

Food and health: nutrients and essence



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Looking Backwards

In the ancient world, both the Judeo-Christian and the Greco-Roman world had a notion that the world was undergoing persistent decay since its creation. Their myths talked of ancestors who lived to a much older age, and this was because food itself was being corrupted. Each generation's food was less nutritious than the generations before. So went knowledge; they believed their ancestors had better sources of knowledge, and this is why—up until the modern age—education was about looking at the past (*e.g.*, learning Latin and Greek, reading Plutarch). They studied history to better uncover previously known secrets that would provide more nutritious sources of food.

Think of the Tree of Life, which the Judeo-Christian god feared humans would eat and obtain immortality. Many ancient cultures knew the concept of the 'bread of life' that would also extend life. The Greeks believed that the gods ate ambrosia and drank a certain nectar, and that if humans consumed it also they would live forever.

It was common to think of life as an oil lamp; when the oil is gone, the lamp goes out. Similarly, a person was thought to have a certain fixed amount of 'vitality' that determined their lifespan (a belief supposedly held by former President Trump). Food replenishes this vitality, of course, but energy is consumed in the process of digestion, and so some vitality always escapes, and one's vitality will eventually be consumed.^{1,2}

One key to longevity, then, was to consume foods that use less energy in digestion. The fruit from the Tree of Life was exactly that kind of food, thought Saint Augustine of Hippo.³ Medieval scientist Roger Bacon believed that after Noah's flood, all the water washing over plants made everything watery and phlegmatic (this word will be important shortly), and thus less nutritious, and is why we must now eat meat, whereas before humans were

vegans.²

In our modern age we have grown accustomed to seeing our children and their children receiving the gifts of longevity, as medical science continually discovers better ways to prevent and cure disease. This is a relatively recent notion, though, perhaps just a few centuries old.

Until around 1,500 AD to study medicine was to study the writings of the ancients, and specifically, Galen.

The Legacy of Galen

During the US Civil War, before any battle, Stonewall Jackson would raise one or both of his arms in the air. The purpose of this was to drain certain humours out of his arm and restore his body's balance to ensure optimal

performance.⁴

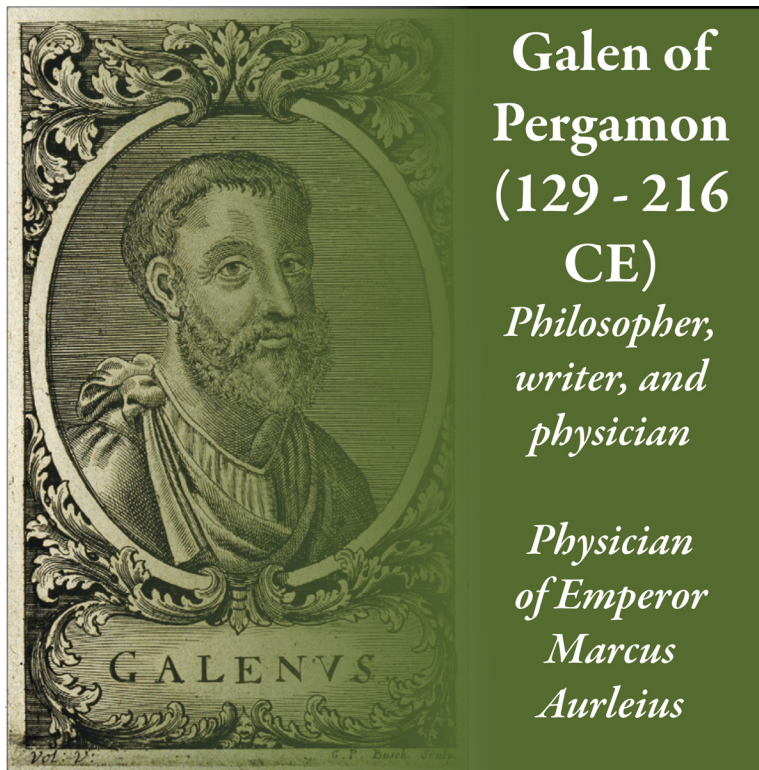
To the modern reader this sounds ridiculous, but the modern reader is likely unaware of Galen's millennia of influence. Until the 15th century AD, the study of medicine consisted almost exclusively of studying the writings of Galen. For 1,500 years his writings dominated medicine, and for almost 2,000 years his writings played a visible role in everyday behavior and language. Up until the 20th century literature made frequent use of the words melancholy, phlegmatic, sanguine:

these words have their root in Galen's writings, and only when his influence waned did they take leave of our everyday vocabulary. The same can be said for our beliefs about the relationship between food and nutrition.⁵

The Hippocratic School

Not everyone has heard of Galen, but most have heard of the 'Hippocratic Oath', an oath all US doctors took until 1973. The average person is mostly only familiar with the part of the oath that states 'do no harm'.

