



The Ethical Vegetarian Myth

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**Transform yourself
Transform your world**

“When you change the way you look at things, the things you look at change” – Wayne Dyer.

Abstract

Human supremacism propagates the calcium myth and the protein myth, in addition to being the cultural bedrock on which all other forms of supremacism flourish. It also propagates the Ethical Vegetarian myth, the myth that the human consumption of milk and eggs is a mutually beneficial ecological relationship with other species. This paper debunks the common scientific view that such an ethical lacto-vegetarian or ovo-vegetarian lifestyle has negligible additional ecological impact compared to a vegan lifestyle. We show that this view stems from a Local Sensitivity Analysis (LSA) which is generally misleading when extrapolated out on a global scale. In contrast, our Global Sensitivity Analysis (GSA) shows that an ethical lacto-vegetarian or ovo-vegetarian lifestyle would actually amplify the ecological impact of animal agriculture by an order of magnitude and therefore be highly unsustainable. This paper also contends that the consumption of the milk and eggs of nonhuman animals is unethical due to the reproductive enslavement, confinement, and slaughter of the cows and hens exploited in both large and small dairy and egg-farming operations.

1. Introduction

In “The Myth of Human Supremacy^[1],” Derrick Jensen debunks the near universal, unquestioned belief in *scala naturae* or the “Ladder of Nature,” with humans at the top and animals and other species below humans. He points out the unique, essential gifts that other species possess to aid the functioning of ecosystems in which they belong. He shows that when we assert superiority over the rest of nature, we orient ourselves against nature taking an unjust position that is fundamentally unsustainable. Indeed the species nomenclature we give ourselves, *Homo Sapiens Sapiens*, Latin for the “wise, wise hominid,” should clue us in to the egocentric narcissism and human supremacism that pervades our culture.

Human supremacism is the cultural bedrock on which all other forms of supremacism flourish. If we cannot assert superiority over other species, we cannot possibly assert superiority over other members of our own species. Conversely, when we assert superiority over other species, we normalize their oppression along with the oppression of humans engaged in their oppression, thereby watering the roots of colonialism, racism, ableism, patriarchy and other forms of social discrimination^[2].

Human supremacism distorts science. It makes us accept the protein myth even in science textbooks, which claims that we can only get our protein from meat even as we observe the largest land herbivores on the planet, elephants, getting their protein exclusively from plants. It makes us believe the calcium myth, that we can only absorb calcium from milk, without questioning the bovine absorption of calcium from leafy greens. It also propagates the Ethical Vegetarian myth, the myth that the human consumption of milk and eggs is a mutually beneficial ecological relationship with a few other species in the animal kingdom.

The French philosopher François-René de Chateaubriand once said,

“Forests precede civilizations and deserts follow them.”

What he omitted to say is that the conversion of forests to grazing lands is the most likely intermediate step in this desertification process. It is becoming increasingly clear that unless we reorganize ourselves into a civilization that does the opposite, turns deserts back into forests, we will be going extinct in short order.

Of the 130M square kilometers of the ice-free land area of the planet today, only 9% is original forests, while 37% is grazing lands for our ruminant farmed animals, 19% is deserts and mountains, 22% is managed forests for timber and 12% is cropland^[3]. Half the cropland output is going to feed our farmed animals, while just one-quarter goes to feed humans directly. That one-quarter of the cropland output, which is entirely plant-based, constitutes a whopping 85% of the food that we consume by weight, while animal agriculture provides just 12% and seafood, the remaining 3%. Our farmed animals are consuming almost 5 times as much food as all humans while providing just 12% of our food and yet the Ethical Vegetarian myth persists with scientific backing.

The scientific method relies heavily on an “unbiased observer” interpreting data. Since such an observer is truly a mythical creature, biases occur in science. To minimize such biases, science relies on a peer-review process to sift out bad science. However, since the vast majority of scientists consume meat and dairy, the peer-review process itself can become a Carnist echo-chamber, thereby distorting science. In our Animal Agriculture position paper^[4], we have shown that such distortions have already occurred in United Nations reports on climate science. Therefore, it is worth examining whether such distortions have occurred in the science on the ecological footprint of diets.

