PALEO BODY POLITICS: RE-WILDING HEALTH, ECOLOGY, AND DIET DURING THE ANTHROPOCENE

by

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ABSTRACT

Environmental politics in the Anthropocene are concerned with what humans have done to nature and in turn what this adulterated nature will mean for the health, well-being, and future of humanity. In this era of environmental anxiety, "re-wilding" has emerged as an ecological health and resiliency strategy across scales, from the human body to the planet. At the scale of the body, this has meant a reevaluation of dietary, consumption, and lifestyle behaviors among concerned consumers seeking to create healthy, resilient bodily ecosystems. Recent health trends including the Paleo Diet and Ancestral Health movements call upon an evolutionary perspective for insight as to how to re-wild one's bodily ecosystem in the face of ecological crisis across scales, using the Paleolithic era as a benchmark for dietary and behavioral rewilding.

Drawing upon data from 55 in-depth, semi-structured interviews with Paleo and Keto dieters and participant observation at the 2017 PALEOf(x)TM conference, this dissertation examines the controversial Paleo movement as a reaction to the environmental and health anxieties of life in the Anthropocene. In the chapters that follow, I investigate how the discourse and practices surrounding the Paleo and Keto diets engage with the shifting landscape of healthcare and nutrition politics, new ecological conceptions of human health and bodies, and a growing understanding of the connection between human and non-human/environmental health in an era of ecological "crisis" or transformation marked by the Anthropocene. Throughout this dissertation, I argue that the body's ecology is a new frontier for an ecological ethic of health and sustainability and a microcosm for interrogating the politics that go along with it. Further, I argue that there is an underutilized potential of the body as both a biopedagogical site (for tuning into bodied knowledges through enhanced *visceral acuity*) and, in turn, a pedagogical site in a more traditional sense for understanding the dynamics between the body, food, health and ecology.

Chapter 1

INTRODUCTION

1.1 Introduction: Going Paleo in the Anthropocene

The Anthropocene is rife with anxiety and uncertainty concerning both human and planetary health. In recent years, a growing community of Paleo Diet and Ancestral Health enthusiasts have come together around a specific temporal intervention for seeking refuge from illness and the key to longevity in the face of this ecological uncertainty, looking to our Paleolithic hunter-gatherer ancestors for the answer to creating a healthier human-environment relationship in the Anthropocene. Drawing influence from evolutionary theory, nutritional primitivism, and new models of the body and the body-environment relationship, the Paleo community blends primitivism and futurism, collectivism and individualism, and provides unique insight into self-care, health, and environmentalism in our current ecological moment¹.

Environmental politics in the Anthropocene are concerned with what humans have done to nature and in turn what this adulterated nature will mean for the future of life on our planet (cf. Cook and Balayannis 2015)². Since the rapid globalization,

¹ Nutritional primitivism is defined by Knight (2015) as, "the pursuit of ostensibly simpler, more natural, and authentic ways of eating as part of a quest for health through diet" (p.442).

² The term "Anthropocene" is contentious and alternatives exist, including: "Capitalocene," "Cthulucene," etc. (cf. Haraway 2015). In this dissertation, "Anthropocene" is used deliberately to reference usage in the geologic and

industrialization, and population growth of the mid-20th century, arguably marking the start of the Anthropocene (cf. McNeill and Engelke 2016), we have witnessed the rise of social movements such as the "back-to-the-land" movement (cf. Brown 2011) and the alternative food and "natural food" movements including the organic movement (cf. Goodman et al. 2012) that focused on bringing the body back to *nature* in the interest of remediating both human and environmental health³. The Paleo community, centered on the popular Paleo Diet (a nutritional regimen modeled after the supposed dietary habits of our pre-agriculture, hunter-gatherer ancestors, cf. Cordain 2002), sits within the lineage of these social movements concerned with the human and environmental health.

In this dissertation, I undertake an empirical investigation of "going Paleo" in the Anthropocene: from the *ancestral futurism* of Paleo philosophy as a new environmentalism and healthism, to how this *ancestral futurism* is interpreted and translated into dietary and lifestyle practices, to how community and an *embodied ecological health movement* is built around these practices, to how the lived, embodied experience of Paleo health practice offers new methods of knowledge production regarding food, health, bodies, and ecology through *visceral acuity* (or a heightened

environmental sciences and the context within which the term was created (i.e., one that was anthropocentric).

³ There is ongoing debate as to when the end of the Holocene (our most recent geologic epoch which began approximately 11,500 years ago) and start of the Anthropocene should be defined. A number of theories are offered, ranging from the advent of agriculture and the end of the Paleolithic period (approximately 12,000 years ago) to as recently as 1945 with the first detonation of a nuclear weapon known as the Trinity Castree 2015). Though a start date has yet to be decided definitively, it is generally agreed that the latter date is more favored (cf. Castree 2015). Thus, this paper defines "Anthropocene" as referencing the time period from 1945 until present.

bodily awareness and ability to interpret the signals of the body). As such, this dissertation complicates the idea of Paleo as merely a dietary trend or fad diet. Instead, I argue that Paleo is a multifaceted phenomenon: a diet, an environmental philosophy, a consumer culture, and an *embodied ecological health movement* that serves as an example of health as ecology put into practice.

Despite the staying power and continued growth and interest in Paleo and Paleo-like diets (e.g., the Ketogenic or "Keto" diet), the diet has received little scholarly attention from any discipline (Johnson 2015). Furthermore, social scientific research on dieting more generally has rarely investigated specific diet plans or the practices and discourses associated with them (cf. Coleman 2010; Mol 2013). This dissertation focuses on the controversial Paleo movement as both a reaction to and an active producer of the environmental and health anxieties of life in the Anthropocene. Rather than simply sitting against the backdrop of the Anthropocene, the Paleo movement contributes to this framing, offering a narrative to help us understand our current ecological moment by placing it within a broader history of humanenvironment relations. In the chapters that follow, I investigate how the discourse and practices surrounding the Paleo and Keto diets engage with the shifting landscape of healthcare and nutrition politics, new ecological conceptions of human health and bodies, and a growing understanding of the connection between human and nonhuman/environmental health in an era of ecological "crisis" or transformation marked by the Anthropocene. Throughout this dissertation, I argue that the body's ecology is a new frontier for an ecological ethic of health and sustainability and a microcosm for interrogating the politics that go along with it. Further, I argue that there is an underutilized potential of the body as both a biopedagogical site (for tuning into

bodied knowledges through enhanced *visceral acuity*) and, in turn, a pedagogical site in a more traditional sense for understanding the dynamics between the body, food, health and ecology.

1.2 Background and Research Questions

In the early 2000s Crutzen and Stoermer (2000) proposed that our current geologic epoch, the Holocene, should be succeeded by the "Anthropocene," on account of human-induced changes to the Earth system to a degree and scale that was previously inconceivable, notably anthropogenic climate change. While global ecological change (e.g., climate change) is often central to framing the Anthropocene, the body's ecology has also undergone change due to human impacts during this period. The human microbiome, or the diverse and sizeable community of microbes contained both within and on the human body, has changed in parallel with the phases of the Anthropocene, particularly in response to changes in dietary and consumption practices (cf. Gillings and Paulsen, 2014). These findings appear to suggest that our body's ecosystem, like our global ecosystem, is in a state of disequilibrium or, at the very least, transition.

The latest research in the health and medical sciences, notably the "omic" sciences such as microbiomics and genomics, have aided in actualizing the idea of the body as an ecosystem, one that is porous, malleable, dependent on a number of non-human, microbial collaborators, and one that is increasingly "endangered" and in need of conservation. As a human-environment geographer, I am interested in examining how the human body has become a new space for the ecological anxieties, interventions, and politics of the Anthropocene to play out. Much like our global ecosystem, perceived threats to the integrity of the body's ecosystem abound in the

Anthropocene: inadequate inoculation of infant microbiomes with their mother's bacteria due to caesarean sections and formula feeding, inadequate nutrition and probiotic food consumption in Western diets including the "standard American diet" (SAD), the excessive use of anti-microbial cleaning and personal hygiene products, chemical exposures in the food supply and built environment, and the sedentary lifestyles and general disconnect with *nature* characteristic of modernity. In light of these perceived threats, I asked the following questions: *What does making a healthy, resilient bodily ecosystem in the Anthropocene look like? What interventions are being made to control the unruly ecologies of both the human body's ecosystem and the environments or spaces it inhabits? Who or what is involved? What do these health practices mean within the larger context of nature-society relations and environmental politics in the Anthropocene?*

As a human-environment geographer broadly concerned with food systems and health, I was interested in examining the care and maintenance of the body's ecosystem through the lens of political ecology, building off of the work of other scholars who have developed "political ecology of health" (cf. King 2010; Jackson and Neely 2015) and "political ecology of the body" (cf. Hayes-Conroy and Hayes-Conroy, 2013; Guthman and Mansfield, 2013) frameworks for addressing matters of bodily health through a shift in focus from (un)healthy landscapes to (un)healthy bodies. Guthman and Mansfield (2013) note that, "as with other forms of environmental change, an important aim of a new political ecology of the body would be to evaluate what is bad and what is good for the body, for whom, and in what ways" (p.13). The goal of my research was to undertake this evaluation, looking specifically at the use of food and dietary manipulation as a strategy for changing

bodily ecologies, and to examine how individuals perceived the relationship between their body's ecology and larger-scale ecologies and how these perceptions influenced their food and consumption behaviors. In order to meet this objective, I decided to focus specifically on Paleo/Keto dieting as both a philosophy and strategy for creating healthy, resilient bodily ecosystems, asking: *How do Paleo/Keto dieters perceive the relationship between their bodies, the food they consume, and larger-scale ecologies? What dietary and/or lifestyle practices are employed by Paleo/Keto diet followers in order to re-wild, heal, and/or create resiliency at the scale of the body's ecology?*

While the multi-scalar ecological crises of the Anthropocene have ushered in an era of environmental anxiety and a sense of ecological entanglement for many scientists, consumers, activists, and others, this anxiety and sense of urgency has not been equally reflected in environmental or health discourse, practice, and policy in Western society. Particularly in the United States, the current political moment is marked by inaction and even outright denial of the threat of looming ecological crises like global climate change. Consequently, there is an urgency to make ecological concerns personal and tangible to consumers and the public. It is within this social, political, and ecological context that "re-wilding" has emerged as an ecological health and resiliency strategy across scales in the Anthropocene, from the human body to the planet. At the scale of the *body*, this has meant a reevaluation of dietary, consumption, and lifestyle behaviors among concerned consumers seeking to create healthy, resilient bodily ecosystems.

Suggested strategies among alternative health practitioners and health advocates for "re-wilding" and cultivating a healthy, resilient bodily ecosystem most often involve dietary and lifestyle adjustments, where diet and consumption become a

method for mitigating the uncertain and taking control of one's health in the wake of rising chronic disease and frustration with the failure of the healthcare system to adequately quell its progression. Consequently, an increasing public obsession with what and how to eat has led some scholars to suggest that Western societies have become "orthorexic" societies (cf. Nicolosi 2006; Rangel et al. 2012), where dietary practice becomes the weapon to combat a public health crisis of diet-related chronic illnesses⁴. Thus, despite emerging research that suggests health is co-created by human and non-human actors across scales, ecological crisis interventions are still predominately being staged at the scale of the body's ecosystem through the micromanagement of individual diets and lifestyles. As a result, frustrated healthconscious consumers increasingly navigate the precarious and flawed healthcare environment through alternative networks of knowledge sharing and scientific evaluation as they attempt to heal and re-wild their bodily ecosystems through dietary and lifestyle choices. It is within this context, that there has been a rise in the popularity of dietary and lifestyle trends such as the Paleo and Ketogenic diets that emphasize the connection between human health and the environment, often explicitly calling upon the imagery of "re-wilding" guts, bodies, and behavior.

In 2013, the Paleo Diet was the most searched diet according to Google Trends' annual search data analysis, with an estimated three million Americans

⁴ "Orthorexia" refers to a form of disordered eating where people restrict their eating based on quality not quantity and exhibit an obsession or fixation with eating "healthy" foods to obtain health and/or avoid illness/disease (Dunn and Bratman 2016). While the Diagnostic and Statistical Manual for Mental Disorders (DSM) does not formally recognize the proposed eating disorder, the National Eating Disorder Association and other health advocacy groups are raising awareness about orthorexia as a legitimate eating disorder.

currently following some version of the diet, though some suggest that this is a conservative estimation given the number of Paleo-like diets such as "Keto," "Primal," and "Whole30" (Barclay 2013). The Paleo Diet is a nutritional regimen modeled after the supposed dietary habits of our pre-agriculture, hunter-gatherer ancestors (cf. Cordain 2002). Paleo Diet discourse claims that civilization has outpaced evolution, resulting in a strained relationship between human biology and the modernity of the Holocene/Anthropocene or Neolithic period (e.g. agriculture, increased grain consumption, etc.) (cf. Johnson 2015). For example, Eaton and Konner's (1985) famous discordance or "mismatch" hypothesis theorizes that the clash between "ancient body and modern world" produces the obesity, diabetes, and other "diseases of civilization" that plague contemporary, Western societies.

For many Paleo Diet advocates Paleo is much more than just a diet. Instead, Paleo is at once a diet, an environmental philosophy, a consumer culture, and a movement that occupies the liminal space between environmental, cultural, and health movement. Grounded in the idea of a fundamental evolutionary "mismatch" between human biology and the "modern world" (Eaton and Konner 1985), the Paleo movement emphasizes the connection between human and environmental health. While other social and health movements share an interest in the connection between human and environmental health, the Paleo movement offers a specific temporal intervention for re-establishing harmony between humans the environment, offering the Paleolithic as a benchmark for re-wilding, healing, and strengthening bodies through dietary and lifestyle modifications. Thus, the Paleo movement offers a rich case study of how health as ecology is put into practice and how the body is a new site for ecological crisis and anxiety in the Anthropocene.

Recently, the Paleo Diet has been brought into the discourse surrounding the Ketogenic ("Keto") Diet as a weight loss and overall health strategy, perhaps due to a shared condemnation of excessive carbohydrate consumption and outspoken encouragement of the consumption of dietary fats. The ketogenic diet is a high-fat, adequate-protein, low-carbohydrate diet that puts the body into ketosis (a metabolic state where the body burns stored fats rather then glucose) by restricting carbohydrate intake to around 20-50 grams per day. The ketogenic diet was developed in the 1920s by physicians looking for a dietary strategy that would mimic the metabolism of fasting as a treatment for epilepsy and was the first line of treatment for the disorder until the development of antiepileptic drug therapies (Wheless 2008). In the past 15 years, the ketogenic diet reemerged as a reputable treatment for epilepsy and has been accompanied by an explosion of scientific research and literature on the diet. This increased scientific interest has led to the Keto diet's recent popularity as a general health and dietary strategy. The ketogenic diet is in essence the first phase of the Atkins diet, thus testament to an enduring interest in carb-restriction as a weight loss and health strategy despite different names and branding efforts. The Paleo Diet is often recommended as a dietary strategy for transitioning off the stricter Keto diet to a "low-carb" diet than can more easily be sustained long-term or indefinitely on account of avoiding certain food groups rather than strict monitoring of macronutrient intake.

In this dissertation, I investigate how the discourse and practices surrounding the Paleo and Keto dietary movements engage with changing healthcare and nutrition politics in the United States, conceptions of human health and bodies as ecologies, and a growing understanding of the connection between human and nonhuman/environmental health in the Anthropocene. These two related dietary health

trends operate under a deep distrust of "traditional" biomedical and nutritional authority and directives, push toward personalized nutrition based on one's genetic and microbiotic makeup, and emphasize the potential of food as medicine. Ultimately, this dissertation considers what the ecological imaginaries and practice of the Paleo and Keto movements mean for healthcare, diet, and environmentalism in our current ecological moment.

1.3 Theoretical Framework and Contributions

Cook et. al. (2013) argue that the study of food offers, "rich, tangible entryways into almost any issue in which you might be interested" (p.343). In this dissertation, I examine how food choices are used as a way to mediate and ameliorate the relationship between human health and ecology in the Anthropocene. By focusing on food consumption and dietary practice at the scale of the individual, I highlight the ways in which agri-food production and consumption are a collaboration that makes both bodies and bodily ecologies as well as larger-scale environments/ecologies. Food is used as the medium to investigate ecological crisis across scales in the Anthropocene, from how the food we ingest affects our body's ecology to how farming practices impact regional and planetary ecologies. In particular, this dissertation focuses on the discourse and practices of two popular health trends in countries in the Global North, the Paleo and Keto diets, that draw upon evolutionary theory and new models of the body and body-environment relationship for insight to "re-wild" health, diet, and both bodily and large-scale ecologies in the Anthropocene.

While Foucauldian and feminist theorists (e.g., Butler 1993, Duden 1993) are often cited for putting the "body" on the intellectual map among geographers (cf. Callard 1998; Gregory et al. 2009; Hall 2000; Longhurst 1995; Nast and Pile 2005;

Parr 2002), the idea of the body as an ecosystem in need of "re-wilding" requires us to theorize the body and health in new ways. This dissertation brings together a variety of literatures from within the field of Geography, as well as the social sciences more generally, in order to build a theoretical framework for investigating and better understanding Paleo body politics and re-wilding health, ecology and diet in the Anthropocene. These literatures include: nature-society studies (particularly work concerned with nature/society and human/non-human binaries, re-wilding, and/or the Anthropocene), the political ecology of health (which brings political ecology and health geography literature into conversation around issues at the human/environment/health nexus), critical food studies (notably embodied food politics, obesity politics, and orthorexia), and critical geographies of the body and health (including work on healthism, biopedagogy, visceral geographies/politics, and embodied health movements). While these strands of literature are distinct, they often draw influence from similar sources (e.g., Foucault, feminist literature) and/or are in conversation with one another and address complementary phenomena (e.g., the subject of obesity is addressed in the political ecology of health, critical food studies, and critical geographies of the body/health literatures).

1.3.1 Conceputalizing the Body's Ecology: Toward a Political Ecology of Health and Bodies

Human microbiome research and medical science more generally have actualized the idea of the body as an ecosystem, one that is porous, malleable, and dependent on a number of non-human, microbial collaborators. The emerging field of the political ecology of health among geographers grapples with questions raised by these recent advances in the health sciences, particularly the role of nature and the non-human in health (cf. Jackson and Neely 2015, Little 2012). Political ecology of health literature frames health in terms of nature-society relationships, bringing nature into discussions of health and bodies (cf. Mansfield 2008, Jackson and Neely 2015). Jackson and Neely (2015) argue that, "health and sickness are more-than- human; they are an ecology," thus paying attention to non-human actors (e.g., microbes, chemicals), "will help us understand the processes that produce particular kinds of partial and situated knowledge and reproduce healthy and unhealthy people" (p.48). Unraveling the connections between bodies, health, ecology, and the non-human is also a concern of science and technology studies (STS) scholars who investigate new biomedical and broader life science understandings of life, health and bodies (cf. Haraway 1991, 2008; Latour 1988), including our relationship to non-human, microscopic life such as bacteria (cf. Braun 2007; Hird 2010). However, Guthman and Mansfield (2013) point out that neither of these disciplines alone adequately addresses these questions. Political ecology literature largely ignores the body, while STS literature tends to ignore the environment (Guthman and Mansfield 2013). As a result, Guthman and Mansfield (2013) call for a "political ecology of the body" that pays attention to the ecological processes both within and around the body.

Hayes-Conroy and Hayes-Conroy (2013) offer a "political ecology of the body" framework that expands upon, "the traditions of political ecology in ways that help to stretch the field into issues of bodies and health," relating alternative food and eating to research on emotion and affect in a shift from, "a focus on (un)healthy landscapes to (un)healthy bodies" (p.85). For the authors, the question "what makes a healthy body?" becomes a question that is, "simultaneously structural (e.g. asking about the social inequities that preclude certain bodies from purchasing certain foods),

discursive (e.g. asking about the social processes through which knowledge about what healthy is comes into being), and material (e.g. asking about the material relationships of daily life that both reinforce and/or resist these structural and discursive patterns)" (Hayes-Conroy and Hayes-Conroy 2013, p.86). The authors argue that through a political ecology of the body approach, "the expert based knowing that is so typical of most food-based initiatives can become replaced with a diverse set of bodied knowledges and activities always attuned to emotion and affect that do not privilege one way of (scientific, intellectual) knowing as the right way" (Hayes-Conroy and Hayes-Conroy 2013, p.86). This dissertation builds off a political ecology of health and the body framework, offering a case study of Paleo and Keto dieters as an example of how the idea of health as ecology is put into practice and how "bodied knowledges" can inform ecological consciousness both within and beyond the body.

1.3.2 Managing the Body's Ecology: Healthism and Biopolitics

Foucault's work on biopolitics, governmentality, and the "care of the self" (cf. Foucault 1984, 1986, 1988; Rabinow and Rose 2003) is often used in discussing the healthism of the neoliberal era and the self-surveillance and management of the human body through dietary and lifestyle modifications (cf. Haman et al. 2015). New advances in the biomedical sciences, particularly in the "omic" sciences such as genomics, microbiomics, and the emerging field of nutrigenomics (the scientific study of the relationship between genes, food, and health), exacerbate the individualization of health and the surveillance and management of an increasingly complex, quantified self. As Harvey (2009) notes, nutrigenomics offers genetic information as "a resource the 'genetic entrepreneur' can use to create a new, optimally healthy, future, rather

than revealing a probable future for which the individual can prepare" (p.119). With insight from nutrigenomics, individuals can supposedly ameliorate risk by altering the nutritional environment of one's genome in order to maximize one's "vital capital" (Harvey 2009, p.119). In other words, the future of these genetic risks are not immutable; as Novas and Rose (2000) articulate, "genetic risk does not imply resignation in the face of an implacable biological destiny: it induces new and active relations to oneself and one's future" (p. 485).

In light of these advances in the "omic" sciences, concern for one's "vital capital" (cf. Harvey 2009), "lively capital" (cf. Rajan 2012), and "biocapital" more generally (cf. Rajan 2006) become an increasingly important preoccupation of healthism and staving off future risks of chronic diet-related illnesses. Franklin and Lock (2003) explain that, "biology-as-capital involves a prioritization of reproduction, rather than production, as the primary generator of wealth, agency, and value" (p.7). Thus, everyday acts of social reproduction, including food shopping, cooking, and eating, become akin to making investments in the stock of one's health. However, the aforementioned advances in biomedical science, notably nutrigenomics, complicate how to properly invest in one's health. As a result, Komduur et al. (2009) argue that the normative assumptions embedded within nutrigenomics research may strengthen, "concerns related to healthism, health anxiety, time frames and individual responsibilities for health" (p. 307). For example, the idea and diagnosis of "orthorexia" is one of the ways that health anxiety can manifest as individuals attempt to manage the risk of an increasingly quantifiable, malleable self through dietary manipulation and investment. This dissertation builds off and contributes to these

literatures by examining the biopolitics and biopedagogy of Paleo ideology and practice and considers the orthorexic potential of the idea and use of food as medicine.