There was an actual person named Hippocrates, but we know very little about him. We think he was born in 460



BC, died in 370 BC, and was born on an island in Greece—beyond that we know little. Though there is a large volume of writings attributed to Hippocrates, it is unknown which, if any, were written by him. Most were likely written by students in the Hippocratic school of medicine.

*Let food by thy medicine,
and medicine by thy food*
—Hippocrates

This may sound strange, but in the ancient world it was common for authors to attribute their original work to the legendary founder of their school of thought. Schools of thought were tightly-bound communities who quarreled with (even murdered) members of others schools. Read the whole Hippocratic Oath, and you will see it has as much to do with maintaining intimate relationships within the Hippocratic school as it does treating the sick (e.g., the student is asked to treat his teacher's children as he would his own siblings).

An oath is always sworn to something, and the Hippocratic Oath was sworn towards the god Apollo and Apollo's son Asclepius, who was said to have healed people with the assistance of certain snakes. That is why symbols for medicine typically involve a snake or snakes twisting around the god's rod.

It is the Hippocratic school of medicine that developed the theory of humours, a theory which was refined by Galen and dominated how people thought about how physical health is impacted by the foods we eat.^{5,6,7}

Galen, the heir of Hippocrates

The Hippocratic school of medicine developed a theory of the humours to explain why people get sick and how to cure them. Their theory was groundbreaking—though ultimately incorrect—because it describes sickness as



*Ancient symbol
of medicine: the
Rod of Asclepius*

being caused, not by the gods, but by natural forces. We will describe that theory shortly, but first we will articulate Galen's contribution.

The Hippocratic school existed for about 500 years before Galen was born, and by the time of his birth there were many competing narratives about what the 'real' school of Hippocrates said. Galen decided there could only be one truth about how the body worked, and thus there could only be one truthful theory of medicine, and he decided he would be the person to identify and defend it.

By the time he reached this decision he had considerable experience in medicine. Pergamon, the city he was born (modern-day Turkey) had a famous sanctuary dedicated to Asclepius. When he was seventeen Galen's father had a vision that his son should study medicine, and that is what he did. He eventually became the doctor to gladiators, and the frequent injuries they experienced gave him intimate experiences with internal body parts. Galen spent much time refining the diets of the gladiators to help them in the arena, and so in addition to treating illness he became an expert on using food as a daily preventive medicine. Eventually he became the personal physician of the Roman Emperor Marcus Aurelius.

It is important to understand that Galen was not just a physician as we think of them today.

He was a philosopher. In his writings is a thorough and detailed account of how the entire body worked and how it related to the universe, and he did this through extensive empirical investigation. His understanding of the body was not just scientific; it had a religious element to it, for at the time philosophy included both religion and science.

We often think of 'pagans' as believers of many gods, and this is somewhat true, but many philosophers at the time,

like Galen, believed in one superior god. This one superior god was called the Demiurge and was viewed as a craftsman that created everything in the world. To understand then world, then, Galen would dissect animals and observe



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the layout of the organs. Based on the assumption that every part of the body was based on the design of a wise demiurge, he then deduced what the organs were used for. For example, he noticed that the liver was located close to the stomach and deduced that food went from stomach to the liver, and the liver from there made blood. Observing that the spleen was on the opposite side of the liver Galen concluded it did something that provided balance to whatever the liver did.

This is the key to understanding Galen. The placement of organs in the body was not just a metaphor for how the universe works. The body and the universe followed the same rules designed by the demiurge and could be understood by rational humans—and Galen thought he could understand it better than anyone.

Galen was arrogant and strident, but so was every philosopher at the time. They had to be that way whether it was in their inherent nature or not. But Galen was different in that he sought to base all his conclusions on observation and to make public demonstrations to convince others. Many of his experiments were conducted in public. To show that urine comes from the kidneys, he tied off the ureters of an animal to collect urine. However ridiculous his theory of the body may seem today, he more than anyone tried to base his ideas on actual observation of the body.