Using data from the US Department of Agriculture (USDA) and the Life-Cycle Analysis (LCA) of the greenhouse gas emissions of food substances from various sources, the often-cited “Shrink That Footprint” website reported that the lacto-vegetarian diet causes just 13% more greenhouse gas emissions than the vegan diet, 1.7 tonnes of CO₂e per person vs. 1.5 tonnes for the vegan diet^[5]. While this analysis can perhaps be dismissed as non peer-reviewed and therefore, not credible, in 2016, Peters et al.^[6] claimed to have shown using a biophysical simulation model that the carrying capacity of the continental United States was highest for the lacto-vegetarian diet, even more than that for a vegan diet. According to their calculations, 807 million people can be supported within the continental US on a lacto-vegetarian diet, 787 million people can be supported on an ovo-vegetarian diet, whereas just 735 million people can be supported on a vegan diet. This peer-reviewed scientific paper made it seem like raising cows strictly for dairy and chickens strictly for eggs is highly desirable from a sustainability perspective.

If true, this would be excellent news for egg and dairy producers and consumers since these products have been historically associated with a benevolent human relationship with animals instead of keeping them in intensive

farming facilities and slaughtering them. Therefore, it is worth scrutinizing this claim from the perspective of ethical lacto-vegetarianism and ethical ovo-vegetarianism where the cows and chickens are treated as members of the extended human family and only their excess mammary and menstrual secretions are extracted for human consumption. Indeed, the Peters et. al. claim that the carrying capacity of the continental United States is maximum for a lacto-vegetarian diet implies that everyone in the US would be consuming just dairy products and no one would actually be eating the cows in that optimum carrying capacity scenario. Historically, such ethical lacto-vegetarianism was widely adopted in India, where the cows were indeed treated as extended members of the human family and allowed to live out their natural lives.

In 2018, Poore and Nemecek^[7] claimed to have shown that the water footprint of cow's milk (600 Liters/Liter) is only slightly worse than the water footprint of almond milk (400 Liters/Liter). If almond milk is truly almost as water-intensive as cow's milk to produce, it reinforces the Peters et. al. claim that lacto-vegetarianism is the optimum dietary and lifestyle choice for humans. Therefore, in this paper, we will scrutinize this Poore-Nemecek claim as well.

The organization of this paper is as follows:

In Section 2, we will consider the distinction between Local Sensitivity Analysis (LSA) vs. Global Sensitivity Analysis (GSA) and show why extrapolating LSA on a global scale can be misleading. Then we will show using GSA that ethical lacto-vegetarianism and ethical ovo-vegetarianism actually amplify the ecological impact of animal agriculture by one to two orders of magnitude. Therefore, ethical lacto-ovo-vegetarianism would, by far, be among the worst dietary and lifestyle choice from a sustainability perspective.

In Section 3, using the same GSA methodology, we will examine the distinction between the water footprint of trees and the water footprint of animal agriculture and show why comparing them on an equal footing is problematic. Therefore, the Poore-Nemecek water-footprint comparisons between dairy milk and almond milk based on LSA, should be considered with the appropriate caveats.

2. Local vs. Global Sensitivity Analysis

In the proverbial story of the six blind men describing an elephant, each man conducts a local examination of the elephant and determines that it is a tree (a blind man touching a leg of the elephant), a snake (trunk), a wall (body), a spear (tusk), a rope (tail) and a fan (ear). This shows that a Local Sensitivity Analysis (LSA) can be misleading when extrapolated out on a global scale. For instance, the LSA of flat terrain might lead one to globally extrapolate that the earth is flat.

In a LSA of lacto-vegetarianism, we examine the impact of a single individual switching to lacto-vegetarianism while everyone else continues with business as usual consumption of meat, dairy and eggs. Since this individual switch would have a negligible impact on the total number of animals raised and slaughtered, the LSA becomes

an exercise in apportioning the ecological impact of raising a cow between its dairy, beef and leather “outputs”. If we choose to assign the vast majority of the ecological impact to beef and leather while minimizing that apportioned for dairy, such creative accounting would make lacto-vegetarianism seem truly benign from an ecological perspective. However, like blind men describing an elephant, we would be fooling ourselves.