1.3.3 Feeding the Body's Ecology: Embodied Food Politics and Visceral Geography

The countries of the Global North are increasingly orthorexic societies, obsessed with what and how to eat. This obsession is not entirely unfounded; diet-related chronic illnesses, including obesity, cardiovascular disease, and type 2 diabetes, are among the leading causes of morbidity in industrialized countries and are on the rise worldwide as chronic conditions overtake acute conditions as the leading causes of morbidity (Mozaffarlan 2017). The aforementioned diet-related chronic illnesses are not the result of an inability to consume enough food (i.e., malnutrition or starvation due to inadequate caloric intake) but instead are related to the quality and quantity of foods consumed. In the United States, the almost 1,000 cardiovascular and diabetes deaths that occur daily are attributed (at least in part) to "poor diet" (Micha et al. 2017). Consequently, dietary intake is a method for mitigating the uncertain and taking control of health in the wake of rising chronic disease and crisis at the scale of the body's ecosystem (e.g., following a Paleo diet).

Agri-food production and consumption is a collaboration that not only makes bodily ecologies, but also creates larger-scale environments/ecologies. Consequently, focusing on food consumption and dietary practice at the scale of the body offers an entry point for exploring how larger-scale ecologies are perceived and created. Bryant and Goodman (2004) examine how, "consumption is a way in which individuals seek to 'make a difference," with the "consuming body" becoming, "the frontline as everyday acts – eating, bathing, shopping or dressing, for example – are politicized" (p.344). This dissertation draws upon recent literature on an "embodied politics" or "visceral politics" of eating, the body, and food as "more-than-food" (cf. DuPuis 2015, Goodman 2016, Hayes-Conroy and Hayes-Conroy 2008) to examine the potential of the embodied, visceral experiences of alternative dietary strategies and consumption for cultivating ecological consciousness and influencing beliefs about health, food, bodies and ecology. Specifically, this research draws on these literatures to argue for the (bio)pedagogical potential of *visceral acuity* and bodied knowledges.

1.3.4 Theoretical Contributions

Bodily ecologies are a subject ripe for geographic inquiry, particularly attention to spatial and scalar interplay and the role of both larger-scale and nonhuman ecologies in the co-creation of (un)healthy bodies in the Anthropocene. By taking a geographic approach to bodily ecologies, this research contributes to literature in the aforementioned fields in Geography and the social sciences more generally in a number of ways. This research weaves the threads of these distinct literatures together in novel ways. For example, using the visceral realm as both a site of inquiry *and* a method for informing a political ecology of health and the body, examining the role of the visceral and embodied experience for informing biopedagogies, etc.

Based on emerging scientific understandings of the body, Guthman and Mansfield (2013) and others (cf. Hayes-Conroy and Hayes-Conroy 2013) have called for a "political ecology of the body" that pays attention to the ecological processes both within and around the body, engaging with materiality and the agency of nonhuman actors. This research contributes to emerging literature on the political ecology of health and bodies (c.f., Guthman and Mansfield 2013, Guthman 2012, Jackson and Neely 2015) through an investigation of recent health strategies that place emphasis on

re-wilding microbiomes, bodies, and lifestyles through dietary and lifestyle interventions. While scholars have worked to build both political ecology of health and the body frameworks in light of advances in the health and medical sciences (e.g., environmental epigenetics; cf. Guthman and Mansfield 2013), there have been few empirical research projects that directly take up these approaches (cf. Hayes-Conroy and Hayes-Conroy 2013). Thus, this research contributes to a gap in the literature by offering a case study of Paleo/Keto dieting as an example of health as ecology put into practice.

By exploring the idea of re-wilding the body's ecology, this research contributes to the broader field of nature-society studies, which has investigated rewilding as a conservation strategy at larger scales, but has only recently turned attention to the scale of the body (c.f., Lorimer 2017). While nature-society scholars have spent time debating the appropriate role and feasibility of human agency in rewilding conservation strategies, as well as whether or not these re-wilding practices are reproducing nature/society binaries (cf. Jorgensen 2015; Prior and Ward 2016), my research adds to the conversation by elucidating how the terminology, ideology, debates, and politics of re-wilding (e.g., distributions of economic and social benefits, non-human/animal welfare, etc.) are brought to the micro-scale of the human body through the discourse and practices of individuals within the Paleo movement.

By focusing on the use of food as a strategy for re-wilding the body's ecosystem, this research adds to literature in health geography and critical food studies concerned with dietary, consumption, and embodied food politics and contributes to an acknowledged gap in the literature regarding the theorization of an "orthorexic society" (cf. Nicolosi 2006; Rangel et al. 2012). Despite the popularity of the Paleo

Diet, the diet and the larger Paleo movement have little scholarly attention devoted to them (cf. Johnson 2015). More generally, social scientific research on dieting rarely investigates specific diet plans or the practices and discourses associated with them (cf. Coleman 2010; Mol 2013). This research contributes to these acknowledged gaps in the food/diet and health studies literatures, theorizing Paleo as more than a diet, but rather a multifaceted phenomenon: a diet, an environmental philosophy, a consumer culture, and an *embodied ecological health movement* that occupies the liminal space between environmental, cultural, and "embodied health movement" (cf Brown et al. 2004). By positioning Paleo as an *embodied ecological health movement*, this research furthers the conversation of what the micropolitics of diet may hold for larger scale politics (cf. DuPuis 2015), including environmental and healthcare politics in the Anthropocene.

Through an emphasis on qualitative methodologies, personal narratives, and visceral experience, this research contributes to "visceral geographies" of food and the body (cf. Hayes-Conroy and Hayes-Conroy 2010), political ecologies of health and the body (cf. Guthman and Mansfield 2013; Jackson and Neely 2015), and an understanding of the body's potential as both a biopedagogical and by extension pedagogical site for fostering ecological awareness in the Anthropocene. In critically reflecting on the practices of visceral methodologies in human geography, Hayes-Conroy (2017) asks, "in what ways could visceral methods be used to understand and intervene within the growing science of body-environment interrelation? What methods might be used to trace the environment into the body and the body into the environment, as well as the politics of these interrelations?" (p.52). By exploring how individuals perceive the connectedness between their body and the environment

through the lens of food and consumption, and how the visceral realm both informs and/or reinforces these perceptions, this research offers insight as to the role of the visceral in how the growing science of body-environment interrelation is interpreted, embodied, and acted upon.

1.4 Methodology, Limitations, and Positionality

1.4.1 Methods

The purpose of this dissertation is to examine what making a healthy, resilient bodily ecosystem in the Anthropocene looks likes and how the idea of health as ecology is put into practice at the scale of the body through a qualitative case study of Paleo and Keto diet followers in the United States. Due to the subjectivity, individuality, and intimacy of topics such as health, the body, and one's dietary and lifestyle behaviors and beliefs, a qualitative approach was taken in order to provide the most detail and depth possible on this research topic. Through in-depth, semistructured interviews with Paleo/Keto participants, participant observation, and discourse analysis, this research provides a rich case study of how the discourse and practices surrounding the Paleo and Keto movements engage with the shifting landscape of healthcare and nutrition politics, new ecological conceptions of human health and bodies, and a growing understanding of the connection between human and non-human/environmental health in the Anthropocene (particularly through the lens of food production and consumption).

This case study is based on data obtained through in-depth, semi-structured interviews with 55 individuals following a Paleo (n=37) or Keto (n=18) nutritional regimen and living in the United States. Recruitment began in April 2017 and

consisted of two phases. During the first phase (April 2017), Paleo participants were recruited in two ways: 1. John Durant, *New York Times* best-selling author of *The Paleo Manifesto* and founder of Wild Ventures, sent an e-mail on my behalf to the PaleoNYC group listserv (the largest Paleo Meetup group in the country, which he founded while living in NYC) encouraging individuals to participate in my research study, and 2. I made a post in the Paleo Diet "subreddit" (r/Paleo) of the popular discussion website Reddit looking for individuals following a Paleo Diet that were willing to take part in the research study. All participants were over the age of 18 and self-identified as "Paleo," rather than my assessing their dietary practices or food intake.

After completing interviews with the initial round of Paleo participants recruited in April 2017, I noticed that the Keto Diet was a gateway to eating Paleo for a number of participants and decided it might be lucrative to recruit and interview participants following a Keto diet in order to investigate further this overlap with Paleo. Consequently, in June and August 2017 I made recruitment posts in the Keto subreddit (r/Keto) looking for individuals to participate in the study. Additionally, more Paleo participants were recruited during this time frame via the Paleo subreddit (r/Paleo) due to previous success recruiting through the subreddit. Recruitment was finalized when theoretical saturation was reached.

Interviews were conducted from April through August 2017. Interviews were conducted over the telephone and recorded with a handheld voice recorder. Interviews ranged from 20-minutes to 90-minutes. There was no compensation offered for participation in the study. Interview questions were deliberately broad and exploratory and covered a range of topics, including: how participants first came across the

Paleo/Keto Diet, how they define Paleo/Keto in relation to other diets, what motivated them to start eating Paleo/Keto, the benefits and drawbacks of adopting a Paleo Diet/Keto, and their beliefs and attitudes regarding their body, health and medicine, food, and nature/the environment more broadly (for a list of the guiding questions used during interviews, see appendix A). Audio recordings of the interviews were transcribed verbatim in Microsoft Word. Interview transcriptions were then analyzed and coded thematically using both a deductive and inductive coding strategy (cf. Flowerdew and Martin 2005)⁵.

Due to the conversational interview structure, emergent themes did not always map neatly onto individual questions. For example, participants' opinions on the influence and/or credibility of the Paleo Diet's evolutionary philosophy emerged at various points in conversation (if at all), rather than being solicited by a particular question. Consequently, rather than developing a coding schema that referenced each particular question, responses were coded by non-question-specific variables that illuminated larger themes relevant to the focus of the research project. These themebased coding variables were developed both deductively (i.e., in advance of transcription/coding) and inductively (i.e., during the process of transcribing/coding). For example, a deductive code used during analysis was *Increased Ecological Awareness*. This variable was applied to any response segments in which participants' expressed that after adopting a Paleo/Keto diet they began to think more critically

⁵ An example of a deductive code that was used during data analysis was "pro- meat consumption." An example of an inductive code that was developed and used during the data analysis process was "heightened sensitivity/awareness of food's impact on the body."

about food systems or the environment (e.g., paying closer attention to food sourcing, expressing concern with contemporary agricultural methods and food systems in regards to human and environmental health and/or sustainability, etc.). However, other coding variables were developed based on themes that emerged during the process of transcription and analysis. For example, *Visceral Acuity* was an inductive code developed in this way. The *Visceral Acuity* coding variable was applied to any segment in which participants' expressed having a heightened bodily awareness and/or sensitivity to the effects of different foods on their body after undertaking a Paleo/Keto diet.

All data have been anonymized: I use pseudonym initials to refer to participants. Detailed demographic information was not solicited from participants, as this information was not essential to the purpose of the study (e.g., examining *how* Paleo/Keto dieting influences perceptions, rather than *who* is Paleo/Keto dieting). As such, any demographic information that was obtained was divulged willingly and without solicitation (more detail on my choice to not solicit comprehensive demographic profiles from participants is discussed in the next section). Demographically, participants were 30 men and 25 women (Paleo M=20, F=17; Keto M=10, F=8). There was representation from all major geographic areas of the United States (i.e., Hawaii, West Coast, Southwest, Midwest, Southeast, Northeast, etc.).

In addition to interviews with Paleo participants, I attended the annual PALEOf(x)TM conference from May 18th-21st 2017 in Austin, Texas. The PALEOf(x)TM conference bills itself on their website as "the world's premiere holistic wellness event" and "a forum—the largest of its kind—where the theory of Ancestral Health turns into the practices that allow great health to flourish" ("Our Mission," n.d.).

While at the conference, I took extensive field notes, interacted with speakers and attendees, and collected a variety of print materials and sample products. I performed textual/discourse analysis on a number digital and print materials related to the Paleo Diet and health movement, including pamphlets, magazines, and sample products obtained at the PALEOf(x)TM conference. Other forms of media outside those obtained from the PALEOf(x)TM conference were also analyzed using textual/discourse analysis, including: non-fiction Paleo books, alternative and mainstream news coverage and digital publications, popular Paleo blogs, websites, and podcasts, as well as social media accounts of popular Paleo advocates and companies.

1.4.2 Limitations of Methods

There are a number of limitations of this research and methods that should be noted. First, the size and scope of this study prevents claims from being representative of all members of the Paleo or Keto dieting communities, much less dieting communities more generally. Instead, this research offers a case study of certain individuals within the Paleo/Keto communities, namely individuals with an online presence (either on Reddit or the PaleoNYC listserv) and who had the time, enthusiasm, and willingness to take part in this research and share their experiences for no compensation.

Second, this research relies on personal narrative of perceptions and beliefs rather than a (presumably) more objective assessment of those beliefs. For example, trusting when a Paleo/Keto participant expressed that eating this way *changed* their beliefs about food, rather than validating their statement through an evaluation of beliefs before and after eating Paleo/Keto through pre-dieting and post-dieting assessments. Furthermore, while I attempt to uphold the integrity of subjective experience by placing participants' narratives at the fore of this analysis, as with most qualitative research, I inevitably insert myself by having to distill longer conversations into shorter quotations and by presenting only my interpretation and analysis of those excerpts without giving them an opportunity to approve or refute my claims. However, in-depth interviews and the personal narratives and details highlighted through direct quotation of these conversations were the best way to carry out the goals of this research and elucidate the subjective beliefs, experiences, and practices of individual Paleo/Keto dieters.

Third, while obtaining and detailing comprehensive demographics of study participants was not essential to the objective of this research (e.g., examining HOW Paleo/Keto dieting influences individual's perceptions of health, food, bodies, and ecology, etc. rather than WHO is following a Paleo/Keto dieting strategy and what kind of sociocultural and/or structural privileges or barriers enable this lifestyle choice), obtaining even more detailed information on study participants (notably socioeconomic status and education) may have reinforced and/or added nuance to certain arguments made in the dissertation or provided insight for future research directions. By choosing not to solicit demographic information from participants and allowing conversation instead to be free-flowing and semi-structured, I gave participants the option for privacy and attempted to establish a comfortable space where participants were able to choose what personal information they divulged or withheld. Finally, this research project, like all research projects, is affected by the positionality of the researcher, which I comment on in the following section.

1.4.3 Researcher Positionality

Like many of the participants in this study, my life has been a continued negotiation between an affinity for scientific inquiry and innovation and a skepticism and distrust toward the technologies and products those endeavors offer for bringing health to my life and the lives of others (human/non-human/inhuman). I share with a number of my study participants a frustration with our current healthcare system (both in theory and practice) and the personal experience of suffering through controversial and/or idiopathic illnesses, chronic health conditions, and negligence, malpractice, or incompetence on the part of healthcare professionals. I worry about both human and planetary health, I tend a garden, I believe that food is integral to the project of making health, I pay close attention to the food I consume, and I am often sensitive to and perhaps too focused on bodily experience and sensation.

In many ways, I am a representation of the paradox I seek to tease apart in the pages that follow. I find peace in positivist science: the inquiry, the order, the ritual and procedure, the infinite possibilities and outcomes, and what are often presented as relatively uncomplicated answers. However, I can never sit comfortably in delusions of relative certainty or optimism for long. While I have a deep appreciation for the scientific method, I have always been interested in that which falls outside the tentacular clutches of empiricism. I have an affinity for outliers, the controversial, counter arguments, the phenomenological, and simply, the "weird." I am interested in that which lives within liminal spaces and is painted with shades of nuance. I am interested in scale, from the microscopic to the planetary, and the interplay of those scales of analysis with individual experiences and consciousness. In particular, I am interested in how the environmental and health sciences are interpreted and influence
consciousness and behaviors at the scale of the individual. Consequently, at the core of my methodological and philosophical orientation is a proclivity for narrative, phenomenology, and subjective experience, which necessitates the use of qualitative methods (and the limitations that come with doing such research).

Before starting this project I had never attempted to follow a Paleo or low-carb dieting strategy or subscribed to the beliefs of any particular dietary regimen. I had never attempted to diet for weight loss or fitness. I always ate what I wanted and when I wanted, a privilege for sure. I never paid attention to portions or meal spacing or macronutrients. Instead, my attention to and experimentation with diet began (as it did for many of my study participants), in an attempt to feel better. My first dietary manipulation began at the suggestion of a naturopathic doctor whose guidance I had sought for chronic allergies, sinus infections, and headaches after a decade of traditional medical treatment had failed to alleviate my symptoms (with the most recent treatment attempt landing me in the hospital for days shortly after graduating college). At the behest of this practitioner, I attempted to cut dairy from my diet for a few months (during which I dreamt of cheese and felt little symptom relief leading me to gradually reintroduce dairy products into my diet). Later, I attempted to remove gluten from my diet. After a few gluten-free weeks, I noticed how different I had felt prior to excluding gluten from my diet. My over-the-counter medication consumption had drastically reduced, I felt good, and I found it easy to exclude gluten-containing grains from my diet rather than the dairy products I had come to know and love. While I tested negatively for Celiac's disease as well as most food allergies and was constantly bombarded with information on the illegitimacy of "gluten sensitivity" in my research, it was hard to reconcile this intellectual understanding with my positive

visceral experience removing gluten from my diet. So I kept this somewhat controversial food choice to myself and went on eating and living.

My personal health experiences and interest in food, the body, and ecology inevitably influenced how I approached this research. As I began to conduct the data collection for this research, carrying out interviews with Paleo and Keto dieting participants, I was able to draw upon my experience in order to sympathize and garner the trust of my participants as someone who could relate and understand their frustration and/or the manipulation of diet as a health strategy. Thus, my positionality allowed for the creation of a comfortable, trusted space for participants to open up about their personal health experiences by remaining open rather than dismissive to what for many could be controversial ideas or practices.

While I hesitated to discuss my personal beliefs and behaviors regarding dietary practice with my participants for fear of influencing their responses, I was often asked if I too was eating a Paleo-inspired diet or if I had in the past, to which I would respond that I hadn't, but that I avoided gluten and generally tried to eat whole foods and home cooked meals. While this response was generally accepted, at other times I sensed suspicion or skepticism from my participants as a result of this admission. I began to feel a bit hypocritical, an outsider to the Paleo dieting world, and out of respect for my participants and a continued desire to create a comfortable, trusted conversational space for my participants, I attempted to eat a Paleo diet for the duration of my data collection period (about a month and a half).

As Hayes-Conroy (2017) notes, scholars interested in engaging with the visceral realm should seek to improve methods of research to do so, but that also, if

we take seriously the politics of research, "we will recognize that our methods are always inescapably visceral" (p.51).

The decision to eat a Paleo Diet for the duration of this research, for me, is just another testament to the "inescapably visceral" quality of the research I set out to do. Futhermore, Hayes-Conroy (2017) articulates that, "studying with populations that are 'primed' for talking about the visceral may make it easier to co-create knowledge that recognizes complex variations in the (political) power of visceral feelings" (p.52). Eating Paleo became another means to access the visceral realm that I discussed with my Paleo participants, a way to be "primed" in a similar way to understand their narratives, language, and experience of "going Paleo," and to be better able to cocreate the knowledge that eventually culminated as this dissertation.

1.5 Dissertation Outline

In the first chapter of this dissertation, I frame the controversial Paleo Diet and the movement surrounding it as both a reaction to and active producer of the environmental and health anxieties of life in the Anthropocene, complicating the idea of Paleo as merely the latest dietary trend. I argue that, while food and diet have long been touted as a critical component of a healthy lifestyle and for longevity in the lifelong project of making health, the Paleo Diet offers a specific temporal intervention for health-conscious consumers seeking refuge from illness and the key to longevity through diet during an era of anxiety and uncertainty concerning both human and planetary health. I conclude that the Paleo Diet is a multifaceted phenomenon (rather than the "fad diet" it is often portrayed as). Instead, Paleo is at once a diet, an environmental philosophy, a consumer culture, and an *embodied ecological health*

movement that occupies the liminal space between environmental, cultural, and "embodied health movement" (cf Brown et al. 2004).

In the second chapter of this dissertation, I examine how the concept of "rewilding" is applied across scales as a means of ameliorating ecological disequilibrium and bringing ecology and health back into balance in the Anthropocene. In this chapter, I offer a case study of Paleo Diet followers as an example of how health as ecology and "re-wilding" is put into practice at the scale of the body. I elucidate how, in an effort to heal both the inner ecologies of gut microbiomes and the entirety of bodily ecosystems through dietary and lifestyle interventions inspired by Paleolithic ancestors who are perceived to have had a more "natural," healthy relationship with their environment, the Paleo movement promotes ideas of wildness and re-wilding at the scale of the body. I conclude that, like re-wilding and other conservation efforts at the scale of larger ecosystems in the Anthropocene, re-wilding the microcosm of the body is rife with uncertainty and tensions that raise a number of questions (applicable across scales) regarding the appropriate role of human technologies and interventions in ecology.

In the third chapter of this dissertation, I explore the potential of the Paleo/Keto dieting body as an entry point for developing ecological awareness both within and beyond the body. Through conversations with Paleo/Keto dieters, I elucidate how the Paleo/Keto dieting body is transformed into both a biopedagogical site for developing bodied knowledges through *visceral acuity* (or a heightened bodily awareness and ability to interpret the signals of the body) that inform dietary beliefs and behaviors, as well as a pedagogical site in a more traditional sense, where a commodity-chain method of analysis began at the scale of the body and extended

beyond the body to food systems and the environment, leading to a broader understanding of the dynamics between the body, food, health, and ecology. I conclude by suggesting that the individualized self-care of Paleo/Keto dieting can transform the concern for personal health into an outward-facing, ecological awareness of the relationship between human and environmental health with the potential to incite behavioral and socio-political change.