The Four Humours

In the belief that the Demiurge was a master craftsman, the design of the body as well as the universe must reflect reason. Just as a chair will have a symmetric design, with the seat being either a square or a rectangle, there will be symmetry in the universe and the human body.

With this guiding principle and the ancient Hippocratic texts, Galen concluded

- the world consisted of air, fire, water and earth
- the seasons consisted of spring, summer, winter, and autumn

- the stages of life were childhood, youth, maturity, and old age
- and the body consisted of yellow bile, blood, phlegm, and black bile—these are the four humours.

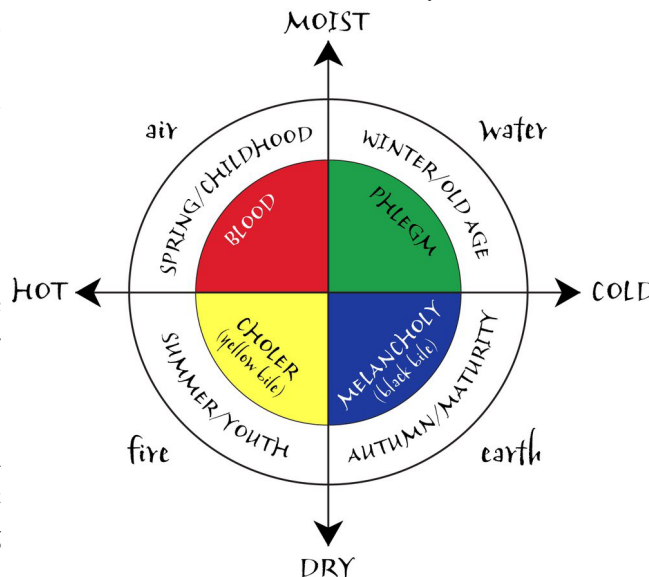
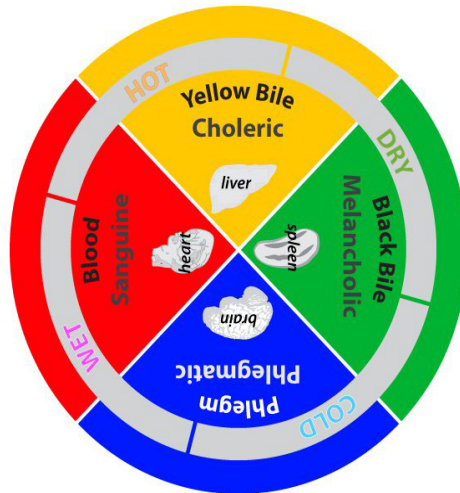
These four constituents have a mixture of heat/cold and wet/dry. Summer of course is associated with heat but also dryness, while spring is hot and moist. So goes the elements that make the body. Some parts are hot and dry (yellow bile) and some parts are cold and wet (phlegm).

Good physical health required the proper balance of the four humours, and the 'proper' balance depended on the time of year, the age of the patient, and the food they ate. For example, the summer was associated with heat and also yellow bile. This tended to cause a person irritation and a bad temper, which was described as choleric. Causation could work in the reverse also. If a person experiences stress in their life that causes irritation, they

will have an excess of yellow bile, especially during the heat of summer. The youth are especially susceptible to an excess of yellow bile, helping to explain their difficulty in controlling emotions.

Consider another example. A person is 'phlegmatic' if they are unemotional and relaxed, or, if carried too far, lazy and unresponsive. If excessively lazy this is due to an excess of the phlegm humors. Another sign of excess phlegm would be difficulty in staying warm. This is a natural problem in the elderly, and explains their slowness. Someone who eats too much may become phlegmatic. Food is a factor also. Phlegm is associated with water, and if one's diet has an excess of water (e.g., oysters) a phlegmatic disposition may result.

The key to physical health was to maintain a proper balance of the four humours, and the 'proper' balance depended on the time of year and the age of the patient. A doctor encountering a phlegmatic patient may attempt to reduce the amount phlegm by prescribing warm and dry foods. So the patient may be advised to add hot peppers or ginger to their food. This is intuitive, but some foods



identified as reducing phlegm is not, like kidney beans, dairy beverages, and yeasted breads. If you think about it, we still use language that is somewhat counterintuitive to talk about food. A martini may be a liquid, but it is still referred to as 'dry'.

