

The Butterfly Effect: The Power of Individual Action to Mitigate Climate Change

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Abstract

Over the years, various scholars in environmental politics have argued that individual action to mitigate climate change is marginal at best, and regressive at worst. According to their assessment, the ‘individualization of responsibility’ places the burden of climate change mitigation on individuals. These scholars also argue that the individualization of responsibility hinders the implementation of institutional solutions. These scholars have responded to a broader debate on what the role of the individual is in the fight against the climate crisis. This paper adds another voice to this debate by directly challenging the aforementioned scholars. First, I draw upon philosophical and socio-psychological scholarship to suggest that individual action is meaningful and can actually serve as a catalyst for institutional advancements. The existentialist philosopher Jean-Paul Sartre argued that people contribute to collective realities through their individual action. Insights from behavioral contagion theory have subsequently shed light on *how* people affect the state of the collective through their individual actions. Humans rely on cues from others to determine how to act. When one person decides to engage in environmentally friendly behavior, such as eating less meat, it is likely that those around them will begin to engage in the behavior as well. To illustrate how the effects of behavioral contagion theory can be observed in the real world, I then document the rise of vegans, vegetarians, and flexitarians in North America. This section provides empirical evidence for the value of personal action by analyzing how behavior change at the individual level has inspired businesses and governments to take action as well. Next, I propose an alternative theory of social change. The question of responsibility is not an either-or matter; rather, individuals and institutions reinforce each other in the fight against the climate crisis. Individuals signal to institutions through their actions that they are willing to take on costly actions to mitigate climate change. Institutions then

take these signals and scale them up in ways that no individual can do alone. Throughout the paper, I argue that while institutional change is important, individual action can be a key component in unleashing institutional change.

Lay Summary

There is a passionate debate surrounding what the role of the individual is in the mitigation of climate change. Some scholars have argued that individual action to mitigate climate change is marginal at best, and regressive at worst. In this thesis, I aim to challenge these scholars by demonstrating how individual action can be a powerful force in the collective fight against the climate crisis. The rise of vegetarians, vegans, and flexitarians exemplifies the power of individual action. By changing their personal eating habits, individuals have influenced the actions of businesses and governments alike. This influence happens through a chain reaction. First, individuals affect the behavior of those around them, which eventually causes institutional bodies to change as well. Large institutional bodies are then able to scale up movements in ways no one individual can. Ultimately, individuals and institutions both play an important role in the mitigation of climate change.

Preface

This thesis is the original and unpublished work of the author, Jennifer Fleming.

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Dedication

To Lynn and Mia

Chapter 1: Introduction

Sentiment without action is the ruin of the soul.

*Edward Abbey*¹

In the 1960s, meteorologist Edward Lorenz came across a major discovery. He dubbed his finding ‘the butterfly effect,’ which denotes the idea that small and seemingly inconsequential shifts in the space-time continuum can lead to momentous and unpredictable effects.² Novelist Ray Bradbury must have been clairvoyant, because one decade earlier he wrote a short story which perfectly captures the essence of the butterfly effect. In the story, the main character travels back in time. During the protagonist’s stint in the past, he accidentally kills a butterfly, and vastly changes the future in the process.³

The butterfly effect, as both a scientifically and a culturally significant idea, suggests that the seemingly meaningless and inconsequential actions humans engage in every day may actually hold the power to markedly impact the world around them. However, some scholars have been seriously doubting the impact individuals can have in the fight against the climate crisis, a problem which represents an existential threat to humans. Academics such as Maniates,⁴

¹ Edward Abbey, *A Voice Crying in the Wilderness: Vox Clamantis in Deserto: Notes from a Secret Journal* (Rosetta Books, 2015): 25

² Peter Dizikes, “When the Butterfly Effect Took Flight | MIT Technology Review,” MIT Technology Review, February 22, 2011, <https://www.technologyreview.com/2011/02/22/196987/when-the-butterfly-effect-took-flight/>.

³ Ray Bradbury, “A Sound of Thunder,” in *R Is for Rocket* (New York: Doubleday, 1952).

⁴ Michael F. Maniates, “Individualization: Plant a Tree, Buy a Bike, Save the World?,” *Global Environmental Politics* 1, no. 3 (August 1, 2001): 31–52, <https://doi.org/10.1162/152638001316881395>.

Sinnott-Armstrong,⁵ Princen,⁶ and Mann⁷ argue that calls for individuals to take action in the mitigation of climate change hinders the implementation of more institutional solutions. This presents an issue, since they believe that the true solution to the problem lies with institutions, not individuals. Hagglng consumers to recycle, ride their bikes to work, and buy environmentally friendly products is unproductive at best, and regressive at worst. According to Maniates this “individualization of responsibility” paints consumers as the main source of the climate crisis, as well as the central solution to it.⁸ The logic behind the individualization of responsibility lies in the idea that if everyone were to adopt these climate-friendly actions, the climate crisis would recede. These scholars reject that logic and believe what should alternatively occur is a collective push towards environmental sustainability on an institutional and political level, with governments and businesses taking responsibility for the environmental damage they have either caused or allowed to happen.

On one hand, these scholars convey a powerful point. Pinning the problem of climate change entirely on the consumeristic choices of individuals somewhat absolves powerful actors in society (such as governments and corporations) from taking responsibility for the problem as well. In addition, Maniates argues that the individualization of responsibility prevents people from “thinking institutionally.”⁹ He claims that once people engage in low-impact actions such as recycling, they will feel as if they have ‘done their bit’ and will not participate in more

⁵ Walter Sinnott-Armstrong, “It’s Not My Fault: Global Warming and Individual Moral Obligations,” in *Perspectives on Climate Change*, ed. Walter Sinnott-Armstrong and Richard Howarth (Elsevier, 2005), 221–53.

⁶ Thomas Princen, *Consumer Sovereignty, Heroic Sacrifice: Two Insidious Concepts in an Endlessly Expansionist Economy*, ed. Michael F. Maniates and John M. Meyer, *The Environmental Politics of Sacrifice* (Cambridge, Massachusetts: The MIT Press, 2010), <https://mitpress.universitypressscholarship.com/view/10.7551/mitpress/9780262014366.001.0001/upso-9780262014366-chapter-7>.

⁷ Michael E. Mann, “Individual Choices Won’t Be Enough to Save the Planet,” *TIME*, September 12, 2019, <https://time.com/5669071/lifestyle-changes-climate-change/>.

⁸ Maniates, “Individualization.”, pg. 33

⁹ *Ibid.*, pg. 33

substantive political actions, such as voting or protesting. Furthermore, Maniates argues that painting the climate crisis as a problem that can be solved through individual action inhibits the consideration of more institutional solutions. This is because people grow accustomed to thinking of individual actions as the primary solution to climate change.¹⁰ While these are important considerations to keep in mind, the dismissal of individual action as a medium of influence disempowers individuals. It provides an implicit message that individuals are supposed to lie in stupor until an environmental mass movement spontaneously occurs, because anything they do as individuals is ultimately meaningless and will not create any real change. In this way, Maniates and others devalue the space within a person's immediate locus of control by portraying the individual as a heteronomous entity dependent on forces bigger than themselves.

Devaluing the autonomy of the individual to create change not only poses moral problems, but it is also empirically incorrect. In his analysis, Maniates refers overwhelmingly to easy and passive actions individuals engage in to mitigate climate change, with little to no mention of more impactful actions an individual can take to fight the climate crisis. In his short article, he mentions the word "recycle" or variations thereof over twenty times. Reducing meat consumption, on the other hand, is not mentioned even once. This may be a convenient oversight, since meat consumption is one area where individuals are making powerful collective change through their individual actions. For example, researchers have found that a sizeable portion of what Americans recycle ultimately ends up in landfills, making recycling a truly unimpactful individual action.¹¹ Conversely, a person who goes from a high meat consumption diet to a vegan one reduces their individual dietary greenhouse gas emissions by approximately

¹⁰ Ibid, pg. 33

¹¹ Renee Cho, "Recycling in the U.S. Is Broken. How Do We Fix It?," *State of the Planet* (blog), March 13, 2020, <https://news.climate.columbia.edu/2020/03/13/fix-recycling-america/>.

1,560 kilograms per year.¹² This convenient oversight indicates that Maniates is unwilling to confront instances where the actions of individual consumers create direct, measurable impact. Furthermore, as will be discussed extensively later in this paper, the actions of these individuals have demanded the attention of governments and businesses alike. As far as meat consumption goes, individual consumers appear to yield power in fighting the climate crisis through their consumeristic choices, which flies in the face of Maniates' theory.

In this paper, I will be challenging the ideas presented by the aforementioned scholars. I aim to reaffirm the power of the individual by documenting the rise of vegetarians, vegans, and flexitarians.¹³ The percentage of people identifying as vegan, vegetarian, or flexitarian has risen rapidly in the past few years. It is estimated that only 290,000 Americans identified as vegan fifteen years ago, but now approximately 9.7 million Americans do.¹⁴ Additionally, the percentage of Americans who identify as vegetarian has been steadily increasing since 2013 and approximately 36% of Americans identify as flexitarian.¹⁵ With so many people taking it upon themselves to change their individual behaviors, their efforts combined are bound to make waves. This thesis documents the waves individuals have indeed been making through their personal actions.

¹² Peter Scarborough et al., "Dietary Greenhouse Gas Emissions of Meat-Eaters, Fish-Eaters, Vegetarians and Vegans in the UK," *Climatic Change* 125, no. 2 (July 1, 2014): 179–92, <https://doi.org/10.1007/s10584-014-1169-1>.

¹³ Throughout this paper, a 'vegan' is someone who does not consume any animal products whatsoever. A 'vegetarian' is someone who does not consume animal products if the animal must be killed to obtain them. A flexitarian is someone who does not cut out meat entirely, but does try to reduce their meat consumption. The efforts of flexitarians vary, with some hardly ever consuming meat, and others just engaging in Meatless Mondays.

¹⁴ Ipsos, "Vegan Trends & Demographics USA," Ipsos Retail Performance, accessed June 15, 2021, <https://www.ipsos-retailperformance.com/en/vegan-trends/>.

¹⁵ Saulius Šimčikas, "Is the Percentage of Vegetarians and Vegans in the U.S. Increasing?," *Animal Charity Evaluators* (blog), August 16, 2018, <https://animalcharityevaluators.org/blog/is-the-percentage-of-vegetarians-and-vegans-in-the-u-s-increasing/>; Margaret Malochleb, "Flexitarianism on the Rise; Transparency Tops 2021 Trends," *The Institute of Food Technologists*, December 1, 2020, <https://www.ift.org/news-and-publications/food-technology-magazine/issues/2020/december/departments/news-flexitarianism-on-the-rise-transparency-tops-2021-trends>.

The thesis proceeds as follows. First, I lay the groundwork for the paper by providing a philosophic and socio-psychological theoretical basis. I rely on Sartrean ethics and behavioral contagion theory to illustrate how the actions of individuals can be very powerful. In a nutshell, behavioral contagion theory denotes the idea that people look to others for guidance on how they themselves should act. Individuals adopt the behaviors of those around them. Thus, if a person is acting in an environmentally-friendly manner, it is likely they will inspire their friends and family to do so as well. As a result of this contagion, increasing numbers of people begin to adopt environmentally-friendly behaviors. These shifts in behavior eventually demand the attention of institutions as well.

To examine how behavioral contagion manifests itself in practice, empirical evidence is then examined to demonstrate how change in individual meat consumption habits has resulted in broad institutional changes. Next, I use the evidence provided in the empirical section to poke further holes in the arguments provided by Maniates and others, mainly by exploring the significance of an individual's internal locus of control and how individual action is especially important in the context of individualistic, liberal societies. This section is important because while individual action can be meaningful everywhere, my analysis in this paper is limited to Canada and the United States. This is because the scholars I am challenging employ a North American lens in their arguments, therefore I am responding with a North American lens as well. Significantly, Canada and the US are both individualistic, liberal countries. Lastly, I argue that the arguments of these scholars create a false dichotomy between individual and institutional action. Ultimately, individual and institutional action are *both* needed to mitigate climate change, and individuals have a unique ability to catalyze collective change through their individual action. Throughout this paper, I argue that the rise of vegetarians, vegans, and flexitarians

indicate that in certain cases, the choices consumers make do have the ability to influence society at an institutional level. I assert that individual action to mitigate climate change is both powerful and meaningful, and it does not necessarily have to mean disengagement from the political realm; in fact, it can actually increase political will to fight the climate crisis.