In the fourth chapter of this dissertation, I examine increased participation in Paleo/Keto dieting in the context of a changing landscape of trusted medical/nutritional authority and an increasingly food-obsessed "orthorexic society." In this chapter, study participants discuss changing views on the consumption of dietary fat, distrust of medical professionals (especially one's perceived to be overweight and by correlation unhealthy), and the idea of food as medicine. I highlight concerns over the idea of food as medicine, including the potential for abuse (e.g., orthorexia) as well as ignoring structural barriers (e.g., access, privilege) due to the reinforcement of healthist ideologies of individual responsibility. I conclude that, whether skeptical or optimistic toward the decentralization of dietary knowledge and power and the possibilities of a future of personalized healthcare, a problematic healthist ideology and emphasis on individual responsibility not only endures but adds new responsibilities, with the orthorexic individual now tasked with interpreting nutritional data and science and assessing what is trustworthy, reliable dietary advice for obtaining health and avoiding disease through healthy eating.

In the final chapter of this dissertation, I present a summary of the dissertation results, including major contributions and takeaways. I argue that the microcosm of the body is an entry point for engaging individuals in ecological health politics at

larger scales, highlighting the underutilized potential of the body as a (bio)pedagogical site. Additionally, I raise concerns regarding the future of healthcare and dietary politics in an orthrorexic society. Finally, I conclude with a discussion of the future directions of my research.

Chapter 2

GOING PALEO IN THE ANTHROPOCENE: DEFINING A MOVEMENT

2.1 Abstract

This paper examines the controversial Paleo Diet as both a reaction to and active producer of the environmental and health anxieties of life in the Anthropocene, complicating the idea of Paleo as merely the latest dietary trend. Instead, I argue that Paleo is a multifaceted phenomenon: a diet, an environmental philosophy, a consumer culture, and a movement that occupies the liminal space between environmental, cultural, and "embodied health movement" (cf Brown et al. 2004) which I term an embodied ecological health movement. Despite the staying power and continued growth and interest in Paleo and Paleo-like diets such as the popular Ketogenic ("Keto") diet, the diet has received little scholarly attention. Drawing upon in-depth, semi-structured interviews with Paleo Dieters and participant observation at the 2017 PALEOf(x)TM conference, I investigate what it means to "go Paleo," elucidating the nuance of eating a Paleo-inspired diet and a reluctance among Paleo Dieters to apply the controversial term "Paleo" to describe their dietary habits. I conclude by arguing that Paleo's evolutionary framing and temporal intervention offers anxious health consumers a way out of the messy ecological uncertainty of human-environment relations in the Anthropocene by looking backward as the way forward to health.

2.2 Introduction

In recent years, a growing community of Paleo Diet and Ancestral Health enthusiasts has offered a specific temporal intervention to social movements concerned with health, nutrition, fitness, and the environment. The Paleo community offers paradoxical pairing of primitivist and futurist thinking, collective and individual goals, and, as such, provides unique insight into how health and environmentalism are tackled in our current political and ecological moment⁶. The Anthropocene is marked by concern for what humans have done to nature and in turn what this compromised nature will mean for the future of humanity (cf. Cook and Balayannis 2015)⁷. Since the rapid globalization, population growth, and rise and spread of industrialized agriculture that occurred during the mid-20th century (arguably marking the start of the Anthropocene; cf. McNeill and Engelke 2016), we have witnessed the rise of social movements focused on bringing the body back to *nature* in the interest of remediating both human and environmental health (e.g., the alternative food and "natural food" movements; cf. Goodman et al. 2012)⁸. The Paleo community arguably sits within the

⁶ Nutritional primitivism is defined by Knight (2015) as, "the pursuit of ostensibly simpler, more natural, and authentic ways of eating as part of a quest for health through diet" (p.442).

⁷ The term "Anthropocene" is contentious and alternatives exist, including: "Capitalocene," "Cthulucene," etc. (cf. Haraway 2015). In this paper, "Anthropocene" is used deliberately to reference usage in the geologic and environmental sciences and the context within which the term was created (i.e., one that was anthropocentric).

⁸ There is ongoing debate as to when the end of the Holocene (our most recent geologic epoch which began approximately 11,500 years ago) and start of the Anthropocene should be defined. A number of theories are offered, ranging from the advent of agriculture and the end of the Paleolithic period (approximately 12,000 years ago) to as recently as 1945 with the first detonation of a nuclear weapon known as the Trinity Castree 2015). Though a start date has yet to be decided definitively, it is

lineage of these social movements concerned with the human-environment-health nexus. In this paper, I complicate the idea of Paleo as merely a dietary trend or fad diet (nor one with straightforward, consistent dietary guidelines at that!). Instead, I argue that Paleo is a multifaceted phenomenon: a diet, an environmental philosophy, a consumer culture, and an *embodied ecological health movement*.

The Paleo movement occupies a liminal space between environmental, health, and cultural movements. Grounded in the idea of a fundamental evolutionary "mismatch" between human biology and the cultures and environments of the "modern world" (Eaton and Konner 1985), the Paleo movement strongly emphasizes the connection between human and environmental health. While other social and health movements share an interest in the connection between human and environmental health, the Paleo movement offers a specific temporal intervention for ameliorating this rift, using the Paleolithic as a benchmark for re-wilding, healing, and strengthening bodies through dietary and lifestyle modifications. While the theories and practices of the Paleo movement receive merciless criticism from both academics and the public alike, interest and participation in Paleo and Paleo-like diets and lifestyles such as the trendy Ketogenic ("Keto") diet continues to grow.

Despite the staying power and continued growth and interest in Paleo, the diet has received little scholarly attention from any discipline (Johnson 2015). Furthermore, social scientific research on dieting more generally has rarely investigated specific diet plans or the practices and discourses associated with them (cf. Coleman 2010; Mol 2013). In this paper, I examine the controversial Paleo

generally agreed that the latter date is more favored (cf. Castree 2015). Thus, this paper defines "Anthropocene" as referencing the time period from 1945 until present.

movement as both a reaction to and an active producer of the environmental and health anxieties of life in the Anthropocene. The first sections of this paper provide a brief history of the Paleo Diet and discuss the idea of Paleo as movement before turning to the methods, data, and analysis. Drawing upon in-depth, semi-structured interviews with Paleo Dieters and participant observation at the 2017 PALEOf(x)TM conference, I investigate what it means to "go Paleo," elucidating the nuance of eating a Paleo-inspired diet and a reluctance among Paleo Dieters to apply the controversial term "Paleo" to describe their dietary habits. I conclude by arguing that Paleo's evolutionary framing and temporal intervention offers anxious health consumers a way out of the messy ecological uncertainty of human-environment relations in the Anthropocene by looking backward as the way forward to health.

2.3 Eating Like Our Ancestors: A Brief History of "Going Paleo"

The Paleo Diet is a nutritional regimen modeled after the supposed dietary habits of our pre-agriculture, hunter-gatherer ancestors (cf. Cordain 2002). The Paleo Diet is an example of nutritional primitivism, defined broadly by Knight (2015) as, "the pursuit of ostensibly simpler, more natural and authentic ways of eating as part of a quest for health through diet" (p.442). Paleo Diet rhetoric often pathologizes the relationship between health and the modernity of the Holocene/Anthropocene (e.g. agriculture), claiming that civilization has outpaced evolution and created a world hostile to human biology (Johnson 2015). This idea, known as the discordance or "mismatch" hypothesis, theorizes that the clash between "ancient body and modern world" produces obesity, diabetes, and other "diseases of civilization" (Eaton and Konner 1985). Thus, the Paleo Diet promises to return contemporary human bodies back to nature and to a healthier existence by returning to the presumed dietary habits

of pre-historic hunter-gatherer groups; in other words, back to a pre-Anthropocene body.

Nutritional primitivism and looking to the past for insight as to what the optimal human diet should be is not a new endeavor. For example, in the 1890s, Dr. Emmet Densmore popularized a meat-heavy diet inspired by the "food of primal man" (Densmore 1890). However, it was Walter Voegtlin's *The Stone Age Diet: Based on In Depth Studies of Human Ecology and the Diet of Man*, published in 1975, that popularized and made explicit the suggestion that a diet mimicking our Paleolithic ancestors could lead to health benefits. The book contained both historical inaccuracies (e.g., claiming that our human ancestors were "exclusively flesh-eaters") and misguided advice (e.g., that Sucaryl, an artificial sweetener banned by the U.S. FDA in 1969, was a safe substitute for sugar) and was met with skepticism from both the public and fellow physicians. Yet, despite these shortcomings, physicians and academics alike continued to look to our ancestors for insight into modern health and optimal diet.

In 1985, S. Boyd Eaton and Melvin Konner (both medical doctors with anthropological training) published a research article in the New England Journal of Medicine on Paleolithic nutrition advancing their "evolutionary discordance hypothesis," which theorized that a clash between "ancient body and modern world" produced the obesity, diabetes, and other "diseases of civilization" plaguing contemporary Western societies (Eaton and Konner 1985). The authors argued that the human body had remained essentially unchanged since the Paleolithic era and, as such, pre-agricultural diets would provide the, "nutrition for which human beings are in essence programmed" (p.283). With encouragement from a number of colleagues,

Eaton and Konner (with the addition of Konner's wife Marjorie Shostak, an anthropologist specializing in hunter-gatherer women) followed the publication of their article with a book geared toward a public audience. In 1988, the *The Paleolithic Prescription: A Program of Diet & Exercise and a Design for Living* was published. In the *Paleolithic Prescription*, rather then simply offering a hypothesis, the authors urged readers to take charge of their health by adopting the same nutrient proportions as were present in typical Paleolithic diets according to their research. However, interestingly enough, the book did not exclude foods that were unavailable before the development of agriculture. For example, foods from the agricultural era such as whole-grain bread, rice, and potatoes were seen as compliant with the nutritional regimen as long as the suggested macronutrient ratio was approximately met (Eaton *et al.* 1988). While Eaton and Konner's work is widely disputed within the scientific community (cf. Turner and Thompson 2013), which has failed to come to any consensus about a universal Paleolithic or ancestral diet, their evolutionary discordance hypothesis continues to influence those pursuing optimal health and diet.

Despite these earlier attempts at Paleolithic-inspired dietary regimens, it was Dr. Loren Cordain's *The Paleo Diet: Lose Weight and Get Healthy by Eating the Foods You Were Designed to Eat*, published in 2002, that finally offered a comprehensive plan for Paleolithic nutrition. Consequently, Cordain, who has authored or co-authored more than 100 peer-reviewed articles in journals including the *American Journal of Clinical Nutrition* and the *World Review of Nutrition and Dietetics* (including several collaborations with S Boyd Eaton), became known as the founder or "father" of the Paleo movement. Cordain is considered to have successfully bridged the gap between academic and popular interest in Paleolithic eating, with *The*

Paleo Diet now considered to be the cornerstone of the Paleo movement (cf. Johnson 2015).

The mainstream visibility of the Paleo Diet slowly rose throughout the 2000s, producing a number of Paleo figureheads and personalities that have since surpassed Cordain in popularity and recognition and have put their own spin on Paleolithic nutrition and lifestyles. Influential Paleo figureheads include: Mark Sisson (a former elite endurance athlete who created the highly trafficked Paleo blog "Mark's Daily Apple" in 2006 and authored *The Primal Blueprint* in 2009), Robb Wolf (a former biochemist and author of the *New York Times* best-selling book *The Paleo Solution*, published in 2010), Chris Kresser (author of *Your Personal Paleo Code*, published in 2013), and Art DeVany (author of the 2010 book *The New Evolution Diet* and proponent of an "evolutionary fitness regimen" with periods of intermittent fasting followed by high-intensity cardiovascular exercise and regular compound weightlifting), among others.

The Paleo Diet has often been linked to the "low-carb," "fad diet" trends popularized around the same time Cordain's (2002) *The Paleo Diet* was published. Low-carb diets, like the notorious Atkins Diet and other popular plans such as the South Beach Diet and Zone Diet, made "low-carb" the trendy weight loss strategy in the late 1990s and early 2000s. These low-carb diets, like Paleo, attributed rising rates of obesity and type 2 diabetes to the excessive intake of refined carbohydrates (e.g., bread, pasta, rice) in modern Western diets and recommended reducing intake of starchy and sugary foods. While similar in their condemnation of refined carbohydrates, Paleo Diet discourse was "explicitly evolutionary" (Chang and Nowell 2016, p.228) compared with these other diets, emphasizing the consumption of pre-

agriculture food groups rather than attention to measurements of one's daily caloric intake of carbohydrates.

In 2013, the Paleo Diet was the most googled diet according to Google Trends' annual search data analysis (Barclay 2013). An estimated three million Americans currently follow some version of the Paleo Diet, though it has been suggested this is a conservative estimation given the number of Paleo-like diets (e.g., "Primal," "Keto," "Whole30," etc.) (Johnson 2015). Markets for Paleo-endorsed specialty foods (e.g., bone broth, collagen peptides) and pre-made, Paleo-friendly kitchen staple replacements are growing rapidly. Market analysts have interpreted this growth as an indicator that Paleo products are not just a fad (Menayang 2017). In fact, the Paleo community strongly pushes back against accusations that Paleo is just another "fad diet." Many in the Paleo community describe "Paleo" as being much more than just a diet, but rather a lifestyle and philosophy. For example, the PALEOf(x) conference, which bills itself on their website as "the world's premiere holistic wellness event," has attracted thousands of attendees annually and offers lectures and workshops on topics well outside the realm of food and diet (described in more detail later).

Recently, the Paleo Diet has been brought into the discourse surrounding the Ketogenic ("Keto") Diet as a weight loss and overall health strategy. In 2017, the Ketogenic diet was one of the most searched diets of the year on Google (cf. Gans 2018). The ketogenic diet is a high-fat, adequate-protein, low-carbohydrate diet that puts the body into ketosis (a metabolic state where the body burns stored fats rather then glucose) due to restricting daily carbohydrate intake (usually to between 20-50 grams of carbohydrates per day). The ketogenic diet is essentially the first phase of the Atkins diet, suggesting that an interest in carb-restriction as a weight loss and health

strategy endures despite different names and branding efforts. Despite being less "explicitly evolutionary" (Chang and Nowell 2016, p.228) compared with Paleo, Keto diet advocates often do make connections to our ancestors, highlighting the use and benefits of starvation/fasting, eating fat and protein from animal sources, and avoiding grains. The Paleo Diet is often recommended as a dietary strategy for transitioning off the stricter Keto diet to a "low-carb" diet than can more easily be sustained long-term.

Despite the continued growth and interest in Paleo and Paleo-like diets and lifestyles such as the Keto diet, the Paleo diet has received little scholarly attention from any discipline (Johnson 2015). Furthermore, social scientific research on dieting more generally has rarely investigated specific diet plans or the practices and discourses associated with them (cf. Coleman 2010; Mol 2013). In the next section, I consider how to classify and characterize Paleo as more than a diet, but rather a *movement*.

2.4 Paleo as an Embodied Ecological Health Movement?

The growing Paleo community does not fit neatly into familiar, preconceived categories that one might default to using in defining such a phenomenon. Unlike its low-carb diet predecessors, such as the Atkins or South Beach diets, Paleo extends beyond the boundaries of individual choice/behavior and diet and weight loss strategies, offering robust evolutionary rhetoric and philosophy and encouraging its application to all areas of one's life rather than solely targeting food decisions. In this respect, Paleo can be considered more of an environmental philosophy, one that draws upon anthropology, evolutionary theory, and new models of the body and body-environment relationship to glean insight to surviving and thriving in the face of the

many perceived ecological and health threats of life in the Anthropocene as both individuals *and* a society.

Usually, a social movement is associated with group action that challenges existing political and professional power structures and/or policies. Health movements often mobilize this group action around healthcare access, health inequalities, and/or the medical recognition of particular illnesses, disabilities, or treatments (cf. Brown and Zavestoski 2004). There are examples of health movements that take up environmental concerns (e.g., Lyme Disease advocacy groups that emphasize how ecological destruction and disturbances impact deer and mice populations that carry and spread ticks) and environmental movements that take up health concerns (e.g., environmental justice advocacy groups that highlight how people of color and other marginalized populations are often disproportionately exposed to toxic environments and their associated health risks).

The Paleo movement appears to occupy a liminal space between environmental, health, and cultural movements. Grounded in the idea of a fundamental evolutionary "mismatch" between human biology and the cultures and environments of the "modern world" (Eaton and Konner 1985), the Paleo movement strongly emphasizes the connection between human and environmental health. However, unlike the aforementioned environmental and human health advocacy groups and movements, there are no clearly outlined political goals of the Paleo movement (no protests, no public policies targeted for amendment, etc.). Instead, the Paleo movement is more of a cultural (or more accurately, countercultural) movement, in the same vein that the Human Potential or "clean-eating" movements are "movements," where the individual adoption of a set of beliefs and practices is intended to shift a

larger cultural consciousness that will (hopefully) alter our collective social, and ecological reality. In other words, change begins at the scale of the individual, in this case, the Paleo Dieter's body and consumption choices.

Resting at the environmental-health-cultural movement nexus, the Paleo movement might also be described as an example of an "embodied health movement," a distinct form of health movement coined and defined by Brown et al. (2004) based on the presence of the following unique characteristics: "1) they introduce the biological body to social movements, especially with regard to the embodied experience of people with the disease; 2) they typically include challenges to existing medical/scientific knowledge and practice; and 3) they often involve activists collaborating with scientists and health professionals in pursuing treatment, prevention, research and expanded funding" (p.50). The authors characterize "embodied health movements" as "boundary movements" that, "attempt to reconstruct lines that demarcate science from non-science" (e.g., "good" science versus "bad" science), "blur boundaries of expert and lay people," and "transcend boundaries of social movement activity as activists' fluidity allows them to move in and out of social movement organizations" (e.g., there is "spillover" among activist groups/identities) (Brown et al. 2004, p.64). The Paleo community's emphasis on the biological body (e.g., genetics, microbiomics) and embodiment (e.g., tuning in to the nuance of how different foods make you feel), challenging existing medical/scientific knowledge and practice (e.g., the "calorie-in, calorie-out" and "low-fat" models of weight loss and dieting), and collaborating with scientists and health professionals for alternative treatments and prevention (e.g., using a Paleo Diet to combat diabetes, autoimmune disorders, etc.) suggests that the Paleo movement effectively meets all three criteria

Brown et al. (2004) outline as characteristic of an "embodied health movement." However, to simply characterize Paleo as an "embodied health movement" (Brown et al. 2004) risks losing the environmental and cultural context and philosophies that are paramount to the Paleo movement. Thus, I arrive at no easy answer as to how to best classify Paleo as a movement within the confines of existing terminology as a result of Paleo's liminal constitution. Instead I will offer my own classification of Paleo as an *embodied ecological health movement*, modifying Brown et al.'s (2004) definition to more explicitly recognize (human) health as ecology (cf. Jackson and Neely 2015). The rest of this paper is dedicated to examining the tensions and nuance of the terminology and practices within this *embodied ecological health movement* and considering what the evolutionary framing and temporal intervention of "Paleo" offers to anxious health consumers in our current ecological moment, beginning with a discussion of the methods and data used in this research in the following section.

2.5 Methods

This paper is part of a larger project on Paleo body politics and re-wilding health, ecology and diet in the Anthropocene. For the purposes of this analysis, I draw from in-depth, semi-structured interviews with 37 individuals following a Paleo Diet and participant observation at the 2017 PALEOf(x)TM conference. Study participants were recruited in two ways: 1. John Durant, *New York Times* best-selling author of *The Paleo Manifesto* and founder of Wild Ventures, sent an e-mail on my behalf to the PaleoNYC group listserv (the largest Paleo Meetup group in the country), encouraging individuals to participate in my research study (April 2017), and 2. I made a post in the Paleo Diet "subreddit" (r/Paleo) of the popular discussion website Reddit looking for willing individuals to take part in the research study (April 2017, with subsequent

recruitment posts June-August 2017 until theoretical saturation was reached from interviews). There was no compensation offered for participation in the study. All participants were over the age of 18 and self-identified as "Paleo," rather than my assessing their dietary practices. 20 men and 17 women from across the U.S. gave interviews for this component of the study.

Interviews were conducted between April-August 2017, ranged from 20-90 minutes, and were conducted over the telephone and recorded with a voice recorder. Interview questions included: how participants first came across the Paleo Diet, what motivated them to start eating Paleo, the benefits and drawbacks of adopting a Paleo Diet, and their beliefs and attitudes regarding their body, health, medicine, food, and nature/the environment more broadly. Interviews were transcribed by the author and transcriptions were analyzed and coded thematically using both a deductive and inductive coding strategy. All interview data are anonymized: initials are used to refer to participants.

In addition to interviews with Paleo participants, I attended the annual PALEOf(x)TM conference from May 18th-21st 2017 in Austin, Texas. The PALEOf(x) TM conference bills itself on their website as "the world's premiere holistic wellness event" and "a forum—the largest of its kind—where the theory of Ancestral Health turns into the practices that allow great health to flourish" ("Our Mission," n.d.). While at the conference, I took extensive field notes, interacted with speakers and attendees, and collected a variety of print materials and sample products. I performed discourse analysis on a number digital and print materials related to the Paleo Diet and health movement, including pamphlets, magazines, and sample products obtained at the PALEOf(x)TM conference. Other forms of media analyzed included: non-fiction

Paleo books, alternative and mainstream news coverage and digital publications, popular Paleo blogs, websites, and podcasts, as well as social media accounts of popular Paleo advocates and companies.

2.6 A Conference for Cave-People

On a hot and humid morning in May 2017, I walked from my hotel toward the Palmer Events Center, a 131,000 square foot multi-use events center located on the scenic waterfront of the Colorado River just across from the heart of downtown Austin, Texas. I, along with thousands of attendees from around the world, was in Austin to attend the annual $PALEOf(x)^{TM}$ conference, billed as "the world's premiere" holistic wellness event" and arguably the largest gathering for Paleo and Ancestral Health enthusiasts. The event has sold out every year since its inaugural event in 2012, so I made sure to purchase my ticket well in advance. As I approached the entrance of the Events Center, working my way past small groups of chatty conference attendees on the sidewalk, I couldn't help but notice a demographic trend in those I encountered; conference-goers looked as if they walked right off the pages of a health and fitness magazine and into the Texas heat. After entering the venue, I checked in with a friendly middle-aged woman volunteering at the Registration booth and picked up my overstuffed tote bag of complimentary "swag," the contents of which included: samples of a variety of health/nutritional supplements (from proprietary blends of "nootropics" or "smart drugs" designed to increase cognitive function, to collagen peptides sourced from grass-fed, pasture-raised bovine hides), pre-packaged Paleo food samples (from butter coffee to gluten-, grain-, sov-, and dairy-free snack bars and meal replacement shakes), the latest issue of Paleo Magazine, and a free SmartGutTM Microbiome Collection Kit ("the world's first sequencing-based clinical microbiome

screening test") from uBiomeTM. After taking this quick mental inventory, I walked past the Registration area through a set of doors to the Expo floor filled with hundreds of vendor booths, energetic brand representatives, and more of the same fit looking attendees I ran into on my way to the venue.

