



**“Starving the Mind”
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Starving the Mind

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Ethics of Food

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Abstract:

This paper investigates the ethical implications of the Western Diet's effects on cognitive health and function. Research focused on addiction, neurodegeneration, cognitive impairment, and positive cognitive health in the context of food, the Western Diet, and the Mediterranean Diet. It was concluded that sugar, red meat, and a high-fat diet (all common in the Western Diet) are deleterious to cognitive health, whereas low-fat dairy, fish, and polyunsaturated fats (common in the Mediterranean Diet) are cognitively healthy. Using Rawlsian philosophy, Utilitarianism, and a number of other contemporary ethical perspectives, it was concluded that the Western Diet requires reform, and that the processed food and meat industries should be responsible for leading this reform. The concept of Fiduciary Duty was also examined in the context of the food business in order to further illuminate the ethical shortcomings of food corporations.

Introduction

Although we have no scarcity of information in 21st-Century America about the nutritional shortcomings of the Western diet, we often overlook the most ethically complex and grave issue regarding food and health: the effect of our meals on our minds. The relatively nascent and growing field of cognitive science has drastic implications for our definition of morality as we uncover new information about the biological basis of memory, cognitive capabilities, personality, and conscious experience itself. Food habits provide a prime example of these implications: how do we respond to new research suggesting that staples of the American diet lead to food addiction, cognitive impairment, and, most concerning of all, neurodegeneration? Who carries the ethical burden of resolving this problem, and to what extent should they—and can they—remedy it? The moral framework provided by Steven Pinker's "The Moral Instinct," the philosophy of John Rawls, Deontology, and new perspectives on Fiduciary Duty offer an ethical foundation with which to determine both the culprit of cognitive malnourishment and a path towards better brain health. In the light of this foundation, scientific research on food and the brain places an ethical burden on American food corporations to shift

the Western Diet away from sugar and red meat—and towards the cognitively healthy foods which are characteristic of the Mediterranean Diet.

Sugar and Addiction

One of the most ethically problematic aspects of processed food is the highly addictive quality of its staple ingredient: sugar. Modern medicine recognizes addiction, once a stigmatized topic which sparked conversations about willpower and moral failure, as a legitimate disease of the brain, to which even the most strong-minded can fall. Processed food manufacturers often appeal to the personal responsibility of consumers when challenged on their products' dietary shortcomings: but, with a “growing body of neurochemical and genetic evidence [suggesting] that food addiction is similar to psychoactive drug addiction,” such arguments ring as hollow as they would from drug dealers (Codella et al). In fact, we can attribute even less responsibility to consumers of addictive food than we would to actual drug addicts: food, unlike highly addictive drugs like heroin, nicotine, and cocaine, is necessary for survival and integral to our culture. As for the culprit of food addiction in America, the prime suspect is sugar, which “can be even more addictive than traditional substances of dependence and abuse, like cocaine,” and which permeates processed food products (Codella et al). The deliberate distribution of highly addictive substances—and the deliberate addition of addictive ingredients to otherwise non-addictive food in the form of added sugar—violates a basic ethical precept laid out by Kant's Deontology. Deontology proposes that morality's foundations are built upon universal categorical imperatives, including prohibitions against lying and against degrading others by using them as a means to an end: by using addictive ingredients to ensnare buyers, industries treat consumers as goods themselves, putting economic interests over consumers' safety and turning them into a

means for profit. Why should we treat the purposeful addition of addictive sugar to countless processed food items as anything but immoral tampering? If the food industry wanted to engage in ethical, sustainable business models—what Steven Pinker refers to as Non-Zero Sum Games, which benefit all parties by profiting industries and putting healthy food into the hands of buyers—they would abandon processed sugar as their greatest money-making tool. However, the cognitive dangers of the Western diet only begin at the addictiveness of sugar, and they extend into some of the country's most troubling neurodegenerative diseases.

Before we approach the ethical implications of the neurodegenerative properties of Western food, we must first address a common retort to accusations of addictiveness against sugar: that physical activity can remedy the symptoms of food addiction, as well as bolster the mind in a variety of ways which lessen the relevance of food's effect on mental health. Exercise has been shown to have positive effects on mental health with respect to anxiety and depression, and, according to an article written by biomedical scientist Roberto Codella and his colleagues, exercise can break the “vicious circle” of addiction “by competing with other deleterious reward drives. Codella and his team also note that exercise improves glucose regulation. People “with good glucose tolerance... have been shown to demonstrate better memory than those whose blood glucose levels remain elevated for longer periods of time,” supporting the notion of exercise as cognitively healthy (Camfield et al). However, we should not use antidotes to justify poison: the fact that exercise offers cognitive benefits does not mean that we can consume with impunity and avoid consequences, but instead that food choice is only one of many factors important to cognitive health. Simple Utilitarian logic—posited by philosophers Jeremy Bentham and John Stuart Mill, and predicated on maximizing well-being for the majority of

people—dictates that we ought to encourage both exercising and eating well. Additionally, a much more existential risk looms than addiction and mental illness for those who eat recklessly, one which exercise can only stave off for so long in the bodies of unhealthy eaters: the accelerated onset of neurodegeneration.

