

BETWEEN THE SPECIES

A naturalistic ethic supporting a vegan diet

ABSTRACT

Nutritional evidence suggests that a vegan diet is the most adaptive one for humans. An ethical principle based on following our biological nature (naturalistic ethic) could therefore provide additional support for a vegan diet. However, some argue that humans in the natural world could not eat a vegan diet, since it relies on supplements, particularly vitamin B12. This leads to the conclusion that humans are naturally omnivores, and therefore our natural diet should include small amounts of animal products. Three approaches to this conclusion are discussed. The first rejects a naturalistic ethic in favour of normative principles based on animal sentience. The second expands the definition of what is natural and argues that there is nothing unnatural about taking supplements. The third approach maintains a stronger naturalistic claim that the vegan diet is both completely natural and is the most adaptive for optimising human health. This can be used as the basis for vegan advocacy. It can also encourage a research programme to fill the gaps in our nutritional knowledge.

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Introduction

One powerful argument for the adoption of a vegan diet¹ is that it is the most optimal for health and longevity (e.g., Benzie and Wachtel-Galer 2010, Greger and Stone 2015, Szabo et al. 2021), and is therefore the most ‘natural’ diet for humans.

Arguments over what is ‘natural’ and ‘optimal’ have a great deal of persuasive power when it comes to ethics. A common argument used by the public, and by philosophy undergraduates when opposing any ethical arguments for a vegan position is that eating meat is ‘natural’ (Lowe 2016). The basis of the argument that whatever is natural is right, is a metaphysical assumption that the universe is teleological (Kirkham 2006). When we act in a way that is in keeping with our nature and optimises our health, this is an indication that we are doing the right thing. In a religious sense we are following God’s will. In its secular variant, we are in tune with the universe. In terms of environmental ethics, we are fulfilling our ‘teleological goal’ (Taylor 1981) or fulfilling our proper place in nature (Hartman 2017).

Stronger versions of both a religious and secular naturalistic ethic consider that optimising health is an ethical imperative in itself. The Seventh Day Adventists for example promote a plant-based diet on the basis that we need to work with the nature that God has given us in order to look after the ‘Temple of the Spirit’ (Banta et al. 2018).

¹I am here using the term ‘vegan’ diet, as meaning one that ethical vegans would eat, entirely omitting animal products. This term is less ambiguous than ‘plant-based’ diet, since some health professionals have used this term to include diets containing small quantities of animal products (Williams 2017).

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In its secular version Mary Midgley (1994) acknowledges that an objective duty applies when humans are genuinely constrained through their biology to behave predominantly in one way. The ‘teleological goal’ of Taylor (1981) also provides a secular reason why optimising health could be a duty.

A naturalistic argument for a vegan diet can therefore be expressed as below. There are two premises, one factual (F), and one ethical (E). These lead to an ethical conclusion.

F: Human health is constrained by biology under natural conditions to be optimal when consuming a vegan diet.

E: Humans have an ethical obligation to eat in a way that conforms to their biology and optimises health.

Therefore: Humans have an ethical obligation to consume a vegan diet.

The factual premise (F) is backed up by medical evidence from prospective cohort studies and other epidemiological data demonstrating that risks for obesity, cardiovascular disease, type 2 diabetes, and a variety of cancers are lower in vegetarians, and even lower in vegans (Melina et al. 2016). Epidemiological evidence points to improvements in health and longevity being inversely proportional to the amount of animal products in our diet (Orlich et al. 2013; Melina et al. 2016; Song et al. 2016; Drew et al. 2020).

There are causal mechanisms that can explain these health effects. For example, we know that cardiovascular health is improved due to the absence of low-density-lipoprotein cholesterol in plant products (Satija and Hu 2018), and we know the biochemical pathways by which animal proteins worsen

insulin resistance, leading to greater risk of type 2 diabetes (McMacken and Shah 2017).

The health-giving properties of plant over animal diets can also be explained in terms of their protective anti-oxidants, in the inhibition of pathways that lead to degenerative diseases, and in the higher concentration of harmful metabolites that build up when one consumes animal products (Benzie and Wachtel-Galor 2010; Greger and Stone 2015; Szabo et al, 2021).