Over the next few days, I kept myself caffeinated with samples of BulletproofTM or butter coffees from numerous vendors (including a memorable sample of nitro cold-brewed coffee from Caveman Coffee Co.TM served on tap from a longhaired, bearded man wearing a skintight, leopard-print, wrestling leotard) and satiated with samples of Paleo-friendly foods including bone broth, gluten-, grain-, dairy- and soy-free baked goods, and organic, grass-fed jerky. I received quotes from a number of companies offering convenient at-home health testing and specialty labwork such as food sensitivity testing, heavy metal testing, as well as other conveniently branded tests such as the "Sleep and Stress Test" measuring cortisol, cortisone, melatonin, and creatinine (some of these offerings *did* require professional medical supervision and collaboration). I spoke with representatives of a number of organizations about the costs and process of becoming a certified Nutritional Therapy PractitionerTM, Functional Medicine practitioner, or Primal Health CoachTM. I tried on blue-light filtering eyeglasses, walked around in lightweight shoes designed to let your foot move more naturally and mimic being barefoot, and learned about the supposed medicinal benefits of Cannabidiol (CBD) oil made from low-THC hemp plants. To be eligible for a vendor booth at PALEOf(x)TM, vendors must provide a list of all product ingredients in order to guarantee that they meet the criteria of the conference organizers and do not include any ingredients from the "banned ingredients" list (see Figure 1 below).

Paleo f(x) [™] Vendor Product / Ingredient BANNED List [™] No products in any category may contain gluten, soy or industrial oils ***					
Acesulfame K	Margarine	Oatmeal	Meat substitutes	Beans	VOCs
Aspartame	Canola Oils	Wheat	Miso	Peanuts	Sulfates
Refined Sugar	Vegetable Oils	GMO Com	Soy cheese	Peas	Parabens
GMOs of ANY KIND	Soybean oil	Bulgur	Soy mayonnaise	Lentils	Aluminum
Monosodium Glutamate	Grapeseed oil	Brown Rice	Soymilk	Pea Protein	BPAs
Nitrates	Rice bran oil	Hidden Gluten Sources	Soy sauce	Dairy	Ptalthates
Potassium Bromate	High Linoleic Sunflower Oil	Artificial Flavors	Soy Lecithin	Ultra Pasteurized Dairy	Synthetics
Saccharin	Corn Oil	Teriyaki Sauce	Tamari	Homogenized Dairy	Talc
Sucralose [1]	Butter substitute spreads	Processed Foods	Tempeh		Artificial Fragrance
Tagatose	Brominated Veg Oil	Malt vinegar	Textured soy protein (TSP)		Solvent Extracted Oils
Corn Syrup	Safflower Oil	Мауо	Textured veg protein (TVP)		Gluten or soy
		Ketchup	Tofu		GMOs of ANY KIND

Figure 1. Paleof(x)TM Banned Ingredient List for Vendors

While the Expo floor was an overwhelming experience in itself, the lectures, panels, and workshops provided a deeper insight into the world of Paleo today. From glancing over the lecture schedule for the weekend, it was clear that "Paleo" was much more than the "fad diet" that the media has often portrayed it as based on the wide spectrum of content offered at the conference. Lectures and panels covered a range of topics from personalized nutrition, genomics, microbiomics, and bio-hacking, to primal sex, sustainable farming, entrepreneurial business strategy, and the decentralization of markets. Some examples included: how subtle energies and subatomic waves influence health performance through a "quantum perspective," using personal genomics and microbiomics to identify your ideal nutrition, the role of genetics, methylation, and vaccines in modern disease, how to "raise your little Neanderthals," how to "bio-hack" your brain for cognitive performance, and "how to slaughter and butcher a chicken with reverence for its life." For interested conference attendees, a panel titled "The System is a Lie" offered the following: "Trust in

authority? Trust in the market? Trust in the establishment? Diet was simply the low hanging fruit in exposing a systemic blindness to reality. What other systemic "truths" will succumb to the Paleo movement's evolutionary lens and critical thought?" If your brain was fatigued from information-overload from the numerous lectures and panels, exercise and movement workshops were offered throughout the day including introductory courses on aerial silks, "primal play method," "animal moves," and Kettlebell fundamentals.

It was obvious to me that "Paleo" meant much more than the dietary prescriptions of Eaton and Konner (1988) or Cordain (2002). An ethos of "Paleo" began to unravel over the weekend: an evolutionary or ancestral lens to diet, health, and lifestyle, a critique of modernity, empowerment through individualism, a cautious but hopeful futurism, and a seemingly paradoxical fusion of "natural," holistic, "ancient," or unconventional approaches with the highly quantified, clinical approaches of the emerging "omic" sciences. This evolution of "Paleo" begs the question of whether "Paleo" is still (or perhaps, was ever) the most appropriate, defining term for this movement. What does it speak to and what does it exclude? What baggage does it drag with it into this "new" vision of health? Based on interviews with Paleo Dieters, the next section considers the tension of the terminology and the nuance of the practice of "Paleo."

2.7 To "Paleo" or Not to "Paleo": Defining a Movement

In September of 2016, PALEOf(x) began exploring the idea of a complete rebranding effort. The organizers felt that the term "Paleo" was preventing them from reaching "the people that need Paleo the most," and that the term, "carried baggage in the minds of the general populace – a preconceived notion of 'fad diet' and 'eccentric'

– that, even with the best marketing efforts, could not be overturned" (Paleofx 2017). The PALEOf(x) organizers sent out an announcement expressing these concerns to their e-mail list subscribers along with a list of possible new names for the event and eventually proposed moving forward with their top pick of "HEALTHf(x)," a broad (perhaps safe) choice in the name of inclusivity. A year later, in September of 2017, the organizers publicly announced that they would forgo their rebranding and instead remain "PALEOf(x)" due to the overwhelming response from their "tribe" to not deviate from the PALEOf(x) brand.

Whether to embrace the "Paleo" terminology and all its "baggage" or try to repackage and rebrand the essence of Paleo thought and practice is an ongoing debate within the community. For example, some within the Paleo community embrace the often pejorative use of caveman caricatures and jokes from media critics, lightheartedly adopting caveman logos and branding (e.g., the Caveman Coffee Co.TM marketing strategy described previously) rather than behaving defensively in response to media criticism of the diet. Others steer clear from the term "Paleo," opting to latch on to related dietary and lifestyle approaches like "Primal" and "Keto" that perhaps have less stigma attached to their use.

Many Paleo Dieters that I spoke with encountered a similar, condescending reaction from social encounters where they discussed their choice to follow a Paleo Diet, particularly the perception that eating Paleo meant eating copious amounts of meat. One participant expressed that this impression was often the first reaction they received when mentioning they were on the Paleo Diet; "oh isn't that the diet where it's all meat and all proteins?" [MA]. Another participant expressed that they had gotten used to "the caveman diet type thing" [TP] being the initial reaction from those

they discussed their diet with. One Paleo participant was somewhat surprised by this stereotype of the Paleo Diet: "When I talk to people, the first misconception that most people have is that it's all meat or super-duper meat-heavy, which is funny to me, because I don't know exactly where that misconception came from" [BRo]. However, the majority of participants were aware of the meat-heavy, "caveman diet" stereotype and expressed disappointment with what they felt was an inaccurate portrayal of what eating Paleo actually looks like. One participant explained: "I know that it's a common misconception that it's all about meat, but I think the people who practice Paleo know that the bulk of your diet should be vegetables" [LRo]. Another participant echoed this sentiment stating: "I feel the general perception from the public...the media kept saying 'oh the caveman diet,' you just eat so much meat. I just feel like sensible Paleo isn't most of your plate is meat, it's much more portioned" [SJA]. One participant saw a silver lining to the "caveman diet" stereotype, namely that it may serve to pique the interest of certain individuals not typically willing or interested to take a more critical look at their health and diet:

"If you were to tell someone 'you're only going to be eating vegetables, but not some of the fun stuff vegetarians eat like soy, but also don't eat that much meat,' nobody would try it. They have to sell it somehow. You have to make it sexy by telling people 'hey you can eat steak all the time and bacon is healthy now,' that's what gets them interested" [ZH]

For this participant, the "sexy" but misleading caricature of a meat-heavy "caveman" diet works well as a marketing strategy where exposure and open-mindedness to the Paleo diet and lifestyle is the goal.

Despite PALEOf(x) deciding to commit to their "Paleo" branding, baggage and all, the misconceptions surrounding the term "Paleo" has led to a reluctance among Paleo Dieters to use the term with friends, family, colleagues, and health professionals when describing their diet. One participant communicated that because of the widespread misconceptions about the Paleo Diet they, "usually don't ever use the word, because people immediately turn to their idea of what Paleo is, and that's generally a lot different than what my idea is" [BRo]. Another participant expressed actively avoiding possible confrontation from using the word "Paleo" by opting instead to give a brief description of how her and her family eat rather than simplifying their diet with the word "Paleo": "instead of describing [my diet] as 'Paleo', I describe that we buy and cook our own food and avoid all types of concentrated sweets in our diet, I haven't brought that controversy up…" [AM]

A participant who is currently a Dietetics major in college communicated their exhaustion with getting into debates with colleagues when they used the term "Paleo," stating, "I don't talk about it as much as I used to, that's one big thing I've learned, I don't like to use the word 'Paleo' anymore" [MA]. Another collegiate participant, a Nutrition major, expressed a similar sentiment, mentioning that they, "try not to use the P-word, the 'Paleo' word" [AB] when speaking with their classmates and professors, despite generally being in agreement with their colleagues about ideal dietary practices. They explained:

"In the end everyone agrees on a few simple things when it comes to eating well, decreased processed foods, more plant-based, increased vegetable intake, avoiding large amounts of carbohydrates and refined foods, so at the bottom of it we all follow a similar diet" [AB] They went on to express that in their nutrition program, despite the stigma they encounter around the term "Paleo," many of the research studies they learn about in class support the various tenets of Paleo (e.g., reducing carbohydrate intake):

"What's interesting about Paleo, [is that it] follows that same lowprocessed [food], plant-based approach, and there's many different studies that incorporate aspects like that, there's a slew of low-carb studies, and Paleo can fall under low-carb, same with dairy-free, lowsugar...there are a lot of studies out there that don't use the ancestral, Paleolithic template and still provide literature supporting this topic" [AB]

For this participant, while the term "Paleo" is steeped in misconceptions and controversy and is met with criticism from their professional colleagues, the actual dietary guidelines of Paleo are supported by the scientific literature that they are learning in their college-level nutrition courses.

The stigma and professional pushback around Paleo is even more apparent among academic and medical professionals. One participant, a practicing gastroenterologist and medical university professor who often uses a Paleo Diet template with his patients, mentioned, "my colleagues hate the term; I work in a university with 50 gastroenterologists and there's a subset that abhors the use of the term" [SG]. He expressed that he's faced a tremendous amount of pushback in the medical community for his support of the Paleo Diet as a prescription for his Irritable Bowel Syndrome (IBS) patients. His colleagues often cite a lack of scientific evidence for the Paleo Diet compared with more traditional interventions (e.g., pharmaceuticals) as their reason for disapproval. He mentioned that: "When my colleagues have to cover my patients from time to time they routinely say 'you should probably stay on the diet that Dr. [SG] prescribed for you because I don't really have any evidence that it actually makes a difference for you but it seems to be working for you' is what they tell them" [SG]

Unfortunately, he doesn't think their desire for formal scientific evidence will be met anytime soon, stating that, "no one's going to run a large-scale study on dietary interventions" and that "it's hard to run IBS trials in general... running an IBS trial is limited by the fact that there's such tremendous variation in terms of why people develop those symptoms" [SG]. However, as the previously quoted college Nutrition major participant elucidated, while the Paleo Diet may lack explicit scientific support, many of the guidelines advocated by Paleo (e.g., reducing refined sugar intake) are supported by scientific research studies. This evidence suggests that it is the term "Paleo" itself that is at the heart of the controversy, rather than the general dietary guidelines promoted by health advocates within the Paleo movement.

With the clear controversy, misconceptions, social stigma, and professional pushback surrounding the term "Paleo," it was not surprising to find that many Paleo Dieters were not in agreement regarding what exactly a Paleo Diet should entail (mirroring the lack of consensus among scientists regarding Paleolithic or ancestral diets; cf. Turner and Thompson 2013). As a result, "going Paleo" manifests in a variety of different ways. The Paleo Diet is defined as a nutritional regimen modeled after the supposed dietary habits of our pre-agriculture, hunter-gatherer ancestors (cf. Cordain 2002). In broad strokes, this has been translated into a diet that excludes grains, legumes, dairy, refined sugar, and processed foods. Instead, Paleo Dieters fill their plates with meat, eggs, vegetables, fruits, nuts and seeds, and "healthy" oils (e.g.,

coconut oil, avocado oil, olive oil). However, as one Paleo participant noted, "there's so many definitions and approaches to what Paleo can mean for different people, so I'm always skeptical when someone says 'I eat Paleo,' because that can mean a lot of different things" [AS]. Another participant expressed that, "I would advocate the Paleo Diet...the problem is that people still don't understand what exactly it is and that's because it still isn't necessarily nailed down as one thing" [BRo]. Offshoots of Paleo such as Mark Sisson's popular "Primal Blueprint" (cf. Sisson 2009) allows for full-fat dairy (e.g., grass-fed butter), quinoa, and wild rice in moderation, for example. There is debate about whether potatoes should be allowed in a Paleo Diet, with most interpretations of the diet allowing for sweet potatoes in moderation but not white potatoes. Thus, despite many people identifying their diet as "Paleo," "Paleo" is often open to interpretation and lacks a clear definition.

While many of the participants I spoke with made mention of rigid Paleo zealots pushing back against the inclusion of any form of dairy or grains, I did not encounter this exclusionary stance with any of the participants in this study. Instead, participants embraced the loose definition and personalized interpretations of "Paleo." One participant expressed:

"It's different for everybody and I think the definition for it should be. It's not this set diet, it's more a way of learning how to eat what's right for you, nutrition isn't the same for everybody and I think Paleo would be a way for someone to figure out what works for them" [MA].

Another echoed this sentiment of personalizing Paleo, mentioning that, "If I talk to someone who says they are Paleo I never quiz them and be like 'well, where do you stand on potatoes,' I just figure whatever works for your body" [SJA]. Another

participant summarized her frustration over the debates about compliant and noncompliant Paleo foods within the Paleo community at large, stating, "it's very controversial and confusing and that implies, I think, that there's not one truth" [ZR].

While it appears that in practice there may not be "one truth" [ZR] to eating a Paleo-inspired diet, with Paleo Dieters exhibiting varying definitions and interpretations of compliant foods when "eating Paleo," the relatively straightforward evolutionary theory behind the Paleo Diet implies that there *is* an optimal human diet based on the biological benchmark of the Paleolithic (even if this theory has been widely disputed by nutritional anthropologists and others within the scientific community, cf. Turner and Thomspon 2013). With the clear controversy around the use of the term "Paleo," what does steadfastly sticking to the questionable evolutionary framing of the Paleo Diet and even the term itself offer to this movement? In the final section, I consider this query and what Paleo (as both a term and a movement) offers to anxious health consumers in our current ecological moment.

2.8 Conclusions

Throughout history, human beings have always used all the scientific and philosophical tools available to them to try and determine the best way to eat and live. Food and diet have long been touted as a critical component of a healthy lifestyle and for longevity in the life-long project of making health. The Paleo Diet offers a specific temporal intervention for health-conscious consumers seeking refuge from illness and the key to longevity in an era of anxiety and uncertainty concerning both human and planetary health, looking to Paleolithic hunter-gatherer ancestors for insight to create a healthier human-environment relationship in the Anthropocene. In this respect, Paleo is more of an environmental philosophy, one that draws influence from anthropology, evolutionary theory, and new models of the body and body-environment relationship to offer insight for surviving and thriving in the face of the many perceived ecological and health threats of life in the Anthropocene.

While most members of the scientific community from nutritional anthropologists to evolutionary biologists scoff at the inaccuracy of the Paleo Diet's interpretation of the dietary and lifestyle habits of humans in the Paleolithic era, interest and participation in Paleo and Paleo-like diets (e.g., Keto, Primal, Whole30) and lifestyle modifications continues to grow (cf. Menayang 2017). Undeterred by evidence that Paleo's fundamental "mismatch hypothesis" of "ancient body" and "modern world" (Eaton and Konner 1985) ignores considerable ecological, genetic, cultural, and behavior variation in the evolution of human diet and metabolism (cf. Turner and Thompson 2013), the concept continues to influence the health and dieting world. The popularity of the evolutionary framing of Paleo and a continued reliance on the "mismatch hypothesis" seems to capture a growing discontent and anxiety over the modernity and ecological crises of the Anthropocene. As such, Paleo provides a unique opportunity for examining health and environmental practice in our current ecological moment.

The growing Paleo community does not fit neatly into familiar, preconceived categories that one might default to using to define such a phenomenon. To write-off Paleo Dieters as merely participants in yet another dietary trend or fad diet that will soon expire is shortsighted. With the far-reaching application of evolutionary philosophy and a strong emphasis on not only dietary but lifestyle factors, the Paleo community is more than simply a collective of dieters. At the same time, the Paleo

community does not exhibit the traditional characteristics of social, political, or health movements (e.g., mobilizing group action to change public policy). Rather than mobilize as a united collective to enlist governments or policies in order to achieve an end, the Paleo community relies on the individual adoption of a set of beliefs and practices to start a domino effect that will (presumably) ultimately change healthcare, environmentalism, and culture. In other words, change begins at the scale of the individual, in this case the Paleo Dieter's body and consumption choices (hinting at a certain level of agency and privilege and serving as a reminder that countercultural is not the same as marginal). Thus, in this paper I have argued that Paleo is a multifaceted phenomenon: a diet, an environmental philosophy, a consumer culture, and an *embodied ecological health movement* that occupies the liminal space between environmental, cultural, and "embodied health movement" (cf Brown et al. 2004).

Beyond the difficulty of classifying Paleo as a movement is whether or why Paleo is the most appropriate term for defining this movement. Despite the baggage that comes along with the term "Paleo," from debates over the inaccuracy of the evolutionary theory that comprises its foundation to concerns over fetishizing the primitive or racial "other," the Paleo movement continues to embrace the term and expand in influence and participation. The nuance and individualization of "going Paleo" has resulted in a diversity of diets and lifestyles among individuals identifying with the Paleo movement. This evolution of "Paleo" begs the question of whether "Paleo" is still (or perhaps, was ever) the most appropriate, defining term for this movement. However, what it does seem to offer is a temporal intervention as a way out of the messy ecological uncertainty of human-environment relations in the Anthropocene, looking backward as the way forward to health.

Chapter 3

THE PALEO PARADOX: RE-WILDING AS A HEALTH STRATEGY ACROSS SCALES IN THE ANTHROPOCENE

3.1 Abstract

In an era of environmental anxiety, "re-wilding" has emerged as an ecological health and resiliency strategy across scales in the Anthropocene, from the human body to the planet. At the scale of the body, this has meant a reevaluation of dietary, consumption, and lifestyle behaviors among concerned consumers seeking to create healthy, resilient bodily ecosystems. Recent health trends including the Paleo Diet and Ancestral Health movements call upon an evolutionary perspective for insight as to how to re-wild one's bodily ecosystem in the face of ecological crisis across scales, using the Paleolithic era as a benchmark for dietary and behavioral re-wilding. This paper draws upon interviews with individuals adhering to a Paleo Diet to better understand whether and how the evolutionary discourse of Paleo influences their beliefs about healthy diet and lifestyles, and how they grapple with re-wilding in an urban context. This paper elucidates the paradoxical "ancestral futurism" of the Paleo movement, where re-wilding bodies and lifestyles in the name of health and sustainability is predicated upon the same technologies, spaces, political-economic structure, and human agency that created the messy ecological uncertainty of the Anthropocene.

3.2 Introduction

In an era of environmental anxiety, "re-wilding" has emerged as an ecological health and resiliency strategy across scales in the Anthropocene, from the human body to the planet⁹. At the scale of the body, this has meant a reevaluation of dietary, consumption, and lifestyle behaviors among concerned consumers seeking to create healthy, resilient bodily ecosystems. For individuals adhering to the principles of a Paleo Diet, health and diet are often reframed and reconsidered from an evolutionary or ancestral perspective, where the Paleolithic era becomes the benchmark for dietary and behavioral re-wilding¹⁰. This paper elucidates the paradoxical "ancestral futurism" of the Paleo movement, where to re-wild our bodies and lifestyles in the name of health and sustainability is predicated upon the same technologies, spaces, political-economic structure, and human agency that landed us in the messy ecological uncertainty of the Anthropocene to begin with.

In the early 2000s Crutzen and Stoermer (2000) proposed that our current geologic epoch, the Holocene, should be succeeded by the "Anthropocene," on account of human-induced changes in the Earth system, notably anthropogenic climate change¹¹. These changes suggest that modern humans are capable of altering the

⁹ The term "Anthropocene" is contentious and alternatives exist, including: "Capitalocene," "Cthulucene," etc. (cf. Haraway 2015). In this paper, "Anthropocene" is used deliberately to reference usage in the geologic and environmental sciences and the context within which the term was created (i.e., one that was anthropocentric).

¹⁰ The Paleolithic period lasted from approximately 2.6 million years ago until 12,000 years ago with the advent of agriculture (cf. Turner and Thompson 2013).

¹¹ There is ongoing debate defining the end of the Holocene (our most recent geologic epoch which began approximately 11,500 years ago) and start of the Anthropocene. A number of theories are offered, ranging from the advent of agriculture and the end of the Paleolithic period (approximately 12,000 years ago) to as recently as 1945 with the

global environment through "forces of nature" previously thought to be immune to human influence (cf. Castree 2015). As a result, environmental politics in the Anthropocene are concerned with what humans did to nature and in turn what this adulterated nature will mean for the health, well-being, and future of humanity (cf. Cook and Balayannis 2015). With the breakdown of the nature/society binary, allowing "nature" to be unbound from its previous conceptualizations and spaces, our collective anxiety over the repercussions of ecological crisis and human contribution is free to move across scales.

