, there is a major difference between the meanings of "organic" in the two contexts. But, manufacturers of products other than agricultural ones are under no obligation to specify their understanding of the term.

Natural Foods and the Metaphysics of Nature

The difficulties in defining and regulating the use of the adjective "natural" to describe a food are part and parcel of a broader metaphysical debate over the proper understanding of the term. The idea of nature is perhaps one of the most abused ideas in common usage, not only from a commercial point of view but also ideologically and theoretically. One's view of the proper understanding of natural foods depends on one's underlying metaphysical approach to nature. Helena Siipi (2008) has proposed a threefold classification based on whether naturalness is grounded in a certain history or in a property or in a relation. Such classification is complementary to the one proposed here, which is based on four classic metaphysical positions concerning nature. For each position, its place in the debate over natural foods is indicated.

1. "Nature" derives from the Latin root "gna," which stands for *that which generates*. In fact, the predicate "nasci," to be born, has the same root. The very first position regards nature as that from which everything is born. On this metaphysical understanding, any food ultimately counts as natural. This position backs up the opinion of agencies, such as the FDA, who hold that "natural" is too broad and vague of a term to be useful in describing some foods as possessing a characteristic which other foods lack.
2. The second position, of Aristotelian descent, claims that *any individual thing has a nature of its own*. Thus, the nature of this apple is different from the nature of that yogurt. Also in this case, the adjective "natural" is of little use on food labels. However, individual natures can and should be captured by food labels. The definition of items provided by governmental agencies, then, should try and pin down the fundamental kinds of foods that there are. Such kinds reflect biological differences (e.g., the variety of an apple tree or the genetic makeup of a seed of corn) and also mirror geographic similarities (See entry on "▶ Geographical Indications, Food, and Culture") and particular

methods of production (e.g., authentic specialties or fair trade products) (See entry on "▶ Fair Trade in Food and Agricultural Products"). This definition is especially important for understanding compound natural foods. An apple pie, as noted above, is natural only if its ingredients are natural. But it takes the right ingredients in order to make an apple pie; that is, the nature – in the Aristotelian sense – of the apple pie needs to be respected as well in order for the resulting product to even count as an apple pie.

3. A third position defines natural as that which is *spontaneous*. To be emphasized here is the lack of an ordering will on a crucial phase of the process of generation. Thus, a golden delicious apple, despite being the product of a grafted tree and of human effort, is still spontaneous, as its characteristic genetic makeup is not the outcome of human intervention: it occurred spontaneously. Vanilla extract counts as natural, under this definition, because its chemical structure is contained in the vanilla beans. Vanillin produced by chemical synthesis, instead, is not natural.
4. According to the fourth position, natural is opposed to *artificial*: natural is that which is not produced by humans. In some cases, that which is natural could also be produced artificially. Thus, for instance, ocean waves can be natural or artificial. This position cannot be applied to natural compound foods, which are the outcome of recipes and – as described above – are derivatively natural in that they derive their naturalness from their ingredients. However, the position plays an important role in the labeling of natural whole foods. A whole food, which is delivered without altering its key characteristics, is natural; for instance, an apple that is washed and cleaned, before being delivered to the market, is still natural. On the other hand, a whole food which is processed and substantially altered, or a food which is produced by chemical synthesis, is not natural.

Each of the four metaphysical positions on nature helps to shed some light on the debate over natural foods. The upshot is that the understanding of the adjective "natural," when applied to food, can hardly be reduced to one metaphysical schema. Some skepticism regarding the usefulness of the term in picking out a genuine characteristic of a food remains.

Summary

The entry employs the conceptual tools of metaphysics to critically study the adjective "natural," when utilized to characterize a food or beverage. There is some skepticism regarding the usefulness of the adjective in picking out genuine characteristics of a food. While some countries, such as the United States, have abstained from issuing specific regulations regarding the use of the term "natural" to describe a food, others – e.g., England and Israel – do have such regulations. The entry first draws a distinction between the application of the adjective to whole foods and to compound foods. Hence, four typical misunderstandings of the term are flagged. They comprise circumstances in which "natural" is taken to imply – respectively – nutritional suitability, a health claim, lack of human influence, and authenticity or familiarity. Finally, four classic metaphysical positions on nature are introduced. The positions jointly support the different facets that the adjective "natural" takes in describing a food. They also reveal how the adjective "natural," when applied to food, cannot be reduced to one metaphysical position.

Cross-References

▶ Natural Food

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Molecular Gastronomy

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Synonyms

Food science; Modern cuisine; Molecular cooking; Progressive cuisine

Introduction

Molecular gastronomy is a scientific field that studies the changes food products go through during the process of manipulation. These physical and chemical processes take place due to the impact on the molecules of the food as it goes through the different stages of cooking. In more recent times, molecular gastronomy has had a different meaning. It has become known as a movement led by chefs who introduce innovative techniques in cooking to diners around the world. This entry will follow the history of the discipline and the movement, mention the key people involved in making it known, and look at the ethical questions that arise from all perspectives of the discipline: ingredients, preparations, and marketing.

History

The field of "molecular gastronomy" began in 1988 by two scientists, Nicholas Kurti and Hervé This, who began working with the natural processes of food. They noted the physical and chemical changes the food underwent during its preparation and manipulation (Koppmann 2009). Kurti and This were looking to answer some of the most common questions of food preparation: How did food react to heat and why did it react that way? What other changes did food go through during the different stages of its preparation? In the beginning, the field was about the discovery of why changes occurred when food was exposed to common stages in every day food preparation. It had nothing to do with creative cuisine (This 2005).

The creators of the field of molecular gastronomy argue the field began with the use of fire to cook food. The exposure of food products to this treatment caused it to change physically. These physical changes took place because of the modifications in the molecular structure of the foods. Before Kurti and This began to study these evolutions, there was not a complete understanding of what exactly was causing the food to be transformed. Trial and error and observation made creations possible. An anonymous text from the second century BCE makes reference to fermented meat, and a later Apicius text from the fourth century BCE mentions making a liquid with animal parts and water that illustrates the beginning of making a basic stock, a food preparation still common today, and the base to many traditional French culinary creations that form the foundation of modern culinary arts and cuisine. In addition, most French culinary texts are laden with recipes that illustrate molecular gastronomy at its best since the beginning of their publication. Famous classic sauces such as a Hollandaise created by French Chef Auguste Escoffier are classic examples of food transformation in a chemical and physical form using friction and temperature to cause an emulsion. All of these examples allow This to prove that though molecular gastronomy is a new field of study, the aspects of food that it studies have been occurring since the beginning of the use of fire (This 2005).

Kurti and This were disappointed that people did not know why food was transformed through cooking. They decided to not only research but also teach others about their discoveries. Food undergoes chemical and physical modification with the use of different elements through its processing and manipulation. In spite of the unavoidable use of molecular gastronomy within cuisine and cooking, most cooks prepared food without a conscious understanding of what happened to it on a molecular level. Disappointed by the lack of interest of food from this perspective, Kurti and This set out to identify all of the aspects