Sugar, Red Meat, and Neurodegeneration

Few brain diseases strike fear into the hearts of modern day Americans like Alzheimer's: and yet, despite the public demand for further research into the causes and cures of neurodegenerative diseases, we forget that a prime mover of their onset sits daily on our dinner plates. A recent issue of *Tufts University Health and Nutrition Letter* quotes Dr. Tammy Scott, a neuroscientist at Tufts, who claims that the ““typical Western diet, which is rich in meat, high-fat foods and sweets, increases the risk of developing dementia, including Alzheimer's disease.”” Less health-conscious Americans often joke that they would rather eat what they want and die a quick, young death than eat healthy food and suffer the degeneration of old age; ironically, the steak dinner they hope will spare them from neurodegeneration accelerates the development of neural disease. From a Utilitarian perspective, neurodegeneration is a deep problem: in addition to the suffering of those afflicted by it, neurodegeneration emotionally and economically taxes the families of those with Alzheimer's and dementia. And while red meat and other staples of high-fat diets certainly have the potential to create memory deficits, research published in *Behavioral Brain Research* on rats has shown that liquid sugar consumption can cause brain inflammation associated with memory issues regardless of whether the rats in question had a high-fat diet (Beilharz et al). The combined knowledge of sugar's neurodegenerative properties and its addictive nature should send a shudder down the spines of

consumers, especially in the context of a country rife with sugar-laden processed food. The processed food industry's violation of Deontology in selling food with added sugar is magnified when we consider that a diet of processed food likely contributes to the epidemic of Alzheimer's in America, and the damage this epidemic deals both to the quality of life for sufferers and the stability of American families.

Alzheimer's also lays a significant financial burden onto the United States, and this economic aspect is crucial to discussions of community ethics in the context of food and the brain. According to a statement made by Francis S. Collins, director of the National Institute of Health, at a congressional hearing about the cost of Alzheimer's care in the United States, our country "is currently spending more than \$200 billion a year on care of people with Alzheimer's," and that "those costs are projected to soar to \$1.2 trillion annually by 2050" (7). These costs are a significant burden for the country, and, as such, a diet which contributes to neurodegeneration also contributes to the economic woes of America. Conversely, a diet rich in foods which stave off cognitive decline has financial boons for the country: as Congressman Jerry Moran pointed out in the same hearing as Collins, "a breakthrough against Alzheimer's that delays the onset of the disease by 5 years would mean a total savings of \$447 billion by 2050" (5). By promoting the consumption of red meat and sugar, the meat industries and processed food industries are complicit in the financial consequences of Alzheimer's. Steven Pinker notes that a basic tenet of universal morality is Community Loyalty: by threatening economic stability, these industries undermine their national community and stunt national progress. By contrast, should a shift occur in America towards a diet which slows the onset of Alzheimer's, the agents

of that shift would not only be morally decorated, but also responsible for saving hundreds of billions of dollars for the American economy.

Although food has a non-negligible role to play in the onset of Alzheimer's, we must consider a broader range of Alzheimer's causes before drawing conclusions about the culpability of food providers in increasing neurodegeneration rates. Suzuki et al. note in their contribution to *Aging Mechanisms Longevity, Metabolism, and Brain Aging* that, in "countries with a growing aged population, the expanding costs of treating and caring for people with dementia has become a serious social and economic issue" (306). Aging is a leading factor in dementia, including Alzheimer's disease; regardless of a country's dietary habits, an older population will have higher neurodegeneration rates. But, just as the boons of exercise do not excuse the addictiveness of sugar, the inevitability of age-related cognitive decline does not excuse food industries to bombard us with food which will accelerate that decline. Likewise, if certain diets can slow the neural aging process, then their adoption is a necessary response to the rise in the average age of citizens in developed countries such as the United States.