The Anthropocene has witnessed disruptions of the human body's ecosystem in addition to global ecosystems. The human microbiome, or the diverse and sizeable community of microbes contained both within and on the human body, changed in parallel with the phases of the Anthropocene, particularly in response to changes in dietary and consumption practices (cf. Gillings and Paulsen, 2014). For example, oral microbiota from fossilized dental calculi show a marked change in bacterial diversity and composition based on the increased consumption of cereal grains in the transition from a hunter-gatherer lifestyle to an agricultural diet (Adler et al., 2013), microbial perturbations which are now being linked to increased frequencies of medical conditions since the rise and spread of industrialized agriculture post-WWII, such as allergies, type 2 diabetes, and obesity (cf. Bendiks and Kopp, 2013; Greenblum et al., 2012; Luoto et al., 2013; Musso et al., 2010). These findings appear to suggest that our

first detonation of a nuclear weapon (the Trinity test). Though a start date has yet to be decided definitively, it is generally agreed that the latter date is more favored (cf. Castree 2015). Thus, this paper defines "Anthropocene" as referencing the time period from 1945 until present.

body's ecology, like our planetary ecology, is in a state of disequilibrium or transformation.

This paper focuses on the idea of "re-wilding" as a response to ecological crises in the Anthropocene and discusses how re-wilding is practiced at the scale of the body through a case study of Paleo Dieters. Recent academic literature on re-wilding focuses primarily on human interventions in the non-human world, notably local and regional ecosystems, such as re-introducing extinct species into a particular habitat and considering whether or not these re-wilding practices are reproducing nature-society binaries (cf. Jorgensen, 2015; Prior and Ward, 2016). However, this article will contribute to the literature by considering the human body as a potential site for re-wilding in the Anthropocene, investigating how the discourse and practices of the Paleo Diet and its corresponding health movement attempt to re-wild, restore, and heal the body through dietary and lifestyle interventions inspired by the presumed behaviors of Paleolithic hunter-gatherers.

Despite the popularity of the Paleo Diet, the diet and the larger Paleo movement have little scholarly attention devoted to them (cf. Johnson 2015). More generally, social scientific research on dieting rarely investigates specific diet plans and their practices and discourses (cf. Coleman 2010; Mol 2013). Drawing upon interviews with individuals adhering to the principles of a Paleo Diet, this research contributes to a growing literature on political ecologies of the body and health. To better understand whether and how the evolutionary discourse of Paleo influences beliefs about healthy diet and lifestyles, and how Paleo participants grapple with the idea of being a biologically "ancient body" stuck in the "modern world" of the Anthropocene (Eaton and Konner 1985), the first sections of this paper provides a
foundation for considering the body as an endangered ecosystem that requires rewilding as an intervention. With an understanding of the politics of re-wilding body ecologies, the Paleo Diet and movement are specifically discussed before turning to the methods, data, and analysis. This paper argues that the body is a new frontier for an ecological ethic of health and sustainability based on re-wilding, and a microcosm for the politics that go along with it. Ultimately, this paper concludes that the Paleo Diet presents a paradox where re-wilding bodies and lifestyles in the name of health and sustainability is predicated upon the same technologies, spaces, political-economic structure, and human agency that created the messy ecological uncertainty of the Anthropocene.

3.3 The Body as an Endangered Ecosystem

Human microbiome research and medical science more generally have actualized the idea of the body as an ecosystem, one that is porous, malleable, and dependent on a number of non-human, microbial collaborators, allowing for a new space for the ecological anxieties, interventions, and politics of the Anthropocene to play out. Perceived threats to the integrity of the body's ecosystem abound in the Anthropocene: inadequate inoculation of infant microbiomes with their mother's bacteria due to caesarean sections and formula feeding, inadequate nutrition and probiotic food consumption in the "Western" or "standard American diet," the excessive use of anti-microbial cleaning and hygiene products, chemical exposures in the food supply and built environment, and the sedentary lifestyles and general disconnect with *nature* characteristic of modernity. From the moment of birth, the body is exposed to the precariousness of modernity and becomes an object for the

practice of health, which now includes cultivating a diverse, resilient bodily ecology closer to that of our "wild," pre-Anthropocene forebears.

Suggested strategies among alternative health practitioners and health advocates for cultivating a wild, resilient bodily ecosystem most often involve dietary adjustments (e.g., avoiding certain foods) and/or the consumption of prebiotic (nondigestible carbohydrates that act as precursors for probiotics) or probiotic foods or supplements to replenish or manipulate the body's beneficial microbes, coupled with avoidance of unnecessary or excessive use of antibiotic drugs or hygiene products. The idea is that by healing one's gut microbiome through dietary manipulation, the body's ecosystem will be brought back into balance, strengthening the immune system as a preventative measure as well as resolving any of the growing number of acute conditions correlated with deficiencies in an individual's microbiome. In addition to dietary and consumption habits, recent microbiome research suggests that lifestyle components including sleep (cf. Anderson et al. 2017) and exercise (cf. Liu et al. 2017) impact the composition of the microbiome. Thus, the burden of responsibility is placed on the individual who must self-monitor, assess, and intervene in the body's ecosystem through dietary and lifestyle modifications.

The popular Paleo Diet and its corresponding health movement emphasize the importance of re-wilding the gut microbiome and the body's ecosystem more generally through dietary and lifestyle interventions. Recent microbiome research studies comparing the microbial diversity of gut bacteria among contemporary African hunter-gatherer groups, notably the Hadza of Tanzania, to individuals in Europe, show a richer diversity of microbes in the hunter-gatherer groups (Schnorr et al. 2014). Such studies provide fuel for the fire of the Paleo movement, whose proponents are

constantly seeking new scientific evidence to strengthen their argument that the Paleolithic hunter-gatherer body should be the benchmark against which a healthy bodily ecosystem is assessed. In sum, the idea of the body as an ecosystem allows the body to become a site for ecological conservation efforts, such as re-wilding through diet.

While Foucauldian and feminist theorists (e.g., Butler 1993, Duden 1993) are often cited for putting the "body" on the intellectual map among geographers (cf. Callard 1998; Hall 2000; Longhurst 1995; Nast and Pile 2005; Parr 2002), the idea of the body as an ecosystem requires theorizing the body in new ways. Based on emerging scientific understandings of the body, Guthman and Mansfield (2013) call for a "political ecology of the body" that pays attention to the ecological processes both within and around the body, engaging with materiality and the agency of nonhuman actors. My research contributes to emerging literature on the political ecology of health and bodies (e.g., Guthman and Mansfield 2013, Guthman 2012, Jackson and Neely 2015) through a case study of re-wilding the body as a health practice.

3.4 Re-wilding as an Ecological Health Strategy Across Scales

"Re-wilding" is a relatively new conservation discipline that emerged from the larger framework of restoration ecology that acknowledges the co-production of nature by human and non-human actors and emphasizes the conscious and conscientious intervention of humans to restore and maintain healthy ecosystems (cf. Greipsson 2011)¹². In short, the common aim of re-wilding is to maintain, or increase,

¹² The term "re-wilding" first emerged from collaboration between the conservation biologist Michael Soule and the environmental activist David Foreman in the late 1980s (cf. Lorimer et al. 2015).

biodiversity, while reducing the impact of present and past human interventions through the restoration of species and ecological processes. While traditional restoration ecology focuses on attempting to recreate past environments through the re-introduction of presumably native species, re-wilding focuses on restoring ecological processes (e.g., predation) that are missing or dysfunctional due to human disruption in order to create functioning ecosystems for the future (Moorhouse and Sandom 2015). In other words, re-wilding creates an ecosystem that is more functionally natural, but may look different than what previously existed (i.e., emphasizing ecological function over species composition) (cf. Lorimer et al. 2015; Moorhouse and Sandom 2015).

Beyond a shared ethos of reducing or reversing past and present human impacts by restoring more functional ecosystems, the term "re-wilding" often describes a variety of goals, approaches, tools, and temporal benchmarks, making a concrete definition hard to come by. For example, re-wilding concepts and projects vary in the roles afforded to human agency. While all forms of re-wilding share an acknowledgement of the detrimental impacts of past human activities, Lorimer et al. (2015) argue that, "they differ as to the place of people in current and future wilds" (p.54). For some, human absence is an index of wildness (echoing traditional conceptions of "wilderness" that place humans outside of "nature," cf. Cronon 1995), where human absence can be used as a re-wilding strategy. For others, humans are part of the re-wilding process, with wildness in the Anthropocene requiring deliberate intervention through ecological engineering.

While scholars have spent time debating the appropriate role and feasibility of human agency in re-wilding conservation strategies and whether or not these practices

are reproducing nature/society binaries (cf. Jorgensen 2015; Prior and Ward 2016), this research adds to the conversation by elucidating how the terminology, ideology, debates, and politics of re-wilding (e.g., distributions of economic and social benefits, non-human/animal welfare, etc.) are brought to the micro-scale of the human body. For example, Lorimer (2017) uses the re-wilding of nature reserves and reworming of the human microbiome through helminthic therapy as case studies that "share a morethan-human ontology that links the planetary to the microscopic" (p.8). Mills *et al.*'s (2017) "Microbiome Rewilding Hypothesis" further exemplifies the re-scaling of the concept of re-wilding to human bodies and health, suggesting that the restoration of biodiversity in urban green spaces would re-wild the environmental microbiome to a state that would provide an ecosystem service to humans in the form of immunoregulatory health benefits from adequate microbial exposure. Mills et al.'s (2017) and Lorimer's (2017) work at the human-environment-health nexus suggest that both human bodies and natural landscapes comprise dynamic and unstable ecologies in need of re-wilding efforts. This paper builds on ecological conceptions of life and health across scales and the use of re-wilding as a strategy to bring the "unstable ecologies" (Lorimer 2017, p.8) of human bodies back into balance, focusing specifically on the discourse and practices of individuals within the Paleo movement.

3.5 Paleo Body Politics: Re-wilding Bodies and Lifestyles in the Anthropocene

Since the "Great Acceleration" of the late 1940s (rapid globalization, population growth, the rise and spread of industrialized agriculture, the Trinity test), arguably the marker of the start of the Anthropocene (cf. McNeill and Engelke 2016), we witnessed the rise of social movements such as the "back-to-the-land" movement (cf. Brown 2011) and the alternative food movement (cf. Goodman et al. 2012) that focused on bringing the *body back to nature* in the interest of remediating both human and environmental health. More recently, the Paleo movement has brought the idea of wildness to social movements concerned with health, nutrition, fitness, and the environment, bringing nature *back (in)to the body*. Drawing influence from evolutionary theory, nutritional primitivism, and new models of the body and the body-environment relationship based on the latest research in the health sciences (e.g., microbiomics, genomics), the Paleo movement blends primitivism and futurism, collectivism and individualism, and provides unique insight into self-care, health, and environmentalism in our current ecological moment¹³.

Nutritional primitivism and looking to Paleolithic ancestors for insight into healthy diet is not a new concept. For example, in the 1890s, Dr. Emmet Densmore popularized a meat-heavy diet inspired by the "food of primal man," claiming that "bread is the staff of death" (Densmore 1890). However, it wasn't until gastroenterologist Walter Voegtlin's *The Stone Age Diet* was published in 1975 that the explicit suggestion that a diet mimicking Paleolithic ancestors could lead to health benefits was popularized. Despite historical inaccuracies and misguided advice in this particular publication, physicians and academics alike continued to look to ancestors for insight into modern health and diet.

In 1985, S. Boyd Eaton and Melvin Konner, both distinguished medical doctors with anthropological training, published a research article in the New England

¹³ "Nutritional primitivism" is defined by Knight (2015) as, "the pursuit of ostensibly simpler, more natural, and authentic ways of eating as part of a quest for health through diet" (p.442).

Journal of Medicine on Paleolithic nutrition, advancing their "evolutionary discordance hypothesis." The discordance or "mismatch" hypothesis theorizes that the clash between "ancient body and modern world" produces obesity, diabetes, and other "diseases of civilization" (Eaton and Konner 1985). The authors argue that the human body has remained essentially unchanged since the Paleolithic era, thus preagricultural diets provide the, "nutrition for which human beings are in essence programmed" (p.283). Eaton and Konner (along with Konner's wife Marjorie Shostak, an anthropologist specializing in hunter-gatherer women) followed the publication of their controversial paper with a book titled The Paleolithic Prescription: A Program of Diet & Exercise and a Design for Living (1988), geared toward a public audience. In the *Paleolithic Prescription*, rather then simply implying a connection between modern diets and "modern" diseases, the authors urged readers to take charge of their health by adopting the same nutrient proportions as were present in typical Paleolithic diets according to their research. While Eaton and Konner's work is widely disputed within the scientific community (cf. Turner and Thompson 2013), which has failed to come to any consensus about a universal Paleolithic or ancestral diet, their concept of the "mismatch" hypothesis continues to influence the health and dieting world.

Despite earlier attempts at Paleolithic-inspired dietary regimens, it was not until 2001 with the publication of Dr. Loren Cordain's *The Paleo Diet: Lose Weight and Get Healthy by Eating the Foods You Were Designed to Eat* that a comprehensive plan for Paleolithic nutrition coalesced. Consequently, Cordain became known as the founder of the Paleo movement, successfully bridging the gap between academic and popular interest in Paleolithic eating with The Paleo Diet now considered to the cornerstone of the Paleo movement (cf. Johnson 2015). Since its' publication, the

visibility of the Paleo Diet slowly rose throughout the 2000s, producing a number of Paleo figureheads and personalities who have since surpassed Cordain in popularity and recognition and put their own spin on Paleolithic nutrition and lifestyles (e.g., Mark Sisson, Robb Wolf, Chris Kresser, etc). In 2013, the Paleo Diet was the most searched diet according to Google Trends' annual search data analysis (Barclay 2013). Today, an estimated three million Americans currently follow some version of the Paleo Diet, though some suggest that this is a conservative estimation given the number of Paleo-like diets such as "Primal" and "Whole30" (Johnson 2015). Markets for Paleo-endorsed specialty foods (e.g., bone broth) along with pre-made, Paleofriendly replacements for kitchen staples are rapidly growing. Market analysts interpret this growth as an indicator that Paleo is not just a fad (Menayang 2017).

The Paleo movement is one of the largest health movements advocating for a focus on the connection between human and environmental health and strategies such as re-wilding through dietary and lifestyle interventions inspired by the presumed behaviors of Paleolithic hunter-gatherers. While other movements share an interest in the connection between human and environmental health, the Paleo movement offers a specific temporal intervention for ameliorating this rift, using the Paleolithic as a benchmark for re-wilding bodies through dietary and lifestyle modifications. Thus, the Paleo movement offers a rich case study of how health as ecology is put into practice and how the body is a new site for ecological crisis and anxiety in the Anthropocene.

3.6 Methods

This paper is part of a larger project on diet and body ecologies. For the purposes of this analysis, I draw from in-depth, semi-structured interviews with 37 individuals following a Paleo Diet. Study participants were recruited in two ways: 1.

John Durant, *New York Times* best-selling author of *The Paleo Manifesto* and founder of Wild Ventures, sent an e-mail on my behalf to the PaleoNYC group listserv (the largest Paleo Meetup group in the country), encouraging individuals to participate in my research study (April 2017), and 2. I made a post in the Paleo Diet "subreddit" (r/Paleo) of the popular discussion website Reddit looking for willing individuals to take part in the research study (April 2017, with subsequent recruitment posts June-August 2017 until theoretical saturation was reached from interviews). There was no compensation offered for participation in the study. All participants were over the age of 18 and self-identified as "Paleo," rather than my assessing their dietary practices. 20 men and 17 women from across the U.S. gave interviews for this component of the study.

Interviews were conducted between April-August 2017, ranged from 20-90 minutes, and were conducted over the telephone and recorded with a voice recorder. Interview questions included: how participants first came across the Paleo Diet, what motivated them to start eating Paleo, the benefits and drawbacks of adopting a Paleo Diet, and their beliefs and attitudes regarding their body, health, medicine, food, and nature/the environment more broadly. Interviews were transcribed by the author and transcriptions were analyzed and coded thematically using both a deductive and inductive coding strategy. All interview data are anonymized: initials are used to refer to participants.

3.7 Diet by Design: Eating and Living for Your Biology

The Paleo Diet is a nutritional regimen modeled after the supposed dietary habits of hunter-gatherers (cf. Cordain 2002). Paleo Diet rhetoric often pathologizes the relationship between health and the modernity of the Holocene/Anthropocene (e.g.

agriculture), claiming that civilization outpaced evolution and created a world hostile to human biology (Johnson 2015). Thus, the Paleo Diet promises to return contemporary human bodies back to nature and to a healthier existence by returning to the presumed dietary habits of pre-historic hunter-gatherer groups; in other words, back to a pre-Anthropocene body. In this section, participants discuss their interpretations of the nutritional primitivism and evolutionary discourse surrounding the Paleo Diet movement and how it influences their beliefs about healthy diet and lifestyles. Participants discuss how the theory behind Paleo resonates with them intuitively (particularly regarding what is *natural*) and/or intellectually (e.g., how Paleo is the diet humans are *designed* by evolution to eat), and how they apply a "Paleo template" to their food consumption and lifestyle behaviors in a post-Paleolithic environment. However, other participants, less convinced by the theory behind Paleo, discuss the problem of feasibility in attempting to eat like Paleolithic hunter-gatherers.

Out of 37 Paleo participants in the study, 19 brought up the evolutionary perspective of the Paleo Diet in our conversations about healthy diets and lifestyles when asked how they first heard about and reacted to the Paleo Diet and/or why they chose to "go Paleo." The majority of participants who brought up Paleo's use of evolutionary thought found these arguments to be compelling and convincing. One participant mentioned that they were, "sold on the idea that we are not adapted to grains, not well-adapted at least" [JC]. Another participant expressed that the "logic behind it" made sense, offering the following example: "teeth were evolved over the course of thousands, millions of years, so why wouldn't we eat what we've evolved to eat for millions of years" [ZH]. For some participants the principles of Paleo

immediately resonated with them, communicating that the evolutionary arguments of Paleo, "made sense on an intuitive level" [BRu], or "intuitively makes sense" [CW]. For one participant, the evolutionary argument of Paleo that claims our bodies are not yet adapted to modern diets fit in with his existing perception of "natural" foods, explaining that: "I've always kind of been into natural foods, natural lifestyles, so when he [Mark Sisson] said 'hey agriculture's only been around 10,000 years so the body's not really adapted,' it just made a lot of sense to me" [BRu]. Another participant also drew a connection between Paleo and the idea of eating "natural" food, communicating that:

"I saw Paleo as simply a refinement of 'natural,' of course 'natural' is by commercial interests and has almost no meaning, but if you mean what you say, 'natural' has meaning, and Paleo is simply refinement or clarification of what that word means, that we should be eating in a way that makes our genes happy, if our genes are designed to metabolize lots of fat and we give it lots of carbs, it's going to be a stressor" [RB]

The principles of Paleo resonated with individuals not only intuitively but intellectually, using words and phrases like "it made sense to me intellectually" [BRu], and "Paleo works, especially intellectually" [RB]. A number of participants made reference to human "design" by evolution, often using the technical analogy of "software" and "hardware" in describing the mismatch between what our bodies were "designed" to eat (i.e., our "hardware") and the food and environments humans created post-Paleolithic (i.e., our "software"), perhaps a reference to the "programming" terminology used in Eaton and Konner's (1985) "evolutionary discordance hypothesis" (p.283). This discourse suggests a mechanistic conceptualization of the body and reflects the underlying sense of technophilia that was present among a significant number of participants, complicating the Paleo discourse with contradictions of the body as an ecosystem and a machine. One participant suggested that "the tenants of Paleo or Primal or Ancestral" could be seen as, "ground rules that will help you get to something that's closer to the way your body was designed to run" [LRoo], conjuring up the idea of the human body as computer or machine. Another participant evoked the metaphor of the human body as machine more directly with the following explanation:

"I think about how we've been sculpted by evolution...that basically we're really advanced programming running on a really shitty computer, so our shitty computer hasn't been able to catch up with the advanced programming...I think about that...how we changed food in a way that our body can't keep up... I can't unlearn that, and that's why I think Paleo will stick with me for the majority of my life" [CW]

One participant discussed how after conducting research as an undergraduate on evolutionary genetics, the subject remained an interest of his and ultimately influenced his conclusion that the Paleo Diet would be the optimal diet for him to follow, stating that:

"It came to be one of those things where if I've accepted that humans more or less are designed for this sort of Paleo lifestyle, that that's what our hardware and software is, then it's not much of a jump to say 'well if we eat that way, that'll be optimal, that would work best'..." [EL]

Another participant echoed this sentiment, explaining how eating Paleo led him to apply an evolutionary lens to how humans should "naturally" interact with the world based on our design by evolution and reflect on his own "unnatural" interactions with the world:

"It's definitely made me think more about how humans are a natural animal, like a thing...that all started I think with the Paleo Diet... I think about it now... sitting alone in a room and accounting or writing software, which is what I do, staying alone for like 20 hours a week, that's not a natural thing...a lot of the things we put in place are for our own human convenience, but they're not how humans were designed to interact with the world...we are designed to interact with the world in very holistic ways" [SS]

Whether resonating intuitively or intellectually with the evolutionary perspective of Paleo, participants explained how they apply the evolutionary logic of Paleo to navigate their food choices in a modern food environment, one that offers foodstuffs of a much different constitution and variety than Paleolithic huntergatherers had access to. As one participant acknowledged, "[Paleo] is a really good idea because our bodies have evolved from our ancestors, but we're not in the same environment as our ancestors" [KD]. So how does one "eat like a caveman" in a modern environment? One participant, when questioned by relatives about her decision to cut fruit from her diet, used the evolutionary logic of Paleo to get them to understand her choice, stating: "I would say, 'in the old days, you might only have fruit one or two weeks a year, and the fruits were much smaller and less sweet'..." [SA]. Another participant also talked about reducing fruit intake as "an example of applying the principles of evolution" in a contemporary food environment, explaining that: "There are no fruits left that are caveman fruits, they've all evolved with the farmers...apples are gigantic pieces of candy...cause they evolved with farmers trying to sell their product...So I shouldn't eat a lot of fruit...that's an example of applying the principles of evolution" [RB].