Reasons for the ethical premise (E), can be based on obligations to be true to our nature and not overstep our bounds, or virtue ethics positions of humility in the place of nature (Jamieson 2013, Hartman 2017). It can also be based on a direct duty to be as healthy as possible (Banta et al. 2018). It is a *prima facie* obligation that may be overridden by other obligations, such as going without nutritious food in order to help others. As such, it is not as strong as the sentiocentric case to reduce suffering and death of sentient beings, which Singer (1991) claimed had been established by the philosophical community 40 years ago.

However, the ethical argument does provide extra support for those outside the philosophical community, who need to be convinced that far from being 'natural', eating animals is an unnatural and sub-optimal activity as far as our health is concerned.

Objections to a naturalistic vegan ethic

One weakness for the factual premise (F) is the supposed requirement for vegans to take vitamin B12 supplements. If this is true then our physiology constrains us under natural conditions to eat a diet that contains animal products.

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Vitamin B12 is an essential vitamin, required for neural development, and is known to be synthesised only by bacteria and archaea. Omnivores can obtain this vitamin from eating animals and their products. These animals in turn receive vitamin B12 from symbiotic gut bacteria or from ingesting food containing bacteria or archaea. Humans do not have the ability to synthesise and absorb vitamin B12 from gut bacteria (Kozyraki and Cases 2013).

For this reason vegan health sites (e.g., www.pcrm.org and www.veganhealth.org) urge vegans to take supplements or foods fortified with vitamin B12 to maintain sufficient vitamin B12 levels. Vitamin B12 levels are often low in vegans (Gilsing et al. 2010; Sebastiani et al. 2019).

Omnivores can therefore argue that a naturalistic ethic based on human biology would allow, or even require, the consumption of some animal products. This is the recommended diet of the EAT-Lancet Commission, a consortium of scientists engaged in researching the most healthy and sustainable diet. These researchers recommend a mostly plant-based diet with no red or processed meat. They do however allow small amounts of eggs, poultry, dairy products and sea creatures, and they recommend the use of omega-3 oils from fishes (Willet et al. 2019).

The EAT-Lancet Commission (Willet et al. 2019) cite a number of studies showing how eating red and processed meat increases all-cause mortality, but the link is less clear or missing when it comes to fish consumption. For example, a cohort study of Adventists showed that all-cause mortality was significantly lower in vegans, but it also showed a similar effect in pescatarians (Orlich et al. 2013). A more recent systematic

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review (English et al. 2021) concludes that all-cause mortality is significantly lower in those who ate a diet higher in vegetables, legumes, nuts and unrefined grains, and low in red or processed meat. However, lower mortality was also associated with bird and sea creature consumption, so the case for a totally vegan diet is not conclusive.

It should be mentioned that a naturalistic diet based on the premise that humans are naturally omnivores would still preclude any form of agriculture, aquaculture or fishing that is in any way unsustainable, since this would violate the ‘teleological goal’ of the natural environment (Taylor 1981). Such a diet should also cause no suffering beyond that required to kill the animal. Predation is natural practice, but confinement, mutilations, genetic manipulations that cause skeletal weakness and other common practices used in commercial farming (Webster 2005) go above ‘natural’ predation and involve ‘interference’ with nature (Hartman 2017).

A diet recommended by the EAT-Lancet Commission would therefore cause far less animal suffering and environmental damage than the standard Western omnivorous diet. Nevertheless, a claim that humans are naturally omnivorous does weaken a naturalistic ethic favouring a vegan diet. Several vegan responses can be made to this claim. These are outlined below.

Option 1: Reject a naturalistic ethic

Proponents of this view can simply invoke the naturalistic fallacy, first articulated by Moore (1903) when arguing against social Darwinists who wanted nature to take its course in social policy (Ruse 2009).

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After all, it could be claimed that all human art, agriculture and technology is unnatural. Complaints about violating the natural order of things are simply neophobia (Kirkham 2006). Advocates dismissing a naturalistic dietary ethic would instead ground their concerns in normative principles opposing the abuse, exploitation or harming of animals (Singer 1991; Regan 2004).

However, if naturalistic ethics are to be jettisoned entirely, this could not only exclude many non-vegans from considering a vegan diet, but it would lead to some conclusions that vegans find unpalatable, such as the micro-management of nature to reduce suffering. David Pearce for example, in his *Hedonistic Imperative*, describes a futuristic vision of eliminating suffering through the managed extinction or behavioural modification of carnivorous animals and enforced sterilisation of herbivores to keep their numbers down (discussed by Delon and Purves 2018). Geo-engineering, the manipulation of nature to correct imbalances caused by global climate change, has also come under strong ethical criticism (Hartman 2017).