Chapter 2: Theoretically Empowering the Individual

2.1 Philosophical Perspectives

No single individual adopting a vegan, vegetarian, or flexitarian diet will halt the climate crisis. In fact, even if an individual did everything in their power to reduce their carbon footprint to the lowest level possible, they alone would still not mitigate climate change. Sandler terms this fact “the problem of inconsequentialism”: no matter what a person does, their individual efforts considered in isolation will not solve the problem.¹⁶ Under Maniates’ logic, the problem of inconsequentialism is a reason to push for institutional change while neglecting the power of individual action. However, this logic begins to fall apart once individual action is analyzed through a Sartrean lens.

In the landmark novella *Existentialism is a Humanism*, philosopher Jean-Paul Sartre famously declares that “in choosing myself, I choose man.”¹⁷ By this, he meant that humans are not only responsible for themselves, but also for humanity as a collective. When an individual makes a certain choice, they are not only choosing for them self, but are rather making a broader statement on how they believe all people should act.¹⁸ When understood in this fashion, an individual’s actions hold great weight. When a person chooses to forgo meat at a dinner party, they are not only making an individual choice, but also sending a signal to all other guests in attendance concerning how they believe others should be acting. Climate activist Greta Thunberg used the power of Sartrean ethics in 2019, when she sailed across the Atlantic ocean on an

¹⁶ Ronald Sandler, “Ethical Theory and the Problem of Inconsequentialism: Why Environmental Ethicists Should Be Virtue-Oriented Ethicists,” *Journal of Agricultural and Environmental Ethics* 23, no. 1 (August 7, 2009): 168, <https://doi.org/10.1007/s10806-009-9203-4>.

¹⁷ Jean-Paul Sartre, *Existentialism Is a Humanism*, ed. John Kulka, trans. Carol Macomber (New Haven: Yale University Press, 2007): 25, <https://yalebooks.yale.edu/book/9780300115468/existentialism-humanism>.

¹⁸ *Ibid.*, pg. 25

emissions-free boat to attend the United Nations Climate Action Summit instead of flying.¹⁹ Any carbon emissions saved from choosing to sail to New York City instead of fly were surely cancelled out by the number of delegates who *did* fly to the location of the summit. However, the purpose of the act arguably was not to achieve an absolute decrease in emissions. Rather, the goal of the act was to send a signal to the countless people watching about the values that Thunberg holds and to underscore the importance of the issue.

Later in the novella, Sartre declares “that man is condemned to be free.”²⁰ In other words, there is nothing compelling humans to act in any certain ways outside of their own values and beliefs about the world, which they must create themselves. This means that human beings are just as free to become climate-deniers as they are to become environmentalists. There is an important caveat to this point: Sartre argues that individuals whose actions do not match up with what they desire for the collective are acting in “bad faith.”²¹ Thus, an environmentalist must not only cognitively value the environment, but they also must embody environmentalist values through their actions, otherwise they would be acting in bad faith.

Taken together, these two concepts from Sartre’s philosophy imbues the individual with great responsibility. An individual’s actions hold power, since they are not only choosing for themselves, but also signaling to society how they believe others should act. Furthermore, their actions contribute to the creation of collective values, which requires the individual to carefully consider what their personal values are and embody them through action. As Sartre powerfully notes,

¹⁹ Jeff Brady, “Teen Climate Activist Greta Thunberg Arrives In New York After Sailing The Atlantic,” National Public Radio, August 28, 2019, <https://www.npr.org/2019/08/28/754818342/teen-climate-activist-greta-thunberg-arrives-in-new-york-after-sailing-the-atlan>.

²⁰ Sartre, *Existentialism Is a Humanism*, pg.29.

²¹ *Ibid.*, pg.25

a man who commits himself, and who realizes that he is not only the individual that he chooses to be, but also a legislator choosing at the same time what humanity as a whole should be, cannot help but be aware of his own full and profound responsibility.²²

While Sartre speaks at length about the burden this philosophy places on individuals, it also empowers them, since it provides individuals with the power to affect the collective through their individual actions.

2.2 Socio-Psychological Perspectives

In the previous section, Sartre's philosophy argued that what an individual chooses to do (or not to do) not only affects themselves, but also the broader collective. This theory is missing an essential part of the puzzle: *how* does an individual's choices affect those around them? The current section answers this all-important question.

It has been over two thousand years since Aristotle made the famous declaration that "man is by nature a social animal."²³ In the modern era, psychologists and sociologists have confirmed Aristotle's initial ideas with ever-increasing evidence. Behavioral contagion, an important avenue of research in social psychology, is the idea that humans rely on cues from others to decide how to act. The power of individuals to affect the behavior of those around them is a well-documented phenomenon within psychological research. Behavioral contagion has often been implicated in the explanation of negative occurrences, such as suicide epidemics, erratic group behavior, and smoking.²⁴ As Frank notes, despite concerns about secondhand

²² Ibid., pg. 25

²³ as cited in Alessandro Vinciarelli et al., *Bridging the Gap Between Social Animal and Unsocial Machine: A Survey of Social Signal Processing*, n.d.

²⁴ Paul Marsden, "Memetics and Social Contagion: Two Sides of the Same Coin?," *The Journal of Memetics: Evolutionary Models of Information Transmission*, 1998, http://cfpm.org/jom-emit/1998/vol12/marsden_p.html; Robert H Frank, *Under the Influence: Putting Peer Pressure to Work* (Princeton, New Jersey: Princeton University Press, 2020).

smoke, “the greatest injury caused by someone’s decision to become a smoker is the harm caused by making others more likely to smoke as well.”²⁵

While most of the research on behavioral contagion has focused on its negative effects, Frank argues that it can also create socially desirable outcomes. When individuals see or hear about others engaging in a certain positive behavior, they feel encouraged to engage in that behavior as well.²⁶ One experimental study found behavioral contagion to be the most effective way to persuade people to change their own personal behavior. In the experiment, canvassers tried to convince people to conserve energy within their home. In order to do this, the canvassers used a variety of appeals. The moral benefits of energy conservation were explained to one group of homes, while the financial benefits were presented to another. A final group of homes was simply informed that their neighbors were pursuing energy conservation measures. The researchers then monitored each household’s energy usage with the meters on their homes, which is a very objective measure. Homeowners who were informed about their neighbors’ behaviors were the only group to have their energy usage decrease significantly. The other groups only experienced minor deductions, or no deductions at all.²⁷ This experiment demonstrates the powerful influence that the behavior of others has on any one individual.

A field experiment conducted by Sparkman and Walton²⁸ explored the influence of behavioral contagion theory on people’s meat consumption habits. They found that café patrons were much more likely to order a meatless option if they had been told prior to ordering that

²⁵ Frank, *Under the Influence: Putting Peer Pressure to Work*, p. 13

²⁶ *Ibid.*, pg. 56

²⁷ Saqib Rahim, “Finding the ‘Weapons’ of Persuasion to Save Energy,” *The New York Times Archive*, June 21, 2010, <https://archive.nytimes.com/www.nytimes.com/cwire/2010/06/21/21climatewire-finding-the-weapons-of-persuasion-to-save-ene-8137.html?pagewanted=1>.

²⁸ Gregg Sparkman and Gregory M. Walton, “Dynamic Norms Promote Sustainable Behavior, Even If It Is Counternormative,” *Psychological Science* 28, no. 11 (2017): 1663–74.

thirty percent of Americans have been recently trying to limit their meat consumption when compared to a control group, who was told nothing about meat consumption before ordering. While the effects of behavioral contagion can be observed when those engaging in the behavior are nameless others (such as ‘American citizens’), the effect is even stronger when it occurs within an individual’s immediate social circle. By using survey data, Vandermoere et al.²⁹ found that individuals who live with a vegetarian or vegan or have vegetarian or vegan friends or family members consume less meat than people who do not have vegetarians or vegans in their social circles.

I have observed the effects of behavioral contagion within my own life. When I decided to abstain from meat six years ago, I did not expect anyone to change their own diet because of me. Much to my surprise, some people in my social circle have become completely vegetarian, while others often enjoy meatless meals alongside me. Thus, the theory of behavioral contagion provides an avenue for individuals to influence the collective. When an individual chooses to forgo meat, they are undermining the dominant norm of meat consumption, which provides others around them with the assurance needed to do so as well. As Sparkman et al.³⁰ describes, individual behavior sends a signal to others about what is possible. When one person chooses to adopt a vegetarian, vegan, or flexitarian diet, it sends an important message to everyone within their social circle: *I changed my behavior, and you can too.*

Those who deviate from social norms not only show others what is possible, but they also provide others with motivation to change their behavior. Some scholars ascribe to the

²⁹ Frédéric Vandermoere et al., “Meat Consumption and Vegaphobia: An Exploration of the Characteristics of Meat Eaters, Vegaphobes, and Their Social Environment,” *Sustainability* 11 (July 19, 2019): 3936, <https://doi.org/10.3390/su11143936>.

³⁰ Gregg Sparkman, Lauren Howe, and Greg Walton, “How Social Norms Are Often a Barrier to Addressing Climate Change but Can Be Part of the Solution,” *Behavioural Public Policy*, undefined/ed, 1–28, <https://doi.org/10.1017/bpp.2020.42>.

information deficit model to explain why people do not always act in a scientifically-consistent manner. The information deficit model refers to the idea that if only people were exposed to accurate information, then they would align their behavior with scientific facts. According to this model, if people continue to eat meat, then it is because they have not been exposed to enough information detailing the environmental consequences of meat consumption.³¹ Apart from being condescending, the information deficit model is also usually incorrect. Due to the internet, people have become much more aware of the climate crisis, as well as strategies to help reduce their carbon footprint. Environmental activists and non-governmental organizations (NGOs) typically have a strong social media presence. Information about the climate crisis is also readily available through websites and mobile applications. Social media in particular is incredibly accessible and allows environmental advocates to easily share information with large audiences.³² In other words, information about climate change has become relatively common knowledge.

Given that norms remain stagnant even as information accessibility grows, the information deficit model cannot fully explain why people have failed to respond to the climate crisis. Hackel and Sparkman³³ argue that it is not a lack of information, but rather a lack of motivation that prevents people from spurring into action. Individuals look towards others for cues on what to care about. Depending on what others are doing or are not doing, an individual's motivation to change their own personal behavior may increase or decrease.³⁴ For example, imagine a climate advocate is meeting a friend for lunch. At the meeting, the advocate discusses

³¹ Brianna Suldoovsky, "The Information Deficit Model and Climate Change Communication," Oxford Research Encyclopedia of Climate Science, September 26, 2017, <https://doi.org/10.1093/acrefore/9780190228620.013.301>.

³² Ibid.

³³ Leor Hackel and Gregg Sparkman, "Reducing Your Carbon Footprint Still Matters.," Slate, October 26, 2018, <https://slate.com/technology/2018/10/carbon-footprint-climate-change-personal-action-collective-action.html>.

³⁴ Hackel and Sparkman.

the urgency of climate change, but they are chowing down on a beef burger and drove a Sport Utility Vehicle (SUV) to the meeting. The friend will probably come away from the meeting with the impression that the climate crisis is not as urgent of an issue as the advocate was making it out to be. However, if the advocate instead consumes a veggie burger and drives a Prius to the meeting, then the friend will perceive through the advocate's actions that the climate crisis is an issue they should care about themselves.³⁵ As Hackel and Sparkman powerfully note, "people don't spring into action just because they see smoke; they spring into action because they see others rushing in with water."³⁶

It would be remiss to focus solely on how the effects of behavioral contagion empower people without also mentioning how it can possibly limit individuals. Sparkman et al. bring attention to the fact that for behavioral contagion to work in a positive manner, there has to be some individuals willing to go against the grain, because "unsustainability is the norm."³⁷ Recent surveys have found that approximately 8% of Americans and 9.4% of Canadians are vegetarian or vegan, meaning that up to 90% of the population engages in meat consumption in both countries.³⁸ Since meat consumption is a dominant norm, many feel powerless and that their individual actions would not make a difference, because they do not believe others will act in the same way they do. In this way, climate change represents a massive collective action problem.

Surveys have revealed that a majority of North Americans are very concerned about climate

³⁵ Gregg Sparkman and Shahzeen Z. Attari, "Credibility, Communication, and Climate Change: How Lifestyle Inconsistency and Do-Gooder Derogation Impact Decarbonization Advocacy," *Energy Research & Social Science* 59 (January 1, 2020): 101290, <https://doi.org/10.1016/j.erss.2019.101290>.

³⁶ "Reducing Your Carbon Footprint Still Matters."

