Nourishment for Life: A Study in Nutrition from a Philosophical & Scientific Perspective

Erin C. Black

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NOURISHMENT FOR LIFE: A STUDY IN NUTRITION FROM A PHILOSOPHICAL & SCIENTIFIC PERSPECTIVE

by

ERIN C BLACK

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SYNTHESIS*
MASTER OF ARTS
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Advisor: Robert Ricketts

* The Synthesis can take a variety of forms, from a position paper to curriculum or professional development workshop to an original contribution in the creative arts or writing. The expectation is that students use their Synthesis to show how they have integrated knowledge, tools, experience, and support gained in the program so as to prepare themselves to be constructive, reflective agents of change in work, education, social movements, science, creative arts, or other endeavors.
This paper attempts to demonstrate that the conventionally scientific approach to food is insufficient and provide an alternative pathway to approach the subject of nutrition with an additional layer of philosophical thought for an improved result. This paper attempts to lay the early groundwork for an expanded model, which necessarily includes a philosophical angle from which to work. This proposal is a model that will enable considerations about nutrition more broadly, in ways that are critical in thinking and creative in process towards exploring options for arriving at ultimately best practices with best outcomes in mind.

The examination of practices, policies, and our beliefs about food, can reveal information to shift thinking and empower individuals and groups to address the dietary problems we continue to face and will begin to face with the evolution of the food industry, on a planet with limited resources and a growing population with increased nutritional needs.

This is not a prescriptive model. The aim is to help shift and shape thinking about thinking, with the intent to consider alternatives from a critical and creative position, in order establish superior food philosophy and approach when it comes to matters of nutrition and nourishment as a global subject.

Readers might then contemplate what might be thought of as best practices in each arena related to nutrition and nourishment with the hopes that it will ultimately
lead to a thriving state of existence for individuals, and then in their sphere of influence.

The approach is rather epistemic in that I seek to bring people to a place where they can begin to digest the data in context, in synthesis, and towards what is the best possible option, given the entire picture, as real knowledge in justified true belief.
Introduction

Humankind is a diverse species, known to inhabit almost every corner of the planet, and in doing so has a diverse set of needs for sustaining life adequately. Differences in everything from culture and custom, to the dwelling requirements necessary to provide sufficient protection from the elements, vary from place to place and group to group. The differences among peoples vary so drastically that it is astonishing we find ourselves able to unite under a single identity at all. However, one common unifying factor exists within us, regardless of all other demographics, socioeconomic factors, or other divergent traits and that is the requirement we have, as living beings, for nourishment and sustenance. The need for nutritional intake for survival extends beyond our species and in fact unites us with all other living creatures on the planet. Big or small, simple, or complex, if it lives and breathes, it needs to eat. Food is the tie that binds on planet earth and places humans at the top of the food chain in this thing we live called life. The concept is simple, the details, however, are more intricate than usually considered at first thought. The aim of this paper is to explore that complexity by applying a broader lens, one that is intentionally philosophical alongside what is scientific, to address some of the subject that sits at the very heart of our existence.

This paper will demonstrate that the conventionally scientific approach to food as a subject, while important, remains insufficient. While recognizing nutritional science as necessary, and not attempting to establish any sort of false hierarchy, this paper will instead attempt to provide an expanded model from which to work. This model will enable individuals and groups to begin to consider nutrition more broadly, in ways that
are critical in thinking and creative in process towards exploring options for arriving at ultimately best practices with best outcomes in mind.

The contemporary view of science and philosophy is that they are distinctly divergent pathways. Often thought of as methodologies with little-to-no overlap, common ancestry the only link beyond specific branches of the latter that directly address the former, any crossover is usually discipline-specific. Philosophy of Science, biomedical ethics, or ethics related to advancements in technology, as in Artificial Intelligence, surveillance systems, military applications of advanced weaponry, etc., are where this intersection is typically witnessed. The juncture usually ends sharply at the margins of applied ethics, except when exploring something scientific from a philosophical perspective, or vice versa with a technical aspect in philosophy being informed by science, as is the case with consciousness and neuroscience for example.

That philosophical perspective is one I mean to take up in this paper. I intend to expand upon what is otherwise rarely considered philosophically, in tandem with science. I aim to move beyond the characteristically narrow ethical approach, while keeping it central, and put the expanded focus on that which science is completely incapable of informing us about when it comes to the subject of nutrition. Nutrition, as a subject, is the branch of science that examines and explores the relationship between (human) diet and health and there is a wide body of scientific data to inform people about these things. My intention is to pursue an inquiry that acknowledges science specific and related to nutrition, pointing back to it when necessary, but to keep the focus on the philosophical aspects of nutrition, which people tend to be unaware of and often overlook. It is not just a matter of shifting attention from macronutrient levels and digestive processes to environmental impacts of
food production and animal welfare. The examination of practices, policies, and our beliefs about food, can reveal information to shift thinking and empower individuals and groups to address the dietary problems we continue to face and will begin to face with the evolution of the food industry, on a planet with limited resources and a growing population with increased nutritional needs.

Individuals seeking information have access to the same data I do, but very often, the data appears as stand-alone items; nothing in synthesis and rarely as a work that provides a comprehensive look at the many angles and lenses through which the subject can be viewed. Occasionally a textbook will appear to be just such an item. However, when this happens, my experience has been that the text glosses the information rendering it incapable of informing for a conceptual understanding that can lead people to make truly informed choices. The alternative is that it does contain sufficient information (and this is rare,) but in such a technical way it becomes inaccessible to anyone who is not an upper-level university student or an expert in the field.

When I was doing the preliminary research for this work, I was able to find many items that addressed one facet or another, and sometimes the item would contain secondary source support that spoke to an additional layer of thinking on the subject of nutrition. Sometimes, a work would be heavily science-based and have a chapter about something mildly philosophical, (usually a Nutritional Science textbook.) More common would be a how-to or self-help style book that contained the author’s personal (prescribed) ‘philosophy’ (Often one which was not strictly speaking, philosophical) and some accessible science to back-up the author’s diet program. Finally, there are a number of books that speak to many of the issues related to food politics, food systems, and related
environmental concerns. Much of the data therewith has been used to inform my work in fact, but many are either informative/directive, and/or the information contained within them is outdated. From what I have gleaned, nothing with the express intent of bringing the multitude of approaches together in an effort to create a comprehensive guide from which to begin work, appears to exist.

I aim to create such a piece.

What I do not aim to achieve is a prescriptive dictate where I impart my personally held nutritional ideology or opinions, or those of the author’s I cite or refer to, in order to make a demand of readers to conform to a specific practice or set of values. My sole aim is to assist readers in their thinking and guide them to consider alternatives from a critical and creative position in order to inform their own philosophy and approach when it comes to matters of nutrition and nourishment as a global subject. This aim, of course, presupposes that

The approach is that rather than to tell others what they should do, how they should act, or otherwise prescribe a model upon which they should endeavor, I seek to engage readers and guide them towards how to think critically about the matters of nourishment and nutrition. I want to help readers consider what might be thought of as best practices in each arena related to nutrition and nourishment with the hopes that it will ultimately lead to a thriving state of existence for individuals, and then in their sphere of influence. The intention is seated in a belief and focused on a hope that when people aim to address problems, they do so by thinking critically about the matter and then that they are able to think creatively about the best possible option to put into practice for the benefit and
betterment of the most beneficiaries. As such, this work should be seen as something alternative to a prescriptive doctrine, or some kind of normative piece about nutrition, food choices, or nourishment. The approach is rather epistemic in that I seek to bring people to a place where they can begin to digest the data in context, in synthesis, and towards what is the best possible option, given the entire picture, as real knowledge in justified true belief.

**Background**

This inspiration for this research came from several sources the most recent of which was a project I was working on towards Self-betterment through autonomous exploration into three aspects of self, –Mind, Body and Spirit. It was intended for use by “those who seek to create better states of existence for themselves through personally defined exploration, or Self-Cultivation through Autonomous Exploration,” or for people seeking better states of existence through customizable exploratory processes. The idea was that a process to explore these aspects of self should be approached through work rooted in both scientific and philosophical frameworks to achieve best outcomes.

By applying the research tools gained in CCT courses like Action Research and Research and Engagement Processes, it became clear that such an undertaking would require considerably more effort than even one segment of the final product could be arrived at within a single-semester’s synthesis project. What was further revealed was the desire I have to dig deeper into and engage with the specific aspect of nutrition and nourishment using the lenses of philosophy and science as a guide, to create a stand-alone work. One that may come to guide what will later become a section of my book project, but which might serve a variety of people for the many different reasons they may want to consider
their food choices and the relationships they have with and because of food.

**Philosophy & Science**

Throughout my time in the Critical and Creative Thinking Program, Science in a Change World track (CCT, SICW) at The University of Massachusetts, Boston, I have been able to approach the subjects of Nutrition, Public Health, Environmental Science, and Sustainability Science, to name but a few. My undergraduate major in Philosophy has been focused on areas of human wellbeing, through Philosophy of Science, Ethics and my previous pre-med work obviously focused on human biology. I see this work as a natural evolution of the studies I have pursued to date and as such, the current research will possibly work to influence professionals in the areas of health, fitness, and nutrition, educators, policy makers, and others.

The present the work, however, is primarily interested in influencing a demographic that is seeking synthesized information to serve as a starting point for their own evolutionary-process-thinking and framework; Individuals who seek to improve their own health and wellbeing through nutrition, beyond what science dictates, and then hopefully that of those around them. This group is especially important and the one I have selected as my target audience because of their ability to impact and influence the rest of society. Through emboldened efforts as consumers who can vote with their dollars, and lead by example, this group of empowered critical thinkers will be capable of changing the world through creative efforts on the front that affects and connects all of life on this planet. Recognizing this, alongside the knowledge that people are typically educated into specialized categories, most individuals are not well versed across disciplines and therefore may not understand how to approach such an endeavor. For that reason, I am
motivated to create this framework with the bridging of that potential gap in knowledge in mind.

