

# A Philosophical Consideration of the American Consumers' Gut Microbiome and Its Relation to Food Justice

By Lauren J. Hartogh

This paper underlines the increased need to solve food justice issues created by the growing knowledge of the connection between the gut microbiome and our mental states. Given this knowledge, I argue that consumers should not be held solely responsible for their health and mental wellbeing. Instead, some of the burdens must shift onto political and epistemic institutions to create a society that fosters their constituents' health. I demonstrate how American institutions are exacerbating the problem and highlight the negative consequences in various social, political, and epistemological structures. While this paper addresses the concern for necessary actions regarding food justice issues, I do not claim to provide tangible solutions. Instead, I explore and identify where possible solutions might lie, moving away from the current doctrine of placing an individual burden on consumers and, instead, pushing toward regulation and transparency in educational institutions and political systems. The exigency and ethical importance of this interconnected issue are dissected to leave room for further development from other thinkers.

## I. Considering the Gut's Role in Food Justice

I aim to highlight the connection between the gut microbiome and mental states in American consumers and show how that connection is then applied to the difficult and urgent social issue of food justice. First, I define food justice as the broad initiative aimed to help elevate food insecurity and other economic pressures that can prevent access to nutritious, culturally appropriate, and healthy foods.<sup>1</sup> Second, I address a newfound exigency for the socio-political problem, which has been shaped by the growing knowledge of the connection between the gut and brain. Undeniably, food justice has long been an important matter of discussion due to its overreaching negative impacts on the environment, global trade, and various communities across the world. However, by considering groundbreaking scientific studies of the gut microbiome, food justice evolves into a much larger human rights concern that brings light to further deep-seated issues about what we are putting into our bodies. This difficult problem addresses how our current institutions are exacerbating the problem, creating downstream consequences in social, political, and epistemological structures. This paper will not provide concrete solutions to these problems, but instead, explore and identify where possible resolutions might lie to begin resolving food justice issues.

### A. Introduction of Research

Recent research demonstrates the effects that food consumption has on the American consumer's mental states; in this section, I provide empirical research on the bidirectional connection between the gut microbiome and cognitive processing. Food justice has long been an important theme in social and political philosophy, but now, its resolution seems more urgent. By introducing various studies of the gut-brain axis, I explain why food justice issues are more critical and urgent than ever before.

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<sup>1</sup> "The Devastating Consequences of Unequal Food Access," Union of Concerned Scientists, accessed April 24, 2022, <https://www.ucsusa.org/resources/devastating-consequences-unequal-food-access>.

Besides the racialized, gendered, political, and economic detriments that food injustice brings to us,<sup>2</sup> it also harms us at a molecular level. I argue that if we can fix the microscopic battles going on within our gut, we can begin to tackle the broader issues that come along with food policy. The newfound microbiological research on the gut reveals that “gut issues themselves...do not occur in isolation from social, relational, and environmental factors.”<sup>3</sup>

Newfound research has shown that the gut microbiome plays an essential role in contributing to altered mental states and cognitive functioning, such as anxiety and depression.<sup>4</sup> Due to the creation of many important biochemicals in the gut microbiome, and the bidirectional relationship of neurons between the brain and the gut biome, we have additional evidence for the conclusion that mental states are not simply brain-centric phenomena.<sup>5</sup> In *I Contain Multitudes: The Microbes Within Us and A Grander View of Life*, Ed Yong discusses numerous studies on the gut-brain connection.<sup>6</sup> He explains the bidirectional relationship between our gut microbiome and our mental states by using experiments done on germ-free rodents:

We now know that gut microbes are part of this axis, in both directions. Since the 1970s, a trickle of studies have shown that any kind of stress – starvation, sleeplessness, being separated from one’s mother, the sudden arrival of an aggressive individual, uncomfortable temperatures, overcrowding, even loud noises – can change a mouse’s gut microbiome. The opposite is also true:

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<sup>2</sup> Robert Gottlieb and Anupama Joshi, *Food Justice* (Cambridge, MA: MIT Press, 2013).