The general idea that certain types of foods makes us feel better in some settings and worse in others is easily relatable. Who doesn't prefer to consume warm soup on a cold day, and who doesn't avoid it in the heat of summer?

However, the exact cure for any particular excess humour could not be completely intuitive, else people could concoct their own cures and not need the aid of physicians. While Galen did indeed leave behind a large volume of writings, they were by no means a simple guide to good health. Without trade secrets and the need for extensive study for physicians, they could not charge high prices for their services.

The proper food for any one person would depend on a multitude of factors. Their age mattered. The season mattered. Their normal personality mattered, as each person would naturally have more of one humour than others; for instance, a naturally sanguine (cheerful) person had more blood than one who was naturally melancholy (sad and pensive). Their current symptoms mattered, in that if a naturally sanguine person felt sad then their normal humours were imbalanced.

Recall the ancient belief that the body had a certain amount of 'vitality' that, when extinguished, resulted in death. Each second of life consumes some vitality, and some of that vitality could be replaced by consuming food, but the act of digestion always requires some vitality lost. From this the notion that the digestability of food

and the energy it contains is important.

Workers who exude much energy during the day were encouraged to eat meat to replace much of the vitality that was lost, whereas a sedentary aristocrat who did not have to sweat was encouraged to eat lighter foods. Much attention was paid to the propensity of a food to loosen or tighten the bowels as well.^{1,8}

The Stoics

Many schools of thought thrived at the same time as Galen. A particularly popular one among the city Romans was Stoicism. Remember that Galen was the personal physician of Emperor Marcus Aurlus; this emperor

was also a follower of Stoicism, and the stoics had some specific beliefs about food and health.

This school, like Galen, was monotheistic in the sense that they believed the world was created by the one Demiurge (though the Demiurge did create lesser-gods, in the same sense that the Christian God created angels). The stoics taught that people should master

self-control, where they are unaffected by factors outside of their control but take responsibility for what they can influence, and do so to benefit humankind. Part of this self-control was moderating one's appetite.

Musonius Rufus posited that 'mastering one's appetite' was good for the soul. It not only improved physical health but one's intelligence and relationship to the god(s). Among his recommendations are

- the best foods are those that can be made without cooking
- inexpensive foods are better than expensive foods
- plants and dairy are to be preferred over meat

Excerpts from 'Galen on Food'

"I personally know of someone who complained about the area that is around the mouth of the stomach, and I reckoned from his description that phlegm had collected at this point, and so I advised him to eat his food with mustard, leeks, and beets, since phlegm is cut by these foods."

"... [Barley soup] is most beneficial for burning fevers, holding the opposite qualities as it is cooling, moistening ..."

His reasoning for these recommendations were religious in nature. Humans were more closely related to the gods than any other animal, and so humans should be 'nourished like the gods'.

The Stoics would come to have a large influence on early Christianity, so much so that some Christians faked a correspondence between Saint Paul and the stoic philosopher Seneca to make Christianity seem more intelligent. It is thought that the Stoic's attitude towards food and the soul were borrowed by Christians, which evolved into an ascetic attitude where fasting was thought to bring one closer to God (but of course, always beware of the 'it is thought').^{1,9}

Slowly towards modernity

Galen was the ultimate authority on health, until the audacious Andreas Vesalius (1514 - 1564) entered the picture. From Brussels (modern-day Belgium), he used to live in an area where they left executed criminals above ground to be consumed by scavengers, and coming from a long line of doctors he had an interest in anatomy, so he would visit this place and study the human skeleton. As he became increasingly interested, he would dissect large varieties of animals and study not just the bones but how the muscles and organs were designed. By the time he attended the University of Paris, he understood basic anatomy well.

The Catholic Church had recently began allowing human dissections but not with the aim of improving medicine and health. This was the Renaissance, when art was all the rage, and artists like Leonardo Da Vinci argued they needed to understand the human anatomy if they are to depict humans accurately on canvas. Schools of medicine did not pass up the chance include human dissections in their classes though.