*Nutritional Science* and *Philosophy of Nutrition* are terms that could bring any number of ideas to mind. Defining them for the purposes of this work is important. Some initial understanding of these concepts is important, but rather than front-loading everything about the definitions and terminology in their entirety, periodically more will appear throughout the work as needed, in context. Noting this, some preliminary definitions to help orient readers are necessary.

**Definitions & Framework**

Most people are all familiar with the term science and have at least a working understanding of the general concept, but definitions can be useful and will assist in establishing what is meant by the term, especially for the purposes of this essay. It is worthwhile to consider the way one might think of something scientifically, and for the purposes of this work, some readers might find the following details useful:

Science is the study of natural phenomena. It is concerned with empirical data which can be tested, repeatedly, and where observations of findings are then recorded for replication and further investigation. Science is concerned with falsifiability, a term that can be understood as testability towards proving a hypothesis wrong. This systematic process is known as The Scientific Method. Another important aspect of science is statistics. Though technically a branch of applied mathematics, statistics is the collecting, description, analysis, inferential reasoning and drawing of conclusions from quantitative data with the purpose of inferring proportions in a whole from those in a representative
sample.

Philosophy, on the other hand, is frequently viewed, (mistakenly) as a kind of nebulous or esoteric term. Quite literally, the term "philosophy" means, "love of wisdom." In a broad sense, philosophy is an activity people undertake when they seek to understand fundamental truths about themselves, the world in which they live, and their relationships to the world and to each other. As an academic discipline, philosophy is much the same; like science, philosophy is a subject with many branches, each with branches from the core branches.

When it comes to philosophy, for the purposes of this work I am mostly interested in the Metaphysics of Ontology (the nature of being) and Causality, (the relationship between cause and effect). The epistemic data, – the theory of knowledge, especially with regard to its methods, validity, and scope; Epistemology is the investigation of what distinguishes justified belief from opinion.) I am also concerned with the Axiology, or the concerns of value and valuation, what can be understood about what is valuable and that approach comes by way of Ethics and Politics as they apply to nutrition and our food systems.

I have created a table that some readers might find useful for understanding these branches of philosophy and how they can work when applied. The chart names the branch in the left-hand column, with a loose definition in the center column, followed by a general set of applicable questions in the right column.
<table>
<thead>
<tr>
<th>Metaphysics</th>
<th>The Study of Existence: An attempt to determine what is real.</th>
<th><em>What is out there? What is happening in the world around me?</em></th>
</tr>
</thead>
<tbody>
<tr>
<td>Epistemology</td>
<td>The Study of Knowledge: <em>How do I know</em> about the world out there and what is happening?</td>
<td></td>
</tr>
<tr>
<td>Axiology:</td>
<td>The study of fundamental values and “goodness”</td>
<td><em>What should I do? What actions are permissible? What is Tolerable? What is the right choice? What is the best choice? What can life be like? What is beautiful, tasteful? How do we judge our sensory experiences, accordingly?</em></td>
</tr>
<tr>
<td>Ethics</td>
<td>The study of Action</td>
<td></td>
</tr>
<tr>
<td>Politics</td>
<td>The Study of Force</td>
<td></td>
</tr>
<tr>
<td>Aesthetics</td>
<td>The study of beauty and taste.</td>
<td></td>
</tr>
</tbody>
</table>

| Logic | The study of what follows from what (to arrive at a valid conclusion). | Does my reasoning make sense, or can it be justified, rationally? Is it sound? Is it valid? |

With these definitions, this work aims to show how the two disciplines compare and how their different approaches complement each other towards greater understanding of various subjects when used as lenses in which to view any given number of topics. Later, I will show how one might utilize this type of questioning as a basis from which to form their own guide for critical and creative thinking towards nutrition and nourishment.

In summary: Philosophy and Science are two different methods or practices to help people navigate and understand the world around them.
More on Language & Terms

When people traditionally think about nutrition, they usually think of Diet. And while many folks have come to see that term as a Four-letter word, diet should be understood here (and if I had my way, elsewhere, maybe everywhere,) to mean simply that which is consumed by an organism, as sustenance, towards said organism’s survival: Basically, what we eat to feed our needs. Traditionally the term was used specifically to speak to the varieties of food an animal, (humans included) consumed to stay alive. Contemporarily it has come to mean a wider variety of things, some of which are broadly abstracted and will be addressed in detail later. For now, we will acknowledge that one abstraction has come to mean a more specific protocol, intentionally undertaken by an individual or group for their health goals or to meet specific cultural needs. It might serve readers to remember that language is malleable, and terms can be used to convey different ideas. Words like diet, nourishment, and nutrition might be broadly abstracted or more narrowly defined, in a given context, so being alert to what is being discussed in a given segment of this work is essential for understanding.

Nutrition and nourishment are related terms that mean distinctly different things. Recall that nutrition is the branch of science that examines and explores the relationship between (human) diet and health. It can be thought of, in part, as the processes through which the body obtains its necessary nutrient and hydration requirements as needed for health and growth (and development). This process of needs being met (or the attempt) is typically referred to as nourishment. To nourish is to supply a body with the appropriate and necessary amounts of what it needs to survive. Therefore, nutrition is the study of the items required to nourish the living organism.
History

Nutrition has been at the heart of my work for many years, both professionally, and throughout CCT. I believe that nutrition and nourishment are, (both literally and figuratively,) what allow humans to thrive or succumb, and as such, they are perhaps the single most important aspect of my work, as multifaceted and as my work tends to be. My career in fitness began when I was still just a teenager, and my interest in the area of human health was fostered in a home where my father was an amateur bodybuilder and serving us protein powder in milkshakes on Saturday mornings. The importance of good nutrition and the concept of “you are what you eat” were not lost on me, even as a young child. My father explained that the extra protein was important to build muscles in his little athletes and if we hoped to grow big and strong –and we did, we would need to supplement as we grew.

My parents divorced when I was fairly young, and in opposition to my dad’s healthy lifestyle, my mother saw fit to feed us a steady diet of junk food, and food-like substances. Despite being devoid of nutritional value, she justified feeding us these foods by claiming they were all she could afford as a single mother. She also attached a lot of significance to the sensory experience of enjoying food and believed that food was to be enjoyed. Being kids, we were not concerned, nor did we even think to question it; things designed to taste good as a priority serve the child-demographic well; This is part of why there is so much practice in the marketing of food-like substances to children. Advertising and packaging-design is a huge industry, much of which focuses on creating lifelong consumers by starting when they are the most impressionable (and vulnerable) and this is why copious amounts of resources are devoted to just such a system. But the
matter of nutrition, as a whole, is one which is rich and multilayered. It reaches across almost every facet of our existence in some form or another and connects aspects that at first might seem related in any way to one another. For example, nutrition is deeply tied to psychology, like the relationship of child to food, of parent to child, of individual to environment, among others into account. And the psychological aspect relevant to these aforementioned dynamics, is not even close to the entire picture. In fact, it is an aspect I cannot delve into here for it would command the space of its own entire essay. I mention it only to mark yet one more facet of this multifarious subject and set a placeholder in the mind of the reader as this paper moves forward.

**Nutrition as a Network**

Nutrition as a system, and nourishment as a subject, can be examined, explored, and experienced through a web of interconnected networks that tie people to person, place, and thing, which looks something like a relationship of each to another in an individual, group, and environmental strata. And as a matter of accounting, the concerns of financial resources across demographics, food as commodity, and the margins of profit and losses in Big Agriculture and beyond all come into play.

Additionally, there are myriad other complexities which factor into food and the various ways it finds agency in life. As mentioned previously, the societal relationship with food has evolved considerably over time from a necessity in hunter-gatherer times, to a matter of marketing that gets product into the minds, homes, and bodies of its target audience. This evolutionary shift in nutrition-thinking has occurred both organically, and with calculated efforts, to bring us to where we exist within the circular relationship that is
food, nutrition, and nourishment today. It is a matter for serious exploration and contemplation. One deserves as much attention from individual as it does from market, because of the severity of consequences along the food chain, from farm to table, from womb-to-tomb. The relationship humans have with diet is layered with complexity and despite the hardwired biological imperative to eat, the context in which we relate to foods is malleable and can be manipulated.

And it begins before we are even born.

**Synthesis of Philosophy & Science**

*Speaking of origins, what came first, the chicken or the egg?*

A pesky question and a paradox as old as time: Ancient Greeks debated the matter after Aristotle posed the problem. Plutarch finessed the question fleshing it out and providing Augustine and Aquinas room to push-back, citing creationist values over natural philosophy (what we know as modern science’s precursor). From there the question continued to arise across time for ages until Science seemingly settled the debate recently, declaring finally that since eggs existed before chickens and the first chicken emerged from an egg in which it grew, the egg did in fact come first. (Farby, 2016)

A screen capture shows Neil deGrasse Tyson and Bill Nye (the science guy) engaged on twitter regarding the ‘chicken and the egg’ paradox.
Perhaps a formal ‘Thank You’ should be extended to Science for settling the age-old dilemma, a paradox that had perplexed people about the origins of their food, and more importantly pointed to the causality dilemma and the matter of infinite regress. But before said effusions of gratitude should be lavished upon the likes of Tyson and Nye, might take pause and note the ways that what at first appears as a matter resolved, actually reveals a set of more important and relevant questions which can be abstracted from this “settled” dilemma. Questions and considerations which speak to the matters of nutrition and nourishment and the ways in which philosophy can be used to understand them in tandem, and which further highlight the ways in which Science can and should not be taken as the authority of the matter, or the final or only word.

The chickens commonly raised as a food source today are not the chickens of the past, and certainly not the chickens of ancient Greece. The chickens raised for consumption in today’s market come from a combination of importation and intentional breeding. (Gerrard, n.d.) According to Gerrard, (n.d.) the type of birds currently eaten, and their eggs come from a line of species that was intentionally bred through hybridization and manipulation towards expression of traits most desirable as food product. I will say more on global food systems, farming practices and food manipulation later, but it is important to understand that the apparent answering of an age-old question is not a matter so easily put to rest as it first appears. There are many nuances to the matter that make it more convoluted that Tyson appears to account for in his quick dismissal of the issue. Which is not to say he is wrong, only that the information should be carefully considered and not simply accepted at face value. As well, the source of the information should always be taken into consideration when one is trying to arrive at a position of understanding. Neil
deGrasse Tyson is a well-known scientist-turned-celebrity who rose to fame by appearing on and hosting a variety of popular science-based television shows. Needless to say, people take the words of a world-famous astrophysicist pretty seriously, so when someone like Tyson, makes a claim about something, people listen. And they often do so without questioning the claim being made.