In contrast, a Global Sensitivity Analysis (GSA) considers the impact of a global change and examines it in its totality. In order to assess the impact of ethical lacto-vegetarianism, it examines what would happen if the whole world adopted ethical lacto-vegetarianism and compares it with what would happen if the whole world adopted veganism.

For such a global perspective, Bar On et. al.^[6] have estimated that the biomass of farmed mammals today is nearly triple the biomass of all the wild mammals that lived 10,000 years ago, while the biomass of wild mammals has diminished by over 80% in the same period. The present day biomass of farmed mammals is dominated by cattle, i.e., cows and buffalos. Consider that humans have cut down almost half the trees on the planet^[9] since the dawn of civilization mainly to create grazing land for farmed animals, displacing an estimated 464 Gigatons of Carbon (GtC) from vegetation and soils and emitting it into the atmosphere.

When trees are cut down to create grazing land, the carbon stored on that land decreases by an order of magnitude. Rao et. al.^[10] showed that if current grazing land is restored to native forest biomes that existed on that land in 1800, that would increase the carbon stored on that land more than ten-fold, from 27 GtC to 292 GtC. Therefore, the diminished carbon storage on grazing land compared to the forests that they replaced is a fundamental greenhouse gas emissions penalty of animal agriculture, which is being ignored in a LSA, but which can be properly accounted for in a GSA.

As of 2018, humans were extracting 840 million tons of milk every year from 808 million milk producing animals, including cows, buffaloes, goats and sheep^[11]. The total number of cows, buffaloes, goats and sheep was **3.7 billion**, which means that 22% of these animals were producing milk. In an ethical lacto-vegetarian world, for each milk-producing animal, there would be a male counterpart. For cows, milk production occurs over roughly one quarter of their natural lifespan before they are ground up into hamburgers today. In such a lacto-vegetarian world, these non-producing animals would live out their natural lives which would further quadruple the number of animals. Each milk-producing animal is lactating because she just had a baby. If the baby is allowed to drink half the milk and the other half used for human consumption, that would further double the number of animals needed to produce the same amount of milk. Therefore, in an ethical lacto-vegetarian world, the number of animals needed to produce the same amount of milk is $0.808 \times 2 \times 4 \times 2 = \mathbf{12.8 \text{ billion}}$, roughly four times the total number of cows, buffaloes, goats and sheep in the world today. Since we are already using 37% of the ice-free land area of the planet just to graze farmed animals today, it would be impossible to find the necessary grazing land for quadrupling this animal population.

Next, please note that the current world production of milk, 840 million tons per year, works out to a daily average of 286 ml of milk per person, which is little over 1 cup (250 ml) per person per day. The US Department of Agriculture (USDA) recommends a daily average of 3 cups of milk equivalent per person per day for which we would need to increase the global population of cows, buffaloes, goats and sheep to **33.6 billion**, which effectively increases the current cow, buffalo, goat and sheep population by **a factor of 9**.

In a vegan world, we can safely assume that current cropland is more than sufficient to produce all the food that humans need, which means that 37% of the ice-free land area of the planet can be restored to forests. According to the HYDE database of the fossil record^[12], 41% of that grazing land used to be forests in 1800, while it is unknown how much of the remaining grazing lands were deforested before 1800. If native forests were restored on 41% of grazing lands today, that alone can sequester 265 GtC, more than the 240 GtC added to the atmosphere through human activities between 1750 and 2015^[13]. Therefore, we can literally reverse climate change in a vegan world while also restoring the biodiversity of the planet.

In summary, the Peters et. al. claim that the carrying capacity of land is maximized through lacto-vegetarianism fails to stand up to scrutiny under a Global Sensitivity Analysis.

Next, let's consider the case of ethical ovo-vegetarianism. At present, 7.6 billion egg-laying birds, roughly one bird per human, are each producing about 210 eggs per year for human consumption^[11]. This level of egg production is astounding considering that the jungle ancestor of the modern-day egg producing bird laid about 12-15 eggs per year as part of her monthly menstrual cycle. Such extreme acceleration of the menstrual cycle of birds has grisly consequences for the health of the birds as most of them are "spent" after about 18 months, roughly one-sixth to one-eighth of their natural lifespan.