³⁷ Sparkman, Howe, and Walton, "How Social Norms Are Often a Barrier to Addressing Climate Change but Can Be Part of the Solution.," p.7

³⁸ Niall McCarthy, "Who Are America's Vegans And Vegetarians?," *Forbes*, August 6, 2018, <https://www.forbes.com/sites/niallmccarthy/2018/08/06/who-are-americas-vegans-and-vegetarians-infographic/?sh=5a05d766211c>; Ryan Flanagan, "More than 3 Million Canadians Vegetarian or Vegan: Study," *CTV News*, July 25, 2018, <https://www.ctvnews.ca/canada/more-than-3-million-canadians-vegetarian-or-vegan-study-1.4027606>.

change.³⁹ It is as if everyone wants to move, but no one wants to move *first*, so unsustainable lifestyles reproduce themselves through norm stagnation. In fact, if people are surrounded by others who are failing to take action to address a problem, they are very likely to follow along.⁴⁰

This is where it is once again important to incorporate Sartre's philosophy. Norms do not appear out of nowhere. They are sustained by people, who either knowingly or unknowingly reinforce them day in and day out. Sartre argues that individuals must align their values with their actions. If an individual values a healthy environment and takes actions towards ensuring that a healthy environment exists, then it is almost as if they are casting an invisible vote for the type of world they would like to live in. Furthermore, when individuals go against a dominant social norm, they set an example for others to follow. They show those around them that there are alternative ways of operating in the world. While it may seem like one individual alone would not make much of a difference, research says otherwise.

As previously mentioned, the collective action problem posed by climate change is formidable. People do not want to alter their own actions without assurance that others will as well. Because altering one's actions takes effort, the temptation to free ride off of the efforts of others is strong. This conundrum creates a negative cycle. People want to fight the climate crisis, but they believe no one will join them in their efforts to stop climate change. Thus, they continue to engage in their carbon-intensive habits and their beliefs about the actions of others become a self-fulfilling prophecy. Psychological research has shown that it takes only one person deviating

³⁹ Robinson Meyer, "Voters Really Care About Climate Change," *The Atlantic*, February 21, 2020, <https://www.theatlantic.com/science/archive/2020/02/poll-us-voters-really-do-care-about-climate-change/606907/>; Stephanie Wood, "Climate Change Number 1 Concern for Canadians, Poll Says," *Canada's National Observer*, September 20, 2019, <https://www.nationalobserver.com/2019/09/20/news/climate-change-number-1-concern-canadians-poll-says>.

⁴⁰ Bibb Latane and John M. Darley, "Group Inhibition of Bystander Intervention in Emergencies," *Journal of Personality and Social Psychology* 10, no. 3 (1968): 215–21, <https://doi.org/10.1037/h0026570>.

from the norm to break this negative cycle. For instance, a 2017 survey found that individuals acquainted with someone who intentionally flew less were often inspired to fly less themselves.⁴¹ Even if it is just one person, this single individual provides others with the community and courage needed to deviate from the norm as well. By leading through example, these mavericks also make free-riding behavior more salient to the population.⁴² This supports the idea that even with the challenges involved in behavioral contagion, if individuals are able to go against the grain and change their behavior in a counter-normative fashion, they have an immense power to influence the collective.

⁴¹ Steve Westlake, “A Counter-Narrative to Carbon Supremacy: Do Leaders Who Give Up Flying Because of Climate Change Influence the Attitudes and Behaviour of Others?” (Cardiff University, 2017), https://drive.google.com/file/d/1GHMzLpkPVJ-a2fifjswLxxqAqTEllVNs/view?usp=embed_facebook.

⁴² J. Mark Weber and J. Keith Murnighan, “Suckers or Saviors? Consistent Contributors in Social Dilemmas,” *Journal of Personality and Social Psychology* 95, no. 6 (March 8, 2008): 1340–53, <https://doi.org/10.1037/a0013326>.

Chapter 3: Empirical Evidence, Businesses and Governments

Meat consumption is one area where individuals are especially influential. Researchers have found that there is only so much producers can do to make meat production sustainable, but consumers have the ability to make a large impact by reducing meat consumption.⁴³

Additionally, people *need* food in order to survive, making agriculture a necessary carbon-intensive activity. However, most people do not *need* meat to survive, which is significant given that 53% of the emissions resulting from agriculture as a whole are due to animal agriculture.⁴⁴ Thus, reduction of meat consumption has the potential to make a large impact. It also represents an area where consumers are able to significantly impact the sector through the laws of supply and demand. This section will discuss how individual consumers have been able to affect collective institutions through their personal consumption habits, a pattern which runs counter to Maniates’⁴⁵ theory of social change.

3.1 Businesses

In recent years, individual consumers have created an uproar in demand for meatless or plant-based products. Businesses have answered the call with a cornucopia of increased supply. This section will analyze how two sectors, grocery stores and restaurants, have been significantly altered by individual consumption habits.

3.1.1 Grocery Stores

Grocery stores in the modern era look a lot different from grocery stores ten years ago. Upon walking into a North American grocery store today, an individual will find large selections

⁴³ J. Poore and T. Nemecek, “Reducing Food’s Environmental Impacts through Producers and Consumers,” *Science* 360, no. 6392 (June 1, 2018): 987–92, <https://doi.org/10.1126/science.aag0216>.

⁴⁴ Hannah Ritchie, “Food Production Is Responsible for One-Quarter of the World’s Greenhouse Gas Emissions,” Our World in Data, November 6, 2019, <https://ourworldindata.org/food-ghg-emissions>.

⁴⁵ Michael F. Maniates, *Beyond Magical Thinking*, ed. Agni Kalfagianni, Doris Fuchs, and Anders Hayden (Routledge Handbooks Online, 2019), <https://doi.org/10.4324/9781315170237-22>.

of meatless substitutes, plant-based ‘dairy’ products, and vegan frozen dinners. The explosion of plant-based and vegetarian products in grocery stores is quite remarkable, given that the market for shelf space in grocery stores is notoriously competitive.⁴⁶ In other words, this change would not have been possible without consumers who want to buy these products, because otherwise companies such as Impossible Foods and Beyond Meat would not have even been able to get their foot in the door.

Yet these companies have not only been able to get their foot in the door, they have also been extremely successful. In 2019, the market for plant-based products reached five billion dollars, representing a sales growth of 11.4% since 2018. Comparatively, overall retail sales for food generally grew by only 2.2% in the same time period. This trend shows that plant-based products is one of the fastest growing industries in grocery stores.⁴⁷ The growing availability of plant-based options in grocery stores not only serves vegetarians and vegans, but is also beneficial for America’s burgeoning flexitarian population. Recent survey results indicate that up to 30% of the American population identifies as flexitarian. The flexitarian movement was catalyzed at the beginning of the COVID-19 pandemic, when sales of plant-based meat substitutes skyrocketed by 264% amidst meat shortages.⁴⁸ The demand for plant-based products is becoming so strong that traditional meat and dairy suppliers are no longer able to ignore it. In 2018, the president of the Meat Industry Hall of Fame, Chuck Jolley, argued that the popularity of meat substitutes is one of the biggest threats to animal agriculture. Others have adopted a ‘if

⁴⁶ Phil Edwards, “The Hidden War over Grocery Shelf Space,” Vox, November 22, 2016, <https://www.vox.com/2016/11/22/13707022/grocery-store-slotting-fees-slotting-allowances>.

⁴⁷ Russell Redman, “Plant-Based Food Retail Sales Reach \$5 Billion,” Supermarket News, March 3, 2020, <https://www.supermarketnews.com/consumer-trends/plant-based-food-retail-sales-reach-5-billion>.

⁴⁸ Andy Nelson, “Plant-Based Foods Stake Their Place in the Retail Food Mainstream,” Supermarket Perimeter, September 13, 2020, <https://www.supermarketperimeter.com/articles/5624-plant-based-foods-stake-their-place-in-the-retail-food-mainstream>.

you cannot beat them, join them' mindset, with Tyson Foods, one of the largest meat producers in the US, investing in companies that develop alternatives to meat and even trying their hand at creating meatless products themselves.⁴⁹

In this section, we observe an alternative theory of social change emerging, one that is driven by individuals. It took individuals demanding these products for plant-based foods to be able to garner shelf space in grocery stores. Companies responded to this demand in a momentous fashion, changing grocery stores forever by flooding the market with vegan and vegetarian options. It is now standard to see a large selection of these options in grocery stores, which by extension provides a sense of normalcy to the idea of reducing meat consumption. This is very different from just a decade ago, when an individual would “be lucky to find Silk soy milk in the grocery store.”⁵⁰ This change may persuade consumers who do not aim to completely cut out meat to nevertheless incorporate these products into their diet on a regular basis, since they are now so ubiquitous. Indeed, a recent survey found that even though only 8% of Americans identify as vegan or vegetarian, 66% of Americans report consuming less meat currently than they have in the past.⁵¹ This indicates that there is a *reciprocal* relationship existing between consumers and companies. Individual consumers induced this relationship by creating demand for meatless and plant-based products in the first place, but companies then responded by flooding the market with meatless alternatives and dairy substitutes. Industrial response to the demand further undermines the dominant norm of meat consumption by

⁴⁹ Susannah Sudborough, “How and Why Vegan Products Are on the Rise,” *Boston University News Service* (blog), December 22, 2018, <https://bunewsservice.com/how-and-why-vegan-products-are-on-the-rise/>.

⁵⁰ Lucy Danziger and Spencer Whaley, “More Retailers Are Competing for Plant-Based Consumer Dollars,” *The Beet*, January 15, 2021, <https://thebeet.com/supermarkets-and-online-retailers-are-competing-for-your-plant-based-dollars/>.

⁵¹ Roni A. Neff et al., “Reducing Meat Consumption in the USA: A Nationally Representative Survey of Attitudes and Behaviours,” *Public Health Nutrition* 21, no. 10 (July 2018): 1835–44, <https://doi.org/10.1017/S1368980017004190>.

providing omnipresence to the idea of reducing meat consumption. The pervasiveness of these alternatives may then cause even the staunchest of meat consumers to occasionally buy an Impossible Burger, due to the fact that consumption of these alternatives is becoming increasingly common.

3.1.2 Restaurants

The explosion in availability of meatless and plant-based options has not been constrained to grocery stores. Restaurants have also changed their operations as a result of the increasing number of vegans, vegetarians, and flexitarians within the US and Canada. A 2019 MenuTrends study found a 621% increase in the word ‘vegan’ appearing on menus since the year 2009. The same study also found that plant-based burgers were the second fastest growing menu item in the four years prior to 2019. Veggie burgers were preceded only by avocado toast, a menu item which is in many cases vegan or vegetarian itself.⁵² A quick search through online menus or delivery services such as Grubhub is more than enough to observe these trends in action. Plant-based burgers appear to be popping up everywhere. In 2018, A&W Canada added Beyond Meat burgers to their menu and began serving the plant-based option in restaurants nationwide. Upon the item’s release, A&W Canada sold ninety thousand Beyond Meat burgers in just 72 hours, with multiple locations selling out in the first day.⁵³ One year later, American consumers received an opportunity to partake in the plant-based burger trend, with Burger King releasing an Impossible Whopper in locations nationwide. The Impossible Whooper rollout was

⁵² Menus of Change Initiative, “Plant-Forward by the Numbers,” 2020, <https://www.ciaprochef.com/MOC/PFbytheNumbers.pdf/>.

⁵³ Gillian Fisher, “How to Eat Vegan at A&W,” LiveKindly, March 8, 2019, <https://www.livekindly.co/the-ultimate-guide-to-eating-vegan-at-aw/>.

originally supposed to be available for only a limited time, but it has been so successful that it does not appear to be going away anytime soon.⁵⁴

Table 1 Fast Food Options

Fast Food Restaurant Name	Product
Starbucks	Meatless Breakfast Sandwiches
Dunkin Donuts	Meatless Breakfast Sandwiches
Subway	Veggie Patty, Veggie Delite Sandwich
Chipotle	Sofritas
Carl's Jr	Beyond Meat Burger
BurgerFi	Beyond Meat Burger, Veggie Burger
White Castle	Impossible Slider
Panera Bread	Vegetarian Salads and Sandwiches, Vegan Broth Bowls
Del Taco	Beyond Meat Tacos
Pizza Hut	Beyond Meat available as a topping
Quesada	Beyond Meat Burrito and Burrito Bowl

In fact, Burger King has actually expanded its meatless options since the release of the Impossible Whopper, with an Impossible-based breakfast sandwich being added to the chain’s menu in 2020.⁵⁵

Burger King and A&W Canada are only two chains on a growing list of fast-food restaurants offering meatless or plant-based options. The table below⁵⁶ depicts a small sample of

⁵⁴ Amelia Lucas, “Burger King’s Plant-Based Impossible Whopper Is Launching Nationwide This Month,” CNBC, August 1, 2019, <https://www.cnbc.com/2019/07/31/burger-kings-plant-based-impossible-whopper-is-launching-nationwide-this-month.html>.