**Appeals to Authority** *((argumentum ab auctoritate))*

Earlier, I explained the differences and strengths, (with presumed weaknesses) of philosophy and science, alongside one another to show how they might work well together. But what happens when a famous astrophysicist dismisses one of these two branches as a useless pursuit and one which compromises the other? In 2014 Neil deGrasse Tyson appeared on an episode of the popular podcast The Nerdist, hosted by Chris Hardwick. After Hardwick told Tyson that he had majored in Philosophy, Tyson insists “that can really mess you up,” and goes on to declare that philosophical questions work as a "pointless delay in your progress," acting as distractions that keep people from doing the real work of science. (Pigliucci, 2014)

Massimo Pigliucci is a philosopher, a biologist, and a professor of philosophy in New York, who specializes in Philosophy of Science, and the relationship of the two. His essay explains that Tyson “has dismissed philosophy as a useless enterprise and actually advised bright students to stay away from it,” along with showing that “It is not the first time Neil has done this sort of thing.” (Pigliucci, 2014) Apparently Tyson is a long-time philistine and it is well known in many circles. (Huenemann, 2014; Linker, 2014) In a curious turn of events however, it seems the internet has been scrubbed of any trace
of the actual video footage of this interview at tie of writing. I have seen the interview myself and referenced the piece during course lectures and in debate, so I know it to have existed. Nevertheless, it seems perhaps the controversy that arose from this event might have created sufficient reason to have it removed from the host’s website. What used to be a direct link, (nerdist.com/2014/03/nerdist-podcast-neil-degrasse-tyson-returns-again/) now returns a 404 error. I can only assume to the reasons why the video no longer exists, but it seems worth mentioning the information, in support of the claim that individuals should give some consideration to the source of their information when considering the information itself.

Of course, this is not to say that we dismiss the science community from informing us about anything outside of the scientific scope, but it points to how our sources inform us. Readers of a certain age might remember another famous instance when a celebrity, (but not an expert in the field they chose to speak about,) said something negative about another group’s area of expertise. It was a sensation for the ages when Oprah Winfrey declared on her wildly popular television show to millions of viewers that she would never eat another cheeseburger over fear of mad cow disease. (Lemmons & Landrum, 2018) A segment of an episode called “Dangerous Food” discussed the emergence of bovine spongiform encephalopathy, aka “mad cow disease. Winfrey declared that people should be concerned when she said, “Now, doesn’t that concern you all a little bit right there, hearing that? It has just stopped me cold from eating another burger. I’m stopped,” and caused a reaction that allegedly cost the Texas beef industry a supposed over $10M dollars in lost revenue. (Duignan, n.d.) The impact was swift, and litigations took place between Texas cattlemen and Winfrey and her companies in a lawsuit over losses directly
related to her proclamation of beef being a danger to the public. (Lemmons & Landrum, 2018)

Winfrey was not found guilty of any wrongdoing, nor financially responsible to the cattleman for her exercising of freedom of speech. But what Oprah—a non-scientist did do, was immensely powerful. Winfrey (and the case) did two important things for society, and those two things are important to identify for the purposes of this paper. Winfrey exposed a horrific practice being done by the beef industry which the public had remained unaware of. Farmers were essentially grounding up the bodies of deceased cattle and mixing them into the feed they were giving their cows. (Lemmons & Landrum, 2018) The result was Bovine Spongiform Encephalopathy, (BSE) and now being colloquially referred to as Mad Cow Disease for the devastating effects it was having on the cattle who developed the neurological condition – a condition that led to a painful death for cows, and more importantly as far as the public was concerned, was contractible by humans who ate beef from cattle infected with the disease. (Lemmons & Landrum, 2018)

What Oprah did might be considered the first effort to expose some of the unhealthy and dangerous practices of factory farming to the public. Oprah was not a scientist, nor was she an investigative journalist. It could be argued that her efforts were more likely related to ratings for her daytime television talk-show than anything else. But her actions changed the course of history, revealing what scientists (and farmers) should have informed the public about, (rather than attempting to hide,) and policy should have never permitted to happen in the first place.
It should be obvious to see from these examples how relying solely on the wisdom of others, even so-called experts, can be problematic. During my research for this work, I encountered a short, but brilliant piece by Sylvester Amponsah (2018) that essentially summarizes the problems I am attempting to point to, quite eloquently. Highlighting issues like intellectual superiority, in tension with what might be regarded as intellectual laziness, putting importance on status above statistics, and using the issue of the chicken and the egg, Amponsah gives an articulate account of exactly the concerns I am attempting to raise here. Returning to the chicken and the egg, Amponsah articulates how the question “is either misleading and incomplete because a single chicken or an egg by itself could never lead to the propagation of this circular process.” (Amponsah, 2018) Amponsah then shows how a rooster must have been part of the equation establishing a case for the combination of rooster and hen to preclude the egg, muddying the waters further before explaining intricacies which are not available at first glance. And it is with this that he points to the “resorting to the deduction of other men” as something we should concern ourselves as critical thinkers with, for as he says, “if the pursuit of truth is allocated to a few experts whose interests frequently lingers on attention more than thorough reasoning, then our future is doomed.” (Amponsah, 2018)

**The Examined Life**

“The unexamined life is not worth living!” (Grube, Cooper, & Plato, 2002) Socrates is said to have these words during his trial as explained in Plato’s APOLOGY. The charges were impiety and the corruption of youth, but more abstractly understood, we can come to see that the implication to question what one is doing, at any given time, and why, has merit. While Philosopher’s have argued about the specific idea for ages, when we
consider the notion as an indication that there is value in self-critical examination, and that people should do so, at least sometimes about the things that they experience and engage with in life, it becomes hard find compelling reasons to discard the practice. People live such wildly different lives however, that it might be difficult to come to consensus about how this could work, globally. One thing every living being on the planet has in common however, is a need to feed. And food choices and the relationships we have, to, with, and because of food are absolutely something than can be put both under the microscope and onto the coffee table.

A question readers might be asking at this point is what it means to examine their food choices. I have already suggested that it is about thinking about nutrition critically and with a creative approach. When thinking about the typical approach to nutrition most of us think about nutritional needs, diet, and what we need to have in order to sustain life. But as this paper will show, there is far more to consider.

There has been an approach from many ethicists, like Peter Singer, whose best seller, The Ethics of What We Eat: Why Our Food Choices Matter, shows that there is far more to think about when it comes to our dietary choices than our ‘marcos’, if eating this cake for breakfast is a bad life choice or if cheeseburgers and fries can be off-set by a diet coke when it comes to what makes our waistlines expand beyond a reasonable post-meal distention. (Singer, & Mason, 2007)

Some materials aimed at making change do so by way of guilt, or shame, using appeals to emotion (argumentum ad passions) towards influencing their behavior. This is not my approach. My aim is to stimulate within the minds of people who access my work with
questions like ‘why?’, ‘how?’ and ‘what?’ hoping that it will lead to a critical examination of behaviors, choices, and alternatives. The work should serve to engage others in a meaningful exploration of dietary choices, in a way that shows an understanding of the deep and broad reaching connections our food has on us as a planetary community. It should also stimulate questioning rather than provide answers.

If nourishment is about that which is required to produce normal and proper growth, sustain health, and maintain a good condition, nutrition can be understood as that which provides said nourishment. Narrowly, this is about the biochemistry of food as fuel for a living thriving organism. More broadly it is about the things we consume indirectly as well and the impacts that consumption has on our thriving survival as species on a shared planet. Nutrition is the specific details of the aforementioned needs, the branch of science that studies these things in their parts and as the sum of said parts, and names the requirements for survival as such.

Cumulatively then, or in synthesis, the subject of nourishment and nutrition can be approached as an umbrella for all the food-related things which sit under it. How does food affect us, body, mind, and soul? How does our relationship to food and the processes by which we access it impact the world and relationships we have, to and within and stemming from our nutritional choices? As before, I have created a short list of questions to aid readers as they think through this work.
Players & Parts

To understand the relationships and the impacts, it first must be understood that the players are independent groups which might best be regarded as SOTP (Sum of the Parts) structure. The old saying should come to mind, about the whole being greater than the sum of the parts, but recognition of intrinsic and inherent values of each part is tantamount to the process. Individuals, in the living environment, survive on a mix of living creatures (and their habitat), often produced, and distributed through industry. The science points us to specifics like requirements of water, fertilizers, soil PH, climate, etc.) but it cannot inform us about things like wellbeing, autonomy, and justice for each of these individual parts.

One of the first things readers might be eager to consider is the subject of human health. Many readers will come to a work like this seeking information about how to make choices for their own well-being or the well-being of their families. Usually, people have some ideas about what a healthy diet might be, but it is also the subject people feel they do not have enough information about. And as I have expressed several times, my interest is not in providing readers with a stringent set of detailed instructions on how to get from A-to-B, but rather how to begin their journey to uncover the best data for themselves.

There are many avenues for people to explore the basic nutritional requirements of human beings, but the market is flooded with conflicting advice and data which sits in opposition, pitting one expert or group of experts against another. It can be very difficult for an individual to even begin to know where to start. As a former fitness and nutrition professional, I can speak to the on-going experience of having even knowledgeable
clients asking about what was *really* best regarding their diet, and what to do in order to meet their daily nutritional needs. With nationally endorsed food guidelines from international agencies putting out data which conflicts with what individual nutritional experts in the field are saying, it can become an overwhelming endeavor to decide what to eat.