For some, objections to large scale manipulation of nature to reduce wild animal suffering or damage from climate change are based around our ignorance of the effects this would have on complex natural systems. We just don't know what we are doing (Delon and Purves 2018). However, related to this objection is the strongly held ethic that there are some places where humans should not interfere.

Discomfort around the ideals of the *Hedonistic Imperative* as well as more recent plans to geoengineer nature can be traced to the belief that there are intrinsic properties in nature or ecosystem processes that should therefore be left alone with

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minimal interference (Rolston 1994; Morris and Thornhill 2006; Faria and Paez 2019). Others take a virtue ethics view that a truly virtuous person will act with humility when interfering in nature (Hartman 2017).

Naturalistic ethical intuitions therefore, as well as being strongly held among those reluctant to switch to a vegan diet (Lowe 2009), also underly serious philosophical consideration (Kirkham 2006). It would be unwise to totally jettison these intuitions as having prima facie credibility.

Option 2: Broaden the scope of the naturalistic ethic

It can be argued that natural physiological constraints on human nutrition are not as narrow as first considered, but can be modified by culture. Indigestible plants can, for example, be rendered digestible by cooking (Wrangham 2009) or by fermentation (Caplice and Fitzgerald 1999). In fact our entire modern diet has become possible through an innovation that is cultural not physiological -- the development of agriculture.

The ability to synthesise vitamin B12 through bacterial fermentation or other extraction processes can therefore be seen as just another form of agriculture or cuisine. A vegan diet is just as 'natural' a means of attaining optimal health as cooking meat, brewing beer or supplementing animal pastures with selenium, synthetic fertiliser or organic manure.

If physiology can be supplemented with culture, then this broadens the scope of natural constraints under the 'teleological goal' (Taylor 1981). It maintains that a vegan diet is still the most healthy and allows us to meet our teleological goal within natural constraints.

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It does however introduce an element of doubt. The technology and knowledge required to create vitamin B12 supplements is relatively new. Their validity as a totally natural part of the human diet is therefore still in question. The ethical premise is diluted somewhat.

Option 3: Embrace a naturalistic ethic

This third option neither ignores nor dilutes a naturalistic ethic, but embraces it at its strongest. It asserts that we do not have perfect knowledge of nutrition, but that most anatomical, epidemiological and physiological evidence points to modern humans being best adapted to a vegan diet, even before artificial supplements became available.

This conclusion is aided by recent research strongly suggesting the presence of natural Vitamin B12 in non-animal sources. There is good evidence that some marine algae, such as Japanese *nori*, contain high levels of bio-available vitamin B12. The available evidence from chemical analysis (Watanabe 2007), and human trials on practitioners of a vegan diet (Suzuki 1996) strongly suggests that eating one to two sheets of *nori* daily would be enough to meet recommended daily allowance for vitamin B12.

The official government Food Composition Tables for New Zealand (2016) list *nori* as containing 67mcg/100g of vitamin B12, which is more than most animal products. Interestingly, gold kiwifruit are also listed as containing small amounts of vitamin B12 (0.08mcg/100g), possibly due to bacterial symbionts or commensals in the skin.

The Japanese Food Composition Tables (2016) list vitamin B12 concentrations of 32.1-77.6mcg/100g in *nori*, depending on

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type. Dried *wakame* seaweed (*Ulva* spp) contains 1.3mcg/100g. The USDA online tables do not list vitamin B12 as a constituent of any seaweeds or of kiwifruit.

Many algae require vitamin B12 for growth and rely on symbiotic bacteria to produce it (Grant et al. 2014; Nef et al. 2019), so its availability in other algae is a distinct possibility. Vitamin B12 has also been found in large quantities in the mycelium of shiitake mushrooms (Turlo et al. 2008), and as an impurity in a fermented soy bean product (tempeh) (Caplice and Fitzgerald 1999). Symbiotic bacteria have been found to provide vitamin B12 to lichens (Grube et al. 2015; Aschenbrenner et al. 2016). It is therefore entirely possible that ancestral humans could have obtained vitamin B12 from algae, fungi or lichens, and in products of natural fermentation.