The evolutionary perspective of Paleo offered valuable insight beyond just dietary choices for many participants. Participants communicated how Paleo made them rethink what they believed to be healthy lifestyle behaviors. For example, making an effort to spend more time outdoors, sleep longer, change their exercise habits, and assess their daily chemical exposure. One participant explained her Paleoinspired lifestyle modifications stating, "I completely switched over to all-natural cleaning and beauty-care products, I bought a shower-filter and a water-filter, I wear the blue-blocking glasses at night, and have a completely dark and cold bedroom, I try and expose myself to sunlight everyday" [SJ]. These sorts of behavioral changes and others are considered part of the "Paleo lifestyle," of which the Paleo Diet is the central component. One participant communicated this mentality of Paleo being "more than just a diet," describing a conversation with his newly converted friend: "My friend just told me after a week on this [the Paleo Diet], 'I'm starting to see this is more then a diet change, it's a lifestyle change,' and I said, 'yeah, you're starting to get it, it's kind of all-encompassing" [ZH]. Another participant explained the importance of Paleo's lifestyle component, suggesting that diet and lifestyle are "inextricably linked," stating:

"I don't think diet can be looked at in a vacuum, diet is inextricably linked with lifestyle, and lifestyle is inextricably linked with society, and I think there's going to have to be, and will be, a shift in both lifestyle and society...if you're really into it [Paleo], you can't just focus on the diet aspect" [EL]

Another participant talked about applying a "Paleo template" as a method for decision-making in all aspects of his life, he explained:

"I think the whole idea of using the Paleo template for your life, that's been huge for me...thinking about whether something makes sense from the ancestral point of view or biological point of view, I think that's very useful...A lot of decisions make much more sense when you apply a Paleo template to it. Does it make sense for me to stare at a screen all day? Probably not... Does it make sense to be closed in an office all day not seeing the sun? No, it doesn't make any sense...I try to apply a Paleo template to what I do ...trying not to sit too much and trying to be outside as much as I can..." [EB]

For many participants, applying an evolutionary lens or "Paleo template" [EB] spread from the dietary realm to the entirety of one's behaviors in the interest of optimal performance and health. One participant described the profound impact of the evolutionary perspective of the Paleo Diet on his life in the following statement:

"Discovering this nutritional approach changed my life, changed my health, changed my whole view of the world, made me fall in love with science again, specifically evolution, which really changed my view of the world. I was never a very religious person growing up, but after learning the nuts and bolts of evolution it gave me a warmer appreciation for life and the planet, so yes I'm a very very different person now because of learning about the Paleo Diet" [AB]

For another participant, it is this evolutionary perspective and placing our diet, lifestyle and other cultural behaviors within a historical chronology that is the true value of following a Paleo Diet: "I think the evolutionary perspective, is that all the stuff we're doing, we've only been doing for a little bit, is it really okay? It's really the questioning of one's assumption or one's culture that needs to happen...you could call that 'Paleo' if you wanted to, or the reevaluating of relatively novel things in our lives, and let people come to their own conclusions about what's normal or okay... I think that's really the value of the Paleo Diet, it's not that they didn't eat this or they didn't eat that, it's the realization that there's an evolutionary perspective to be had" [TP]

While the evolutionary perspective of the Paleo Diet offered profound insight for some participants' lives, even beyond dietary practice, others were less influenced by the theory behind Paleo. As one participant explained:

"I don't necessarily read too much into the evolutionary stuff...I think people go too far with that, with the connections there...the reason I eat Paleo is because it made a difference in how I feel, it improved my health...I don't do it because of some proposed evolutionary connection." [BRo]

For this participant, the decision to eat Paleo came from the positive health benefits experienced firsthand from following the principles of the Paleo Diet, rather than finding the theory behind those principles to be particularly convincing. Other participants pointed out the problem of feasibility when it comes to attempting to eat like Paleolithic hunter-gatherers. For example, one participant expressed:

"I don't see Paleo as 'oh we're getting back to what our ancestors ate' because no, they didn't eat what we eat today, we try to eat an approximation of the ratio they used to eat but even that was seasonally dependent...so I don't really buy into that." [CH] Another participant echoed this sentiment of not being able to truly eat like Paleolithic ancestors, expressing frustration with how some Paleo Dieters claim to be doing so, he explained, "I think my reservation about people who are like, 'oh I'm eating Paleo so I'm eating just like our ancestors who were hunter-gatherers,' that I'm like 'nah, you're not"" [sic] [RB]. Another participant communicated frustration with the "all-or-nothing" attitude of some Paleo Dieters, particularly the idea that one should strictly adhere to *only* what "cavemen" ancestors ate or had access to:

"A lot of people who are just like 'you either need to be all Paleo or not, you can never have a Paleo dessert because cavemen weren't eating dessert,' that's just incredibly stupid and short-sighted, the idea is we use this sort of template and incorporate modern science, this amazing thing, and make it even better." [DS]

This participant's statement speaks to the heart of the Paleo paradox. How does one "re-wild" and live a Paleolithic lifestyle in the Anthropocene?

Beyond attempts at "eating like our ancestors ate," for the majority of Paleo participants Paleo offers much more then dietary guidelines, further setting Paleo apart from the stereotype of a "fad diet." Johnson (2015) notes that the Paleo Diet is, "at once a manual for the body, the self, and society" (p.102). Through interviews with Paleo Dieters this assertion was reinforced. The majority of evolution-inspired Paleo participants interviewed for this study placed emphasis on lifestyle changes in addition to dietary alterations, applying an evolutionary lens or "Paleo template" to many facets of their lives, such as their sleep and exercise habits, chemical exposures, and occupational or locational stressors. The next section examines how Paleo participants' negotiate the tensions between a Paleo lifestyle and the contemporary, urban lifestyles and spaces in the "modern world" of the Anthropocene.

3.8 The Struggle of a Contemporary Cave-Person

Paleo Diet followers often attempt to re-wild or bring the body back to a more "natural" state through dietary and consumption practices alone, without having to abandon modern lifestyles or spaces. However, as noted in the previous section, for many Paleo Dieters "Paleo" is more than just a diet. For these individuals, the influence and logic of the evolutionary principles of Paleo guide change in other aspects of their lives as well. This section focuses on how individuals work to cultivate a pre-Anthropocene body in the city.

For some participants, the evolutionary logic and principles of Paleo clearly point toward the "unnaturalness" of urban lifestyles, inevitably leading to "diseases of civilization" (Eaton and Konner 1985) such as diabetes, heart disease, and obesity that plague industrialized societies. In the pursuit of health and wellness, these individuals expressed the desire to live a more "natural" life, in both their dietary practice and beyond. This insight, gleaned from "going Paleo," led to a reconsideration of the "naturalness" of one's environment, from one's home to the greater geographic location in which participants live or work.

In discussions with Paleo participants living in urban and suburban areas (which constituted the majority of participants), the nature/society binary was often invoked, with participants making claims of the "unnaturalness" of urban life and often romanticizing rural or agricultural livelihoods and spaces¹⁴. One participant

¹⁴ While there was representation from urban/suburban areas across the United States, based on the recruiting strategy through John Durant and the PaleoNYC listserv, a

expressed that he feels disconnected from nature living in New York City and added, "I question whether it's even possible to really feel connected to nature in the city" [BRu]. Another participant living in New York City expressed how, after spending a weekend in "nature" in the Catskill Mountains, in a cabin with no WiFi or cellular service, she became aware of the potential impact that electro-magnetic frequencies (or "EMFs") in the city were having on her health, she explained, "I've recently become aware of EMFs. I had a personal experience this weekend, [I] was in the Catskills of New York, with no WiFi and no cell service, I was able to sleep better than [I] ever have" [SJ]. She went on to describe that even though she quit her stressful day job so that she could work from home in an effort to improve her health, she still found herself "tired all day," hypothesizing that:

"I was kind of wondering why I'm still so tired all day, I'm not really interacting with the city as much as I used to, I should have more energy, but this whole EMF thing was another light bulb that went off, like there's all that invisible stuff that I couldn't see before [in the city]" [SJ].

She explained that following the Paleo template and trying to live a Paleo lifestyle made her more aware of her "sensitivity" to city life and expressed that she could imagine, "moving to a warmer climate where I can have more control over my food source" [SJ].

significant number of Paleo participants were clustered in the greater New York City metropolitan area.

Another participant who had lived in major cities in China, Australia, and the United States for work within the last year echoed the sentiment that the city is "unnatural" and full of potential health hazards and likewise expressed an interest in eventually relocating, stating that:

"I think the city is a very unnatural place, I don't think humans should live in cities to be honest...I mean it's crazy to think of all the WiFi signals in air...way too hectic lifestyle...the heavy metal pollution..." [ZR]

This participant went on to explain that her ideal scenario would be to live somewhere near the ocean, expressing that "[the] ocean is the best way to ground and purge all these energies from when you work on your computer or speak on the phone," and that she would like to, "have a farm where I could actually grow food" [ZR]. In addition to these two participants, other participants also fantasized about having a farm or growing their own food. One expressed that, "in an ideal world we would go back to cavemen, not hitting each other over the heads or anything, but tending to your own patch, raising your own animals" [SJA]. A New York City-based participant expressed her struggle to balance the benefits of a more rural or "natural" environment with the benefits of living in a major metropolis, stating:

"The more you learn about your body, the more you realize it's [the city] not a natural environment for your body to be healthy and be fit, so it's made me start thinking about where I want to live for the rest of my life, in the city or somewhere where maybe I can find a happy place between nature and the benefits of being in a metropolitan area." [SR]

While the farming and animal husbandry these participants romanticize seems incongruent with Paleo's premise of eating a pre-agricultural, hunter-gatherer diet, the sentiment of getting "back to the land" and living and eating more like ancestors remains.

However, while many urban Paleo participants struggled with how to live a healthy, Paleo-inspired lifestyle amidst the "unnaturalness" of the city, the seemingly contradictory idea of living like a "modern caveman" was not a tension among all participants. The logic of the "mismatch hypothesis," or the idea of an "ancient body" stuck in a "modern world" (Eaton and Konner 1985), was not a problem for many Paleo participants who instead embraced this duality and the blurred boundary between "natural" and "unnatural" or nature/society. For these individuals, looking to evolutionary theory for guidelines for diet and lifestyle is merely the way to optimize and heal our bodies, which are (biologically) stuck in the Paleolithic. Rather than romanticizing a rural lifestyle closer to that of our more recent ancestors (rather then hunter-gatherers), these participants embraced modern urban life and saw potential for a healthy, sustainable urban future that was not antithetical to human health and thriving.

One participant communicated that science and technology provide tools for self-reflection and improvement. Rather than "go backwards to be healthy," the evolutionary insight of Paleo can help us remediate our present:

"Technology and advances we've made in major cities have brought us to this point where we can understand our evolutionary path and then now take this path we're learning about and apply it to our health to make ourselves healthier... I don't think we need to go backwards to be healthy, I think we can take what we've learned so far and apply it to the modern day-to-day to get the most bang for our buck to decrease disease" [AB]

This participant went on to address the logical fallacy of those within the Paleo community that romanticize getting back to a lifestyle more similar to that of our hunter-gatherer ancestors, stating that:

"Those romanticizing getting back to the land, if everyone did that we would all starve in a month. I remember reading somewhere that given the amount of food that's naturally in the environment, the Earth wouldn't be able to support more than a very small fraction of people then are on the planet right now, so if everyone decided to all go hunt and gather we would all die pretty quickly" [AB]

In this quote, the participant recognizes that the hunter-gatherer lifestyle and diet in Paleo theory is not feasible in practice living in a post-Paleolithic world with our current human population size and density. Instead, as discussed in the previous section, looking to ancestors or evolutionary theory is seen as simply a way to reconsider what is "natural" and therefore "healthy" for our bodies and try to mimic those healthy conditions to the best of one's ability (e.g., eating fresh fruits and vegetables).

Rather than romanticizing relocating from the "unnatural" city to the countryside in the name of health, this group of participants often advocated for the critical role of cities in achieving a sustainable future for humankind. One participant expressed:

"I don't think the city is less sustainable then the countryside, actually the opposite, which is why I became interested in urban agriculture and did my Masters on urban agriculture, cause I think the future is to make cities protected, to grow their own food, to make them use cars less, compact living, [it's] more efficient, and socially it's more rich." [JC]

Another participant echoed this sentiment, communicating how eating Paleo made him more environmentally conscious but that he doesn't resonate with the idea of "going back to being cavemen." Instead, he described a need for the development of "green" cities in order to achieve environmental sustainability and "the salvation of our planet," rather than running "back to the woods." He explained:

"We're obviously not hippie Paleo people...but it has got me much more in touch environmentally. But I have a different philosophy than a lot of people when it comes to that, I'm not like 'oh I gotta run back to the woods now cause I realize how important the environment is.' Being that I'm in a technology-related field, I see the salvation of our planet as, we're at a crossroads, we either have to go back to being cavemen, which is not going to happen, or we need to go Plan B, where there are more densely populated urban areas so we can let a greater percentage of the Earth to actually live again. We need to use our powers of technology to become as green as we possibly can in those urban areas so we don't choke ourselves out with smog and stuff like that...I think that's probably more our salvation now, because the greater majority of people are not going to be running back to caves, we're beyond that, fortunately and unfortunately at the same time" [JR]

Paleo's foundation and interest in evolutionary theory confirms an enduring belief that we can "be learning a lot from the past" [AB]. However, rather than "running back to the woods" [JR], the Paleo participants interviewed for this study (in concert with the discourse of popular Paleo figureheads) often balanced a reverence for the past gained through evolutionary insight with a hopeful, future-oriented, techno-optimism. While some participants perceive contemporary, urban life to be unhealthy or "unnatural" and romanticize rural or pastoral lifestyles, identifying a rural life as more connected with "nature" (effectively reifying the nature/society binary that the diagnosis of the Anthropocene seeks to dissolve), others believe that science, technology, and urbanity will lead humanity out of the ecological health crises society faces. Thus, the Paleo movement is not (entirely) a romantic, "back-tothe-land" exercise, but rather a practice of making healthy bodies that acknowledges the overwhelming threats to the body's ecosystem in the Anthropocene while still desiring the comforts provided by its' precarious environment. Working with Murphy's (2006) idea of "how to build yourself a body in a safe space," by using an evolutionary perspective to argue for the superior health of Paleolithic ancestors based on their diet and lifestyle, the Paleo movement suggests that we can find insight for building ourselves a healthy, "wild" bodily ecosystem despite acknowledged environmental crises at larger scales, eliciting a sense of techno-optimism at the scale of the body's ecosystem. However, where to draw the line between beneficial scientific and technical interventions and those that are harmful continues to be a source of tension.

Through interviews with participants, an ethos of "Paleo" became discernable: an evolutionary or ancestral lens to diet, health, and lifestyle, a critique of modernity, empowerment through individualism, a cautious but hopeful futurism, and a seemingly paradoxical fusion of "natural," holistic, "ancient," or unconventional approaches with the highly quantified, clinical approaches of emerging health sciences. However, this "ancestral futurism" is not without contradiction and tension as Paleo dieters grapple with the conundrum of living a Paleolithic lifestyle in the urbanized Anthropocene. While the theory behind Paleo points toward the agricultural

methods and products and urban lifestyles and spaces of civilization as a source of biological "mismatch" that led to a public health crisis, "re-wilding" bodies and lifestyles with Paleo in the name of health and sustainability is predicated upon the same technologies, spaces, political-economic structure, and human agency that created the crises of the Anthropocene. This tension is the Paleo paradox.

3.9 Conclusions

The concept of "re-wilding" has emerged as an ecological health and resiliency strategy across scales in the Anthropocene, from the human body to the planet. The recent conceptualization of the human body as an ecosystem in the health sciences has enabled the body to become an endangered ecology in need of conservation through restoration and re-wilding. The Paleo Diet and its corresponding health and lifestyle movement bring notions of wildness and a focus on the human-environment relationship to health, nutrition, and fitness regimens, with an interest in re-wilding bodies to a presumably healthier, more wild state that predates the disruptions to the body's ecosystem that have occurred in the Anthropocene. As a result, the Paleo movement's paradoxical pairing of primitivist and futurist thinking, and collective and individual goals, offers a unique opportunity for examining health and environment.

Twenty years after Cronon's (1995) call to remove *nature* from the space of wilderness and bring the positive values we associate with wilderness "closer to home" (p.17), through dietary and lifestyle practices "wildness" can now be found in even the most urban areas; with the Paleo Diet you can supposedly live like a Cro-Magnon in Brooklyn. While the theory behind Paleo points toward the agricultural methods and products and urban lifestyles and spaces of civilization as a source of

biological "mismatch" that led to a public health crisis, for many Paleo participants, these very same technologies and spaces offer the means to re-wild and return to health and vitality. Thus, we arrive at the crux of the Paleo paradox, where Paleo body politics complicate the delineation between beneficial scientific and technical interventions and those that are harmful.

Most members of the scientific community from nutritional anthropologists to evolutionary biologists scoff at the inaccuracy of the Paleo Diet's interpretation of the dietary habits of humans in the Paleolithic era. For example, Turner and Thompson (2013) argue that the "mismatch hypothesis" ignores evidence of considerable ecological, genetic, cultural and behavioral variation in human diet and metabolism that suggest that long-standing flexibility and diversity characterizes much of human diet evolution. However, others see the popularity of the Paleo Diet as an opportunity for increasing public understanding of evolutionary science. As paleoanthropologists Chang and Nowell (2016) point out, "members of the Paleo movement want to know what evolutionary anthropologists think; what they don't want is to be 'debunked' or talked down to. Shouldn't we be happy that consumers are searching for evolutionary guidelines about how to live their lives?" (p.230). The authors note recent surveys that suggest that 42% of Americans hold creationist views of human origins and suggest that these figures reflect, "the general devaluing of science and scientific knowledge that has characterized recent popular and political dialogues" (Chang and Nowell 2016, p. 230). The authors see the Paleo movement as an opportunity for public engagement and dialogue to educate and inform the general public about the relevance of evolutionary thinking to their everyday lives, something they feel their discipline fails to take advantage of.

Counter to the "general devaluing of science and scientific knowledge" that Chang and Nowell (2016) note as characteristic of our current political moment, the Paleo movement embraces not only insight from evolutionary science and nutritional anthropology (regardless of the accuracy of interpretation), but from medical and health sciences more generally. Unlike other dietary trends, the Paleo Diet and its related health movement continues to be shaped by the latest scientific understandings of health, diet, and the body, integrating insights gleaned from emerging health research. Recent research in microbiomics and genomics provides new methods of scientific evidence for Paleo advocates to back their claims that modern diets and lifestyles are maladaptive and hostile to the human body's ecosystem (cf. Anderson et al. 2017; Schnorr et al. 2014). This emerging research suggests that Paleo's focus on the human-environment relationship as a critical factor in the health of both society and the planet offers a timely perspective for examining health.

In an effort to heal both the inner ecologies of gut microbiomes and the entirety of bodily ecosystems through dietary and lifestyle interventions inspired by Paleolithic ancestors who are perceived to have had a more "natural," healthy relationship with their environment, the Paleo movement promotes ideas of wildness and re-wilding at the scale of the body. Just as re-wilding conservation efforts at the scale of local and regional ecosystems are fraught with debates over appropriate benchmarks (cf. Lorimer et al. 2015), Paleo proponents struggle to settle on a guideline for creating wild, resilient bodily ecosystems in the urbanized Anthropocene. Debate continues regarding the proper benchmark for a biologically appropriate human diet and if it is truly the Paleolithic, whether or not it differs among individual bodies, and if it is even possible to be Paleolithic or pre-Anthropocene

bodies in the Anthropocene. Like re-wilding and other conservation efforts at the scale of larger ecosystems in the Anthropocene, re-wilding the microcosm of the body is rife with uncertainty and tension. These tensions raise a number of questions, applicable across scales, regarding the appropriate role of human technologies and interventions in ecology.

Beyond a shared ethos of reducing or reversing past and present human impacts by restoring more functional ecosystems, the term "re-wilding" is used at the scale of local and regional ecosystems to describe a range of conservation goals, approaches, tools, and temporal benchmarks, which often vary in the role afforded to human agency. In some cases, human absence can be used as a re-wilding strategy. In others, humans are part of the re-wilding process, with wildness in the Anthropocene requiring deliberate intervention through ecological engineering (cf. Lorimer et al. 2015). When it comes to re-wilding the human body's ecosystem, the Paleo approach demands the latter and the paradoxical engineering of "wild." By requiring selfmonitoring, experimentation and treatment through manipulation of one's diet and lifestyle, the burden of responsibility is placed on the individual to re-wild and manage the body's ecosystem, giving a false sense of individualism in a world where "health" is increasingly understood to be a co-created ecology (cf. Jackson and Neely 2015). Thus, re-wilding at the scale of the body raises similar concerns to larger-scale rewilding efforts (cf. Jorgensen 2015; Prior and Ward, 2016) as to whether the nature/society and human/non-human binaries that the Anthropocene urges us to dissolve are in fact being reproduced and reified.

Re-wilding and the paradoxical "ancestral futurism" of Paleo body politics and practice are perhaps unsurprising byproducts of the ecological anxiety and desperation

that characterizes environmental politics in the Anthropocene, where ameliorating relations with nature and the non-human is increasingly seen as critical to human health and survival. The turn to re-wilding suggests we are trying to escape the ecosystem we created not only at the scale of larger biomes, but at the scale of the human body as well. In this respect, the body is a new frontier for an ecological ethic of health and sustainability based on re-wilding, and a microcosm for interrogating the politics that go along with it.

Chapter 4

THE BODY AS A BIOPEDAGOGICAL SITE: VISCERAL ACUITY AND THE ECOLOGICAL LESSONS OF THE PALEO/KETO BODY

4.1 Abstract

We live in an increasingly self-focused society, from the rise of social media celebrities to an increase in time and money spent on "self-care" including workout and dieting regimens. Critics call attention to this culture of narcissism, noting the part it plays in perpetuating a lack of individual concern for broader scale environmental issues and for taking action such as reducing one's consumption footprint. In this paper, I consider how ecological awareness can be fostered in a self-absorbed society. In particular, this study examines the Paleo/Keto dieting body as an entry point for developing ecological awareness. Drawing upon data from 55 in-depth semistructured interviews with Paleo and Keto dieters, I elucidate how adhering to the principles of these diets transformed participants' relationships to their bodies and food and influenced their ideas about food systems, health, and the environment more generally. I argue that through the visceral, lived experience of the embodied practices of eating and dieting and the development of what I term visceral acuity (or a heightened bodily awareness and ability to interpret the signals of the body), the body can be transformed into a biopedagogical site for establishing new understandings of the body-food-health connection. By focusing on food consumption and dietary practice at the scale of the body through the lens of visceral geography and a political ecology of the body and health, I highlight the potential of bodied knowledges from

enhanced *visceral acuity* to serve as a gateway to ecological lessons both within and beyond the body.