<sup>3</sup> Jane Dryden, “Food Choices and Gut Issues.” *Feminist Philosophy Quarterly* 7, no. 3 (2021): 30, <https://ojs.lib.uwo.ca/index.php/fpq/article/view/10839>.

<sup>4</sup> Giovanna Colombetti and Eder Zavala, “Are Emotional States Based in the Brain? A Critique of Affective Brain-centrism from a Physiological Perspective,” *Biology & philosophy* 34, no. 5 (2019): 1–20.

<sup>5</sup> Colombetti and Zavala, “Are Emotional States Based in the Brain?”

<sup>6</sup> Ed Yong, *I Contain Multitudes: The Microbes Within Us and A Grander View of Life* (New York: Harper Collins Publishing, 2016).

the microbiome can affect a host's behaviour, including its social attitudes and its ability to deal with stress.<sup>7</sup>

Yong examines one of the first studies conducted in the late nineteenth century by William Beaumont, now considered the “Father of Gastric Physiology.” Yong explains that Beaumont discovered that the foods we eat impact everything from our mood and happiness to our social behavior.<sup>8</sup> We know now that the foods we choose can fuel specific bacteria in our gut that create different reactions in our brain. Through his experiment on feeding a man with an open gun wound to the stomach, Beaumont had a literal window into the gut and its effects on the body. He was able to test how different foods had different effects on his patient's mood and disposition. He saw that the foods we are consuming could hold the power to create unwellness in our bodies and have influence over our minds.

## B. Mental States in the Gut

Consuming certain foods can have detrimental effects on the gut microbiome and on one's physical health and mental wellbeing.<sup>9</sup> Researchers describe the connection between the gut microbiome and the effect on human brain development as especially impactful in children and adolescents whose brains are not fully developed. Through experiments, they found that what we feed young ones, or not feeding them in many cases, can significantly affect how their brains develop: “Nutrition itself is a well-established modulator of cognitive outcomes...both specific nutrient deficiencies and low overall diet quality are associated with negative long-term impacts on cognitive development.”<sup>10</sup>

Yong also summarizes researcher Paul Patterson's studies to show that many emotions and other mental processes can be the result of the communication between the colony of bacterial organisms living

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<sup>7</sup> Yong, *I Contain Multitudes*, 91.

<sup>8</sup> Yong, *I Contain Multitudes*, 90.

<sup>9</sup> Caitlin S. M. Cowan, Timothy G Dinan, and John F Cryan “Annual Research Review: Critical Windows – the Microbiota–gut–brain Axis in Neurocognitive Development,” *Journal of child psychology and psychiatry* 61, no. 3 (2020): 353–371, <https://doi.org/10.1111/jcpp.13156>.

<sup>10</sup> Cowan, Dinan, and Cryan, “Annual Research Review,” 371.

within our digestive systems. Patterson's research explains the effects that the gut has on mental health, including depression, anxiety, and relational autonomy.<sup>11</sup> While the research is in its initial stages and has many variables to consider, it opens many doors to the interdisciplinary studies of neuroscience, microbiology, and gastroenterology. Patterson's findings demonstrate that the connection between food justice and the relationship between the gut and brain grows, and so does the urgency to not only understand, but eradicate these problems.

### C. Killing the Biome One Antibiotic at a Time

Due to the rampant use of antibiotics, modern medicine often produces harmful effects on the gut microbiome. However, Yong explains, "Much of modern medicine is built upon the foundations that antibiotics provide, and those foundations are now crumbling."<sup>12</sup> When we ingest antibiotics, they enter our stomach and kill all bacterial entities, including those necessary for healthy development and proper somatic functioning.<sup>13</sup> Antibiotics are destroying the diversity of our microbiome and thereby affecting our immune systems and our mental states. In a human study that observed the effects of antibiotics on young children, researchers found that "early-life antibiotic exposure was also associated with greater behavioral difficulties, more oppositional behavior and more symptoms of ADHD and depression."<sup>14</sup>

They explain that the effect antibiotics have on the gut microbiota of younger individuals can possibly be detrimental to their long-term health. This is reflected in germ-free rodents, who exhibit cognitive and social deficits compared to their germ-ridden counterparts.<sup>15</sup> They argued that the first set of microbiotas we gain after birth seems to have a disproportionately significant influence on the overall state of

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<sup>11</sup> Yong, *I Contain Multitudes*, 87.