⁵⁵ Kat Thompson, “Burger King’s Making a Breakfast Sandwich With Impossible’s New Plant-Based Sausage,” Thrillist, February 3, 2020, <https://www.thrillist.com/news/nation/burger-king-croissanwich-impossible-sausage-croissant-sandwich>.

⁵⁶ Sources for Chart: PETA, “Vegan Fast-Food and Restaurant Guide,” People for the Ethical Treatment of Animals, April 2021, <https://www.peta.org/living/food/chain-restaurants/>; Starbucks, “Menu: Hot Breakfast,” accessed May 24, 2021, <https://www.starbucks.com/menu/food/hot-breakfast>; Dunkin Donuts, “Sandwiches & More | Stacked with Flavor | Dunkin’®,” Dunkin Donuts Menu, accessed May 24, 2021, <https://www.dunkindonuts.com/en/menu/sandwiches-and-more>; Panera Bread, “Menu,” accessed May 24, 2021, <https://www.panerabread.com/en-us/menu.html>.

the additional vegetarian or vegan options offered by fast food restaurants in North America. Other fast food restaurants not included in the chart have offered vegan and vegetarian options at select locations only or have vegan and vegetarian menu items in the works. In 2019, Kentucky Fried Chicken (KFC) partnered with Beyond Meat to bring 'Beyond Fried Chicken' to select locations. The new menu item was first trialed at a KFC location in Atlanta, which garnered lines wrapped around the building. Beyond Fried Chicken completely sold out in the Atlanta location only five hours after its release. The debut of Beyond Fried Chicken was so successful, that it was trialed once again in locations throughout the American south and southern California. While Beyond Fried Chicken has yet to become a permanent, nationwide staple in KFC's throughout America, vegan and vegetarian options are available in all Canadian KFC's.⁵⁷

More recently, fast food monolith McDonalds has announced a three year partnership with Beyond Meat to engage in a project dubbed 'McPlant.' The project's goal is to first develop a vegan burger that can be sold in North American McDonalds locations, but it will eventually move on to creating plant-based alternatives for pork, eggs, and other products to include on McDonalds menus.⁵⁸ McDonalds, as one of the largest companies in the world and as a brand that is based around burgers, represented a sort of 'final boss' to those who want to see expansions of vegan or vegetarian options in restaurants. With McDonalds hopping on the plant-based train, it is clear that the dominant norm of meat consumption is becoming increasingly undermined. Once again, it is important to invoke the critical role that consumers played in catalyzing this change. If the demand for vegan or vegetarian options was not there, why would

⁵⁷ Liam Pritchett, "A Complete Guide to Vegan KFC," LiveKindly, September 7, 2020, <https://www.livekindly.co/complete-guide-to-vegan-kfc/>.

⁵⁸ Anna Starostinetskaya, "McDonald's and Beyond Meat Sign 3-Year Deal to Launch Plant-Based Options," VegNews.com, February 25, 2021, <https://vegnews.com/2021/2/mcdonalds-beyond-meat-sign-3-year-deal-to-launch-plant-based-options>.

McDonalds, a company that aims to maximize profit and a brand that has been built around the norm of meat consumption, engage in a project to bring meatless options to their locations? The short answer is that McDonalds would not have made this deal with Beyond Meat if individual consumers had not signaled to the market that meatless options are important for them to have. What we are observing now with an onslaught of vegan and vegetarian options becoming available is the power of the individual consumer to influence the market.

The proliferation of vegan and vegetarian items in restaurants has also changed the menus of sit-down restaurants. Even restaurants that traditionally revolve around meat have not been able to resist the growing desire of consumers to have vegetarian or vegan options. Ruth's Chris Steak House, a popular North American restaurant whose claim to fame is its steaks and chops, now features a specialty vegetarian menu for diners.⁵⁹ Luella's Bar-B-Que, a popular barbecue restaurant in Western North Carolina, includes barbecue tempeh on their menu. Given the centrality of pork to the culture of barbecue, the restaurant calls the option "almost blasphemous" in their description of the item.⁶⁰ The inclusion of vegetarian or vegan options in traditionally meat-centric establishments further emphasizes how much consumers have made an impact in undermining the dominant norm of meat consumption. Furthermore, similar to the market for shelf space in grocery stores, the restaurant industry is notoriously competitive.⁶¹ Consequently, restaurant owners would not put vegan and vegetarian options on their menu if

⁵⁹ Ruth's Chris, "Vegetarian Menu," accessed May 24, 2021, <https://www.ruthschris.com/promotions/vegetarian/>.

⁶⁰ Luella's BBQ, "Our Menus," *Luella's* (blog), accessed May 24, 2021, <https://luellasbbq.com/our-menus/>.

⁶¹ Jonathan Maze, "Here's How Competitive the Restaurant Industry Really Is," *Restaurant Business*, April 18, 2018, <https://restaurantbusinessonline.com/operations/heres-how-competitive-restaurant-industry-really>; Kostuch Media Ltd., "Canada's Competitive Market It Making It Harder for Restaurants to Thrive," *Foodservice and Hospitality Magazine* (blog), February 26, 2015, <https://www.foodserviceandhospitality.com/canadas-competitive-market-it-making-it-harder-for-restaurants-to-thrive/>.

they did not believe the items would sell. The ever-increasing demand for these options is what makes restaurateurs confident that vegan or vegetarian menu items will sell.

3.2 Governments

When compared to businesses, governments have been slow to react to the increasing number of North Americans who have chosen to either reduce or completely cut out animal products. However, there has been some positive signs on the governmental side. This section will cover what North American federal or sub-national governments have done to respond to this shift.

3.2.1 USA

The US is one of the most individualistic and liberal countries in the world. The personal lives of citizens is generally seen as an area where government should not intrude upon. Due to the cultural significance of these ideas, any measures to regulate what citizens consume are usually perceived as unacceptably paternalistic. There is one exception to this rule: paternalistic measures which target children are sometimes tolerable.⁶² This has been the case with meat consumption as well. While no general measures for the entire population have been passed, multiple school districts throughout the country have implemented Meatless Monday programs. In March 2019, New York City mayor Bill de Blasio announced that every single school in the district would be participating in Meatless Mondays for the upcoming 2019-2020 school year. With over one million students, New York City Public Schools is the largest school district in the country, and every single student who eats breakfast or lunch at school receives vegetarian or

⁶² Drew McCormick, "Obesity-Related Legislation Meets American Individualism," *AMA Journal of Ethics* 12, no. 4 (April 1, 2010): 305–8, <https://doi.org/10.1001/virtualmentor.2010.12.4.hlaw1-1004>.

vegan options on Mondays.⁶³ With this measure, New York City public schools became part of a network of over 150 school districts throughout the nation which participate in Meatless Mondays. It is important to note that unlike New York City public schools, some schools participating in Meatless Monday programs strongly encourage meatless options on Mondays, but nevertheless still offer meat entrees.⁶⁴

Even so, the fact that major school districts throughout the country are imbuing the act of reducing meat consumption with normalcy by implementing these programs is quite remarkable. These programs would not have been possible without citizens signaling to governments that reducing meat consumption is important to them. Even when it comes to children, governments in individualistic countries must tread extremely carefully when making decisions that will affect the lives of citizens. Anything that changes the lives of citizens too much will be seen as an unjust violation of individual liberty. This is why it is important for these norms to be altered from the bottom-up as opposed to from the top-down. If individual citizens had not already been sending a message to governments that they want to consume less meat, then the implementation of these measures may have been met with extreme backlash and ultimate failure. This was the case in 2009, when Baltimore Public Schools had to heavily scale back their Meatless Monday programs since it was turning out to be unsuccessful.⁶⁵ A lot has changed in over a decade. In the context of changing norms, where calls to reduce meat consumption now come from the bottom-up as opposed to the top-down, these government programs have been successful thus far.

⁶³ JoAnna Klein, "What Happens When the Nation's Largest School System Goes Meatless One Day a Week?," The Hill, November 22, 2019, <https://thehill.com/changing-america/sustainability/climate-change/471698-what-happens-when-the-nations-largest-school>.

⁶⁴ Linda Jacobson, "Success with Meatless Mondays Depends on Staff Training, 'well-Prepared' Recipes," K-12 Dive, March 18, 2019, <https://www.k12dive.com/news/success-with-meatless-mondays-depends-on-staff-training-well-prepared-re/550480/>.

⁶⁵ Jacobson.

3.2.2 *Canada*

When compared to the United States, the Canadian government has made more headway to advance plant-based and meatless lifestyles. One way the Canadian government has done this is through changes to nutritional guidelines for citizens. In 2019, the Canadian government revamped its Food Guide. Two of the most prominent changes were the elimination of dairy as a food group on its own and the consolidation of ‘meat and meat alternatives’ and ‘dairy and dairy alternatives’ into one group titled ‘protein foods.’ In addition to meat and dairy, the ‘protein foods’ group includes options such as lentils, nuts, and tofu, which demonstrates to the public that meat and dairy are not the only two ways to obtain protein.⁶⁶ This change is impressive given that meat and dairy industries typically have considerable influence over government operations in Canada. Beynon-MacKinnon credits the growing prominence of vegan and vegetarians as one important reason why the Food Guide was able to change so drastically despite the influence of meat and dairy industries.⁶⁷

In addition to changing dietary guidelines for citizens, the Canadian government has also invested heavily in the development of plant-based alternatives to meat and dairy. In 2018, the federal Canadian government announced that it would be investing 153 million dollars into the Protein Industries Canada Supercluster, a non-profit group which aims to make Canada a world leader in the development of meat alternatives through increased agriculture. One of the critical factors in the Canadian government’s decision to invest was the incredible success of the Beyond

⁶⁶ Zoe Beynon-MacKinnon, “Not Milk? Agribusiness and Canada’s Food Guide” (University of British Columbia, 2019), <https://doi.org/10.14288/1.0380496>; Health Canada, “Welcome to Canada’s Food Guide,” Government of Canada, January 14, 2021, <https://food-guide.canada.ca/en/>.

⁶⁷ “Not Milk?”

Burger at A&W Canada. Protein Industries Canada is using the investment to develop Canada-based agriculture for beans and peas, which are the two main ingredients in the Beyond Burger.⁶⁸

This example once again demonstrates the *reciprocal* relationship between citizens and institutional bodies. In this case, individual consumers signaled an increased interest in plant-based products to institutional actors by making the Beyond Burger so popular. The Canadian government was then able to take this interest and connect it to broader goals for the country, such as international competitiveness. Another reason the Canadian government invested so heavily in plant-based alternatives was to create jobs in a sector that Canadian political leaders see as the future. Emphasizing the economic benefits of this shift reframes the issue of reducing meat consumption. Reduced meat consumption becomes less of a sacrifice and more of a means by which Canada can become more economically competitive. Individual consumers played a crucial role in setting off this chain of events, but Canadian political leaders were then able to take the momentum and scale it up. The development of Canadian-based meat and dairy substitute industries must be going quite well, because in mid-2020 Prime Minister Justin Trudeau announced yet another investment of 100 million dollars into Merit Functional Foods, a Winnipeg company “that specializes in plant-based proteins.”⁶⁹

3.3 Analysis of the Empirical Section

Two observations arise out of the empirical section. First, governments and businesses have a *reciprocal* relationship with citizens and consumers. Second, individuals play a key role in activating this relationship. It is unlikely that businesses and governments would have taken

⁶⁸ Lauren Wills, “Canadian Government Invests \$150 Million in Vegan Protein Development,” LiveKindly, November 14, 2018, <https://www.livekindly.co/canadian-government-invests-150-million-vegan-protein-industries-supercluster/>.

⁶⁹ Helena Hanson, “Trudeau Just Announced A \$100 Million Investment Into Plant-Based Food In Canada,” Narcity, June 22, 2020, <https://www.narcity.com/ottawa/an-investment-of-almost-dollar100-million-will-go-to-plant-based-food-says-trudeau>.

the actions described in the empirical section without individuals signaling to both of these entities that reducing meat consumption is important to them. However, businesses and governments are then able to take this energy and scale it up, expanding options for all consumers, not just vegans, vegetarians, and flexitarians. These institutional bodies increase the normalcy of eating meatless or plant-based on a larger scale than any one individual can; though it is important to keep in mind that individuals were the ones to first set off this chain of events by generating demand for new products and policies. This demonstrates the power that individuals have to catalyze social change.