Schools at the time would teach anatomy by having one person read from a text by Galen on anatomy while a barber-surgeon dissected a human. They did this not so much to understand anatomy well (it was a poor method of teaching) but to reinforce the idea that Galen was the ultimate authority on medicine.

When Vesalius became a professor he decided he would teach differently. He performed the dissections himself while lecturing, using both human cadavers and performing vivisections on a variety of live animals. His

major teaching innovation, though, was to not rely on Galen (though he knew the Galen texts by heart). While giving these lectures an artist would create pictures of the bodily structure.

During these lectures Vesalius would often discover ways in which Galen was simply wrong. While it is commonplace today to question the assertions of others (it is even encouraged), at this time to question Galen was unheard of.

Over time he recorded so many errors in Galen that part of the lectures were devoted to demonstrating all the ways Galen was wrong. This would have been heresy had he not done so while performing the dissections and clearly proving Galen's fallacies (and not been so popular among the students). He finally came to the conclusion that Galen needed to be discarded, and so Vesalius and

his artist wrote their own anatomy books with (for the first time) accurate diagrams of the body.

This is a pivotal moment in history, perhaps the most overlooked turning point in the evolution from the Middle Ages to the Modern

Age: Galen could now be questioned.⁵

From this point forward knowledge would be gained not by looking to the past but by actively creating new knowledge in the present. Instead of thinking one's ancestors had access to the best knowledge, one assumed one's descendents will.

Before, the study of almost everything was a form of philosophy. What we call biology and physics was natural philosophy. Around this time the term 'science' began to be used. The Latin 'scientia' referred to knowledge, but its variant 'science' referred to collective knowledge coming about from the deliberate seeking of groups of people—not one ancient seer, not a god.¹⁰

Francis Bacon articulates the scientific method, thinkers begin trying to understand small parts of the universe, not the universe in its totality (that will come later). Research funding is made available and is now aimed at creating technologies that improve life.

Deeper exploration into the human body and Darwin's formulation of evolutionary theory revealed the human to not be created by a Demiurge according to a intelligent plan. The bodily design has some genuinely smart components but also some flawed ones, such that the author H.L. Mencken quipped that if the body has a divine origin it wasn't one god but a committee of

The art of medicine consists of
amusing the patient while nature
cures the disease.
—Voltaire

gods that created it (anyone who has served on multiple committees will get the joke).¹¹

Now, we know the approximate age of the universe, how the earth and its creatures were formed, what constitutes space and matter, and the essence of light—but we still have many remaining questions about the relationship between food and health.

Progress in nutrition

Much progress has been made in understanding what foods provide good health, but achieving it wasn't easy. Nutrition is a difficult science because the human body is complex, and performing experiments on humans is [rightly] considered immoral. We can experiment on animals, and that is why the science of nutrition regarding livestock is highly advanced; we know exactly the best food for cattle to keep them in top shape. This is also because we can control what cattle eat; humans make their own choices.

In the 19th century scientists decomposed food into the categories of proteins, fats, and carbohydrates, and was used to identify the cheapest way to meet the minimum dietary requirements of the poor. The germ theory of disease was also formulated in their area, providing us with practical guidance in making foods safer. Until the discovery of vitamins and other micronutrients, though, much work remained.

Consider the story of combatting scurvy, a condition frequently experienced by sailors when the body doesn't obtain enough Vitamin C. Your gums bleed, previously healed wounds open, you weaken, and your joints hurt.

Cures for scurvy were discovered by different people at different times, often lost, then rediscovered, and so on. The Iroquois Native Americans boiled leaves and eastern white cedar to prevent scurvy. The ancient Chinese relied on ginger during long trips at sea.

As early as the 15th century the sea explorer Vasco da Gama gave his crew citrus, and in the 18th century British soldiers would be given lime juice; but it wasn't clear that citrus was really the cure. Sometimes the lime juice was handled in a way that removed its Vitamin C. Other times the meat sailors consumed had enough

Vitamin C, suggesting scurvy was caused by something other than a lack of fruits and vegetables. People knew that sources of food often mattered, but they didn't know about vitamins.

It was research on animal diets that provided real breakthroughs leading to the discovery of vitamins. One example is a Dutch researcher who found that chickens who were fed white rice instead of brown rice the birds

exhibited symptoms of beriberi, which is now known to result from a Vitamin B1 (thiamin) deficiency. A decade later chemists isolated the chemical missing in white rice that caused beriberi; he named it 'vitamine', the word that later become 'vitamin'. Further research identified other vitamins that are necessary for good health but are only present in certain foods.