<sup>12</sup> Yong, *I Contain Multitudes*, 162.

<sup>13</sup> Michaela Wenzel, "Do We Really Understand How Antibiotics Work?" *Future Microbiology* 15 (2020): 1307-1311, <https://doi.org/10.2217/fmb-2019-0324>.

<sup>14</sup> Cowan, Dinan, and Cryan, "Annual Research Review," 371.

<sup>15</sup> Cowan, Dinan, and Cryan, "Annual Research Review," 371.

the microbiota later in life, based on results from the mice model they were studying. A study done on infant rats found that immune challenges, inflammatory disorders, and social deficits are more likely to be reversed early in life rather than at four weeks into adulthood.<sup>16</sup> What this study shows is that adverse effects are easier to reverse younger in life, when the gut is not fully populated yet. These findings should increase the need for greater attention on pediatric education, such as greater education about what probiotics infants should be exposed to after nonvaginal births to ensure the best gut population in adult life.

## II. Considering Moral Implications of Food Injustice

Given the research on the gut microbiome and knowledge of existing gaps in various social structures, I argue that food injustice compromises consumer autonomy. I understand autonomy through feminist work on relational autonomy, which:

Characterizes selves as relationally constituted and their autonomy as augmented or diminished through relational factors. Paying attention to how an agent's autonomy and broader social structures work together can help us consider how an agent might be supported in making choices about food that reflect their values, goals, and commitments.<sup>17</sup>

This feminist framework of autonomy highlights the concern for a need for change in food justice. As the urgency of the problem increases, I highlight how there tends to be an increase in the individual's burden through either moral shaming or biased racial and gendered tactics, instead of political institutions accepting the bulk of the responsibility. In our current society, individuals are almost entirely responsible for making the 'right' choices for their health. I argue that this burden is unfair and unjust due to the compromised state of autonomy that many individuals suffer.

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<sup>16</sup> Cowan, Dinan, and Cryan, "Annual Research Review," 371.

<sup>17</sup> Dryden, "Food Choices and Gut Issues," 30.

## A. Exposing the Gendered Issue

Diet culture functions to blame the individual, and worse yet, due to the nature of marketing and advertising, food companies use purposeful tactics to make it nearly impossible to desire to eat healthily. Because of this, we tend to place the responsibility on the individual, which only further perpetuates the current obesity epidemic we have on our hands.<sup>18</sup> Through diet culture, American society has collectively created and upheld unrealistic standards of health and beauty, while simultaneously providing near impossible solutions for people to obtain them, which, in turn, creates a perpetual cycle of consumerism and self-loathing. In *Food is Love: Food Advertising and Gender Roles in Modern America*, Katherine J. Parkin writes, “Scholars have long debated the role of advertising, with some speculating that it reflected the culture and others charging that it shaped it. Fundamentally, advertising seeks to shape. That it might at times have reflected reality was coincidental, but not its purpose.”<sup>19</sup>

Through the creation of a dieting culture, Parkin focuses on women’s burden and the hopelessness they feel if they cannot successfully fit into the specific idea of beauty and health presented to them. These unrealistic ideals promote a cyclical downward spiral towards more unhealthy decisions. It is in the personal and professional interest of businesses, food producers, the diet industry, and privatized health care companies to keep people overweight and unhealthy because it makes them money,<sup>20</sup> which is the goal of any business. “In addition to positive portrayals, the ads also directed a barrage of criticism at women about their appearance, most especially about their weight. The ads encouraged feelings of bodily shame and promised that their products would offer salvation.”<sup>21</sup> The moral pressures and value judgments about health and weight should be done away with entirely.