Chapter 4: Liberalism and Social Change

The empirical section described how people were able to create conditions for social change to occur through their individual consumption habits. In other words, individuals were able to change institutions by first changing themselves. This goes against the theory of social change proposed by Maniates⁷⁰ and others, since they believe that individual action is only influential at the margins, but in this case it played a key role. Sinnott-Armstrong goes so far as to say that individual action not only has very little influence, but also that individuals have no personal responsibility whatsoever to act in an environmentally-friendly manner. He does this by analyzing the act of going for a Sunday joyride, and he concludes his article by stating:

We should not think that we can do enough simply by buying fuel-efficient cars, insulating our houses, and setting up a windmill to make our own electricity. That is all wonderful, but it...does little...to stop global warming, nor does this focus fulfill our real moral obligations, which are to get governments to do their job to prevent the disaster of excessive global warming. It is better to enjoy your Sunday driving while working to change the law so as to make it illegal for you to enjoy your Sunday driving.⁷¹

What scholars such as Maniates and Sinnott-Armstrong miss is the importance of an individual's internal locus of control and the significance of living in an individualistic, liberal state. I will elaborate upon each oversight now.

4.1 Internal Locus of Control

When scholars undermine the power of an individual's actions, the space under their immediate control, then it leaves large, unanswered questions over how the individual should proceed. Sinnott-Armstrong⁷² recommends that citizens work "to change the law", but how?

⁷⁰ Maniates, *Beyond Magical Thinking*, pg. 276-279

⁷¹ Sinnott-Armstrong, "It's Not My Fault," p. 312

⁷² Ibid. p. 312

Maniates⁷³ recommends adopting a new framework to approach problems, but how will this lead to institutional paradigm shifts in the mitigation of climate change? When the area under an individual's direct locus of control is undermined as being only marginally influential, then it is unclear what the individual should do. It also reinforces existing power structures by implying that individuals are at the mercy of whatever governments or businesses decide to do concerning the mitigation of climate change, because whatever individuals do will have little to no impact.

My point is not that pushing for collective political change is unimportant, but rather that scholars have been quite vague on how citizens should do this and that it is unhelpful to devalue the space under an individual's direct control. This is because environmentalists should be encouraging people to build a strong internal locus of control. As Cleveland et al. note, "people with an internal [locus of control] believe their actions have some bearing on outcomes of situations, while those with an external [locus of control] believe they are powerless, with outcomes of situations being beyond their control."⁷⁴ Research has shown that increased feelings of powerlessness lead to decreased effort being put forth to mitigate climate change. It also causes individuals to place less importance on the issue of climate change.⁷⁵ On the other hand, when an individual has a strong internal locus of control, they are much more likely to engage in pro-environmental behaviors. Pro-environmental behaviors include personal actions, such as

⁷³ Maniates, "Individualization," pg. 44-49

⁷⁴ Mark Cleveland, Maria Kalamas, and Michel Laroche, "Shades of Green: Linking Environmental Locus of Control and Pro-environmental Behaviors," *Journal of Consumer Marketing* 22, no. 4 (January 1, 2005): 200, <https://doi.org/10.1108/07363760510605317>.

⁷⁵ Christopher Aitken, Ralph Chapman, and John McClure, "Climate Change, Powerlessness and the Commons Dilemma: Assessing New Zealanders' Preparedness to Act," *Global Environmental Change*, Special Issue on The Politics and Policy of Carbon Capture and Storage, 21, no. 2 (May 1, 2011): 752-60, <https://doi.org/10.1016/j.gloenvcha.2011.01.002>.

forgoing meat, and political actions, such as supporting environmental non-governmental organizations.⁷⁶

Throughout their analyses, Maniates and Sinnott-Armstrong argue that individuals should address the climate crisis politically instead of worrying about their own personal actions. As previously mentioned, this suggestion is quite vague. However, one political action that they may have had in mind is voting. While voting is important, it is an action that an individual engages in infrequently. Furthermore, once a vote is cast, an individual has little to no control over whether or not their chosen candidate wins, nor do they have much control over what their chosen candidate does once in office if they were to win. In other words, an individual has complete control when they are standing in the voting booth, but little to no control before and after that fleeting moment. With that being said, an individual has almost complete control over whether to order a hamburger or a veggie burger at a restaurant. The average North American votes only every two to four years, but eats three times a day. Environmentalists should be empowering the actions that people engage in frequently and have almost complete control over. Empowering these types of actions can help to build each individual's internal locus of control. When a person's internal locus of control is strong, then they will hopefully be more likely to participate even in situations where personal control over a situation is nebulous, such as voting.

4.2 Individualistic Liberal States

A majority of people in North America want to see action taken to address climate change. A recent Pew Research Center study found that 65% of Americans believe the government is doing too little to address climate change, and 60% of Americans view climate

⁷⁶ Mark Cleveland, Maria Kalamas, and Michel Laroche, "It's Not Easy Being Green': Exploring Green Creeds, Green Deeds, and Internal Environmental Locus of Control," *Psychology & Marketing* 29, no. 5 (April 11, 2012): 293–305.

change as a major threat.⁷⁷ In Canada the numbers are even higher, with one poll indicating that 76% of Canadians believe the government should be doing more to address the problem.⁷⁸ Mass demonstrations to address the climate crisis have been present as well. In 2019, climate activist Greta Thunberg led a climate strike in the city of Montreal, which garnered an estimated turnout of over 500,000 people.⁷⁹ This was just one in a series of sustained demonstrations, called ‘Fridays for the Future.’ The demonstrations resumed in September 2020 in cities across Canada after a temporary break due to the COVID-19 pandemic.⁸⁰ It is now more than obvious that citizens care and that they want to see political action to address the climate crisis. So, what is happening? Why are Sunday joyrides and meat consumption still legal? It may be that Maniates and others are underestimating the significance of an individualistic and liberal state.

While there are certainly other factors obstructing action to mitigate climate change, such as the meat industry’s influence in politics, the ideational factors behind stagnation are an important element as well.⁸¹ Scholarship up until this point has identified individualist tendencies as an obstacle to swift action on climate change mitigation.⁸² This makes sense, given the utmost importance placed on individual liberty within individualist countries. As far as Sinnott-

⁷⁷ Alec Tyson and Brian Kennedy, “Two-Thirds of Americans Think Government Should Do More on Climate,” *Pew Research Center Science & Society* (blog), June 23, 2020, <https://www.pewresearch.org/science/2020/06/23/two-thirds-of-americans-think-government-should-do-more-on-climate/>.

⁷⁸ Andrew Russell, “Canadians Want More Action on Climate Change, but Are Worried about ‘Economic Hardship,’” *Global News Canada*, December 30, 2019, <https://globalnews.ca/news/6312773/canada-climate-change-poll/>.

⁷⁹ Brittany Henriques, “Montreal’s Climate Strike through Photographs,” *Global News Canada*, August 30, 2019, <https://globalnews.ca/news/5962709/montreal-climate-strike-photographs/>.

⁸⁰ Jackie Dunham, “Fridays for Future: Canadian Activists Join Global Climate Protests with Day of Action,” *CTV News*, September 25, 2020, <https://www.ctvnews.ca/sci-tech/fridays-for-future-canadian-activists-want-climate-justice-back-in-the-spotlight-1.5120126>.

⁸¹ Deena Shanker, “The US Meat Industry’s Wildly Successful, 40-Year Crusade to Keep Its Hold on the American Diet,” *Quartz Media*, October 22, 2015, <https://qz.com/523255/the-us-meat-industrys-wildly-successful-40-year-crusade-to-keep-its-hold-on-the-american-diet/>.

⁸² Peng Xiang et al., “Individualist–Collectivist Differences in Climate Change Inaction: The Role of Perceived Intractability,” *Frontiers in Psychology* 10 (February 12, 2019), <https://doi.org/10.3389/fpsyg.2019.00187>.

Armstrong's⁸³ proposition to make Sunday joyrides illegal goes, the likelihood of that happening anytime soon in the US or Canada is very low. Similarly, the likelihood of meat consumption becoming illegal is also extremely low. In an individualist country, governments are limited in what they can do to affect the lives of citizens. Any intrusion that is too invasive is almost guaranteed to be challenged. This is why it is so important for individuals to provide signals to governments and businesses concerning what they value instead of those values coming from the top-down. When individuals are sending signals to those at the top about the change they would like to see in the country, then government or business response to these signals appear like a natural part of the process instead of an unjust intrusion onto individual liberties.

Additionally, the old adage 'actions speak louder than words' may be in play here. When politicians in democratic countries are elected to office, a very salient notion in their mind is their next re-election date. The mitigation of climate change requires the passage of policies which are high cost in the short-run for long-term benefit. Short election cycles are not conducive for addressing problems as serious as climate change, because politicians are motivated to focus on policies that will produce concrete results for constituents in the short-run, not policies that have short-term high costs for long-term collective benefit.⁸⁴ However, if constituents signal to politicians that they are willing to take on these high costs in the short-term by first changing their individual behavior, then politicians may find that advocating for these policies aimed at long-term collective benefit is not equivalent to giving up their position at the next election. To return to Sinnott-Armstrong's⁸⁵ point, if many North Americans enjoyed going on Sunday joyrides and engaged in this activity regularly, but they were at the same time pushing

⁸³ Sinnott-Armstrong, "It's Not My Fault," pg. 312

⁸⁴ Marina Povitkina, "The Limits of Democracy in Tackling Climate Change," *Environmental Politics* 27, no. 3 (May 4, 2018): 411–32, <https://doi.org/10.1080/09644016.2018.1444723>.

⁸⁵ Sinnott-Armstrong, "It's Not My Fault," pg. 312

for legislation to make Sunday joyrides illegal, would these conflicting messages not be extremely confusing for a politician? The words communicated to the politician convey a message that North Americans are willing to take on high costs to mitigate climate change as a collective, but the actions scream 'don't tread on me!'

Chapter 5: Towards An Alternative Theory of Social Change

The purpose of this paper is to establish the potential of individual action as a catalyst for social change, to reaffirm the role of individual action in environmental politics, and to empower individuals to take matters into their own hands. The empowerment of individual action does not absolve political or corporate leaders from taking responsibility to mitigate climate change. It does not have to be an either/or situation. Environmentalists can encourage individual action as an empowering force while also pushing for broader, institutional changes in the political realm. In fact, this is often how NGOs operate. Greenpeace, one of the most prominent global environmental NGOs, recently released a report detailing the impact of meat consumption on climate change and human health. In the report, Greenpeace calls on individuals to reduce their meat consumption while also targeting politicians to terminate subsidies for the meat and dairy industry.⁸⁶ The Sierra Club, an American environmental NGO, asks consumers to cut back on meat while also calling for the institutional elimination of factory farms.⁸⁷ It does not have to be, and arguably should not be, an either/or situation between individual behavior change and collective political action.

This is especially true given that the mitigation of climate change will ultimately require both. Institutional measures aimed at addressing the problem on a collective level will eventually affect the personal lives of citizens.⁸⁸ To illustrate this point, consider the oft-cited statistic that one-hundred companies are responsible for 71% of carbon emissions. This statistic is commonly used in defense of the view that individual actions are marginal, and that corporations, not

⁸⁶ Greenpeace International, “Less Is More: Reducing Meat and Dairy for a Healthier Life and Planet” (Amsterdam, 2018), https://www.greenpeace.org/static/planet4-international-stateless/2018/03/698c4c4a-summary_greenpeace-livestock-vision-towards-2050.pdf.

⁸⁷ Bruce Hamilton, “Food and Our Climate,” Sierra Club, October 2, 2014, <https://www.sierraclub.org/compass/2014/10/food-and-our-climate>.

⁸⁸ Peterson, 2010

individuals, are the only actors who can truly mitigate climate change. A closer look at the study that this statistic is derived from reveals that a large percentage of corporate emissions result from the production of products for people to consume. For instance, many of the emissions attributed to Exxon-Mobil, a company which made the list, is due to consumer use of gasoline.⁸⁹ While the actions of companies have certainly contributed to the climate problem, it is important to recognize that the ultimate purpose of corporations is to provide products and services to consumers. Thus, any regulation directed at Exxon-Mobil will ultimately have trickle-down effects for individual consumers.

As much as certain scholars try to convince people that individuals bear no responsibility for the climate crisis, personal action has contributed to the problem. However, this means that individual action can also catalyze the solution. People do not need to wait until regulation befalls Exxon-Mobil to change their own personal behavior. It is much more empowering when individual action is conceived of as a way for citizens to push for collective change through their actions instead of something that is forced upon them after these collective, institutional changes are adopted.