**Human Health**

The Food and Agriculture Organization of the United Nations, (FAO) -the agency responsible for working with the World Health Organization on matters of nutritional health for people worldwide, maintains that

> national food-based dietary guidelines (FBDGs) provide context-specific advice and principles on healthy diets and lifestyles, which are rooted on sound evidence, and respond to a country’s public health and nutrition priorities, food production and consumption patterns, sociocultural influences, food composition data, and accessibility, among other factors. (fao.org, 2021)

According to the FAO, such guidelines are needed because “88% of countries face a serious burden of … malnutrition … (and) diet is one of the single most important contributors to malnutrition… and FBDGs can … impact diets and the food system, from production to consumption. (fao.org, 2021) According to the website for the “2015-2020 Dietary Guidelines for Americans” “stakeholders” are listed as “the U.S. Department of Health and Human Services (HHS) and the U.S. Department of Agriculture (USDA).” (fao.org, 2021) Their process is explained at length with detail and emphasis placed on the “scientific evidence” as well as the “intended audience,” who are named as “policymakers, nutrition educators, and health professionals” who are tasked in
developing nutrition policy, education messages, and consumer materials for the general public and for specific audiences, such as children.” (fao.org, 2021) The guidelines are “intended for Americans ages 2 years and older” with a focus on disease prevention – they are not intended to treat disease.” (fao.org, 2021)

The website states that there are “five overarching guidelines that encourage healthy eating patterns” and speaks to things like caloric intake for weight management, meeting nutrient needs and the avoidance of chronic illness. (fao.org, 2021) They specify that “A healthy eating pattern includes A variety of vegetables … Fruits … Grains … Fat-free or low-fat dairy …and/or fortified soy beverages … A variety of protein foods … (and) Oils,” while placing limits on “Saturated fats and trans fats, added sugars, and sodium,” (percentages included.) (fao.org, 2021)

**Malnutrition**

One of the important things identified in the above information regarding FBDGs was malnutrition. The FAO stated that many people worldwide are experiencing health crisis related to one or more of the three types of malnutrition, which they identify as either “acute and/or chronic undernutrition, micronutrient deficiencies, obesity and diet-related diseases (including type II diabetes, cardiovascular diseases and certain types of cancer).” (fao.org, 2021) These distinctions are important for several reasons. One of the most serious among them is the way these items, individually and in unison, are affecting individuals in the United States in a way that has never been seen before. Frequently, when people think of malnutrition they tend to think of starvation or problems related to food insecurity. They might possibly think of the very rare cases of malabsorption
disorder, (Ruiz, 2021) but for the most part, Americans are rarely concerned with this ‘problem’ because they do not believe they are impacted by it firsthand. Because most Americans have access to plenty of food, they are not starving, indeed it is quite often the opposite, in many instances, they are overfed. Malnourishment in this case is different than starvation in that the body is not being deprived of substance but rather, despite the even gorging habit of many westerners, the body remains starved of nutrients. This is because the food being consumed is devoid of nutritional value, thus resulting in an undernourished state. This is a serious concern that has arisen along the same trajectory as access to artificially enhanced foods, and food-like substances. These modified foods, which have been created through synthetic, scientific processes, differ greatly in the way the body processes them. Rather than naturally occurring food, this advanced technological age has allowed for the creation of substances which resemble food but do not behave like traditional food within the body. I will return to this topic in more detail in a later section; For now, I will continue to address malnutrition.

On the very first page of his book Raj Patel (2007) states plainly that “global hunger and obesity are symptoms of the same problem … the route to eradicating world hunger is also the way to prevent global epidemics of diabetes and heart disease, and to address a host of environmental and social ills.” (Patel, 2007, p 1) What once was only the tragedy of impoverished peoples, is now the norm in western society: We are currently seeing a new kind of malnourishment epidemic emerge as a result. The title of Patel’s book makes clear what the issue is, the content reveals the myriad ways in which the problem seems to occur. It is not just a matter of one common factor at the heart of the issue, but rather
an intricate, multilayered, many-player problem for which no quick fix can be easily applied. (Patel, 2007)

As stated, the FAO seeks to address the three different types of malnutrition, and the FBDGs, are guided from the data expressed in the Global Nutrition Report (GNR). (fao.org, 2021) The GNR was created, “following the first Nutrition for Growth Initiative Summit (N4G) in 2013 as a mechanism for tracking the commitments made by 100 stakeholders spanning governments, aid donors, civil society, the UN and businesses” and “is the world’s leading independent assessment of the state of global nutrition.” (Global Nutrition Report, 2021) They state that the intention is “to inspire governments, civil society and private stakeholders to act to end malnutrition in all its forms… and aims to help “hold stakeholders to account on the commitments they have made towards tackling malnutrition.” (Global Nutrition Report, 2021)
“Figure 1.2” (as sourced from the GNR,) gives an easy to understand visual about the work the GNR is interested in doing and how their efforts are currently measuring up. It shows, among some other data, the impacts of malnutrition in all its forms and across demographics, globally. A more interesting aspect of the GNR’s website is the regionalized section where users can search the database for specific continent or country’s profile and see the breakdown of data for a given nation. According to the GNR “The United States has shown limited progress towards achieving the diet-related non-communicable disease (NCD) targets...has shown no progress towards achieving the target for obesity.” (Global Nutrition Report, 2021)

**Obesity**

Understanding the link between obesity and malnourishment is important. It is equally important to understand that the emaciated individual, dying of starvation in an undeveloped nation, is tantamount to an individual suffering from severe obesity in a developed country. Both are extreme states of poor health with severe negative outcomes. But before I say more about that, I would like to share the specific information about the prevalence of obesity in the United States. Obesity has risen to epidemic levels, with severe obesity reaching an alarming, all time high. The following information from the Center for Disease control states that over 13.7 million children had obesity. For children ages 2-19 the prevalence of obesity was 18.5%, with a prevalence of 13.9% among those ages 2-5, 18.4% among those ages 6-11, and 20.6% among those ages 12-19. (Fryar, 2020) For adults the data is even more concerning: The prevalence of obesity was 42.4% and from 2000 to 2018 the prevalence of obesity increased from 30.5% to 42.4%, the prevalence of severe obesity increased from 4.7% to 9.2%. (Hales, 2020)
It is clear that the science can inform us about the prevalence, the health-related consequences and point to the ways nutrition impacts and can mitigate these issues when certain guidelines are implemented and followed. The science can also show the ways in which these problems have impacts beyond the individuals and how they affect society from a number’s perspective. At time of writing most publications were citing well-known data from the early aughts, and the most current information, (the one which will be used for this paper) comes from a 2012 study published in the Journal of General Internal Medicine. Biener, Cawley, and Meyerhoefer (2012) show that,

between 2005 and 2010, the amount by which obesity raised medical costs per obese adult rose from $3070 to $3508 (both measured in year 2010 dollars), an increase of 14.3 percent. During that same period, the aggregate costs of obesity in the adult, noninstitutionalized population of the US rose from $212.4 billion to $315.8 billion (both in 2010 dollars), an increase of 48.7 percent; this large increase is due to three factors: (1) an increase in costs per obese individual; (2) an increase in the population, so even if the prevalence of obesity remained constant there would be more obese individuals; (3) an increase in the prevalence of obesity. (Biener, Cawley, and Meyerhoefer, 2012)

This information is startling and the projections of economic impact due to obesity related medical costs, nothing short of grim. I will leave the math for the eager reader to do on their own, should they wish to try and estimate current costs based on the information from Biener, Cawley, and Meyerhoefer, paired with the data provided by Fryar, and Hales. But it can be safely stated that there is no positive conclusion to be abstracted by any statistician from the data available.
Some of the projected related concerns of these numbers paint a grim picture for the future, regardless of the numerous ways one might try to color it; some experts suggest that we have a population who, for the first time in a very long time is not expected to outlive their parents. (Lindberg, 2020; Olshansky, 2005). And as tragic as this projection is, the alternative does not seem to present a more hopeful outlook.

If the effects of obesity and the related diseases do not result in a limited life expectancy, (Flegal, 2012; Oxford University Press, 2007) the result could be a very ailing population with increased demands on medical and socioeconomic support. This could place undue burden on resources that continue to be stressed across demographics, (Glei, 2019) because despite the usual correlation of increased labor force with increased population growth, a population very sick with obesity related illness is unlikely to be a strong work force.

Obesity is often generational, a problem that continues to grow with each new child in a family. The problems might be genetic, or environmental, and they are often a combination of the two. (Battista, 2011; Guillaume, 1995; Ludwig, 2010; Wang, 2019) And despite all efforts to mitigate the problem from the many stakeholders named in GNR, the problem continues to persist, and increase with intensity. What remains most unclear is why the trend continues to buck any efforts to reverse it. I have already alluded to a breakdown between what people believe to be a healthy diet and what actually constitutes one.

Critical thinking demands further inquiry.
The idea of nutrition as a network of parts, working in a larger system means that there are bound to be many possible avenues to explore when searching for information, answers, and when trying to come up with new ideas. It would be impossible to explore them all, or even very many, within this paper. Stating that, this is a good place to remind readers that while the intention is to draw awareness to some of the intersections of philosophy and science regarding nutrition, it is by no means an exhaustive effort. As such, this work should rather be viewed as one might the tip of a very large iceberg; intended to scratch a surface that invites readers to begin their own investigation.

Continuing the inquiry about what reasons might exist to explain the continued rise in obesity despite efforts and increasing awareness, backed by vested interests in achieving goals to reverse said trend, several possibilities emerge.

**Social & Emotional Health**

Returning to the ways science informs about nutrition and the impact it has on individuals, one can look at the way food impacts mood, or psychological and emotional state. The image you see here provides a very basic example, the way certain substances have negative effects vs those with more positive influence, but the thinking circles out.

What individuals intake affects them, but it also affects others. It is an on-going cycle which is always spiraling inwards and outwards, and a certain level of consciousness must be applied in consideration of what is eaten. This is because of the broad reaching impacts that directly and sometimes immediately affect how we *feel*, and for the ways in which those impacts then reach out to others and impact their lives and wellbeing also.