Cognitive Impairment and Effects in Children

The role of food in cognitive impairment extends beyond the danger of neurodegeneration for the elderly: the Western diet has also been associated with cognitive dulling, memory deficits, and mood issues in all age groups, perhaps most troublingly in children and adolescents. Studies have shown not only that high fat, high sugar diets spur on cognitive decline, but also that, in "school-aged children," these diets have been "associated with impaired non-verbal intelligence ... visual-spatial learning and memory ... and self-reported difficulties in mathematics" (Beilharz et al). This information should disturb us from two angles. Firstly, any

food that can lead to memory deficits in otherwise healthy people should set off the same Utilitarian alarm as food which contributes to Alzheimer's. Memory forms the backbone of our personal lives, collective history, and ability to function as productive members of society; anything that endangers our memory likewise endangers our dignity and wellbeing. Secondly, by sapping the brainpower of our youth, food providers who neglect the effects of their products on cognition create an unsustainable model for society: far from preparing the next generation for the issues of the future, they drain them of their intellectual worth. John Rawls emphasized that we must treat our most vulnerable members well in his Minimax theory of ethics. We ought to heed his words with particular caution when these members must also bear the load of tomorrow's issues, and when our current treatment of them robs them of their cognitive toolset.

We have already examined the dangers of a high fat, high sugar diet on the brain of the individual consumer, and the especially troubling effects high fat and high sugar diets have on young and elderly minds; the ethical complexity and weight of this fact grows exponentially in light of new studies which suggest that mothers can genetically pass on food-induced cognitive dulling to their children. A paper published in *Nature* studied the effects of a high fat diet in pregnant rats and found that “maternal diet [multi-generationally] affects... hippocampal plasticity”—the hippocampus being the brain structure responsible for memory formation—“and cognitive functions similarly to adverse environments and psychological stress” (Fusco et al). Fusco et al. also found that a high-fat maternal diet was “associated with anxiety-like behavior and neurodevelopmental disorders in the offspring.” In other words, a poor diet in pregnant mother rats has the potential not only to harm the brains of the rats' children, but of future generations as well. The paper also cites previous studies which “reported that maternal [high fat

diet] affected hippocampal plasticity of the offspring by impairing adult neurogenesis, dendritic spine formation, and cognitive functions” (Fusco et al). This sort of information chisels away at the argument of personal responsibility peddled by the food industry: how can we hold people responsible for how they were affected by their mothers’ diets? Does the food industry not fly in the face of Minimax ethics when selling malnutritious, addictive food to mothers, and therefore doing ill by infants, the most vulnerable individuals of all? Furthermore, if high-fat diets in a mother can result in cognitive impairment in offspring, then the model with which we consider the neuroethics of food shifts to one in which unhealthy food habits have disease-like, contagious qualities, capable of ensnaring an entire network of people via the eating habits of a single person.

A Burden on the Food Industry

If food companies know the dangers of their products—and there is no dearth of research on the subject for their nutrition experts—then they intentionally sell food which contributes to perhaps the most devastating neurological epidemic in the United States, in addition to dulling the minds of our youth. Rawls’ Veil of Ignorance—the thought experiment of pretending not to know one’s own social status when considering the merits of a policy—should clarify any questions here of ethical soundness. If processed-food industry executives learned that the meals fed to their children and parents had the potential to wreak havoc on their quality of life and cognitive faculties, would they want their food providers to cover up this risk? Certainly not. Yet I have never seen a package of ground beef or a box of sugar-doused breakfast cereal with an ‘Alzheimer’s warning label’ on it, or an advisement against its excessive consumption for those who regularly engage in spatial and quantitative problem-solving.

Before we place the onus on food corporations to address the crisis of food-related cognitive issues, we ought to discuss the ethical doctrine of Fiduciary Duty, an oft-invoked defense for the ethically questionable actions of corporations, including food companies. When we discuss Fiduciary Duty in the context of food corporations, we refer to the responsibility of these companies to prioritize their own profit, as well as the abundance and availability of their products, over concerns for the health of consumers. However, Steve Lydenberg of the Harvard Kennedy School argues against our current interpretation of Fiduciary Duty, which he dates back to the late 1900s and which he believes has usurped “a previous, more ‘reasonable’ interpretation of fiduciary duty... that accounts to a greater degree for the relationship between one's investments and their effects on others in the world” (Lydenberg 365). Lydenberg refers to the modern interpretation as “rational” Fiduciary Duty, and he notes how this interpretation fails to distinguish between making a profit for beneficiaries and ensuring their “objective well-being,” as well as how it fails to keep “future generations” and the outside world in mind (365). Lydenberg’s text has direct applications to the issue of cognitive health and food. If we treat consumers as analogous to investment beneficiaries, it becomes clear that processed food corporations violate “reasonable” Fiduciary Duty when they prioritize food availability over food quality, especially when they sell addictive food to consumers and high fat food to pregnant mothers: the latter practice, as we have already discussed, clearly neglects future generations by endangering the cognitive functionality of children (Fusco et al). In addition, if the food industry in America is to abide by “reasonable” Fiduciary Duty, they must take a more active role in educating their customers about the ills and benefits of their wares: Lydenberg offers a robust analogy here, noting that “[p]atients may assert that smoking or drinking excessively makes them