Thus, an alternative theory of social change emerges, one in which individuals engage in meaningful actions to mitigate climate change on a personal level while also pushing for institutional measures to mitigate climate change on a political level. As Frank notes, “taking individual steps to reduce your carbon footprint reinforces your identity as a climate advocate.”⁹⁰ The promotion of individual action to mitigate climate change does not have to mean failure to address the problem at an institutional level as well. In fact, often times engaging in personal

⁸⁹ Lloyd Alter, “Is It True That ‘100 Companies Are Responsible for 71% of Carbon Emissions’?,” Treehugger, September 28, 2020, <https://www.treehugger.com/is-it-true-100-companies-responsible-carbon-emissions-5079649>.

⁹⁰ Robert H. Frank, “The Way We Could Live Now,” Project Syndicate, October 2, 2020: pg. 6, <https://www.project-syndicate.org/onpoint/behavioral-contagion-against-climate-change-by-robert-frank-2020-10>.

actions to mitigate climate change can make a person even more likely push for change on a political level. As Hackel and Sparkman⁹¹ describe, this is because humans do not like to experience cognitive dissonance, so they harmonize their beliefs and values, including their political beliefs and values, with their actions. However, there is one important caveat to this pattern which must be addressed because Maniates⁹² suggests that individual action to mitigate climate change does not necessarily translate into political action to solve the problem.

Maniates argues that the individualization of responsibility causes individuals to feel as if they have ‘done their bit’ and subsequently disengage from other more substantive actions to fight the climate crisis. According to Hackel and Sparkman, it is the simple and easy actions which lead to disengagement. On the contrary, actions that hurt a little bit initially, such as reducing meat or dairy consumption, inspire greater political engagement. In other words, it is the actions that are noticeably absent from Maniates’⁹³ analysis. When an individual recycles or buys a ‘green’ product, then they may feel as if they have ‘done their bit.’ However, when an individual forgoes meat or decides to fly less, then they are reinforcing their identity as a climate advocate because they are then putting significant effort into living an environmentally-friendly lifestyle and may even be sacrificing a bit for the cause.

On an individual side, the behaviors which require initial effort can create a ‘ratcheting-up’ effect. For instance, the decision to become vegan, vegetarian, or flexitarian can be a bit difficult at first. Individuals who make this decision may have nothing to eat at a family gathering, or they may have to give up their favorite meal. The effort and commitment required to act upon this decision means that environmental considerations are ever-present. As an

⁹¹ Hackel and Sparkman, “Reducing Your Carbon Footprint Still Matters.”

⁹² Maniates, *Beyond Magical Thinking*, pg. 276-277

⁹³ Maniates, “Individualization,” pg. 31-50

individual empowers their internal locus of control by fully utilizing the space under their direct authority, then they can expand their efforts into other areas where they have less control. In other words, individual actions can serve as a 'gateway' for individuals. By first acting in a space where they have complete control, they can build confidence and power. As their internal locus of control grows and their identity as a climate advocate is continually reinforced through their actions, then they will feel confident taking their efforts into situations where they have less control, such as political situations.

On a community side, behaviors which require initial effort can spread throughout the population via behavioral contagion. These actions are not always easy, but they get an individual's family and friends to notice. As the behavior continues to proliferate, it gets business tycoons and government leaders to notice as well. Once that happens, then the institutional and collective change which Maniates desires is truly possible, even within the confines of an individualist and liberal state.

Chapter 6: Limitations

This thesis demonstrates how individual action can be a powerful catalyst in spurring institutional change. However, I do not claim that individual action has the power to change every aspect of the social fabric. I only claim that it is a more powerful force than some scholars suggest and represents a way for individuals to empower themselves by being proactive. In recognition of the fact that individual action does not represent a panacea for environmental ills, this section illuminates some important limitations of the central claim. The influence of personal action is limited by both cultural and institutional factors.

6.1 Cultural Limitations

The introduction specified that the scope of this thesis is limited in its analysis to North American countries: Canada and the United States. The concepts discussed throughout are applicable to other countries as well, however they are arguably more applicable in the context of individualistic and liberal societies as opposed to collectivist ones. In order for a positive behavioral contagion chain to begin, individuals must first be willing to go against the grain of larger society. It requires individuals to disavow certain societal norms and orient their behavior towards a different way of being. This is a somewhat easy process for individuals to engage in if they live in a society that celebrates and rewards individuality, such as Canada and the United States. Collectivist societies, on the other hand, emphasize social cohesion through conformity.⁹⁴ Researchers have found that people from collectivist societies are much more likely to conform to social norms than people from individualist countries.⁹⁵ For this reason, the concept of

⁹⁴ While the word ‘conformity’ usually has a negative connotation within North American society, this thesis uses the word ‘conformity’ in a neutral sense.

⁹⁵ Heejung Kim and Hazel Rose Markus, “Deviance or Uniqueness, Harmony or Conformity? A Cultural Analysis,” *Journal of Personality and Social Psychology* 77, no. 4 (October 1999): 785–800, <https://doi.org/10.1037/0022-3514.77.4.785>; Rod Bond and Peter B. Smith, “Culture and Conformity: A Meta-Analysis of Studies Using Asch’s

breaking social norms to stimulate positive behavioral contagion is a more practical strategy in individualistic societies than collectivist ones.

Since people living in collectivist societies may find it harder to break social norms than people living in individualist societies, norm changes in collectivist countries may have to come from the top-down as opposed to the bottom-up. In this paper, I have argued for a bottom-up strategy of norm revision. While people living in individualist societies typically find the process of breaking social norms easier to undergo, they are still strongly affected by the behavior of those around them. They still look to others for cues on how they themselves should act. Their personal behavior is especially impacted by the behavior of those closest to them, such as family and friends.⁹⁶ When an individualistic society that rewards individual norm-breaking but condemns governmental paternalism is combined with the powerful effects of behavioral contagion, a bottom-up strategy of norm revision is the most viable. Government mandates or directives are generally unpopular in liberal societies such as Canada and the US, but individuals breaking social norms by changing their own behavior and subsequently inspiring others to do so as well can be an effective way to alter societal norms in these countries.

With that being said, there are cultural factors discouraging people from going against societal norms in collectivist countries. Due to this, a bottom-up strategy of norm revision may not be as effective in collectivist countries. Collectivist countries may have to rely more on top-down strategies to alter societal norms. Top-down strategies refer to when governments or other institutional bodies send signals to citizens on how to behave. Top-down strategies are generally

(1952b, 1956) Line Judgment Task,” *Psychological Bulletin* 119, no. 1 (January 1996): 111–37, <https://doi.org/10.1037/0033-2909.119.1.111>.

⁹⁶ Bond and Smith, “Culture and Conformity”; Christopher Cashman, “Do as Your Neighbor Does? Neighbors Caring about the Environment Makes You More Likely to Conserve,” Newsroom, November 28, 2018, <https://www8.gsb.columbia.edu/newsroom/newsn/6685/do-as-your-neighbor-does-neighbors-caring-about-the-environment-makes-you-more-likely-to-conserve>.

ineffective in liberal societies due to their paternalistic nature, but they can be effective in collectivist countries. In fact, some collectivist countries have already adopted top-down strategies to change societal norms. In 2016, the Chinese Communist Party announced a plan to reduce the country's meat consumption by fifty percent. China's health ministry subsequently issued new dietary guidelines which urged citizens to reduce their meat intake.⁹⁷ While more needs to be done for the norm of meat consumption to completely change within China, there are signs that this announcement may have had at least a minor effect. In the past few years, the number of establishments serving vegan or vegetarian food has ballooned within China, and surveys have indicated that an increasing number of Chinese consumers are willing to incorporate meat substitutes into their diet.⁹⁸

6.2 Institutional Limitations

The central claim of this thesis is somewhat limited in the sense that individual action is much more powerful in select circumstances.

The empirical section of this paper explored how individuals changing their personal eating habits has affected the operations of institutional bodies. What an individual chooses to order at a restaurant or pick up at the grocery store is a decision that they have almost complete control over. Unfortunately, there are certain situations where individuals have a lot less control over the choices they make due to institutional factors. For instance, environmentalists often recommend driving less as a way to reduce one's individual carbon footprint. This action is difficult for many individuals to undertake, because the US and Canada are both very car-

⁹⁷ Oliver Milman and Stuart Leavenworth, "China's Plan to Cut Meat Consumption by 50% Cheered by Climate Campaigners," *The Guardian*, June 20, 2016, <http://www.theguardian.com/world/2016/jun/20/chinas-meat-consumption-climate-change>.

⁹⁸ Olivia Rosane, "Is China Going Vegan? Plant-Based Foods on the Rise in the World's Most Populous Country," *EcoWatch*, March 10, 2021, <https://www.ecowatch.com/china-vegan-meat-consumption-2651008321.html>.

dependent countries. Though there are a few exceptions, most locations in North America are institutionally engineered in such a way that individuals are almost required to transport themselves with a vehicle. North America also has a very weak public transportation system. Public transportation tends to be infrequent or unreliable, and in some localities it is nonexistent. Without a car, many Americans would be unable to transport themselves to work, school, the grocery store, or social activities.⁹⁹

The problem of car-dependency is compounded by the fact that any single individual acting alone could not do much to address it. It is impossible for one individual to create public transportation infrastructure or construct bike lanes across their city. Car-dependency is an example of an issue where institutions would have to take the lead in solving the problem, because as it stands now there is not much individuals can do. However, this does not mean that individuals cannot do anything whatsoever. Even in an automobile-dependent world, individuals can choose to drive hybrid vehicles over SUVs, to carpool with friends and co-workers, and to refrain from ‘joy-rides.’ None of these actions alone will solve the car-dependency problem. Institutions definitely need to get involved and overhaul current infrastructure to create less car-dependent localities. However, environmentalists should empower individuals by emphasizing what they *can* do instead of creating a culture of powerlessness. Environmentalists can recognize the need for governmental bodies to implement public transportation infrastructure while still encouraging individuals to do what they can in the meantime. Doing so empowers the autonomy of the individual by demonstrating that individuals are not completely powerless to the whims of

⁹⁹ Deana Ridenhour, “U.S. Car Dependency Exacerbates Climate Crises and Hinders Public Safety,” Pipe Dream, April 19, 2021, <https://www.bupipedream.com/opinions/121116/auto-draft-1034/>; Todd Litman, “The Costs of Automobile Dependency and the Benefits of Balanced Transportation,” *Victoria Transport Policy Institute*, August 2, 2002, 30.

institutions. Encouraging an individual to be proactive and to align their behavior with the type of world they desire is empowering, regardless of whatever an institution is doing or is not doing.

Depending on the circumstance, the actions of individuals will vary in how influential they are. In some cases, such as the car-dependency case, the actions that individuals can take are very limited until institutions become involved and change societal structures. In other words, this thesis does not apply equally in all situations. However, I do argue that environmentalists should empower individuals in all cases. Though people will be able to take more actions in some areas as opposed to others, we should always focus on what people *can* do as opposed to what they *cannot* do. Emphasizing what individuals can do does not mean that institutions are off the hook. It just provides individuals with a way to empower themselves and take matters into their own hands while facing the climate crisis, a problem which often evokes feelings of hopelessness and dread. This thesis aims to fight these feelings of hopelessness and dread through empowerment.

Chapter 7: Conclusion

Contrary to the beliefs of certain scholars, individual action to mitigate climate change is meaningful. Conveying values through action is one of the most powerful things an individual can do to fight the climate crisis, for several reasons. When an individual makes a decision, they are not only choosing for themselves, but they are also making a broader statement about how they believe all people should act. Their actions do have the power to motivate others in a substantial way through the mechanism of behavioral contagion. Psychological research demonstrates that it takes only *one* individual deviating from the norm to set off a chain reaction of positive behavioral contagion.¹⁰⁰ Once an individual changes their own personal behavior, they set the stage for others around them to change their behavior as well. This chain reaction can lead to institutional change by building values from the bottom-up, as is the case with reducing meat consumption. The empirical section demonstrated how individuals changing their own behavior caused businesses and governments to change their operations as well. The empirical section illuminated how valuable individual action can be. It allows citizens to empower their internal locus of control by fully utilizing the space under their direct authority. In individualistic and liberal states, substantive individual action also signals to governments that citizens are willing to take costs upon themselves for collective benefit. Lastly, citizens do not have to make a choice between engaging in individual action and pushing for institutional change. Often, these two factors reinforce each other instead of crowding the other out, as some scholars suggest.

The debate regarding the proper role of the individual in the mitigation of climate change has raged on for quite some time now among scholars in environmental politics, and it will

¹⁰⁰ Hackel and Sparkman, “Reducing Your Carbon Footprint Still Matters.”

assuredly continue into the future as well. Throughout this thesis, I have aimed to add a new perspective to this debate by approaching the question in an interdisciplinary manner. I have drawn upon scholarship from political science, psychology, behavioral economics, and philosophy to create a more complete picture of how impactful individual action can be.