To explain this point, I will provide a fictitious scenario to help aid in understanding.
Imagine a working woman eats a meal at lunch which is laden with sugar, processed fatty meats and refined carbohydrates, (the things warned against in the FBDGs). She then drinks a large coffee for the caffeine, (to stave off the post-meal crash which will result from the consumption of low-quality food,) and then inevitably begins to feel poorly a few hours later. She goes home and her bad mood impacts her spouse, their children, the cat, and then pizza delivery boy who brings even more of the same type of food for dinner because the woman felt too unwell, unmotivated, and uncomfortable to make what might be considered a more proper and nutritious evening meal. From here, the cycle not only repeats but now spreads. The children fight because of the way the food affects their bodies. The husband, already upset because the woman was unpleasant when she came home from work, now also feels badly, and they fight with one another over who will clean up the mess, who is going to bathe the children and who will clean the kitty litter. The pizza boy, surviving on a diet of soda and pizza because of his discount, takes all of this home to his family and so it continues. The misery begets misery, ad infinitum.

It is not difficult to see from just one example the ways in which poor food choices can impact an individual, and then those around them. The impact of food on mood is well documented and continues to be studied on-going. (Adan, 2019; Firth, 2020; Gomstyn, n.d.; Holder, 2019, Vukoje, 2014). So, with this information being so widely available, what else might the problem be? As indicated, there is some manipulation of food occurring in the market and the creation of food-like substances is of particular concern. In order to engage with this concept within the proposed framework of this project, it might help to recall the original questions and chart from early in the work. I have included just the original ‘questions’ column for reference.
What is out there?
What is happening in the world around me?

How do I know about the world out there and what is happening?

What should I do?
What actions are permissible? tolerable? What is the right choice?
What is the best choice?
What can life be like?
What is beautiful, tasteful?
How do we judge our sensory experiences, accordingly?

Does my reasoning make sense, or can it be justified, rationally?
Is it sound? Is it valid?

When thinking with the first set of questions in this context it might be helpful to ask questions like “What is happening to the food supply?” or “Is the food supply being manipulated?” and “if so, what impacts might that be having on individuals?” From the many references already provided, readers should understand that it is presupposed people will engage in various forms of investigative and exploratory research to uncover this aspect and to address ‘how’ they come to know about it. Leaving the other questions in-mind, but to be addressed later, the practice of critical engagement on nutrition related thinking can continue by looking at more detailed examples of the manipulations in question.

Some questions I will pose to readers for guidance on exploration, are: “Is the food supply being compromised through manipulation?” and, if so, ‘Why?’ and ‘to what end?’ With these in mind, a richer exploration might begin.

**In the Beginning**

Mammals are, in part, defined by the process through which they nourish their offspring. (Stevens, 2009). It is actually where the term mammal comes from. (Schiebinger, 1993)
The secretion of milk by females for the nourishment of the young from mammary glands, commonly known as breastfeeding in humans, was really the only method to feed infants until they reached a level of maturity where they could consume and digest solid foods. While there were some crude vessels known to exist as far back as ancient times, the primary method of infant nourishment was breastfeeding. (Stevens, 2009) This was true until the advent of bottles and baby formulas in the late 19th century, and by the middle of the 20th century, infant feeding formulas had earned their place as mainstay alternative to breastfeeding, leading to a “steady decline” because of “aggressive marketing of formulas.” (Stevens, 2009) Despite a movement to promote breastfeeding, which began “in the 1970s, … in 1988, (when) the formula industry began advertising directly to the public, … tension between the medical profession and the formula manufacturers” arose. (Stevens, 2009). And despite the official position of the American Academy of Pediatrics (AAP) formula feeding continued to grow in popularity, which lead to “increasing trends of formula-fed children developing atopy, diabetes mellitus, and childhood obesity.” (Gaynor, 2003; Wolf, 2003, as cited in Stevens, 2009). It is interesting to note that a correlation exists between an increase in childhood obesity and an increase in formula-fed infants.

What might be more interesting still is the amount of sugar found in many of these formulas. “Interestingly, the FDA … does not require that the sugar contents be listed on the formula labels and doesn’t place a limit on how much sugar should be allowed” in any formulation.” (Caplan, 2017) The awareness of this knowledge led to an investigation and what was uncovered was shocking! (Bridge, 2020) Gemma Bridge said the “key finding” of their investigation was that “some formula milks have double the
sugar per serving than a glass of soda.” (Bridge, 2021) What is even worse, is that despite lactose being the more appropriate sugar source for formula, companies often use cheaper ingredients like corn syrup, sucrose, and maltodextrin, all of which are also sweeter than lactose. (Caplan, 2017) This appears to be in total disregard digestive process of infants which utilizes an enzyme known as lactase, which is “‘ready-to-go’” and this bypass is suspected of having a greater and negative “impact on infant insulin since it contains twice as much glucose per gram as does lactose” (Caplan, 2017) The assumption then, is that there may be “long-term consequences of forcing formula-fed babies’ pancreases to work harder than breastfed babies’ pancreases” resulting in consequences which may be linked to obesity. (Caplan, 2017)

**How Sweet it is**

Caplan adds yet another layer of complexity to the mix by explaining that the reason behind adding the sugar might not just be as simple as a balanced macronutrient profile, which is just relying on the cheaper carbohydrates. As mentioned, they are sweeter than the lactose which would be a more ideal choice and Caplan explains that according to a pediatric dentist in Chicago “the sweetness of the formula causes babies to crave sweetness.” (as cited in Caplan, 2017) Not only this but the dentist apparently “says that any formula that contains sucrose causes the baby to crave sugar… sucrose-containing formulas make the baby want to eat more, so they become hypersensitive to sweetness.” (Caplan, 2017)

The evidence seems clear in that it points to an intentional manipulation of the formula to create a product that babies crave. And it cannot be assumed that manufacturers are not
aware of the pathways they are exploiting in this process. Nor can it be ignored that it would be highly unlikely for there to be a lack of awareness about the fact that certain types of sugar are related to severe ill health effects. (Lustig, 2011) Sugar is topic which deserves a great deal of attention, and admittedly far greater devotion than can be given in this paper. But it is essential to make mention of some of the details regarding sugar in order to understand what might be at stake for individuals wishing to pursue an inquiry into this area.

Sugar is basically an interchangeable term with carbohydrates because the human body breaks down carbohydrates into glucose. (The Sugar Association, 2021; U.S National Library of Medicine, 2021) Carbohydrates come in two varieties: simple and complex. Simple carbohydrates are called such because of their simple chemical composition, which is relegated to a single sugar (monosaccharides) or two sugars (disaccharides). (The Nutrition Source, 2016) These carbohydrates are quickly used by the body for energy, but this “often (leads) to a faster rise in blood sugar and insulin secretion from the pancreas – which can have negative health effects.” (The Nutrition Source, 2016) The other kind of carbohydrates are known as complex carbohydrates because of their more complex chemical structures, having “three of more sugars linked together (known as oligosaccharides and polysaccharides)” and because of this “they take longer to digest” (The Nutrition Source, 2016) The impact on blood sugar is therefore significantly less. But this is really an extreme simplification of the matter. It is not quite as simple as this explanation makes it out to be, and because there is not room in this paper to explain sugar and carbohydrates in the detail, I implore all readers to read more about this as it is
an important topic for individuals to understand well. However, for the purposes of this work however, this limited information is sufficient to move forward.

**Know thy Enemy**

A curious networking in the food industry is government involvement and the history of policy in ventures to create a healthier population. Like the earlier noted FBDGs, there have been many related efforts and campaigns to promote better dietary choices in recent history. Much the way the FAO explains that FBDGs indicate what is considered a healthy choice, and what things are contraindications to health, so too have other models across agencies. At present, the FAO offers different FBDGs based on location, each Member Country having an FAO assisted FBDG. (fao.org, 2021) FAO states that Member Countries work with a network of experts from across sectors including “representatives of agriculture, health, education, nutrition and food science, consumers, non-governmental organizations, the food industry, communications and anthropology” to create the FBDG for their respective country. (fao.org, 2021) The country-specific FBDGs aim to “promote and protect traditional food cultures and take into account the impact of dietary patterns and the food system on the natural environment,” while also focusing on the “cultural, social and economic situation” of the county. (fao.org, 2021) Per the website, the FBDGs are “adapted to their nutrition situation, food availability, culinary cultures and eating habits” and the information used comes from a multitude of sources, “such as scientific evidence of the relationship between diet, nutrition and health; and data on food production, food consumption, food composition, cost and accessibility.” (fao.org, 2021)
According to science and health journalist, best-selling author, and nutrition authority Gary Taubes, the first iteration of the US Dietary Guidelines, (1977) declared fat the enemy when Nick Mottern-a man with “no scientific background and no experience writing about science, nutrition, or health” was tasked to write the guidelines. (Taubes, 2001) Mottern elected to take the word of a nutritional extremist to heart. As Taubes explains, Mottern was led by Mark Hegsted, who believed fat was as bad as tobacco. Taubes says that the initial result was that “all hell broke loose,” because of financial interests that would be compromised by this demand, but the release found footing. (Taubes, 2001) According to Taubes,

Even the American Medical Association protested, suggesting that the diet proposed by the guidelines raised the "potential for harmful effects." But as these scientists testified, so did representatives from the dairy, egg, and cattle industries, who also vigorously opposed the guidelines for obvious reasons. This juxtaposition served to taint the scientific criticisms: Any scientists arguing against the committee's guidelines appeared to be either hopelessly behind the paradigm, which was Hegsted's view, or industry apologists, which was Mottern's, if not both. (Taubes, 2001)

In an interview by Adam Brown for DiaTribe, (an online publication for a foundation dedicated to improving the lives of diabetics) Taubes is described as “a student of history and science, … (who) shows how certain people, events, misinterpretations, and measurement techniques can color a field for years.” (Brown, 2017) When questioned about the changes he would make if placed in charge of American nutrition policy, Taubes indicated that improvement to “the quality of nutrition science (and scientists)”
would be in order. Following with the idea that the current state is one of “controversy (which) can be resolved with rigorous experiments.” Taubes says ‘the nature of a healthy diet should not be a matter of opinion but of fact,” and insists anyone claiming, “we know what a healthy diet is and it doesn’t need to be tested,” is wrong because “when 100 million or so Americans are obese and 30 million have diabetes, we clearly don’t understand something about healthy eating.” (Taubes as cited in Brown, 2017)