The field of nutrition earned the blessing of governments once World War II broke out and it became clear that many recruits were too unhealthy to fight. By then we knew enough about vitamins to detect problems like rickets (caused by Vitamin D deficiency) and thiamin (Vitamin B1) deficiencies.

It was discovered that food had become so processed that many of the vitamins and minerals we need were removed. This is especially the case with bread, where the 'white' bread made without the wheat germ or bran resulted in a nutritionally deficient food. Governments responded with brio. The United Kingdom required bakers to use flour containing wheat germ and bran, which contains many of the vitamins and minerals people lacked; whereas in the US we just added those vitamins and minerals into our white bread, creating the 'enriched' bread most of us consume daily.

The US government also created educational campaigns that apparently worked. From 1940 to 1960 the American public went from knowing almost nothing about vitamins to almost everyone understanding their importance.¹²

Progress in nutrition

By the 1970s we seemed to understand exactly what nutrients the body needed and exactly what nutrients foods contained, such that foods could be broken down

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to their constituents (proteins, fat, vitamins, minerals) and then recombined to match the body's needs perfectly. Progress beget progress, and by 2015 we had food products like Huel, a shake made from a powder that portends to possess all the nutrients needed for life—an in optimal proportions, much the way we create optimal diets for livestock. For just a few dollars a meal and with little hassle one can acquire all their nutritional needs in this one shake—just don't expect this food to be one of your daily pleasures!

We might think it lunacy to not want to obtain pleasure from eating, but the creator of Huel remarked, "It's quite bizarre that as a society we prioritize taste and texture ... We can live our whole lives without taste." (He wasn't saying we should always ignore taste, just that taste shouldn't matter for some of our meals.)

It is understandable that someone would want *not* to forego the pleasure of taste that food provides, but from a nutritional standpoint, isn't this ideal? After all, this is how we keep livestock in optimal health!

No. Many, perhaps most, nutritionists did not like this approach to food. They had 'been burned' before by their own research. The creator of Huel based its recipe on scientific research from the field of nutrition, the same nutrition in the late 1970s that said people needed to eat less fat. This was based of studies using correlations of eating behaviors and health.

(Two things are positively correlated if they move together; negatively correlated if they move in opposite directions. Rainfall and the temperature within a given month are negatively correlated because the more clouds the more rainfall the less sun the lower the temperature.)

Research showed that people who ate less fat tended to have fewer health problems. But it happened that people who ate less fat also smoked less, drank less, and exercised less; but that wasn't really considered. So nutritionists advised people to eat less fat, and food companies responded by processing food to remove fat.

The problem is that fat is yummy, so when you remove one yummy thing it must be replaced with another: sugar. In the 1980s it was not uncommon for people to eat 'healthy' cookies that contained little to no fat but large amounts of sugar.

At the time we thought this was good, but then we saw heart disease continue to rise, Type II diabetes continue to rise, obesity continue to rise. Now the popular conjecture is that sugar is the root of our eating sins; but we've been wrong before.

By the time Huel came out nutritionists knew (well, they always knew, but now they really appreciated)

the problem with correlational studies. They did not like Huel because its recipe assumed we knew all we needed to know about nutrition. But we do seem to know what makes for a generally healthy diet: a diverse diet, moderate in quantity. One open question is how 'natural' those foods need to be.¹²

Natural versus processed

It seems evident that if we consume moderate amounts of the foods our great—grandparents ate, making sure it contains some of the vitamins and minerals we need, we will be okay. It is less evident whether 'breaking down' their foods, removing some parts and processing others, will improve it. Certainly, the science of nutrition provides much useful information, but is there also information in the types of foods our ancestors grew up eating?

Here enters 'natural' or 'whole foods'. The idea is to take foods as our ancestors generally ate them, without adding or subtracting much. Regarding bread made from wheat, it's okay to remove some germ and bran, but not all of it; and preferably let's not add any sugar. Let's don't process oils to make them different than their 'natural' state; throw out the trans-fats, but keep the lard.

Much of nutrition is about obtaining the appropriate balance or proportion of different nutrients, and while modern technologies now allow us to produce food with any proportion of nutrients we want, the natural foods movement contends that 'nature' already produced foods with the right balance.