Health sites promoting a vegan diet such as the Physicians Committee for Responsible Medicine (www.pcrm.org) recommend that vegans take vitamin B12 supplements until we can be absolutely sure through properly controlled clinical trials using verified methods that algae and other natural products contain bio-available vitamin B12. This is an understandable and responsible precautionary approach. It does however appear somewhat premature to dismiss the future possibility of finding vitamin B12 from naturally occurring non-animal sources.

As discussed earlier, epidemiological evidence points to improvements in health and longevity being inversely proportional to the amount of animal products in our diet, and there are also causal mechanisms to explain why this is the case (Greger and Stone 2015, Szabo et al. 2021).

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There is some evidence that consumption not only of red meat but also fish and other sea creatures lead to sub-optimal health. Risk factors associated with consumption of sea creatures, such as kidney stone formation, are related to the acidic nature of animal proteins generally (Greger and Stone 2015). There are also harmful metabolites that can result from the consumption of sea creatures (Szabo et al. 2021). Drew's (2020) analysis also found that the improvement in Quality of Life Years was higher in a vegan diet than a pescatarian one.

There are however some uncertainties and gaps in our knowledge. For example, The EAT-Lancet Commission (Willett et al. 2019) reviewed health data on fish consumption, and concluded that it is not harmful. In fact they recommended eating small amounts of fish because it contains beneficial omega 3. The lower all-cause mortality figures for pescatarians compared with other meat-eaters (Orlich et al. 2013) appears to support this hypothesis.

The hypothesis that humans are best adapted to a vegan diet, when compared with alternative animal-based diets, including pescatarian, is therefore strong, but not totally conclusive. It can however be regarded as an Inference to the Best Explanation (Douven and Wenmackers, 2017). This means it is the most likely hypothesis out of the alternatives available. This conclusion is implicitly endorsed by Benzie and Wachtel-Galor (2010), Kahleova et al. (2018) and Drew et al. (2020), who suggest there is sufficient evidence for public health organisations to promote a vegan diet as the healthiest, in spite of some scientific uncertainty.

If we accept as an Inference to the Best Explanation that the vegan diet is optimal for human health, this does not mean we

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have to accept that even small amounts of animal products are harmful. Any well-adapted biological system needs to have built in tolerances to accidentally ingested toxins, and ours can safely detoxify small amounts of alcohol for example. It also does not mean that we need to accept that animal products have no nutritional value or that all plant products are superior to all animal ones. All that needs to be inferred is that for any calorific intake, the optimal diet is one made up entirely of non-animal products.

A case for a research programme

Public and private research funding is often allocated to projects that support the dominant economic and political paradigm, as shown by conflicts of interest in medical research, education and practice (Lo and Field 2009). It can therefore be argued that it is little wonder there are still gaps in our knowledge about vegan diets.

Disparities in research and education funding would also explain why some people on vegan diets may not have sufficient knowledge of balancing nutrients. This may be the reason why vegans have been found to be lacking in some nutrients, such as vitamin B12, vitamin D, iron, zinc and calcium (Gilsing et al. 2010; Sebastiani et al. 2019). This is an argument for better research and better education about how to achieve optimal health on a natural vegan diet; not an argument for abandoning it.

The fact that even existing research findings from biased funding sources point so overwhelmingly in support of a vegan diet is further evidence for its optimality. The strong scientific case for the optimal nature of a vegan diet can be used to pro-

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mote a research programme to plug some of the knowledge gaps, and an education programme for plant-based nutrition.

One promising avenue of research that vegan groups could advocate for would be funding human clinical trials using verified methods to confirm the presence of bioavailable vitamin B12 from non-animal sources. A prospective cohort study testing whether a completely vegan diet can significantly reduce all-cause mortality compared with the diet advocated by the EAT-Lancet study (Willett et al. 2019), using subjects who are totally familiar with the nutritional requirements of a vegan diet and are therefore taking supplements responsibly, would be another useful addition to our knowledge.

Conclusion

Medical research provides strong evidence that a vegan diet provides optimal health as well as presenting plausible mechanisms detailing how this comes about. By aligning a naturalistic ethic that requires humans to achieve teleological goals of health through eating a natural diet, with the normative ethic of preventing suffering and loss of sentient life, the case for a vegan diet is strengthened. It is no longer possible to equate eating animals with being a ‘natural’ diet.

A naturalistic ethic can therefore provide a strong tool for vegan activism. A naturalistic ethic also provides the basis for a testable research programme to find natural unprocessed sources of nutrients and collect further evidence on health and longevity.

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