Readers might recall at this point that the GNR was created in 2013 and Taubes is very well versed on current efforts to mitigate factors contributing to obesity. He has, after all, invested a great deal of time, energy, and research into the work he has done towards this effort himself. And Taubes is not just a man of words, but of action. In seeing the shortcomings he has spelled-out, he opted to co-found his own organization NUSI -The Nutritional Science Initiative “TESTING THE CONVENTIONAL WISDOM ON NUTRITION (supporting) research that tests fundamental assumptions about the metabolic and hormonal causes of obesity and related disorders” (Nusi.org, 2021)

I would like to draw readers attention to the efforts of Gary Taubes in what he believed was a concern, which he then exercised critical thinking towards, taking a philosophically investigative approach towards science, and then elected to get creative in his efforts to address the problem. I am in no way suggesting that readers should act as investigative journalists who write best-sellers and then start foundations to address the problems they have encountered, but if I could point to an ideal model to look to for how someone demonstrating the ways in which it could ultimately be done, Gary Taubes is a living testament to it.
In discussing his book, which was his newest release at the time of interview, Taubes explained why he was making *The Case Against Sugar* (Taubes, 2017) he explained a bit of his critical thinking process to Brown. In saying that he believed there was more compelling evidence to identify sugar as the problem, (not fat) he suggested that “one way to think about this question is to ask whether [we should conduct] a randomized controlled trial to test the hypothesis,” and though it would be long, and difficult, he believed that “with some innovative thinking and enough money, it could probably be done.” (Taubes as cited in Brown, 2017) And when Brown pressed Taubes to name the stakes more clearly, Taubes doubled down without missing a beat; Asking if sugar was addictive Taubes replied with a clear mind to think critically and creatively about the matter,

My favorite line about this is from Charles Mann, an exceedingly talented journalist/historian who wrote in his last book (1493) that scientists debate today whether sugar “is actually an addictive substance, or if people just act like it is.” We can state pretty conclusively that rodents find sugar as addictive as any other drug of abuse, including heroin, but the research on humans is harder to do and less well developed. But, as Mann said, we certainly act like it is. And if you have children, as I do, I’m not sure I care what conclusions the researchers reach on this. Clearly, sugar has a hold on my children, or at least one of them, that no other food does. (Taubes as cited in Brown, 2017)

When Taubes set out to make sugar enemy number one, he was already in good company. Robert Lustig (already mentioned) had seemed a bit of a lonely voice in sea of people who had long been naming fat enemy number one. Lustig seemed like a bit of a
pioneer but he relays that someone before him had made serious efforts to stop the vilification of fat before it even began. Before his famous lecture, *The Bitter Truth* at UCSF, (2011) Lustig says he was told about John Yudkin, a “British professor of nutrition who had sounded the alarm on sugar back in 1972, in a book called Pure, White, and Deadly,” but whose efforts were systematically dismantled by agents representing other interests, namely University of Minnesota researcher of nutrition Ancel Keys. (Leslie, 2016)

There is not adequate room to do this whole story justice, but the noteworthy bits are easily summarized by J.T. Winkler, retired professor from London Metropolitan University. Winkler wrote a short piece about *Pure, White and Deadly* (1986) and in it he said that essentially, thought Yudkin’s book went out of print, his influence was not lost; low-carb diets, and those advocating for low-sugar not low fat followed Yudkin’s lead, Atkins, Agatston, and Sears, among them. What he said was that “with hindsight, Yudkin played a largely unacknowledged role as John the Baptist to a multitude of low carb prophets … “regular pieces of journalism, such as those by Gary Taubes… kept the pot bubbling… the turning point came with …Robert Lustig,” noting that Lustig wrote the introduction to the reissue of Yudkin’s book. (Winkler, 2013)

**Appeal to Novelty?** (argumentum ad novitatem)

With this information it is easy to see that what appears as a new enemy to many, is really an old adversary being dragged from its hiding place. Who hid it, and why, remains to be seen. Perhaps that information will be revealed as more people become interested in investigating the bitter truth. Many researchers had already been attempting to do what
Taubes was interested in doing, and a good number of investigations have come about since his call to action. Some have gone as far as to attempt to prove that sugar and refined carbohydrates are as addictive (and perhaps even more so) that cocaine and heroin are. (Avena, 2007; Ervin, 2013; Freeman, 2018; Lennerz, 2018; Nunes, 2020)

Some have, in their efforts to get people to avoid the stuff, gone on to try and demonstrate that the human body actually needs no carbohydrate intake at all to function sufficiently or even to thrive and perform at peak, optimal, athletic levels, (mostly because of a process called gluconeogenesis!) (Phinney, 2020; Sheridan, 2015; Spritzler, 2021)

With all of this knowledge, it seems the matter of nutritional science and the history of food is definitely still up for debate. Scientists are usually supposed to remain unbiased, but it seems that in this arena, they are anything but. Although perhaps it is business that is really to blame, because after all, are they not who was ultimately responsible for loading their food products with sugar to make up for the loss of flavor in the wake of a banishing of fat? Maybe the problem was the press in failing to deliver the right kind of information to the public! Or perhaps the government is who should be held responsible, because after all, they are the ones creating policy that everyone else is just supposed to follow, right? But what about personal responsibility? What about the consumer being proactive and practicing a buyer-beware? It seems to me that there is onus in all directions, but that the laying of blame does nothing productive as it is a backwards looking practice and perhaps, we should be most interested in what happens from here. New questions to think with might include asking about how these various actors and the impact of their actions really measure up? And who do we ask for guidance if not them?
Who do we trust to inform us about both the science and the philosophy on food? These are important questions which might reveal shocking responses when scrutinized or called into doubt. Earlier I put the authority of scientists to speak on the matter into question when I brought science giant Neil DeGrasse Tyson’s public dismissal of philosophy as a waste of time and energy, a trap that sucks one into asking too many questions and a futile pursuit which is unproductive and leads ultimately to nowhere. (I am a paraphrasing, but only slightly). In moments like this we should be asking even things like how does science work without questions? How can we assess fidelity and accuracy and verify results? How can we invent new things or approach problems which require scientific technology for solutions, like medicine, especially in the realms of health? Fortunately, Bill Nye - *The Science Guy*, admitted to the error of this erroneous thinking about philosophy and the way it relates (or does not) as is Tyson’s claim. (Harvey, 2017) Bill retracted his shared position with Tyson, effectively leaving Neil with what looks a lot like egg on his face.

**Appeal to Tradition** *(argumentum ad antiquitatem)*

So, does this mean we can turn to Philosophy for the answers? Hippocrates seemed like he might have had some insight on the matter in question. “Let food by thy medicine and medicine be thy food.” It sounds like sage advice, at least on the surface. But there remains a problem with this quote; it is actually a misattribution. While the Hippocratic writers definitely saw practical uses of some foods, especially herbs and spices towards medicinal use, (Totelin, 2015) Hippocrates cannot be credited with these words as they appear nowhere in his known writings. Back to the cutting board.
Back to the cutting board is of course an allusion to the idiom ‘back to the drawing board’ which is used to refer to the need to devise or design a new plan or strategy after an endeavor was in some way unsuccessful or which failed. Though slightly nuanced to keep with the food theme, it means to return to the planning stage, and this is a good example of critical thinking in action. Rather than realizing the quote was a misattribution and simply abandoning it, I chose to dig into the matter and examine the claim. (Cardenas, 2013) What this process revealed was interesting and illuminating; Unlike the popular Fake Buddha Quotes (Bodhipaksa, 2021) –which tend to rise up like a sort of Hydra, misattribution in this case appears as a more subtle nuance, where the confusion is not from something that strays too far from the mark. For Hippocrates saw a strong connection between health and diet and did say other related things as the classical version of The Hippocratic Oath indicates: “I will apply dietetic (emphasis mine) measures for the benefit of the sick according to my ability and judgment; I will keep them from harm and injustice.” (Hippocrates as cited in Jones, 1945)

Currently, dietetics is “the branch of knowledge concerned with the diet and its effects on health, especially with the practical application of a scientific understanding of nutrition” (Lexico.com 2021) and the term comes (in part) from the Greek, as in Hippocrates Oath, διατήμασι, (diaietikos) "of or pertaining to diet”. (etymonline.com, 2021) From this it is clear that humans have had a long understanding of the way diet impacts and relates to health and wellbeing and that any indication otherwise is a conflation, confusion or corruption of knowledge and understanding. When paired with the information that preceded this section regarding the seemingly intentional misrepresentation of the status of fat versus the effects of sugar on the body, it appears to be a combination of all three.
When the truth is misrepresented, intentionally or otherwise, it is easy to understand why people might have difficulty in not only knowing what is best for them, but in understanding how to consider what is best, and how to arrive at such a conclusion. I hope that at this point it has been well communicated that I am asking readers to withhold any ideas they may have looking to specific figures or individuals as beacons of truth, rather than holding truth as an authority unto itself and one which people, despite any credentials they have, are prone to error in their representations of truth in a given context or situation. It might also be the case that there is room to negotiate truths within certain situations, and that on matters of best choices, there can be a certain degree of compromising with truths where one truth dictates some authority over another. I realize this may sound vague at the moment, but I hope to make it more clear for readers before too long.

Having already established the impact of food on human health it is time to move forward, yet again. It is important for readers to understand that the next section, not unlike the previous exposition about human health, is a mere sampling of the various matters in the nutrition network system where science can inform one way, while philosophy is required to think through the related concerns otherwise. That stated, the details in the next section will not be to the depth or degree as they have been above. In part because there is not room to go into the depth and detail of everything I could want to discuss, I elected to add detail to the thing I think the most readers will relate to and that is themselves. The human body. Human health and their living experience. People are often concerned with their own wellbeing first, as a matter of practicality and priority, so this dictated to my selection, some. There is a matter of time and space issue which
goes along with the context of this project and so knowing what it is to be for the purposes it was written within the course, and where I see the work going beyond the course, I feel confident I have chosen wisely. Finally, I selected a few representative samples which, when researched by readers, should inevitably lead down many rabbit holes leading to a vast number of other considerations, which are what the true aim of my work here is. So, with that being said, this work moves on to the impact of human food (choices) on the health of others, including the living environment.