‘feel good,’ but doctors have an obligation to determine if these activities are making them objectively unhealthy” (371-372). As experts and providers of an essential resource for human life, food companies ought not to hide behind the concept of consumer responsibility and take action to ensure the health of those they depend on for economic survival. The current incarnation of “rational” Fiduciary Duty is a construct of modern society and should not carry such a strong ethical weight that it drowns out serious concerns about human wellbeing and the way substances can muddle conscious experience.

Positive Effects of Dairy, Fish, and the Mediterranean Diet on Cognition

However, not all components of American foods incur cognitive impairment: in fact, low-fat dairy consumption, as well as fish consumption, has many boons for mental health. An article titled “Dairy Constituents and Neurocognitive Health in Ageing” found that, contrary to red meat and sugar, “low-fat dairy products, when consumed regularly as part of a balanced diet, may have a number of beneficial outcomes for neurocognitive health during ageing” (Camfield et al). One way that low-fat dairy can have cognitive benefits is by reducing body weight. Insulin resistance and poor glucose regulation, both associated with malnutritious, high-fat diets, have negative effects on memory: we should take note, then, that “whey protein concentrate has been shown to reduce body weight in rats,” and that “consumption of dairy products may have a positive effect on glucose regulation” (Camfield et al). Of course, this connection between bodily and mental health also confirms the cognitive beneficence of foods which we already associate with a healthy diet. In addition, dairy products containing colostrin, α -lactalbumin, and probiotics, can have positive effects on memory, mood disorders, and anxiety disorders (Camfield et al). The positive psychological effects of fish consumption further supports the idea

that eating animal products, far from having inherently deleterious cognitive consequences, can, in fact, bolster the mind. Studies on fish consumption show a “relationship between an increased frequency of fish consumption and reduced psychological symptoms,” and suggest that those who “ [eat] fish less than once per week had higher GHQ-12 scores,” an indication of poorer mental health (Jacka et al). Since fish and dairy already have a place in our diets, these findings dispel the idea that American eating tendencies cannot be salvaged.

The above findings—that fish and low-fat dairy consumption has cognitive health benefits, while red meat has health drawbacks—match the guidelines of the Mediterranean Diet, which research suggests can significantly slow brain aging. In addition to an emphasis on plant-based food, low-fat dairy, and fish and poultry instead of red meat, the Mediterranean Diet also substitutes high-fat butter with oil, which contains the same cognitively beneficial polyunsaturated fatty acids (PUFA) found in fish (Jacka et al). Research has shown that, among “older adults, [Mediterranean Diet] adherence was associated with less brain atrophy, with an effect similar to 5 years of aging” (Gu et al.). Not only does this information make the Mediterranean Diet an ideal remedy for a country experiencing an increase in average age and marred by unhealthy dietary norms, but it also entails economic benefits: recalling Congressman Moran’s remarks regarding the cost of neurodegeneration, the widespread adoption of the Mediterranean Diet could make America half a trillion dollars richer within the next few decades. The findings of Gu et al. also confirm the superiority of fish over other meats with regard to cognitive health, as “[h]igher fish and lower meat intake might be the [two] key food elements that contribute to the benefits of [the Mediterranean Diet] on brain structure,” and “fish intake of” three to five ounces “at least weekly, or keeping meat intake” 100 grams “daily or

less, may also provide a considerable protection against brain atrophy that is equivalent to about 3-4 years of aging.” From both an economically pragmatic perspective and a Utilitarian one, the Mediterranean Diet is superior to our Western habits.

Conclusion

A plethora of scientific research attests to the dangers which sugar, red meat, and a high-fat diet present to our brains, and, as a result, the need to reform the Western Diet. The ethical precepts of John Rawls, as well as the concept of Reasonable Fiduciary Duty, prove especially useful in holding food corporations, rather than consumers, accountable for this reform. Likewise, the validity of the Mediterranean Diet proves that an alternative does exist to the food culture created by the American food industry, and that this alternative is feasible: the most important components of the Mediterranean Diet, such as fish and dairy, already have a presence in Western food (albeit behind a wall of processed sugar and red meat). By foregoing unhealthy foods and embracing foods which fortify our brains, we better the quality of our conscious experience. Food industries should promote this betterment—and not work against it.

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