In an ethical ovo-vegetarian world, let's assume that the egg producers are allowed to live out their natural lives at natural egg production rates. That would require the number of birds to increase by a factor of 84 to 140 to produce the same number of eggs. Then, we would also need to let the male birds live out their natural lifespans, which would further double the number of birds. Finally, if we harvest just half the eggs letting the other half be used for hatching baby chicks, that would further double the number of birds by a factor of 2. In total, the number of birds in an ethical ovo-vegetarian world would be 120 to 200 times the total number of chickens on earth today, or about **2.5 trillion to 4.3 trillion**. It is downright impossible for such ethical ovo-vegetarianism to be sustainable, much less optimal on planet earth. Besides, eating just one egg per day is as bad as smoking 5 cigarettes per day in terms of life expectancy and therefore, it is unclear why we would contemplate transforming into this lifestyle in the first place^[14].

The ethical ramifications of dairy and egg consumption are profound, even in a fictional (and economically and environmentally impossible) situation in which male chicks and calves were not murdered as unproductive waste products of these industries, and even if their mothers were not also killed at a fraction of their natural lifespans. The ethical dimensions of these products also includes the exploitation of the female reproductive system,

causing immense harm to female nonhuman animals in terms of their biology and their natural inclination to care for their young—an inclination they have in common with human animals, but which is commonly ignored by feminists and other concerned with bodily self-sovereignty as a basic right. As American law professor Sherry Colb asserts:

One aspect of dairy and egg production, beyond the killing and the suffering that both require, independently disturbs me as a woman. It is the use of female animals as reproductive slaves...Because of their uniquely female capacities, capacities that they share with human women, we exploit laying hens and dairy cows every moment of their lives and then slaughter them or throw them away when their reproductive productivity diminishes.^[15]

Cows and hens used for their milk and eggs, in both large industrial farms and small “family,” “organic,” or “local” farming, have been bred in ways that maximize their lactating and ovulation without concern for the physical and emotional impacts this has on the cows and hens themselves. Because of the unnatural quantities in which their bodies produce milk and eggs due to human manipulation of their genetics, cows and hens commonly suffer from, among other illnesses: osteoporosis, due to the calcium leached from their bodies in milk and egg production; in the case of cows, mastitis, a painful inflammation of a cows udders; and for hens, uterine prolapses and other painful and often fatal reproductive maladies.

Anyone who favors rights for human women and identifies as feminist should be concerned about these abuses of the female body, and about the fact that these female animals are forced into reproductive activity against their will through a process that has aptly been described as rape. For instance, dairy farmers use an apparatus to restrain cows while forcibly inseminating them, and refer to this restraining device as a “rape rack.” Journalist Katrina Fox asks: “how could I call for my own reproductive autonomy while actively supporting the assault on female nonhuman animals’ reproductive systems through the consumption of dairy?...It’s contrary to feminism to defend one type of female body while using and abusing another.”^[16] Along similar lines, according to law scholar Carmen M. Cusack: “Cows are the victims of rape, but feminists ignore them. Mainstream feminism condemns rape but ignores the connection between the sexual abuse of women and cows because feminist theory and law legitimize human superiority and speciesism.”^[17] We concur with these positions, and maintain that dairy and eggs are a feminist issue and that there is no ethical consumption of these products in the contemporary industrialized world.

3. Comparing Water Footprints of Trees and Animals

The earth currently has approximately half the trees than it did 10K years ago, while the biomass of mammals has increased by a factor of 4, mostly in the form of farmed animals. Therefore, to restore the ecological balance on earth, we need to be planting more trees and cutting down on the biomass of farmed animals. Yet, scientific comparisons on the water footprint of dairy milk vs. almond milk have been used to discourage the switch to almond milk from dairy milk on the pretext that its water footprint (400 Liter/liter) is almost the same as that of dairy milk (600 Liters/liter)^[7].