**Industrial Agriculture**

It was a difficult decision to make but I believe including imagery to support some of the following data was important; partly because of what I will say about it and the impact I hope it has on readers. I told readers that I would not make the fallacy of an appeal to emotions in this work, and I intend to remain true to that. But before going further, an explanation might serve readers well because of this specific type of fallacy and how it related to the nature of the information to follow. An appeal to emotion is not an argument that will not produce some kind of emotional response. It does not even mean than an argument cannot intend to do so. Logical arguments often trigger emotional responses so an argument should not be thought of as fallacious based on this occurring. A logical fallacy has only occurred when emotion is used *instead of* logic, in order to bypass rational reason as a way to win said argument; I assure readers I am about to engage in no such practice here.
Intensive and Extensive Agriculture are terms that can point to a number of agricultural practices, but which are the practices employed to produce greater amounts of food for large populations. This might happen as Industrial Farming or Industrial Agriculture, and/or various forms of Intensive Animal Farming. Extensive agrochemical applications—agents like pesticides, herbicides, fungicides, chemical fertilizers, and antibiotics are often used in these businesses, directly on the food supply. Other common factors—abundant irrigation, and the use of heavy machinery requiring copious amounts of diesel fuel to run and operate.

When the farm is one dedicated to raising a variety of livestock it is what is known as a Concentrated/Confined Animal Feeding Operation (CAFO) and is named for the method which brings food into the enclosures where the animals are kept rather than allowing them to graze, which would be known as a free-range farm. (They are known alternatively as Intensive Livestock Operations (ILOs) and Confined Feeding Operations (CFOs) outside of the US.)
Two terms which have grown in popular use about these types of operations, especially among their opponents, are Factory Farms, and Feedlot Farms.

As the image above might give some indication of, feedlot animals are miserable and indeed they suffer. This is no longer a matter that requires speculation or inquiry, it is common knowledge. I chose images that should stir feelings without the desire to traumatize, because the truth is traumatic without seeing what you can never unsee. This is territory that only the strongest of stomachs should embark research into and be warned that you will never be the same once you uncover the true extent that is the horror of factory farming. While I have never intended this to be a prescriptive program in that I am dictating to you your food choices, what you should eat and what you should not, there are certain moral considerations which stem from our need to eat that should not be ignored.

One way to approach the matter without investing too much emotional energy is to ask what the bodies of stressed animals, living in squalor and sorted conditions, subjected to abuse, and an ongoing existence of mental and emotional suffering are like. Does it seem reasonable that an animal who has been subjected to such stress and thus has high levels of cortisol in its system, (a hormone linked to obesity,) (Yun & Yun, 2020) might be less healthy to consume than the products of an animal who lived a reasonably happy life? That an animal treated with kindness, well cared for, protected, and spared from abuse or even most naturally occurring threats and who was ethically and humanely slaughtered at the end of its life before becoming your sustenance, be a better dietary choice? If one is not interested in the moral consideration, the alternative could be equally as compelling if one is trying to make the case for health of one option versus the other; unhappy animals
do not taste as good as the ones who lived a relatively stress-free life. (Freund, 2011) Any way you want to spin it, the choice to raise livestock for food seems to be better when they can be raised without the added stress and trauma that comes with being raised in a CAFO.

Some people believe that veganism, vegetarianism, or some other alternative is the solution. Plant-based lifestyle campaigns are all the rage for health, wellness, and environmental protection, but the truth does not seem to withstand scrutiny. The problems with veganism for the individual and planet alike are many, and the science can easily inform us on the plain truths of both. The environmental impacts alone should give any vegan who is doing it for the animals pause, but there is plenty of reason to believe that many innocent creatures also suffer in the plant-based diet model. (Archer, 2021; Jenssen & Kongshaug, 2003; Paleo Leap, 2019; Tom et al., 2015)

But I am not here to tell anyone that veganism is a worse choice than omnivorism; I am here to show the ways in which food choices and production should be examined more critically, from a broad perspective, considering many opinions with the interest of gaining a more comprehensive view of the situation at hand. One which, when examined critically, can positively impact outcomes to support the thriving survival of individuals, human existence, the species we share our world with and the planet as a whole. The bigger issues related to intensive farming, be they plant- or animal-based, point to a bigger systems issue: narrowly, the impact of agrochemicals on people who consume the products from those farms, as well as the life on and around the farms and then the easily deducible issues of the life around farms including who live in their vicinities and their surrounding environments.
Food Systems

When thinking about Food Systems individuals might begin to imagine all the possible connections of their nutritional choices. ‘Where does food come from?’ has answers that meet all of these criteria and many people are surprised to learn just how many hands their food might pass through before arriving on their dinner plate. There are many aspects to the nutritional sphere (some more distant than others,) and a good way to begin to think about them in unison is with the image from Food Rescue Partnership. (2017) that shows Food Systems Sectors as 5 different segments of a wheel.

Food Rescue Partnership. (2017)
With the above image it is easy to see that there is more to nutrition than just the food people eat, and how it impacts the body, or even the environment from which it originated. The entire chain, from origin to end waste, should be taken into consideration when examining the framework for scientific and philosophical exploration into nutrition. In each section, all of the aspects of the things listed there are possible items to examine critically. In the section labelled Production that includes the things discussed earlier in the essay related to farming, but also the many things not discussed related to farming. Some of those ideas might include alternatives to large farms, including small, local, sustainable farming practices, humane slaughter, free-range vs. cage-free, organic farming, crop rotation, micro-farming, permaculture, urban farms, and agroforestry, just to name a few. Thoughts about Gardening might include alternative to tradition like hydroponics, aquaponics, raised beds, containers, straw bales, window farms, balcony farms, “Grow Food not Lawns,” ‘Pollinator Friendly’, Mittlieder Method, organic vs agrochemicals, etc. Fishing considerations could be aimed at over-fishing versus sustainable fishing practices, Trolling, Dragging, Blasting, shark-finning, whaling, dolphin-safe, line-caught, farmed vs wild-caught, etc. Hunting has many concerns for the wellbeing of animals, and inhumane practices like trapping and poaching, matters of licenses issued for specific hunts and seasons, the ethics of fair chase, trophy and sport hunts, and the benefits of Green Hunting. Foraging presents opportunities to explore concepts in preservation and conservation biology, land stewardship and the potential for increased connection with, respect for and a sense of duty to nature. From this list of examples, I believe it will be easy for readers to brainstorm related ideas under each heading within the segments of the circle and hope they might do so.
Now that this project has presented a few examples of entry points, and places that individuals might begin to investigate the various aspects of nutrition suggesting that being open to divergent sources for data is better than keeping things narrow – in this case the more the better, and I will explain why presently, it is time to start thinking about the framework in more detail.

Towards the beginning of this essay, I provided a table as well as the image shown again here to try and assist readers in thinking with the intent to question as they read. With the original questions in view, I will now provide sample or example questions to help readers begin conceiving of the types of questions they might ask in their own critical and creative journey to think philosophically and scientifically about nutrition.

In asking ‘what is out there?’ readers might consider asking what they know and understand about the food they eat, what it does to their bodies and how it impacts them directly, and beyond. What do their food choices do and what kind of power do those choices seem to have? What consequences, good and bad does the food being eaten have on individual, society, and the environment, including plant and animal life as a whole?

The question ‘how do I know about it?’ relates to the ideas discussed in the sections regarding the controversies with Neil deGrasse Tyson and Oprah Winfrey, as well as those of the Fat versus Sugar debate. This line of questioning also concerns who might
have known what, when, and what they should have done, versus what was done? This can be applied to considerations about policy and guidelines as much as it can be towards what a “professional” knows and where they are getting their information from. Can you trust them, and can you trust their information? Is what you are being told about the healthiest choice, what is healthiest for you, or for them? And why?

‘What should I do?’ is an interesting question. It gives some kind of indication about what the right choice is, implying that there is actually a right choice to be made. While I have endeavored to refrain from telling any reader what to do (beyond think critically about their choices and creatively about solutions to any problems they may encounter) I do not want to suggest what the right choice is. But the question might address ideas related to the healthiest options, for myself, for my family, for my community, for the world around me. The same applies to the most accessible options, the ease of options, and this of course presupposes that there are indeed options.

‘What can be done about it?’ takes that last point into consideration. In the face of any choices, which ones are most ethical to make, are there legal concerns or restrictions one might face related to possible ideas? If one does not like the idea of factory farms because they do not want to support the needless suffering of animals, can they engage in alternatives to lend their support to farmers who engage in more humane practices, for example?

The last question is one I would like to address with things which I feel passionate about, which I hope to interest readers in, and which I believe deserve support. That said, it is also to serve as an example for readers’ own creative thinking.
What is Possible?

With the data already covered in mind, it is time to start thinking about what is possible in tension and aligned with what is permissible and what is possible. What can be done, and what should be done? One way to think about this is to assess wins-vs-tradeoffs, as a matter of priority, which is to say what is most important, what is most needed and what is most desirable. The greatest outcome of course being the most wins, with the least compromises across the chart we saw earlier, where the players win across all the fields without conceding losses that are detrimental to any players.

This can also be done by keeping the health and wellness of the things which relate to and are impacted by the players in mind.