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<sup>18</sup> Nia Mitchell et al, “Obesity: Overview of An Epidemic,” *The Psychiatric Clinics of North America* 34, no. 4 (2011):717-732, <https://doi.org/10.1016/j.psc.2011.08.005>.

<sup>19</sup> Katherine J. Parkin, *Food Is Love: Food Advertising and Gender Roles in Modern America* / (Philadelphia: University of Pennsylvania Press, 2006), x.

<sup>20</sup> Gottlieb and Joshi, *Food Justice*, 69.

<sup>21</sup> Parkin, *Food Is Love*, 70.

## B. Exposing the Racialized Issue

Low-income communities and communities of color are also disproportionately affected. In *Food Justice*, Robert Gottlieb and Joshi Anupama explain that food marketing companies purposely target vulnerable people who will be affected the most and for the longest duration of time. Through the evolution of supermarkets and grocery stores, there have been discrepancies in access that affect urban communities, lower-income individuals, and people of color disproportionately. There are no longer independent delis, butchers, or grocers, since they are all confined into one super-space and generally placed in suburbs. Low-income communities are within the marketing companies' grasp; consequently, there is an increased accessibility to unhealthy, highly processed foods and a corresponding difficulty to obtain healthy food or secure the time to prepare it.<sup>22</sup> There is also a disturbing connection between the number of fast-food establishments compared to grocery stores in inner-city areas. Areas with persistent uneven distribution of unhealthy food have been labeled as 'food swamps' to explain both the lack of accessibility to healthy foods and the excess of unhealthy foods.<sup>23</sup> Low-income communities are more susceptible to these food dangers.<sup>24</sup>

In addition, food-related diseases, such as diabetes and heart disease, are more common amongst minority groups for the exact reasons already mentioned. There is less access to healthy foods, causing their eating habits to become skewed and problematic. Due to this injustice, the individual is not equipped to make decisions about their health without the proper education on what is nutritious, or without a fair chance when making buying decisions. Therefore, these individuals should not be held solely responsible for the mismanagement of their health. These various systemic injustices have begun from and continue because of the inability to access nutritious

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<sup>22</sup> Gottlieb and Joshi, *Food Justice*, 55.

<sup>23</sup> Kristen Cooksey-Stowers, Marlene B. Schwartz, and Kelly D. Brownell, "Food Swamps Predict Obesity Rates Better Than Food Deserts in the United States," *International Journal of Environmental Research and Public Health* 14, no. 11 (2017): 1366, <https://doi.org/10.3390/ijerph14111366>.

<sup>24</sup> Gottlieb and Joshi, *Food Justice*, 73.



foods, the miseducation of the human mind-body connection, and the inadequate regulation of food policy decisions in America.

### C. Exposing the Moral Weight

Although corporations and large companies have much more of an environmental and social impact when it comes to their contribution to these issues, the American consumer has been the one burdened with responsibility for them in multiple aspects of life. We have seen this repeated with several problems that are out of the consumer's control. For example, in her book, Heather Rodgers writes about the social and political history of garbage in the United States.<sup>25</sup> She explains how the United States government placed the responsibility of keeping the environment clean on the consumers through various anti-littering campaigns rather than blaming the plastic companies creating all the unnecessary waste. In promoting recycling as an individual responsibility, a sense of morality was applied to the consumers' decisions. The littering campaign made it seem that if you litter, you are a bad person, but if you recycle, you are a good person. This is important to note because we see this again with diet culture. Even though food companies have made it nearly impossible to remain healthy, morality is now directed at individual food decisions: if you are skinny, you are judged a good person, but if you are fat, you are judged a bad person. Companies find it more efficient and profitable to shift blame onto their consumers than to address the issues they create.