4.2 Introduction

We live in a self-focused society, from the rise of social media celebrities to an increase in time and money spent on "self-care" such as workout regimens and diet plans. Critics call attention to this culture of narcissism, noting the part it plays in perpetuating a lack of individual concern for broader scale environmental issues and for taking action such as reducing one's consumption footprint. This attitude is reflected at the national scale in our current political moment, marked by inaction and even outright denial of the threat of looming ecological crises like global climate change. Consequently, there is an urgency to make environmental concerns personal and tangible to consumers and the public. In this paper I consider how ecological awareness can be fostered in a self-absorbed society and whether "the self," particularly the consuming body, can be an entry point for developing ecological awareness beyond the body¹⁵.

Emerging research in the "omic" and health sciences (e.g., epigenomics, microbiomics) calls into question our very selfhood, offering new ideas about how to view and care for the self, resting on the idea of health as ecology. This research suggests that our body's ecosystem, like our planetary ecosystem, is in a state of disequilibrium or, at the very least, transition. In this paper, I consider how "self-care"

¹⁵ This paper defines "ecological awareness" as becoming cognizant of the relation of living organisms to one another and to their physical surroundings (whether it be at the scale of the body's ecology, local and/or global food systems, etc.).

in the form of low-carb dieting, particularly the Paleo and Ketogenic ("Keto") diets, transforms the body into a biopedagogical site for learning about the body, the self, and the connection between human and environmental health. I argue that the Paleo/Keto diets are more than merely weight loss strategies or "fad diets," as they are often portrayed¹⁶. Instead, the discourse and practice of following a Paleo/Keto diet offers biopedagogical techniques for re-training bodies to eat and taste differently (preferring certain, more "biologically appropriate" or *natural* foods over others), interpreting the body and its' signals in new ways, and ultimately changing one's relationship to the act of eating, consuming, and living as a biologically "ancient body" stuck in the precarious "modern world" of the Anthropocene as the discourse of Paleo suggests (Eaton and Konner 1985).

This study draws upon data from 55 in-depth semi-structured interviews with Paleo (n=37) and Keto (n=18) dieters to elucidate how adhering to the principles of these nutritional regimens transformed participants' relationships to their bodies and food and influenced their ideas about food systems, health, and the environment more generally. I argue that through the visceral, lived experience of the embodied practices of diet and self-care and the development of what I term *visceral acuity* (or a heightened bodily awareness and ability to interpret the signals of the body), the body can be transformed into a biopedagogical site for establishing new understandings of

¹⁶ In fact, "weight loss" was the primary motivation to start eating a Paleo diet for only 5 of 37 Paleo participants (this number was higher among Keto participants, though many expressed that weight loss ultimately became secondary to overall health improvements in their decision to continue with the diet). Instead, primary motivations were most often the perceived therapeutic (e.g., curing an acute health condition) and preventative (e.g., optimizing health and wellbeing and mitigating future health risks) health benefits of a Paleo/Keto diet.

the body-food-health connection through "bodied knowledges" (cf. Hayes-Conroy and Hayes-Conroy 2013). The improved *visceral acuity* of the dieting individual often led Paleo/Keto participants to interpret the self, the body, and society in new ways as they feel, understand, and *see* previously indistinguishable or unrecognized dynamics between body, food, health and ecology¹⁷. Consequently, through the biopedagogy of *visceral acuity*, the body was also transformed into a pedagogical site in a more traditional sense, where a commodity chain method of analysis began at the scale of the consuming body and extended beyond the body as dieters turned their attention to the food systems and environment in which their food (and health) are created (n=33)¹⁸. This research contributes to "visceral geographies" of food and the body (cf. Hayes-Conroy and Hayes-Conroy 2010), a political ecology of health and the body (cf. Guthman and Mansfield 2013; Jackson and Neely 2015), and an understanding of the body's potential as both a biopedagogical and by extension pedagogical site for fostering ecological awareness through an understanding of the dynamics between the body, food, health and ecology in the Anthropocene.

¹⁷ Almost all participants expressed that eating a Paleo/Keto diet transformed their relationship to food and their understanding of the food/body relationship (n=48). Of these same participants, a significant number expressed that eating Paleo/Keto led them to become more environmentally conscious (n=33) (e.g., the sustainability of different agricultural methods, the quality of food, etc.).

¹⁸ The production of a commodity (such as foodstuffs) involves intricate networks of individual activities and transactions across space and time. Commodity chain analysis, often used as an analytic method in economic and agri-food geographies, takes an ultimate consumable item and traces it back to the set of inputs that culminated in this item (e.g., raw materials, prior transformations, etc.) (cf. Gregory et al. 2009, p.101).

In the first sections of this paper, I consider how everyday food practices and the embodied, visceral experience of dieting can transform the body into a biopedagogical site for informing beliefs about the body, health, food, and ecology. With an understanding of the potential for bodied knowledges to inform a political ecology of health and the body, the Paleo and Keto diets are specifically discussed before turning to the methods, data, and analysis. Ultimately, I argue that through enhanced *visceral acuity*, the bodied knowledges of the Paleo/Keto dieting body have the potential to inform and nurture ecological consciousness both within and beyond the body.

4.3 Geographies of the Body and the Body's Ecology: Toward a Political Ecology of Health and the Body

Feminism is often cited as being responsible for putting the "body" on the intellectual map of social theory (cf. Butler 1993, Duden 1993, Gregory et al. 2009). The term embodiment is used to denote, "constituent aspects of the body, including identity, power and the materiality of the body itself," where the body is, "simultaneously part of material forms, their social constructs and the materialization of their constitutive interaction" (Brown et al. 2009, p.233). An embodied approach views the "fleshy, messy" lived experience of "everyday life" (Katz 2001) as both material and discursive or socially constructed. Finding significance in the everyday is a core analytic tradition in feminist geography (Gregory et al. 2009). Currently, geographers are using everyday activities, such as eating and drinking, to look at embodied, "visceral" experience as a means to understanding political agency "from the body out" (cf. Hayes-Conroy and Hayes-Conroy 2017 p.51). This paper builds off this tradition, using the embodied, visceral experience of adhering to the principles of

a Paleo or Keto dietary regimen to investigate how the body becomes a biopedagogical site for understanding and *seeing* the body in new ways that inform ideas about healthy dietary and lifestyle behaviors, as well as a pedagogical site for a broader understanding of the dynamics between the body, food, health, and ecology.

Human microbiome research and the health sciences more generally have actualized the idea of the body as an ecosystem (rather than a more mechanistic or reductionist interpretation), one intimately connected with non-human "others" or *nature*, and one in which we supposedly can and should intervene in the interest of human health. This emerging research suggests that both the body's ecology and our planetary ecology are in a state of transition or transformation. The shift in the humanbacteria imaginary catalyzed by human microbiome research, for example, raises new questions concerning what constitutes a human body; where does the human end and the non-human begin? What does this shifting human/non-human, nature/society boundary and "non-human turn" (cf. Grusin 2015) mean for bodies, health and dietary practice? While recent feminist scholarship on the body emphasizes the role of embodiment and materiality in making sense of the complex immaterial-material relationship of bodies and food, literature on the political ecology of health and the body takes into consideration this blurring of the human/non-human boundary by bringing the materiality of the "more-than-human" (cf. Greenhough 2014, Jackson and Neely 2015), the non-human, and environment into examinations of the production of (un)healthy bodies.

The emerging field of the political ecology of health among geographers grapples with the aforementioned questions raised by recent advances in the health sciences, particularly the role of nature and the non-human in health (cf. Jackson and

Neely 2015, Little 2012). Political ecology of health literature frames health in terms of nature-society relationships, bringing nature into discussions of health and bodies (cf. Mansfield 2008, Jackson and Neely 2015). Jackson and Neely (2015) argue that, "health and sickness are more-than- human; they are an ecology," thus paying attention to non-human actors (e.g., microbes, chemicals), "will help us understand the processes that produce particular kinds of partial and situated knowledge and reproduce healthy and unhealthy people" (p.48). Unraveling the connections between bodies, health, ecology, and the non-human is also a concern of science and technology studies (STS) scholars who investigate new biomedical and broader life science understandings of life, health and bodies (cf. Haraway 1991, 2008; Latour 1988), including our relationship to non-human, microscopic life such as bacteria (cf. Braun 2007; Hird 2010). However, Guthman and Mansfield (2013) point out that neither of these disciplines alone adequately addresses these questions. Political ecology literature largely ignores the body, while STS literature tends to ignore the environment (Guthman and Mansfield 2013). As a result, Guthman and Mansfield (2013) call for a "political ecology of the body" that pays attention to the ecological processes both within and around the body.

Hayes-Conroy and Hayes-Conroy (2013) offer a "political ecology of the body" framework that expands upon, "the traditions of political ecology in ways that help to stretch the field into issues of bodies and health," relating alternative food and eating to research on emotion and affect in a shift from, "a focus on (un)healthy landscapes to (un)healthy bodies" (p.85). For the authors, the question "what makes a healthy body?" becomes a question that is, "simultaneously structural (e.g. asking about the social inequities that preclude certain bodies from purchasing certain foods),
discursive (e.g. asking about the social processes through which knowledge about what healthy is comes into being), and material (e.g. asking about the material relationships of daily life that both reinforce and/or resist these structural and discursive patterns)" (Hayes-Conroy and Hayes-Conroy 2013, p.86). The authors argue that through a political ecology of the body approach, "the expert based knowing that is so typical of most food-based initiatives can become replaced with a diverse set of bodied knowledges and activities always attuned to emotion and affect that do not privilege one way of (scientific, intellectual) knowing as the right way" (Hayes-Conroy and Hayes-Conroy 2013, p.86). It is this idea of "bodied knowledges" (ibid) and their potential for social and ecological change that shapes this analysis of *visceral acuity* as a method for accessing bodied knowledges and fostering ecological consciousness by making the body a biopedagogical site.

4.4 Biopedagogy and Bodied Knowledges

The term "biopedagogy" is meant to bring together Foucault's notion of "biopower" with pedagogy in order to help understand the body as a political space, focusing on how various pedagogical sites (e.g., schools, media) engage learners in meaning-making practices that they use to make sense of their worlds and their selves and thereby influence how they act on themselves and others (cf. Harwood, 2008; Wright, 2009). Biopedagogy is concerned with how people learn to relate to their bodies and the bodies of others, resulting in a, "process of learning and training bodies how to live," of how to be good consumers and "biocitizens" (Fotopoulou and O'Riordan 2017, p.54). Traditionally, biopedagogies of health are embedded in education, in government campaigns, and on television and the internet (cf. Van Amsterdam and Knoppers 2018). However, the forms of pedagogical sites are changing in the context of health promotion under neoliberal governance where health promotion is depoliticized and privatized by placing accountability for health on the individual (a phenomenon often referred to as "healthism"; cf. Crawford 1980). For example, Warin (2011) communicates how in a neoliberal environment, large-scale bureaucracies (e.g., public health institutes) are not always seen as the most appropriate way to guide and influence people's health behaviors. Warin (2011) highlights the cultural technology of reality television as, "an opportunity for governing at a distance" (p.37), using the example of celebrity chef Jamie Oliver's reality television show "Jamie's Ministry of Food" as a campaign to persuade people to, "conduct themselves as rational and ethical actors who can make choices and govern themselves in a bid to free themselves (and perhaps the nation) from obesity" (p.26). The discourse and practice of Paleo/Keto dieting makes the body itself a biopedagogical site, where dieters are trained to develop visceral acuity (or a heightened bodily awareness and ability to interpret the signals of the body) in order to see and interpret their visceral lived experience and inform their dietary beliefs and behaviors.

Bartos (2017) argues that, "how we come to know is partly a result of a variety of deeply personal and intimate relationalities that we encounter viscerally through our bodies" (p.156). These visceral encounters inform a way of knowing with the body through "bodied knowledges" (cf. Hayes-Conroy and Hayes-Conroy 2013) attuned to physical sensation, emotion, and affect. Rue (2003), a religious studies professor and theatre artist, writes on the use of the body and somatic experience as a pedagogical tool. Rue (2003) insists that there are many ways of "knowing," and that with her students she begins with the body, introducing them to, "the use of their bodies as a

'way of knowing'" and the "importance of bodily experience" (p.30). The Paleo/Keto dieting body not only becomes a biopedagogical site for informing healthy dietary and lifestyle behaviors through *visceral acuity* and bodied knowledges but, in turn, becomes a pedagogical site for understanding health as ecology and may have potential for fostering food system awareness and ecological consciousness beyond the body based on this understanding.

4.5 "More-than-food": Visceral Geographies and Embodied Food Politics

Agri-food production and consumption is a collaboration that makes both bodies and environments/ecologies across scales. Consequently, focusing on food consumption and dietary practice at the scale of the body offers an entry point for exploring how larger-scale ecologies are perceived and created. Bryant and Goodman (2004) examine how, "consumption is a way in which individuals seek to 'make a difference," with the "consuming body" becoming, "the frontline as everyday acts – eating, bathing, shopping or dressing, for example – are politicized" (p.344). In this paper, I examine the potential of the embodied, visceral experiences of alternative dietary strategies and consumption for cultivating an ecological consciousness among dieters that moves across scales, from the body to larger biomes, and fosters food system and/or environmental awareness. In order to explore this possibility, I turn to recent literature that contributes to an "embodied politics" or "visceral politics" of eating, the body, and food as "more-than-food" (cf. DuPuis 2015, Goodman 2016, Hayes-Conroy and Hayes-Conroy 2008).

In *Dangerous Digestion* (2015), DuPuis explores food and consumption as a means of political agency where what we choose to keep in or out of our bodies decides who we are. DuPuis (2015) connects the micro-politics of consumption,

identity, and the body to the macro-politics of the societal body, suggesting that how we relate to our bodies will affect how we narrate the world, with new ways of thinking about the body offering new politics. DuPuis (2015) specifically cites human microbiome research and the idea of the body as an ecosystem, one that is, "not a bounded being but is created by and is embedded in a myriad of other beings" (p.12), as offering a new foundation for thinking politically. DuPuis (2015) encourages us to rethink our relationship to our "bodily political ecologies," summarizing her thoughts with the idea of a "fermentive politics," and a need to move from, "being 'ingestive subjects' – you are what you eat – to becoming 'digestive subjects,' immersed in a world of processes that you make and which make you" (p.12). In other words, DuPuis' "fermentive politics" requires an active rather than passive subject and thus offers an educational opportunity. Here, I offer insight into the micro-politics of diet and consumption and examine what new visions of the body may hold for larger-scale politics, including environmentalism and health and the increasingly apparent connection between the two.

Hayes-Conroy and Hayes-Conroy (2008) examine the making of the "political (eating) subject," using food as a means to trace discursive power through the body, illustrating how people's beliefs about food connect with their everyday experiences of food (p.461). Part of this project entails "exploring how food beliefs are actually already material, experienced as part of the visceral body" (p.462) in order to elucidate a visceral understanding of everyday, socio-political life (Hayes-Conroy and Hayes-Conroy 2008). According to the authors, examining "the visceral experience of food has the potential to inform geography about more general (non-food) ways in which internal bodily processes affect the formation of political subjectivities" (Hayes-

Conroy and Hayes-Conroy, 2008, p.462). In this way, embodied experience holds potential for influencing beliefs, ethics, and politics beyond the body.

In subsequent work, the authors build on these ideas to develop what they term a "visceral geography" of "conceptually broad, dynamic, and sometimes inconsistent array of geographic scholarship on the body that collectively promotes and expands at least three analytical projects" (Hayes-Conroy and Hayes-Conroy 2010, p.1274). The authors outline these "three analytical projects" as follows:

"First, visceral geography advances a greater understanding of the agency of physical matter, both within and between bodies. Second, visceral geography moves beyond static notions of the individual (body) and toward more contextualized and interactive versions of the self and other, combining both structural (political-economic) and post-structural (fluid) concerns. Third, visceral geography encourages skepticism of boundaries – e.g. mind/body, representation/ non-representation – not through a complete dismissal of such dualisms but through insistence on the imagining and practicing of our (political) lives in, through, and beyond such tensions." (Hayes-Conroy and Hayes-Conroy, 2010: 1274)

This "visceral geography" framework informed the Hayes-Conroys in developing and contributing to a "political ecology of the body," developed further in the work of Guthman and Mansfield (2013) mentioned earlier. By focusing on food consumption and dietary practice at the scale of the body through the lens of visceral geography and a political ecology of the body, I highlight the potential of bodied knowledges from enhanced *visceral acuity* to serve as a gateway to ecological lessons both within and beyond the body.

4.6 Methods

This paper is based on in-depth, semi-structured interviews with 55 individuals following a Paleo (n=37) or Keto (n=18) nutritional regimen. Recruitment began in April 2017 and consisted of two phases. During the first phase (April 2017), Paleo participants were recruited in two ways: 1. John Durant, *New York Times* best-selling author of *The Paleo Manifesto* and founder of Wild Ventures, sent an e-mail on my behalf to the PaleoNYC group listserv (the largest Paleo Meetup group in the country, which he founded while living in NYC) encouraging individuals to participate in my research study, and 2. I made a post in the Paleo Diet "subreddit" (r/Paleo) of the popular discussion website Reddit looking for individuals following a Paleo Diet that were willing to take part in the research study. All participants were over the age of 18 and self-identified as "Paleo," rather than my assessing their dietary practices or food intake.

After completing interviews with the initial round of Paleo participants recruited in April 2017, preliminary analysis showed that the Keto diet was a gateway to eating Paleo for a significant number of participants and I began to recruit participants following a Keto diet in order to investigate this overlap with Paleo. Consequently, in June and August 2017 I made recruitment posts in the Keto subreddit (r/Keto) looking for individuals to participate in the study. Additionally, more Paleo participants were recruited during this time frame via the Paleo subreddit (r/Paleo). Recruitment was finalized when theoretical saturation was reached.

Interviews were conducted between April-August 2017, ranged from 20-90 minutes, and were conducted over the telephone and recorded with a voice recorder. There was no compensation offered for participation in the study. Interview questions were deliberately broad and exploratory and covered a range of topics, including: how

participants first came across the Paleo/Keto Diet, what motivated them to start eating Paleo/Keto, the benefits and drawbacks of adopting a Paleo Diet/Keto, and their beliefs and attitudes regarding their body, health and medicine, food, and nature/the environment more broadly. Interviews were transcribed by the author and transcriptions were analyzed and coded thematically using both deductive and inductive coding strategies (cf. Flowerdew and Martin 2005). All interview data are anonymized: initials are used to refer to participants. Participants were 30 men and 25 women from across the U.S. (Paleo M=20, F=17; Keto M=10, F=8).

4.7 Recovering the Ancestral Palate with a Paleolithic or Ketogenic Diet

The Paleo Diet is a nutritional regimen modeled after the supposed dietary habits of Paleolithic hunter-gatherers (cf. Cordain 2002). The Paleo Diet is considered an example of nutritional primitivism, defined broadly by Knight (2015) as, "the pursuit of ostensibly simpler, more natural and authentic ways of eating as part of a quest for health through diet" (p.442). Paleo Diet discourse expresses concern for the relationship between health and the environment during the Neolithic (e.g. after the development of agriculture) and subsequent archaeological periods of human history, claiming that civilization has outpaced evolution and resulted in a world that is hostile to our human biology (Johnson 2015). Consequently, the Paleo Diet seeks to return contemporary human bodies back to a healthier existence by emulating the presumed dietary habits of pre-historic hunter-gatherer groups.

Though Paleolithic-inspired dietary regimens had been around since at least the late 19th century (cf. Densmore 1890, Voegtlin 1975, Eaton and Konner 1985), it was not until 2002 with the publication of Dr. Loren Cordain's *The Paleo Diet: Lose Weight and Get Healthy by Eating the Foods You Were Designed to Eat* that a comprehensive plan for Paleolithic nutrition coalesced. Consequently, Cordain, became known as the founder of the Paleo movement, with *The Paleo Diet* now considered the cornerstone of the Paleo movement (cf. Johnson 2015). After the publication of *The Paleo Diet*, mainstream visibility of the diet slowly rose throughout the 2000s, producing a number of Paleo figureheads and personalities that have since surpassed Cordain in popularity with their own interpretations and promotion of Paleolithic nutrition and lifestyles (e.g., Mark Sisson, Robb Wolf, Art DeVany). In 2013, the Paleo Diet was the most searched diet according to Google Trends' annual search data analysis (Barclay 2013). Today, an estimated three million Americans currently follow some version of the Paleo Diet, though it has been suggested this is a conservative estimation especially given the number of Paleo-like diets like "Primal," "Keto," "Whole30," etc. (Johnson 2015).

The Paleo Diet is often linked to the low-carb, "fad diet" trends popularized around the same time as Cordain's (2002) *The Paleo Diet*, such as the Atkins Diet, South Beach Diet, and Zone Diet. These low-carb diets, like Paleo, attributed rising rates of chronic diet-related illnesses like obesity and type 2 diabetes to excessive consumption of refined carbohydrates (e.g., bread, pasta, rice) in modern Western diets and recommended a reduction in the consumption of starchy and sugary foods. However, unlike the low-carb fad diets of this era, the Paleo Diet was "explicitly evolutionary" (Chang and Nowell 2016, p.228) and emphasized pre-agriculture food groups rather than attention to the amount of carbohydrates (measured in grams) in one's daily caloric intake (e.g., the Atkins diet).

Recently, the Paleo Diet has been connected with the rising popularity of the Ketogenic ("Keto") Diet as a weight loss and overall health strategy. In 2017, the

ketogenic diet was one of the top ten most searched diets of the year according to Google (cf. Gans 2018). The ketogenic diet is a high-fat, adequate-protein, lowcarbohydrate diet that puts the body into ketosis (a metabolic state where the body burns stored fats rather then glucose) by restricting daily carbohydrate intake (usually to between 20-50 grams per day). The ketogenic diet is in essence the first phase of the Atkins diet, thus testament to an enduring interest in carb-restriction as a weight loss and health strategy despite different names and branding efforts. The Paleo Diet is often recommended as a dietary strategy for transitioning off the stricter Keto diet to a low-carb diet than can more easily be sustained long-term or indefinitely on account of avoiding certain food groups rather then strict monitoring of macronutrient intake. While the discourse surrounding the Keto diet may be less "explicitly evolutionary" (Chang and Nowell 2016, p.228) compared with Paleo, Keto advocates often draw connections with Paleolithic hunter-gatherer ancestors to highlight the use and benefits of starvation/fasting, eating fat and protein from animal sources, and avoiding grains.