I also strive to inspire a new understanding of individual action through this thesis. According to Maniates, “contemporary environmentalism has become a movement of guilt and shame.”¹⁰¹ Unfortunately, Maniates is correct in noting that the phenomenon of individual action is often used to guilt or shame people. For instance, environmental activists are often criticized as being hypocrites based upon the actions they do or do not take in their own personal lives.¹⁰² As Maniates suggests, this creates a culture of guilt and shame in environmental activism. In this thesis, I have proposed an alternative way of understanding individual action. I have argued that individual action is a form of empowerment. Taking responsibility for the mitigation of climate change, as an individual, is not shameful, but rather it is empowering. It is an acknowledgment that individuals are not powerless entities who cannot do anything besides attempt to influence corporations and governments. Individual actions are a powerful medium of influence. They affect those around us through the medium of behavioral contagion, and they can affect corporations and governments too as behaviors continue to proliferate. Throughout this thesis, I have aimed to empower the space under an individual’s direct control by illustrating how it can have a strong impact on the collective.

Future scholarship could further develop certain themes discussed in this thesis. The section on behavioral contagion discussed how it only takes one person deviating from a social

¹⁰¹ Maniates, *Beyond Magical Thinking*, pg. 278

¹⁰² Madeleine Somerville, “How I Deal with the Unbearable Hypocrisy of Being an Environmentalist,” *The Guardian*, April 5, 2016, <http://www.theguardian.com/lifeandstyle/2016/apr/05/environmentally-friendly-green-living-ideas>.

norm to make others feel more comfortable deviating from the norm as well. This finding has been proven through multiple experimental studies.¹⁰³ Some research has focused on what causes people to act in a disagreeable fashion contrary to dominant social norms.¹⁰⁴ However, it is somewhat unknown what causes a person to act in a pro-social manner contrary to dominant social norms. Future scholarship could investigate the characteristics of mavericks who break social norms to act in a socially benevolent manner. It would be interesting to find out what exactly causes a person to go against the crowd when they feel like the crowd is not doing the right thing. Scholarship following this thesis could also further develop an alternative theory of social change in which institutions and individuals both contribute to environmental justice. In this thesis, I have laid out some important considerations to keep in mind when developing an alternative theory of social change, but future scholarship could develop it more fully.

Above all, this paper aims to empower individuals by showing them that their efforts are valuable and do have the potential to create change. At the end of the day, individuals cannot control governments, businesses, or even their friends and family. However, individuals do have complete control over what they decide to do. While controlling other actors is impossible, using the locus of control directly under an individual's jurisdiction can influence other actors in a substantial manner. This is because individuals send signals to others in society about what they value, which can create momentum for larger changes through behavioral contagion. As we observed in the empirical section, sometimes this momentum can be so strong that it even

¹⁰³ Hackel and Sparkman, "Reducing Your Carbon Footprint Still Matters."

¹⁰⁴ Ruth Vargas Hill, Eduardo Maruyama, and Angelino Viceisza, "Breaking the Norm: An Empirical Investigation into the Unraveling of Good Behavior," *Journal of Development Economics* 99, no. 1 (September 1, 2012): 150–62, <https://doi.org/10.1016/j.jdeveco.2011.11.004>; Gerben A Van Kleef et al., "The Social Dynamics of Breaking the Rules: Antecedents and Consequences of Norm-Violating Behavior," *Current Opinion in Psychology* 6 (December 2015): 25–31, <https://doi.org/10.1016/j.copsyc.2015.03.013>.

changes society. It appears that the butterfly effect can be a formidable force in the fight against the climate crisis after all, but only if individuals believe in their power and subsequently use it.

Bibliography

- Abbey, Edward. *A Voice Crying in the Wilderness: Vox Clamantis in Deserto: Notes from a Secret Journal*. Rosetta Books, 2015.
- Aitken, Christopher, Ralph Chapman, and John McClure. "Climate Change, Powerlessness and the Commons Dilemma: Assessing New Zealanders' Preparedness to Act." *Global Environmental Change*, Special Issue on The Politics and Policy of Carbon Capture and Storage, 21, no. 2 (May 1, 2011): 752–60. <https://doi.org/10.1016/j.gloenvcha.2011.01.002>.
- Alter, Lloyd. "Is It True That '100 Companies Are Responsible for 71% of Carbon Emissions'?" Treehugger, September 28, 2020. <https://www.treehugger.com/is-it-true-100-companies-responsible-carbon-emissions-5079649>.
- Beynon-MacKinnon, Zoe. "Not Milk? Agribusiness and Canada's Food Guide." University of British Columbia, 2019. <https://doi.org/10.14288/1.0380496>.
- Bond, Rod, and Peter B. Smith. "Culture and Conformity: A Meta-Analysis of Studies Using Asch's (1952b, 1956) Line Judgment Task." *Psychological Bulletin* 119, no. 1 (January 1996): 111–37. <https://doi.org/10.1037/0033-2909.119.1.111>.
- Bradbury, Ray. "A Sound of Thunder." In *R Is for Rocket*. New York: Doubleday, 1952.
- Brady, Jeff. "Teen Climate Activist Greta Thunberg Arrives In New York After Sailing The Atlantic." National Public Radio, August 28, 2019. <https://www.npr.org/2019/08/28/754818342/teen-climate-activist-greta-thunberg-arrives-in-new-york-after-sailing-the-atlan>.
- Cashman, Christopher. "Do as Your Neighbor Does? Neighbors Caring about the Environment Makes You More Likely to Conserve." Newsroom, November 28, 2018. <https://www8.gsb.columbia.edu/newsroom/newsn/6685/do-as-your-neighbor-does-neighbors-caring-about-the-environment-makes-you-more-likely-to-conserve>.
- Cho, Renee. "Recycling in the U.S. Is Broken. How Do We Fix It?" *State of the Planet* (blog), March 13, 2020. <https://news.climate.columbia.edu/2020/03/13/fix-recycling-america/>.
- Cleveland, Mark, Maria Kalamas, and Michel Laroche. "'It's Not Easy Being Green': Exploring Green Creeds, Green Deeds, and Internal Environmental Locus of Control." *Psychology & Marketing* 29, no. 5 (April 11, 2012): 293–305.
- . "Shades of Green: Linking Environmental Locus of Control and Pro-environmental Behaviors." *Journal of Consumer Marketing* 22, no. 4 (January 1, 2005): 198–212. <https://doi.org/10.1108/07363760510605317>.
- Danziger, Lucy, and Spencer Whaley. "More Retailers Are Competing for Plant-Based Consumer Dollars." The Beet, January 15, 2021. <https://thebeet.com/supermarkets-and-online-retailers-are-competing-for-your-plant-based-dollars/>.
- Dizikes, Peter. "When the Butterfly Effect Took Flight | MIT Technology Review." MIT Technology Review, February 22, 2011. <https://www.technologyreview.com/2011/02/22/196987/when-the-butterfly-effect-took-flight/>.
- Dunham, Jackie. "Fridays for Future: Canadian Activists Join Global Climate Protests with Day of Action." CTV News, September 25, 2020. <https://www.ctvnews.ca/sci-tech/fridays-for-future-canadian-activists-want-climate-justice-back-in-the-spotlight-1.5120126>.
- Dunkin Donuts. "Sandwiches & More | Stacked with Flavor | Dunkin'®." Dunkin Donuts Menu. Accessed May 24, 2021. <https://www.dunkindonuts.com/en/menu/sandwiches-and-more>.

- Edwards, Phil. “The Hidden War over Grocery Shelf Space.” Vox, November 22, 2016. <https://www.vox.com/2016/11/22/13707022/grocery-store-slotting-fees-slotting-allowances>.
- Fisher, Gillian. “How to Eat Vegan at A&W.” LiveKindly, March 8, 2019. <https://www.livekindly.co/the-ultimate-guide-to-eating-vegan-at-aw/>.
- Flanagan, Ryan. “More than 3 Million Canadians Vegetarian or Vegan: Study.” CTV News, July 25, 2018. <https://www.ctvnews.ca/canada/more-than-3-million-canadians-vegetarian-or-vegan-study-1.4027606>.
- Frank, Robert H. “The Way We Could Live Now.” Project Syndicate, October 2, 2020. <https://www.project-syndicate.org/onpoint/behavioral-contagion-against-climate-change-by-robert-frank-2020-10>.
- Frank, Robert H. *Under the Influence: Putting Peer Pressure to Work*. Princeton, New Jersey: Princeton University Press, 2020.
- Greenpeace International. “Less Is More: Reducing Meat and Dairy for a Healthier Life and Planet.” Amsterdam, 2018. https://www.greenpeace.org/static/planet4-international-stateless/2018/03/698c4c4a-summary_greenpeace-livestock-vision-towards-2050.pdf.
- Hackel, Leor, and Gregg Sparkman. “Reducing Your Carbon Footprint Still Matters.” Slate, October 26, 2018. <https://slate.com/technology/2018/10/carbon-footprint-climate-change-personal-action-collective-action.html>.
- Hamilton, Bruce. “Food and Our Climate.” Sierra Club, October 2, 2014. <https://www.sierraclub.org/compass/2014/10/food-and-our-climate>.
- Hanson, Helena. “Trudeau Just Announced A \$100 Million Investment Into Plant-Based Food In Canada.” Narcity, June 22, 2020. <https://www.narcity.com/ottawa/an-investment-of-almost-dollar100-million-will-go-to-plant-based-food-says-trudeau>.
- Health Canada. “Welcome to Canada’s Food Guide.” Government of Canada, January 14, 2021. <https://food-guide.canada.ca/en/>.
- Henriques, Brittany. “Montreal’s Climate Strike through Photographs.” Global News Canada, August 30, 2019. <https://globalnews.ca/news/5962709/montreal-climate-strike-photographs/>.
- Hill, Ruth Vargas, Eduardo Maruyama, and Angelino Viceisza. “Breaking the Norm: An Empirical Investigation into the Unraveling of Good Behavior.” *Journal of Development Economics* 99, no. 1 (September 1, 2012): 150–62. <https://doi.org/10.1016/j.jdeveco.2011.11.004>.
- Ipsos. “Vegan Trends & Demographics USA.” Ipsos Retail Performance. Accessed June 15, 2021. <https://www.ipsos-retailperformance.com/en/vegan-trends/>.
- Jacobson, Linda. “Success with Meatless Mondays Depends on Staff Training, ‘well-Prepared’ Recipes.” K-12 Dive, March 18, 2019. <https://www.k12dive.com/news/success-with-meatless-mondays-depends-on-staff-training-well-prepared-re/550480/>.
- Kim, Heejung, and Hazel Rose Markus. “Deviance or Uniqueness, Harmony or Conformity? A Cultural Analysis.” *Journal of Personality and Social Psychology* 77, no. 4 (October 1999): 785–800. <https://doi.org/10.1037/0022-3514.77.4.785>.
- Klein, JoAnna. “What Happens When the Nation’s Largest School System Goes Meatless One Day a Week?” The Hill, November 22, 2019. <https://thehill.com/changing-america/sustainability/climate-change/471698-what-happens-when-the-nations-largest-school>.