Similarly, in American society, diet, just like recycling, is treated as a matter of individual responsibility. Fast food companies cause weight gain and physical unwellness, yet "the industries have sought to deny responsibility to health outcomes and have funded research to that effect, for example...that sodas have no relation to weight gain."<sup>26</sup> The false research makes people largely unaware of the negative connections between food and mental states and therefore have little control in avoiding them. Thus, the consumers' self-sufficiency, or autonomy, is negatively impacted. If consumers are largely unaware,

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<sup>25</sup> Heather Rogers, *Gone Tomorrow: The Hidden Life of Garbage*. (New York: New Press, 2005).

<sup>26</sup> Gottlieb and Joshi, *Food Justice*, 57.

burdens of moral responsibility should shift from the consumer onto social institutions instead. Microbiological evidence shows us that shifts in relational autonomy are occurring due to food. If this is true, and the consumer's autonomy can be negatively impacted, then I propose that the individual's burden should be decreased. A responsibility to correctly inform the consumer and regulate food consumption arises from these shifts in autonomy, pushing the bulk of the moral responsibility onto a broader social entity.

### III. Proposal Arguing Where Solutions Should Lie

We need to push away from the current doctrine of placing an individual burden on consumers and instead push towards regulation and transparency in educational institutions and political systems. The solution to these food justice issues might lie in educational reform. I am careful to note that education comes in many forms, from actual epistemic institutions to education on city infrastructure, government food subsidies, and much more. After educational reform begins, bottom-up political reform becomes possible. When voters are more aware of the issues, representatives are more accountable to voters' needs and desires.

#### A. Consumer Consciousness-Raising

Education comes in various forms, from an institutionalized curriculum to an increase in political and social awareness. The education I propose involves consciousness-raising rather than just formal or institutionalized learning. The populace of all ages must be appropriately informed in relation to their ability to act. Small children and school-aged individuals can focus on their locus of control and what they put into their bodies. Young adults and those of voting age should be informed of their power in a democracy and must be adequately informed about legislation that can create lasting change.

Education through a school-based curriculum is the most common form of teaching. By promoting a need for nutrition in schools, America can produce more educated consumers. All K-12 school systems should include nutrition courses that provide scientifically supported studies taught by registered dietitians who are able to inform the students correctly. In addition, children should be

educated about the existence and function of their gut microbiome from an early age. By learning about their body in a more comprehensive light, students can identify how food really affects our minds and bodies. There are various benefits to introducing nutrition in schools:

[Students] enhance their competence as informed consumers able to perform their food choices in a complex society with a wide variety of food available. School-based nutrition education should focus not only on nutrition information, but also develop skills and behaviours related to areas such as food preparation, food preservation and storage; social and cultural aspects of food and eating; enhance self-esteem and positive body image and consumer aspects.<sup>27</sup>

It is imperative to provide consumers with the proper tools to make informed decisions, and nutrition education can aid in meeting this imperative.

Teaching students about the value of nutrition and how to navigate the difference between actual healthy foods and marketing lies is essential to their health and wellbeing. Several other countries already incorporate food education for school-aged children.<sup>28</sup> Therefore, there are various functioning roadmaps available for the United States to follow and emulate. In addition, the reliance on established epistemic institutions to inform the young consumer is currently how we have built our society, and, thus, the new reform would be less invasive than other tactics, since the infrastructure is already set up to be successful this way.

## B. Education in Policy Making

Simply learning about which foods are nutritious is only half the battle, since eating healthily requires time and resources that are not

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<sup>27</sup> Rachael Dixey et al., "Healthy Eating for Young People in Europe: A School-based Nutrition Education Guide," International Planning Committee of the European Network of Health Promoting Schools, Guide, 1999.