Trees are integral to the desirable conversion of salt water into fresh water while animal agriculture is integral to the undesirable conversion of fresh water into salt water in the water cycle. Trees absorb underground water

through their roots and transpire it through their leaves. Along with the water vapor, trees also emit micro-organisms that become the nucleus for raindrop formation. Such condensation creates a low-pressure zone over the trees, which sucks water vapor from over the ocean to shower rain over the trees, thereby creating a “Biotic Moisture Pump” to convert salt water into fresh water. Conversely, when forests are cut down to form grazing lands for animal agriculture, there will be more micro-organisms above the ocean than above land and the Biotic Moisture Pump reverses, converting fresh water into salt-water^[18], thereby desertifying the land.

Therefore, the water footprint of tree nut products should rightly be viewed as a “negative” footprint in that the greater it is, the more efficient the tree in creating fresh water in the water cycle. Of course, this assumes that the trees are part of a larger ecosystem that is thriving instead of being part of monoculture plantations that have to be maintained using pesticides and other poisonous means.

It is estimated that humans have reduced the number of trees on earth by 2-3 trillion over the past 10K years. Replanting these trees while restoring native ecosystems would increase the total number of trees on a thriving planet earth to 5-6 trillion.

At present, the world produces 840 million tons of dairy milk. In order to produce the same amount of almond milk using real almonds, i.e., 1 cup of almond per liter of almond milk, we would require 8.4 billion mature almond trees, about 0.2% of the total number of trees on a thriving planet earth. In order to meet the USDA recommended 3 cups of milk per person per day, we would need to increase that to about 0.5% of the total number of trees on the planet. Please contrast that with the ecological devastation that needs to occur in order to produce adequate amounts of dairy milk in an ethical lacto-vegetarian world (Section 2).

4. Concluding Remarks

In the relatively pristine earth that existed 10,000 years ago, the dry weight of vegetation was about 1000 billion tons (1000 Giga tons, Gt) and the dry weight of wild mammals was about 0.2 Gt^[8]. Today, wild mammal populations have been decimated while the human population itself has a dry weight of 0.2 Gt and we need to eat about 1.6 Gt of food each year. We are now facing the question: how much of that food should come from animals, if we have to simultaneously restore the balance in global ecosystems and ensure that future generations have a thriving planet to live in?

In this paper, we have shown that far from reducing our demands on the planet, ethical lacto-vegetarianism and ethical ovo-vegetarianism actually increase our demands on the planet by an order of magnitude over what we do today. In contrast, the rejection of human supremacism and the adoption of veganism, while organizing human society around the task of turning deserts into forests would lead to a thriving human civilization on a thriving planet earth. Therefore, the logical analysis in this paper as well as the crisis situation in all our global ecosystems calls for a complete moratorium on animal foods until all ecosystems have been restored and the

planet has been healed. Once that happens, let our children and grandchildren decide whether they wish to start exploiting innocent animals once again, just because they can. Meanwhile, there are plenty of plant-foods available on the planet to sustain our human population as we go about the task of extricating ourselves from this crisis situation.

Once we acknowledge that humans have caused climate change on the planet, we have automatically shouldered the responsibility to not let that climate go haywire. Therefore, it is time for humans to wean ourselves from our mother cow, buffalo, goat and sheep and grow into our mature ecosystems role as the climate regulating “Thermostat species” of the planet. Perhaps this begins with changing our species nomenclature from the narcissistic “Homo Sapiens Sapiens” to a more humble “Homo Ahimsa,” a term that Judy Carman coined in “Peace to All Beings^[19].” Homo Ahimsa is a combination of a Latin word, Homo, and a Sanskrit word, Ahimsa (nonviolence) signifying us coming together across cultures, and it describes our character, not our characteristics. Ahimsa is the compassionate way to inner peace and world peace through non-killing, non-injuring, non-harming, and nonviolence:

A: Abstinence from animal products
H: Harmlessness with reverence for life
I: Integrity of thought, word, and deed
M: Mastery over oneself
S: Service to humanity, nature, and creation
A: Advancement of understanding and truth

Acrostic credit: Jay Dinshah, of American Vegan Society (AVS).

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