The inevitable goal is to arrive at a place where thriving states of survival can be had by all, and where health is prioritized as a facet of the nutritional spectrum. Interactive, flexible, and moveable, dependent upon needs as they shift in the hierarchy – security and subsistence as the most pressing, pleasure and abundance for all as the most desirable. In saying this, I simply mean that one is only able to consider possibilities related to their current position in life. If food scarcity is of concern, then there is no expectation that an individual should be concerned with anything other than securing food. Basic survival needs take precedence over desires and pleasure, but also over perceived obligations to try and change a faulty system. Until someone rises in power, securing their own ability to survive, they cannot be expected to try and make impacts that affect the world around them.
With that said, there is some notion that people might have an obligation to alleviate the burden and suffering of others, and in that regard, help elevate others closer to thriving survival—those who can afford to bear the burden of cost, might do so in order to help create a system shift, an idea which sits in (positive) tension with those who need to be given a ‘pass’ on access. An example of this is those who can afford to support their local sustainable, farm-to-table, or otherwise life-friendly farmer do so, while trying to flow efforts and energy to broadening this practice and making it accessible for others elsewhere. When I lived in Oregon, the local large-chain supermarket had a small organic section, and the food was notably more expensive. During the 5 years I lived there, due to local consumer demand, which I championed and campaigned efforts for voraciously, the market shifted to a very large organic produce and grocery section, where many times the prices were comparable, and even cheaper than the conventional foods. This enabled more people to buy the organic products, which made the store respond to their demands, which continued to make it more affordable, and so forth. And this is really as easy as it can be. When those who can afford the extra cost, actively do so, while still trying to help others who cannot, the balance of power can be shifted and what was once out of reach for many, becomes more widely accessible.

So how does one then lend their efforts and energy elsewhere?

**Community Engagement.**

One of the things I learned during CCT was the power of community and the importance of constituency building. Bringing others into the fold of your work for support and feedback, as well as becoming invested in their work because of your ongoing exposure
to it and the importance being made real, means something. Perhaps the experience that had the biggest impact was that of engaging with my classmates and then others regarding my synthesis project. Repeated discussions regarding my writing, presentations of my ideas in early drafts, and attempting to convey what I was working on proved frustrating at times, but also informative. Unlike in previous courses during CCT where I was not able to clearly articulate my vision soon or with ease, I had learned by this time the ability to do that, and from having worked with a lot of the concepts I was trying to bring together found myself capable of doing so to the point where questions from others became provocative and ultimately productive for my work. This inevitably led to the point where I was able to take my idea beyond the classroom to discuss it with professionals in the health and fitness industry (my former peers, proteges and clients) and gather their feedback, and garner their support. Had it not been for that set of experiences, I doubt I would be at the place where I am working with every effort to take this to the next step beyond graduation and move this into its next iteration which is a direct extension, continuation, and expansion of this project.

It also brought very important ideas back to the table to be included with this work, because of the way my peers recalled earlier projects I had worked on and mentioned, and the passion projects I had discussed with them. Because of those very important and ongoing conversations, the work I am doing has become meaningful, reconnected me to a purpose I had, but had lost my way with, and given me a new sense of invigorated interest to move forward in an effort to make change for the better, for myself and others, to the best of my ability. Of course, the interest is in inspiring others to do the same; I believe together we can really change the world.
Social Connections & Ideal Possibilities

I wanted to bring special attention to a few of the ideas and options that I am very passionate about and want others to feel invited to participate in, on a variety of levels. I will not go into a lot of detail but introduce the concepts and suggest ways people might get involved if they are interested and so choose to.

One of the things I learned in CCT was to hold ideas in tension with alternatives. I think a perfect example which demonstrates this are some of the following methods I see as alternatives to the traditional practices we have related to food and our environment.

The Grow Food Not Lawns (foodnotlawns.com, 2021) has grown into a legitimate movement over the last two decades and I believe many smaller movements, like the resurgence and interest in victory gardens in the wake of the Covid-19 pandemic, have brought to light some of the importance and value in this practice. The idea is basically that well manicure grass lawns, that look like golf-courses are inefficient and not a good use of otherwise very valuable real estate that could be providing nutritious and natural food in abundance for many people.

Community gardens are another extension of this – where shared public space can serve multiple streams of the community towards combatting malnutrition at the local level, education for the young and old alike, fostering community as community, etc. One thing I was interested in doing, and which is directly related to this project is the potential to establish a community garden at or with UMASS BOSTON, which I would like to have dedicated and named after Peter Taylor and his wife Ann Blum who were both advocates of the practice. I had many enjoyable discussions with Peter about this subject, he was
very interested and supportive of my idea to create local community garden projects in Plymouth, MA where I live, and it is important to me to keep this aspect of his memory alive in the work I do in this regard, moving forward. An additional extension to this idea worth mentioning by name is Urban Farms and Guerilla Gardening because of the way they map onto and branch out from community garden efforts, in what they mean and what they can achieve. I implore readers to explore this angle.

Farm-to-table initiatives are just one more way to think about the food systems aspect of this subject. Bringing people nutritious food, from more local and sustainable sources, ones which they can be involved with on a more intimate level fosters many of the aims I seek to achieve. Bringing people’s awareness up about where their food comes from is an important aspect of this work.

Of course, the goal is to arrive at a place where thriving states of survival can be had by all, and where health is prioritized as a facet of the nutritional spectrum. Interactive, flexible, and moveable dependent upon needs as they shift in the hierarchy – security and subsistence as the most pressing, pleasure and abundance for all as the most desirable. I believe these elements and options I have just named are the embodiments of these ideals and values. To spell out the extensions that come from these collectively, they each foster and cultivate the strong connection and respect to and for self, nature, the importance of good nutrition and a healthy environment. They solidify the connection of the various aspects and agents at each level of the food chain and bring an awareness that cannot be taught in non-interactive, unengaged models.
Limitations & Future Directions

Originally, I believed I had wanted to include within this work some very philosophical bits, considerations in existential, phenomenological perspectives, (aesthetic) modernism, and reductionist theory to name a few. Additionally, reflections about the way ancient philosophers considered matters related to food and nourishment, spiritual and religious practices that related to nutrition, and more detail on the philosophy of nutrition as a specific branch within the field. I had wanted to delve into some of the psychological aspects, related to marketing, related to diet culture, and related to our cultural experience with food. I had envisioned that I would have room to include some of the specific politics beyond food guides, in terms of food subsidies, food support systems, and the matter of food insecurity within the US. I had wanted to discuss fad diets and the exploitation of neurological processes to sell product to customers because of sensory experience, things like supernormal stimulus and sensory-specific satiety.

But the truth is, there was neither time, nor space to do any of it real justice here, and I fell victim to what might be metaphorically aligned with having eyes bigger than my stomach, if readers are familiar with the idiom. It might also make sense to imply I was biting off more than I could chew with those aspirations.

It is important to recognize the experience of writing this synthesis paper and what I imagined it could be, what I intended it to be and what it finally has become. During the course of the synthesis classes, many times other students likened this process giving birth to a child. So, it might be fair to say that like any parent (despite the fact that I am not one to any human children) I imagined my ‘child’ growing up to become great things. And while I still see that as possible, much like a first-time parent I probably had some
disconnect between what I imagined that would be like, and what the reality actually was. While I am very pleased with this work, as is, there is much to be desired, and much left to do. Acknowledging that this is not the end, and more truly it is only the beginning of this work as something more tangible, it is important to recognize the learning process and the trial that this experience has been. The learning experience is ultimately important, not more or less so but differently that the importance of the work itself. The work now exists, to be worked on and worked with towards future iterations of itself. But the process of doing this to create what exists now is something quite remarkable that requires mentioning.

For if there is anything I have learned during my time in the CCT program, it is the value of discovery when the door is held open and a little bit of prompting, without constrictions, sends you on your way. The experience is worth the price of admission, the takeaway is nothing short of life changing. And if I am abstracting the right understanding from my education, it is that truly, we are able to learn, change and produce best when we are the leaders of our own journey, not being led but rather leading ourselves with encouragement and support. I hope readers find my words encouraging enough and that my future evolution of this project will provide a solid foundation for ongoing support. I hope to cross-paths with travelers so I might learn of their journeys and where they went as a result of finding this little piece of encouragement to go forth and change the world.

Moving Forward
From here I intend to take this work and use it as the starting point for what I envision will be a multifaceted book and interactive web-based program, including a model which others can use and apply, which I will build using the tool-kit I have acquired during my time in the CCT program, most importantly the action research and engagement processes, to form an interactive community of users who are invested in the change I spoke of throughout this work, moving in a grass-roots style, but with the professionalism of a legitimate organization.

I am hoping that there may be a way to gather feedback from readers after the point this work has been submitted for the course, but I remain uncertain on how to achieve that end at time of writing.

**Final Remarks**

Rather than call this section a conclusion I have chosen to simply close my work with final remarks. This is most accurately because I have learned in CCT that if you understand the intended outcomes and learning objectives, you were not supposed to see this point as the end, but rather the beginning of everything you can do next. I realize I am paraphrasing, but that is my personal spin on the take-away.

Regarding the specific work at hand, I would like to clearly state that there is no conclusion, because I do not have answers in the traditional sense but attempted to inspire others to ask questions. A conclusion cannot then, of necessity be drawn from such an effort. That said, I do believe that I have some good ideas, seated in sincere and honest values, steeped in integrity and a desire to improve the world around me through the intentional entanglement of philosophy and science on the level that impacts every living
thing on this planet in the most fundamental way, at the heart of all existence.

And because I know how to think, and I know how to research and I know how to evaluate data and I know what can be achieved by gathering into community -my late mentor Peter’s term, for a process and practice which he advocated for, because of his belief in, based on experience with, and which his desire to share, was not lost on me, I claim the following stakes:

We are doing it wrong. The global approach needs to change in order for us to reach a sustainably thriving state of existence and this cannot be achieved by relying on what others tell us, regardless of their position, education, background, experience, or expertise. It requires critical and forward thinking, on-going investigation and revisiting our epistemology and datums time and again towards understanding the situation, in context. The position is always dynamic and our needs shift over time with changes to and around us. The way we relate to self, other and the environment is a flux-state that can only ever be assessed with a forward reach and backwards glance, thrusting us towards the ideal while keeping in mind what we need to survive. Thriving survival happens across vectors and keeping them in balance is a delicate operation which requires steadfast focus and determinism on scientific data informed by ethical consideration and directed by philosophical enquiry.
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