<sup>28</sup> Carmen Perez-Rodrigo and Javier Aranceta, "Nutrition Education in Schools: Experiences and Challenges," *European Journal of Clinical Nutrition* 57, no. 1 (2003): S82-S85.

available to many people; education on the gut biome cannot help the individual living thirty miles away from any available organic produce and information on probiotics does not benefit the immigrant family living on a farm. Social and political awareness are also needed to call attention to these problems of inequality; however, there remains a need for educational programs that will help combat food injustice. Teaching communities about the reality of food swamps and food inaccessibility is also imperative to create change.

First, by introducing the interconnectedness between what we feed our gut microbiome and the world around us, we can highlight the deeper importance of creating access to the right choices. This interconnectedness between the gut microbiome and food justice continues to present itself. As shown,

With regard to gut issues, while the biomedical condition plays a role, the experience of making food choices is highly affected by social, relational, and environmental factors...Drawing attention to the importance of these factors helps to point to ways in which we could collectively respond and thus enable more possibilities for food choices.<sup>29</sup>

Education about how the gut affects our minds comes first, then that can be applied to how that affects the broader social structures that we exist in. The goal is creating higher voter consciousness on issues like city and government capabilities to help irradicate some of those issues.

#### IV. Objections to My Proposal

In this section, I will raise two objections to my proposal and explain the shortcomings in education-based solutions, explore where other areas may fit better to solve food justice issues, and investigate the boundaries of my proposal to discover which problems education cannot reach.

##### A. Education is an Individual Burden.

It is important to note that not every student has the same access to education. Federal mandates can require information to be taught,

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<sup>29</sup> Dryden, "Food Choices and Gut Issues," 30.

but they cannot ensure the same quality of education in every school district, and educational inequalities disproportionality affect students of color and people living in low-income communities. Thus, providing education on the gut biome might unfairly help those with better access to more affluent school districts. The burden is still primarily placed on the individual because education requires taking the time to internalize information and trying to act on it. Once the information is taught, there must still be infrastructure set up to ensure equal access to the right foods. Educating people on the harms of food does not solve the issue of autonomy if there is nothing they can do to change or fix it.

### B. Education Cannot Change Everything.

As informed as a nation can be, there are still people who simply will not care. There are various issues that have been mandated to be taught in schools, yet they are still disagreed upon. Teaching students about their mental and physical health can be mandated; however, there is no guarantee that students will follow or agree upon the information. Additionally, teaching individuals what they should or should not eat is not helpful if they do not have access to those foods. Various accredited sources have already been written and published, showing the detriments of food swamps and the role food marketing companies had in creating them.<sup>30</sup> However, they are still perpetuated, not because people are uneducated about their existence, but because solving problems on paper is easier than real-world application. Education about an injustice does not solve the injustice; no matter how many people read about it, change does not come from education alone. Educating the masses might be less fruitful than predicted. Exploring alternative proposals like policy reform in the form of stricter guidelines on what can or cannot be sold might prove to be more effective in our current society.

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<sup>30</sup> Kristen Cooksey-Stowers, Marlene B. Schwartz, and Kelly D. Brownell, "Food Swamps Predict Obesity Rates Better Than Food Deserts in the United States," *International Journal of Environmental Research and Public Health* 14, no. 11 (2017): 1366.

## V. Conclusion

The main argument of this paper is that, as more information is discovered on the connection between the gut microbiome and our mental states, the urgency to elucidate food justice issues increases. Because of this development, consumers should no longer solely be held morally responsible for their own healthiness and wellbeing; instead, some of the moral burden must shift onto political and epistemic institutions to create a society that fosters their constituents' overall health. I call for significant revisions in epistemic, social, political, and structural practices in America. I recognize the limitations of my position and understand that I have not formulated obtainable solutions. Instead, I issue a call for action to those who have the power to ensure lasting change in this field of study. The link between our gut and our mental states is undeniable; what we will do with this newfound information is critical, yet still undetermined. I encourage further interdisciplinary research to be done on the philosophical implications of the human condition and their gut microbiome.