- Kostuch Media Ltd. “Canada’s Competitive Market It Making It Harder for Restaurants to Thrive.” *Foodservice and Hospitality Magazine* (blog), February 26, 2015. <https://www.foodserviceandhospitality.com/canadas-competitive-market-it-making-it-harder-for-restaurants-to-thrive/>.
- Latane, Bibb, and John M. Darley. “Group Inhibition of Bystander Intervention in Emergencies.” *Journal of Personality and Social Psychology* 10, no. 3 (1968): 215–21. <https://doi.org/10.1037/h0026570>.
- Litman, Todd. “The Costs of Automobile Dependency and the Benefits of Balanced Transportation.” *Victoria Transport Policy Institute*, August 2, 2002, 30.
- Lucas, Amelia. “Burger King’s Plant-Based Impossible Whopper Is Launching Nationwide This Month.” CNBC, August 1, 2019. <https://www.cnbc.com/2019/07/31/burger-kings-plant-based-impossible-whopper-is-launching-nationwide-this-month.html>.
- Luella’s BBQ. “Our Menus.” *Luella’s* (blog). Accessed May 24, 2021. <https://luellasbbq.com/our-menus/>.
- Malochleb, Margaret. “Flexitarianism on the Rise; Transparency Tops 2021 Trends.” The Institute of Food Technologists, December 1, 2020. <https://www.ift.org/news-and-publications/food-technology-magazine/issues/2020/december/departments/news-flexitarianism-on-the-rise-transparency-tops-2021-trends>.
- Maniates, Michael F. *Beyond Magical Thinking*. Edited by Agni Kalfagianni, Doris Fuchs, and Anders Hayden. Routledge Handbooks Online, 2019. <https://doi.org/10.4324/9781315170237-22>.
- . “Individualization: Plant a Tree, Buy a Bike, Save the World?” *Global Environmental Politics* 1, no. 3 (August 1, 2001): 31–52. <https://doi.org/10.1162/152638001316881395>.
- Mann, Michael E. “Individual Choices Won’t Be Enough to Save the Planet.” TIME, September 12, 2019. <https://time.com/5669071/lifestyle-changes-climate-change/>.
- Marsden, Paul. “Memetics and Social Contagion: Two Sides of the Same Coin?” *The Journal of Memetics: Evolutionary Models of Information Transmission*, 1998. http://cfpm.org/jom-emit/1998/vol2/marsden_p.html.
- Maze, Jonathan. “Here’s How Competitive the Restaurant Industry Really Is.” Restaurant Business, April 18, 2018. <https://restaurantbusinessonline.com/operations/heres-how-competitive-restaurant-industry-really>.
- McCarthy, Niall. “Who Are America’s Vegans And Vegetarians?” Forbes, August 6, 2018. <https://www.forbes.com/sites/niallmccarthy/2018/08/06/who-are-americas-vegans-and-vegetarians-infographic/?sh=5a05d766211c>.
- McCormick, Drew. “Obesity-Related Legislation Meets American Individualism.” *AMA Journal of Ethics* 12, no. 4 (April 1, 2010): 305–8. <https://doi.org/10.1001/virtualmentor.2010.12.4.hlaw1-1004>.
- Menus of Change Initiative. “Plant-Forward by the Numbers,” 2020. <https://www.ciaprochef.com/MOC/PFbytheNumbers.pdf/>.
- Meyer, Robinson. “Voters Really Care About Climate Change.” The Atlantic, February 21, 2020. <https://www.theatlantic.com/science/archive/2020/02/poll-us-voters-really-do-care-about-climate-change/606907/>.
- Milman, Oliver, and Stuart Leavenworth. “China’s Plan to Cut Meat Consumption by 50% Cheered by Climate Campaigners.” The Guardian, June 20, 2016. <http://www.theguardian.com/world/2016/jun/20/chinas-meat-consumption-climate-change>.

- Neff, Roni A., Danielle Edwards, Anne Palmer, Rebecca Ramsing, Allison Righter, and Julia Wolfson. "Reducing Meat Consumption in the USA: A Nationally Representative Survey of Attitudes and Behaviours." *Public Health Nutrition* 21, no. 10 (July 2018): 1835–44. <https://doi.org/10.1017/S1368980017004190>.
- Nelson, Andy. "Plant-Based Foods Stake Their Place in the Retail Food Mainstream." Supermarket Perimeter, September 13, 2020. <https://www.supermarketperimeter.com/articles/5624-plant-based-foods-stake-their-place-in-the-retail-food-mainstream>.
- Panera Bread. "Menu." Accessed May 24, 2021. <https://www.panerabread.com/en-us/menu.html>.
- PETA. "Vegan Fast-Food and Restaurant Guide." People for the Ethical Treatment of Animals, April 2021. <https://www.peta.org/living/food/chain-restaurants/>.
- Poore, J., and T. Nemecek. "Reducing Food's Environmental Impacts through Producers and Consumers." *Science* 360, no. 6392 (June 1, 2018): 987–92. <https://doi.org/10.1126/science.aag0216>.
- Povitkina, Marina. "The Limits of Democracy in Tackling Climate Change." *Environmental Politics* 27, no. 3 (May 4, 2018): 411–32. <https://doi.org/10.1080/09644016.2018.1444723>.
- Princen, Thomas. *Consumer Sovereignty, Heroic Sacrifice: Two Insidious Concepts in an Endlessly Expansionist Economy*. Edited by Michael F. Maniates and John M. Meyer. *The Environmental Politics of Sacrifice*. Cambridge, Massachusetts: The MIT Press, 2010. <https://mitpress.universitypressscholarship.com/view/10.7551/mitpress/9780262014366.001.0001/upso-9780262014366-chapter-7>.
- Pritchett, Liam. "A Complete Guide to Vegan KFC." LiveKindly, September 7, 2020. <https://www.livekindly.co/complete-guide-to-vegan-kfc/>.
- Rahim, Saqib. "Finding the 'Weapons' of Persuasion to Save Energy." The New York Times Archive, June 21, 2010. <https://archive.nytimes.com/www.nytimes.com/cwire/2010/06/21/21climatewire-finding-the-weapons-of-persuasion-to-save-ene-8137.html?pagewanted=1>.
- Redman, Russell. "Plant-Based Food Retail Sales Reach \$5 Billion." Supermarket News, March 3, 2020. <https://www.supermarketnews.com/consumer-trends/plant-based-food-retail-sales-reach-5-billion>.
- Ridenhour, Deana. "U.S. Car Dependency Exacerbates Climate Crises and Hinders Public Safety." Pipe Dream, April 19, 2021. <https://www.bupipedream.com/opinions/121116/auto-draft-1034/>.
- Ritchie, Hannah. "Food Production Is Responsible for One-Quarter of the World's Greenhouse Gas Emissions." Our World in Data, November 6, 2019. <https://ourworldindata.org/food-ghg-emissions>.
- Rosane, Olivia. "Is China Going Vegan? Plant-Based Foods on the Rise in the World's Most Populous Country." EcoWatch, March 10, 2021. <https://www.ecowatch.com/china-vegan-meat-consumption-2651008321.html>.
- Russell, Andrew. "Canadians Want More Action on Climate Change, but Are Worried about 'Economic Hardship.'" Global News Canada, December 30, 2019. <https://globalnews.ca/news/6312773/canada-climate-change-poll/>.

- Ruth's Chris. "Vegetarian Menu." Accessed May 24, 2021. <https://www.ruthschris.com/promotions/vegetarian/>.
- Sandler, Ronald. "Ethical Theory and the Problem of Inconsequentialism: Why Environmental Ethicists Should Be Virtue-Oriented Ethicists." *Journal of Agricultural and Environmental Ethics* 23, no. 1 (August 7, 2009): 167. <https://doi.org/10.1007/s10806-009-9203-4>.
- Sartre, Jean-Paul. *Existentialism Is a Humanism*. Edited by John Kulka. Translated by Carol Macomber. New Haven: Yale University Press, 2007. <https://yalebooks.yale.edu/book/9780300115468/existentialism-humanism>.
- Scarborough, Peter, Paul N. Appleby, Anja Mizdrak, Adam D. M. Briggs, Ruth C. Travis, Kathryn E. Bradbury, and Timothy J. Key. "Dietary Greenhouse Gas Emissions of Meat-Eaters, Fish-Eaters, Vegetarians and Vegans in the UK." *Climatic Change* 125, no. 2 (July 1, 2014): 179–92. <https://doi.org/10.1007/s10584-014-1169-1>.
- Shanker, Deena. "The US Meat Industry's Wildly Successful, 40-Year Crusade to Keep Its Hold on the American Diet." Quartz Media, October 22, 2015. <https://qz.com/523255/the-us-meat-industrys-wildly-successful-40-year-crusade-to-keep-its-hold-on-the-american-diet/>.
- Šimčikas, Saulius. "Is the Percentage of Vegetarians and Vegans in the U.S. Increasing?" *Animal Charity Evaluators* (blog), August 16, 2018. <https://animalcharityevaluators.org/blog/is-the-percentage-of-vegetarians-and-vegans-in-the-u-s-increasing/>.
- Sinnott-Armstrong, Walter. "It's Not My Fault: Global Warming and Individual Moral Obligations." In *Perspectives on Climate Change*, edited by Walter Sinnott-Armstrong and Richard Howarth, 221–53. Elsevier, 2005.
- Somerville, Madeleine. "How I Deal with the Unbearable Hypocrisy of Being an Environmentalist." *The Guardian*, April 5, 2016. <http://www.theguardian.com/lifeandstyle/2016/apr/05/environmentally-friendly-green-living-ideas>.
- Sparkman, Gregg, and Shahzeen Z. Attari. "Credibility, Communication, and Climate Change: How Lifestyle Inconsistency and Do-Gooder Derogation Impact Decarbonization Advocacy." *Energy Research & Social Science* 59 (January 1, 2020): 101290. <https://doi.org/10.1016/j.erss.2019.101290>.
- Sparkman, Gregg, Lauren Howe, and Greg Walton. "How Social Norms Are Often a Barrier to Addressing Climate Change but Can Be Part of the Solution." *Behavioural Public Policy*, undefined/ed, 1–28. <https://doi.org/10.1017/bpp.2020.42>.
- Sparkman, Gregg, and Gregory M. Walton. "Dynamic Norms Promote Sustainable Behavior, Even If It Is Counternormative." *Psychological Science* 28, no. 11 (2017): 1663–74.
- Starbucks. "Menu: Hot Breakfast." Accessed May 24, 2021. <https://www.starbucks.com/menu/food/hot-breakfast>.
- Starostinetskaya, Anna. "McDonald's and Beyond Meat Sign 3-Year Deal to Launch Plant-Based Options." *VegNews.com*, February 25, 2021. <https://vegnews.com/2021/2/mcdonalds-beyond-meat-sign-3-year-deal-to-launch-plant-based-options>.
- Sudborough, Susannah. "How and Why Vegan Products Are on the Rise." *Boston University News Service* (blog), December 22, 2018. <https://bunewsservice.com/how-and-why-vegan-products-are-on-the-rise/>.

- Suldovsky, Brianne. “The Information Deficit Model and Climate Change Communication.” Oxford Research Encyclopedia of Climate Science, September 26, 2017. <https://doi.org/10.1093/acrefore/9780190228620.013.301>.
- Thompson, Kat. “Burger King’s Making a Breakfast Sandwich With Impossible’s New Plant-Based Sausage.” Thrillist, February 3, 2020. <https://www.thrillist.com/news/nation/burger-king-croissanwich-impossible-sausage-croissant-sandwich>.
- Tyson, Alec, and Brian Kennedy. “Two-Thirds of Americans Think Government Should Do More on Climate.” *Pew Research Center Science & Society* (blog), June 23, 2020. <https://www.pewresearch.org/science/2020/06/23/two-thirds-of-americans-think-government-should-do-more-on-climate/>.
- Van Kleef, Gerben A, Florian Wanders, Eftychia Stamkou, and Astrid C Homan. “The Social Dynamics of Breaking the Rules: Antecedents and Consequences of Norm-Violating Behavior.” *Current Opinion in Psychology* 6 (December 2015): 25–31. <https://doi.org/10.1016/j.copsyc.2015.03.013>.
- Vandermoere, Frédéric, Robbe Geerts, Charlotte de backer, Sara Erreygers, and Els Doorslaer. “Meat Consumption and Vegaphobia: An Exploration of the Characteristics of Meat Eaters, Vegaphobes, and Their Social Environment.” *Sustainability* 11 (July 19, 2019): 3936. <https://doi.org/10.3390/su11143936>.
- Vinciarelli, Alessandro, Maja Pantic, Dirk Heylen, Catherine Pelachaud, Isabella Poggi, Marc Schröder, and et al. *Bridging the Gap Between Social Animal and Unsocial Machine: A Survey of Social Signal Processing*, n.d.
- Weber, J. Mark, and J. Keith Murnighan. “Suckers or Saviors? Consistent Contributors in Social Dilemmas.” *Journal of Personality and Social Psychology* 95, no. 6 (March 8, 2008): 1340–53. <https://doi.org/10.1037/a0013326>.
- Westlake, Steve. “A Counter-Narrative to Carbon Supremacy: Do Leaders Who Give Up Flying Because of Climate Change Influence the Attitudes and Behaviour of Others?” Cardiff University, 2017. https://drive.google.com/file/d/1GHMzLpkPVJ-a2fifjswLxxqAqTEllVNs/view?usp=embed_facebook.
- Wills, Lauren. “Canadian Government Invests \$150 Million in Vegan Protein Development.” LiveKindly, November 14, 2018. <https://www.livekindly.co/canadian-government-invests-150-million-vegan-protein-industries-supercluster/>.
- Wood, Stephanie. “Climate Change Number 1 Concern for Canadians, Poll Says.” Canada’s National Observer, September 20, 2019. <https://www.nationalobserver.com/2019/09/20/news/climate-change-number-1-concern-canadians-poll-says>.
- Xiang, Peng, Haibo Zhang, Liuna Geng, Kexin Zhou, and Yuping Wu. “Individualist–Collectivist Differences in Climate Change Inaction: The Role of Perceived Intractability.” *Frontiers in Psychology* 10 (February 12, 2019). <https://doi.org/10.3389/fpsyg.2019.00187>.