In some sense we are returning to Galen, in that the key to health is ensuring the correct 'balance' of things, except the 'things' Galen referred to do not exist and the things modern dieticians do are.

There are two schools here (1) *essentialism*, referring to whole foods and (2) *nutritionism*, referring to the scientific studies documenting the relationship between specific nutrients and health. The former says you need to eat the whole rice seed; the latter says you can combine rice powder (husks removed) with fiber from a different source. The latter says artificial sweeteners are better; the former isn't so sure.

Nutritionism contends we know enough about nutrition to disregard how food is created by nature; here, it is okay to create new food products mother nature cannot (like a single Huel powder that meets all one's nutritional needs). Essentialism says that one should not tinker with nature's gifts too much.

Consider the example of plant foods. The popular food author Michael Pollan falls more on the essentialist side.

After studying the history of dietary advice he offers a simple but also compelling mantra for eating, “Eat food, not too much, mostly plants.” Why eat plants, if we can get all the carbs, protein, fiber, vitamins, and the like from highly scientific foods like Huel?

The answer is that those ‘scientific’ foods, while based on science, are based on an incomplete science. The research seems pretty clear that eating lots of fruits and vegetables is healthy, but it isn’t exactly clear why they are so healthy.

One current line of research suggests that it is due to the ‘poisons’ in plants. Being sedentary, plants mostly rely on poisons to stop animals from eating it. The nicotine in tobacco, the caffeine in coffee plants, and the flavor of garlic are all the product of plants creating poisons that, though they may harm some organisms, do not affect us and actually taste good. It turns out that some of these ‘poisons’ trigger a body respond that improves our health, much like how tearing muscle fibers by lifting weights leads to stronger muscles.

Broccoli sprouts, for example, contain sulforaphane, which is an oxidant, and oxidants are sometimes thought to destroy human cells (that is why we are encouraged to consume antioxidants). However, we have recently learned that when sulforaphane enters the blood it induces the body to release the Nrf2 protein, which itself activates hundreds of different genes, telling the body to produce a wide variety of beneficial compounds, leading to improved overall health. (Velasquez-Manoff, 2014).

Plants, then, might be so healthy in part because our bodies evolved concomitant with these plants, and we need the ‘poisons’ these plants provide. Does this suggest, then, that we should just take supplements of sulforaphane instead of eating broccoli? No! And that’s the point of essentialism.

In reality we all employ both schools: essentialism and nutritionism. The difference is the extent to which a person trusts one school more than another. It is akin to feelings about the COVID-19 vaccinations. Many (including the author) trust the science. Others would rather let the virus take its ‘natural’ course.

Dieticians themselves have a foot in both schools,

because they know the science of nutrition and they know its limitations. I have interviewed a dietician for a college football team and a dietician for a school system, and they are both adamant that whole foods and a diversity in foods are among the most important attributes of an optimal diet.

The debate about food and nutrition—as with most debates—is about the location of the ideal between the two extremes; and like most debates, it is discussed in terms of the extreme.

Back to stories

Recall that the first systematic theory of food and health insisted upon a systematic story of how food and the body worked. It was wrong, but it was a compelling story nevertheless.

Does our desire for stories—regardless of their scientific validity—explain our penchant for ‘natural’ foods and health remedies, like the use of essential oils to cure disease, or magnolia bark to thwart obesity? Alan

Levinovitz, professor religion, suggests it does.

In the Hippocratic school of medicine the use of ‘natural’ medicine referred to thought systems that did not involve supernatural spirits, whereas ‘natural’ medicine today does involve spirituality, whether it be a shaman’s chant, prayer, or yin-yang conceptions of the universe. Today we have Cristina Cuomo recommending a bleath, or Gwyneth Paltrow starting the morning by drinking an alkaline water with lemon (the lemon, being acidic, neutralizes the water!).

Why do people spend so much money on remedies that have no scientific validity? One explanation is that it is a placebo, and if medical research has taught us one thing it is that the placebo effect is real—so real that the gold standard for medical research always includes a placebo control (one group gets the real medicine and another group gets a placebo). Good medicine is not one that improves health, for even placebos like a sugar pill do that. Good medicine is one that improves health more than a placebo.