### A. What Education Can Change

While acknowledging the objections above, I maintain that education is necessary, even if not sufficient, for lasting change. Education alone will not be able to solve food swamps in their entirety; however, food swamps are not the only issue within the realm of food justice. Education can help local farmers through more awareness. Education can provide health and vitality to consumers through the consumption of proper foods. Consciousness-raising is about creating a holistic awareness of the world and promoting transparency between knowers. I argue that education is only the first step. Once voters are properly informed, they can begin to understand the limits and abilities that the government possesses. This knowledge can help initiate laws aimed at subsidizing organic produce or allowing proper access to relevant resources and healthy foods.

Regardless of the current state of the education system, it is still essential to inform consumers, to the best of our ability, about the importance of eating healthily and caring for their gut biome. I recognize that learning about what to put in our bodies is only half the

battle, and that food swamps can only fall away by decreasing the demand for unhealthy foods *and* increasing the supply of healthier foods. My proposal is not simply to create a more informed consumer but to give them more fair options to choose between. When we place the burden on corporations to make food more accessible and affordable, we can alleviate an individual's burden to choose between cheap and unhealthy or expensive and healthy. I maintain that this change in the supply and demand all starts with education because, with a more educated population, communities are more able to decide and fight for what they deserve to have access to.

## B. Awareness Creates Change

Strict policy reformation and an increase in governmental control will only further harm consumer autonomy. Education and transparency, on the other hand, allow for an individual's decision-making to remain autonomous. The government's role is to ensure that all consumers are properly informed so that their vote can inform how they want their legislatures to act. We already have governmental institutions like the FDA and USDA created to ensure proper regulation of goods, but even they lack transparency from companies about what is going on behind all the products sold. Therefore, placing more responsibility on these institutions might not work. I propose that when the government creates new policies, they employ a team of registered dietitians on the board before implementing any new food regulations and drastically limit lobbying from interested companies. This will further the push for education and transparency, since there is currently little nutritional input from actual dietitians about what is healthy and advice from privately-run food companies is included without context. Researchers explain that "corporations frequently hire lobbyists to engage directly with government policymakers. Business associations can also wield significant influence over policy processes because they claim to represent a large number of firms that may be important economic players within a policy or regulatory context."<sup>31</sup> The American governmental policy creates conventional

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<sup>31</sup> Jennifer Clapp and Gyorgy Scrinis, "Big Food, Nutritionism, and Corporate Power," *Globalizations* 14, no. 4 (2017): 578–595, <https://doi.org/10.1080/14747731.2016.1239806>.

ideas of ‘wellbeing’ such as the *Food Pyramid* or the more recent *MyPlate* initiative, which are all heavily influenced by lobbyists, instead of nutritionists or dietitians.<sup>32</sup> After constituents are informed about how the microbes affect their bodies, and how to ensure equal access to the correct foods, then recognizing where the government should take on its responsibility is the next step. We must also educate and inform legislatures so that we can trust them to make the right decisions and implement successful policies.

Raising one’s consciousness provides vital power to the individual knower. By understanding the connection between how what we eat affects not only how we feel, but our place in the world as well, the daily habit becomes much more weighted and important to consider. Teaching consumers about the myriad of factors that are influenced by the simple act of eating can protect them from exploitation. When we change the way we consume, we can begin to reshape the world with more equity and justice for all.

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**Lauren Hartogh** went through dozens of rounds of antibiotics as a child and never understood why she was sick much more often than most other children. Overuse of antibiotics damaged her gut microbiome and weakened her immune system, perpetuating her constant illnesses. As she grew more aware of her body, she discovered the influence of the gut microbiome. Out of an

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<sup>32</sup> Matthew Chrisman and Lillian Karina Diaz Rios. “Evaluating MyPlate After 8 Years: A Perspective,” *Journal of Nutrition Education and Behavior* 51, no. 7 (2019): 899–903.



act of desperation to find out how to heal her body, this paper was born; looking for advice for herself, she found the connection between what lives inside everyone and the world around us.