There is also the psychological reaction to illness. People who suffer tend to ask two questions (1) why me and (2) what can I do? These are questions medical science often does not address, and when they do patients don’t



Reading that Gwyneth Paltrow’s ‘clean beauty’ regime means she starts every day with a refreshing glass of alkaline water + a spritz of lemon.

(Which makes the alkaline water no longer alkaline & highlights the magnificent level of BS that people will swallow from celebrities)



like the answer. Why does a non-smoker get lung cancer? Random genetic mutations? What kind of answer is that?

We want a world where our world makes some kind of sense and where we have a sense of agency. To be at the mercy of random genetic mutations and the efficacy of horrid chemotherapies is a terrifying thought. It is not surprising, then, that we seek other depictions of the world when we suffer.

Enter natural healing systems. Galen gave people a systematic story of how foods can restore balance in the four humors, some people today target foods thought to contain a proper balance of yin and yang. These foods happen to be things like whole grains and vegetables, which truly are good for you, but some people like the story of yin and yang better than a doctor saying 'studies have shown'.

It is tempting to see the ordering of the healthy human body as a reflection of a harmonious and ordered world. When Galen refined the theory of the four humours they were mirrors of demiurge's craftsman ship. The four humours reflected the four seasons and the four stages of life.

Levinovitz then suggests that, since we no longer associated disease with sin against god, the 'why' of our suffering might be related to our sin against the natural world. The pollution resulting from our seemingly unnatural activities. The solution, then, is perhaps to return to the natural.^{13,14}

To be clear, Levinovitz is not suggesting such a belief is scientifically valid or metaphysically coherent. What he is saying is that this appeal to natural remedies fulfills a human need, and human needs to not need to be coherent. Extending this idea, as people see the modern world as a sin against nature and the cause of our discontents, they are likely to desire what they call 'natural' foods that resemble the foods of our ancestors who did not suffer our peculiar discontents. (Ignoring, of course, the discontents they did experience, which was much, much worse).

They then believe organic food is healthier, or that local

foods are more environmentally friendly, despite any evidence to the contrary.

Why be so irrational? Perhaps it is better to ask, is it really irrational? These are the same individuals who avoided all fats in the 1980s because scientists told them to. So they switched to low-fat but high-high-high-sugar cookies and acquired Type II Diabetes in the process. Now they pick up the paper and scientists tell them to eat butter and stop drinking high-sugar sodas. So, basically, they are being told to go back to the diets of their great-grandparents; diets consisting of whole foods, produced naturally.

Who's irrational now?

Synthesis

The philosopher Hegel saw the unfolding of history as a process of thesis, antithesis, and synthesis. We develop an idea. That idea is challenged. The idea and the anti-idea have merits. They are merged into a new, enlightened synthesis.¹⁵

You wake up, thinking coffee is a super awesome drink (thesis). Then you drink too much, and abhor the idea of ever drinking coffee again (antithesis). The next day you

drink coffee, but in moderation (synthesis). Capitalism creates wealth (thesis). Yet it puts the wealth in suboptimal places (antithesis). So we regulate capitalism (synthesis).

With new technologies we learn ways of creating 'better' foods, like refining flour for better taste (thesis). Then we realize that refining flour removes important nutrients (antithesis). So we enrich breads or add some of the germ and bran back into the flour (synthesis).

We engineer nature to improve our lives (thesis). That engineering resultings in problems (antithesis). We correct those problems while retaining the benefits of engineering (synthesis).

Prophets always talk in the extremes but the wise always dwell in the between. Nutritionism helps us advance and essentialism keeps us from moving too fast. Despite our inevitable mistakes, this synthesis of two steps forward and one step back seems to work. Read history and you'll agree. It will continue to work, so long as we are wise in how we synthesize. How do we become wise? That is an

When you're sick, you want to get well, but that's not all. You also want to feel safe, that your body and your world will not betray you again, and that you have some agency over avoiding further betrayals. In these vital moments of need and ccrisis, modern medical science offers little empowerment. ... pandemics are our punishment for exploiting nature ... why not fight the resulting fight the resulting illness with something natural, instead of using 'unnatural' approaches that owe their very existence to the very system that caused the problem to begin with? *Why Us?* Because we have violated natural systems. *What can be done?* Restore ourselves, and the world, through restoring everything to its natural balance.

—Levinovitz in 'Natural and Unnatural'.
Aeon.co.

altogether different subject.

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