Nutritional primitivism and looking to the past for insight as to what the optimal human diet should be is not a new undertaking. For example, in the 1890s, Dr. Emmet Densmore popularized a meat-heavy diet inspired by the "food of primal man" (Densmore 1890). However, it was gastroenterologist Walter Voegtlin's *The Stone Age Diet: Based on In Depth Studies of Human Ecology and the Diet of Man*, published in 1975, that popularized and made explicit the suggestion that a diet mimicking those of our Paleolithic ancestors could lead to health benefits. In his book, Voegtlin (1975) distinguished between "hunger" and "appetite," where hunger is a purely "physiological mechanism" whereas appetite is an "acquired social endowment, a conditioned reflex." Johnson (2015) notes that Voegtlin and his

colleagues saw promise in caveman diets for bypassing the "construct of appetite" so that, "the dieter can recognize hunger and, once again, eat intuitively" (p.114). Voegtlin's theory was that, "after regaining true hunger, the dieter will naturally appease hunger with 'whole' or 'real' foods, effortlessly discerning what is *good* from what is *valuable*" (Johnson 2015, p.114). In other words, following a "Stone Age" or Paleo diet will supposedly re-train the body and palate to crave only "natural" foods. Keto diet enthusiasts also echo Voegtlin's claims, suggesting that by eating Keto and training your body to be fat-burning rather than glucose-burning you are able to bypass the "construct of appetite," feeling satiated for long periods of time before experiencing the visceral sensations of what one can now *see* and recognize as "true hunger." Johnson (2015) elucidates how these diets, "teach instinct and redefine pleasure as checked desire," and effectively "recalibrating the palate" away from the extreme flavors of modern, industrial foods in favor of "natural" Paleo foods (p.103).

In summary, the Paleo and Keto diets are more than merely a weight loss strategy or the "fad diets" they are often portrayed as in the media and biomedical community. Instead, the discourse and practice of Paleo/Keto dieting offers biopedagogical techniques for re-training bodies to eat and taste differently (preferring certain more "biologically appropriate" or "natural" foods over others), interpreting the body and its' signals in new ways (relative to how the individual had previously missed or misinterpreted signals from their body), and ultimately changing one's relationship to the act of eating and sensations of hunger and satiety. The discourse surrounding these diets argues that a "better body" makes a "better world," that an "improving self creates an improved society," and that more generally, "personal and social transformations go hand in hand" (Johnson 2015, p. 110). The influence of

nutritional primitivism suggests that these diets are, "a collective solution to a specieswide health crisis" rather than "an individual plan for self-improvement" (Johnson 2015, p. 110). As Johnson (2015) articulates, these diets are, "at once a manual for the body, the self, and society," mixing "myth and manual" to create a "new type of embodied utopia" (p.102-103). The next section explores the bodied knowledges and changing relationships to food and the body experienced by Paleo and Keto diet participants.

4.8 Embodied Lessons: The Bodied Knowledges of Paleo/Keto Dieting

In my interviews with Paleo and Keto dieters, I asked participants to reflect on whether following the dietary and consumption principles of the diet changed their relationship to their body or food in any way and if so, how. 48 of the 55 participants expressed significant changes in their relationship to their body, articulating the development of body *wisdom* or *intuition*, and being better able to *read* or *know* what their body needs. Participants often expressed having an enhanced *visceral acuity* or a heightened sensitivity or visceral awareness of the effects of different foods on their bodies after experimenting with the Paleo or Keto diet.

Visceral acuity is a play on the term "visual acuity," or "sharpness of vision," measured by the ability to discern letters or numbers at a given distance according to a fixed standard. Most are familiar with the pyramid-like design of the Snellen chart used to measure visual acuity by opthamologists and primary physicians, comprised of random letters and numbers that progressively decrease in size as one gazes down the chart. After one's base visual acuity is assessed, the opthamologist offers lenses to "correct" or sharpen one's vision, allowing previously blurry symbols to gradually come into focus. Fitted with the correct lenses, the patient not only sees the Snellen

chart with new clarity but, upon exiting the physician's office, is able to see the world with this new sharpness or clarity. This expanded visual awareness allows access to details that were previously inaccessible, unrecognizable, or simply overlooked.

Like improving one's visual acuity through corrective lenses, Paleo/Keto dieting allows individuals to improve their *visceral acuity* or to *sharpen* their bodily awareness, learning to become more aware, to feel, *see* and interpret previously unrecognized signals from the body. While *visceral acuity* shares some similarity with the idea of "mindfulness," specifically the re-focusing of one's attention to become more aware of visceral sensations in the body, *visceral acuity* moves beyond simply becoming "mindful" of visceral sensations. Mindfulness often encourages "nonjudgment," however, *visceral acuity* asks the individual to not only "tune in" but critically analyze and interpret the visceral sensations of the body, a skill that is sharpened with time and practice. This sharpened *visceral acuity* in turn led participants to new understandings of the relationship between bodies and food and the connections between diet and overall health and wellbeing which informed changes in participants' dietary and consumption practice.

4.8.1 Visceral Acuity: Tuning In To The Body

Participants often articulated that through adhering to the principles of a Paleo/Keto diet, they experienced an improvement in their ability to interpret the signals of their body, suggesting the development of a *visceral acuity* that was not as pronounced in the past. For example, one participant explained, "you can more quickly identify when something doesn't sit well" [JS]. Another participant echoed this sentiment, stating, "I can feel the difference between when I'm doing good and when I'm not doing good" [AM]. A participant following the Paleo Diet suggested that they now felt much more in tune with their body's requirements, explaining how, "now I'm kind of an expert at my own body" [AS]. Another Paleo participant explained that they, "pay more attention to what food does to my body," and as a result are, "better about reading what my body needs" [LH]. A participant following the Keto diet gave an anecdote from earlier in their week to explain this newfound, heightened ability to read the signals of their body: "The other day I was weeding and got lightheaded and [my] heart was beating a little fast...figured I needed electrolytes...so I'm more in tune with those feelings and what they mean for my body" [RM].

For many participants, the recent discovery or enhancement of one's bodily awareness was most pronounced when eating non-Paleo/Keto compliant foods. One participant expressed that, "once you stop having dairy and refined sugars your body really loses its' tolerance for it" [SR]. Another Paleo participant echoed this statement, articulating, "I'm more sensitive to an influx of highly processed, high-carb food if I do eat it" [RL]. Many participants expressed that this newfound awareness of the negative impacts of non-Paleo/Keto compliant foods on their body was eye-opening, exposing an underlying stressor on their body that they hadn't been aware of when they still incorporated these foods in their diet. For example, one participant explained, "If I do have a couple of days non-keto, I start feeling very sluggish and bloated, which I now realize was how I used to be all the time" [MLO]. Another participant expressed how after eating Paleo and trying to reintroduce grains into their diet, "my body reacted so extremely that I was like 'wow, I guess that was harming my body,' I just didn't know cause I had always been eating it" [BRu]. One participant explained that by eating Paleo with their spouse, their bodies became, "way more sensitive to the

allergen foods, soy, wheat, dairy, that kind of stuff, cause we don't eat it anymore at all" [JR]. They went on to explain how they believe these allergen foods had been affecting them subtly in the past but now, after cutting these foods from their diet, they are much more aware of the negative impact of eating these types of foods:

"There's things I realize now looking back as to where the food was affecting us...our bodies were more acclimated to it so I don't think the effects were as dramatic, more subtle and long-term...whereas now because our bodies aren't used to it anymore, it's dramatic, it's like we're sick the next day" [JR]

Some participants found that specific body parts became their primary "receptors" for receiving feedback from the body about the effects of different foods. Unsurprisingly, the digestive system and stomach was an indicator of food compatibility for many participants. For example, one participant explained:

"I have became more sensitive in a way, so what I do know is that if I don't eat properly, I would develop stomach problems...that's something I tried a few times, if I'm not following the diet strictly, I feel pain in my stomach" [EB].

However, for other participants, their primary bodily indicator was less obvious. One participant mentioned that their skin and the presence or lack of acne or other undesirable skin conditions was their primary gauge for the compatibility of certain foods with their body, stating, "I just bodily feel it, especially my skin…it's the thing I know I can turn to" [CW]. For another participant, it was their allergies and sinuses that acted as the primary indicator for food compatibility, they explained:

"I do have [gluten] here and there, usually by accident, I had some a few weeks ago and it triggered my spring allergies and I've had it ever since then...I also know I can't eat sugar, I definitely feel inflamed afterwards, my sinuses get stuffed up, and I feel it all over, I feel yucky" [SJ]

Other participants communicated that their brain and/or mental state signaled the beneficial or detrimental impacts of particular foods or dietary behaviors on their body. One participant explained that, "when I'm not eating sugar, and my brain isn't telling me 'give me carbohydrates,' I can hear it tell me 'give me vitamins'" [EM]. Another participant articulated their discovery that sugar and carbohydrates had been an underlying factor in their mental health, explaining:

"When I cut out all sugars and carbs that was so clear to me, if I cheated and had a little sugar then the next day I was extremely anxious and depressed and full of self-hate and that would last for almost two weeks and every night I would have cravings for sugar until those two weeks were out, and that happened enough times that I knew that that was the pattern and that's how sugar responded in my body, and it was awful, so after awhile I stopped doing that because it wasn't worth it" [AV]

Other participants noticed a shift in their experience of cravings. One participant struggled with cutting out non-Paleo foods, particularly sugar. However, they slowly noticed that, "the less of it you have the less you crave it" [SR]. A Keto participant who was experimenting with intermittent fasting, popular among many Keto diet advocates, explained the shift in their perception of hunger:

"The first time I tried going a day without eating, I went 48 hours without food, the hunger felt different...I would get these signals at lunchtime like I'm supposed to eat, but I wouldn't be hungry, would just feel like I'm supposed to eat...body is expecting food, and if I don't give it to it, it goes away...the cravings really go away..." [JB] Many participants expressed the immense value of sharpening this visceral awareness through following the guidelines of Paleo or Keto and being able to not only feel or *see* but skillfully interpret and respond to signals from the body. One participant explained:

"If you follow the ground rules, as you approach health, your body will give you feedback about what it needs, and as long as you understand the feedback that you're receiving from your body, you will eventually arrive at a macro-nutrient mix which works well for your body" [LRoo].

One participant credited Paleo for their newfound understanding that, "everything that I put in my body has an effect," stating that they were, "really grateful that Paleo made me so aware of the effect of literally everything emotionally, physiologically and physically that I put in or on my body" [AV]. Another Paleo participant also expressed gratitude for the embodied lessons of eating Paleo, explaining that:

"I know some people can eat carbs all day long and not feel tired and gain weight...if it's not the way my genetics work and my body works, coming to that realization has been kind of freeing for me, it seems the opposite cause you're restricting what you're eating, but recognizing this was a problem and wasn't making me feel healthy and energetic really opened my eyes in that way" [EP]

For this participant and others, being able to finally *see* through improved *visceral acuity* was an invaluable tool gained from the embodied experiences of Paleo/Keto dieting. Through enhanced *visceral acuity*, participants viewed the relationship between their body, their health, and the food they consumed in new, informative ways. It is this newfound awareness of the body-food-health connection expressed among participants that I turn the attention to next.

4.8.2 New Understandings of the Body/Food/Health Connection

For many participants, enhancing bodily awareness and the embodied lessons of following a Paleo or Keto diet led to new understandings of the connections between the body, food, and health. Participants expressed an understanding of the body as a biological "machine" in which it was important to be intentional with the "fuel" used based on how these different inputs affect the body. For example, one participant expressed how thinking about the body as a machine led them to new understandings of the role of food:

"It's weird thinking about your body differently than you used to, cause it is like a machine, the food you put in it is supposed to nourish and benefit, and not just try to heal emotional wounds, it's there for physical reasons" [EC]

Similarly, another participant echoed this sentiment of eating for purpose rather than pleasure, explaining that they now pay greater attention to what they eat, when, and why:

"It's turned it into a relationship where I think of food as fuel in a different way, the macronutrients, what I'm eating and when, what it's going to make me feel like...instead of "oh I need to eat something" it's "what do I need to eat, and why do I need to eat that now, how full is it going to make me"...you become a lot more attuned to what you're doing" [BRo]

Participants used words like "intentional," "purposeful," and "critical" in describing how they now approach the foods they choose to consume. One participant expressed gratitude for the new understanding of food they've gained from adhering to the Keto diet, stating, "Keto has given me the ability to critically think about what I'm eating and why" [MB]. Another participant expressed that, whether or not they chose to stick to the restrictions of a Paleo Diet long-term, they would continue to be, "more intentional about what I put in my body, what the purpose is" [CW]. One participant explained in more detail their shift from habitual to purposeful eating:

"Yes, I do think it's changed my relationship with food...I think we get into a habit where we eat three times a day because that's what we've always done, we snack in between because our eating doesn't fully satisfy us...and going through this [Keto dieting] I realize [food] serves a purpose, it gives us energy and helps us put the right type of nutrients into our body...it shouldn't become blind eating out of habit, it should be purposeful" [DF]

New understandings of the body-food relationship were often both intellectual and embodied, learned through reflecting on and analyzing the visceral experience of dietary experimentation and the feedback received from one's refined bodily receptor through Paleo/Keto (as discussed in the last section). One participant articulated their experience of this phenomenon:

"I always thought I was fine, but Keto kind of made me re-evaluate that, it's not like I was bad beforehand, but I didn't know I could feel a lot better, and that was really kind of a switch in how I viewed food...Tried to move away from food being an emotional outlet...not putting so much emotional weight on food and feeling like I need to eat for an emotional reason instead of an actual hunger reason" [MB]

For many participants, new understandings of the body-food relationship led to a realization that food plays a critical and underutilized role in achieving health and wellness. As one participant noted, "I just have become so aware of how closely our health is tied to the food we consume" [SJ]. Another participant echoed this sentiment, explaining how eating according to the principles of the Paleo Diet led her to think critically about food for the first time and inevitably notice a direct correlation between food and health:

"I had never really thought about what I ate before, not critically anyway...I think like most Americans, I never took a nutrition class, I never learned about what specific effects specific kinds of foods have on the body...Now I see that there's a direct correlation between the foods you eat and how well you feel...My personal journey kind of flipped the switch and made me realize food has a direct correlation with health..." [LRom]

One participant, a practicing Gastroenterologist and medical school professor, explained that when they first encountered the Paleo Diet and similar carbohydraterestrictive diets in the early 2000s it, "completely changed" their paradigm as a medical professional. They went on to explain this paradigm shift, stating, "You realize what you get in food has a crazy impact on everything that you feel, how your body is created" [SG]. This participant often uses the Paleo Diet as a prescription for their patients, particularly those diagnosed with Irritable Bowel Disease (IBD). Another participant came to a similar realization from the opposite end of the doctorpatient relationship. This participant, a woman in her late 40s who suffered from a traumatic brain injury in her 30s that resulted in frequent seizures and other neurological issues, was eventually prescribed the Keto diet to try to treat her seizures after, "seven years of taking medications and experimental treatments and not getting anywhere" and saw improvement "within a few days" [SK]. As a result of her drastic improvement, she became a firm believer in the role that diet plays in health and wellness, she explained:

"I had seven concussions within a minute...my damage is very substantial, and to say there are improvements when [doctors] said it would never improve...the fact that I'm answering your questions right now and remember things, they said it would never happen ...but I change my diet and look what happens, it says a lot about diet that it can do that" [SK]

Like improving one's visual acuity through corrective lenses, the Paleo/Keto diet allowed individuals to improve their visceral acuity or sharpen their bodily awareness, learning to become more aware of, feel, see, and interpret previously unrecognized signals from the body. The embodied lessons from the refined visceral acuity of following the principles of a Paleo/Keto diet led many participants to new understandings of the body-food relationship and the connections between diet and overall health and wellbeing. Just as the patient leaving the opthamologist's office with new corrective eyewear interprets and sees their environment in new ways (i.e., with improved clarity and attention to detail), so the improved visceral acuity of the Paleo/Keto dieting individual allows the individual to interpret the self, the body, and society in new ways as they see, feel and understand previously indistinguishable or unrecognized dynamics between the body, food, and health. As participants reflected on these embodied lessons and began to think more critically about food, this critique often extended beyond the body-food relationship to food systems and the environment more generally. It is this phenomenon that I turn the attention to in the next section.

4.9 Ecological Lessons from the Microcosm of the Paleo/Keto Body: Food System and Environmental Awareness

In interviews with Paleo and Keto participants, I asked participants whether or not eating Paleo/Keto influenced their beliefs about contemporary food systems, food quality, and/or the environment. For many Paleo and Keto participants, an increased *visceral acuity* and new understandings of the connection between bodies, food, and health resulted in a greater interest and awareness of ethical, environmental, and health concerns within the contemporary, industrial food system. Thus, through the biopedagogy of *visceral acuity*, the body was also transformed into a pedagogical site, where critical analysis that began at the scale of the consuming body extended beyond the body to food systems and the environment more generally, ultimately transforming participants into "conscious consumers" through the entry point of the body. One participant described this phenomenon of awareness moving beyond the body-food relationship to larger-scale human-environment interactions:

"All of a sudden you start realizing what you put in your mouth and your body really has more to do with what you're doing, you start to have a different relationship with not only your food but your whole environment, you start understanding yourself more, all of a sudden you start becoming more aware" [SK]

Often participants expressed that paying closer attention to the food they were consuming at the scale of the body resulted in an increased attentiveness to the food system in which their food inputs were grown or raised. This was particularly true among Paleo dieters compared with Keto dieters. As one Paleo participant explained: "I never thought about farming practices...[now] I'm much more aware of farming practices...the phrase, 'you are what you eat eats' really resonates for me" [AS]. Another participant similarly credited "going Paleo" with an increased attentiveness to food sourcing, stating, "It's changed a lot of [how] I view food and how it's grown and how I eat it and why I eat it" [BRo]. Some Paleo participants expressed that they had already been somewhat aware and critical of the modern, industrial food system

before eating Paleo, however Paleo deepened that awareness. For example, one participant articulated:

"It certainly brought a lot of awareness to me that I kind of had toplying but wasn't super aware of how fucked up our food industry is, so I learned a lot about how fucked up factory farms are and that kind of stuff" [DS]

Another participant expressed a similar sentiment of adopting an even more critical view of the American, industrial food system, stating, "I think I was already somewhat critical of American food but now I'm very critical" [HN].

Whether "going Paleo" resulted in a new, critical awareness of the state of contemporary food systems or reinforced an already existing one, many Paleo participants described changes in their food sourcing and purchasing behaviors as a consequence. One participant described that he and his family "bought into the environmental stuff" after starting to eat Paleo, he explained:

"Getting to know the people that grow your food, that produce your food, getting to know where it comes from...even going to a farm and seeing what you're going to be eating is very humbling" [JR]

Another participant echoed this sentiment of the importance of having a personal relationship with the people that produce your food and being able to know and trust how that food is produced:

"The way I choose my food now, I do want to go visit the farm, I want to meet the farmer, I want to know what the farm looks like...and after having seen it I can trust that farmer, I can buy from that farmer" [LRoo] For one participant, their interest and attentiveness to food sourcing extended beyond purchasing directly through known and trusted farmers, expressing a desire for self-sufficiency:

"I'm more engaged with [food], I cook more food, go to the farmers' market and get food. I'm personally involved in as many aspects of eating as I can. My grandpa is taking me hunting this weekend so I can actually kill an animal and take on the magnitude of what that means and be closer to my food and have more respect for it...I want to be self sufficient...it's grown as I've become more a part of this diet..." [EP]

Other Paleo participants expressed a similar desire for self-sufficiency and growing or hunting one's own food as a reaction to the perceived ills of contemporary food systems. For example, one participant expressed, "my ideal scenario would be to have a farm where I could actually grow food" [ZR]. Another participant stated: "It's deepened my fantasy to live out in the country and have a farm and raise my own food" [BRu].

Participants expressed concern over the state of the American food system not only for its perceived negative impacts on human health through the "standard American diet," but for its' environmental impacts. As one participant explained:

"The more I get involved in Paleo and making sure what I put into my body is good, it also makes me want to be in an environment that's good, because it's not just what you eat, it's also what you're receiving indirectly from the environment that has a big effect" [SR]

In this quote, the participant makes a connection between human and environmental health, extending this idea beyond food systems alone to the environment more

generally. As another participant succinctly summarized, "our current diet is a problem for the environment" [JC].

Concerns over food quality and agricultural methods as both a human health and/or environmental health concern were almost exclusive to participants following a Paleo diet, which has a strong evolutionary discourse. A participant who was currently following a Keto diet but foresaw eventually transitioning to Paleo observed that, when it came to concern over food quality, "I wouldn't say it's as much of a presence in the Keto community as it is in the Paleo world" [AM]. Thus, while the two diets are often perceived to be similar in many respects (e.g., avoiding grain consumption), the discourse in the Paleo and Keto communities regarding food systems, food quality, and the human-environmental health connection offers a point of variance.

In summary, for many study participants (particularly those following a Paleo diet), a heightened *visceral acuity* and awareness of the body-food-health connection influenced ecological lessons beyond the body. Participants expressed an increased interest in and attention to the environmental impact and sustainability of their diet compared with other diets, and articulated a desire for healthy, more sustainable food systems in their aspiration to obtain the desired inputs to support their visceral vision and experience of health as ecology. For many Paleo participants, the Paleo/Keto diet effectively transformed participants' bodies into a pedagogical site that fostered an environmental consciousness that extended beyond the body to larger ecosystems (e.g., local and global agri-food systems) compared with their previous dietary strategies.

4.10 Conclusion: The Body as a (Bio)Pedagogical Site

The Anthropocene is marked by ecological disequilibrium and transformation across scale, from the human body's ecosystem to our planetary ecosystem. In our current political moment, marked by inaction and even outright denial of the threat of looming ecological crises like global climate change, there is an urgency to make environmental concerns personal and tangible to consumers and the public. In this paper, I highlight the potential of the body as a (bio)pedagogical site for learning and forming opinions about the connections between bodies, food, and ecology through the embodied, visceral experience of "self-care" in the form of Paleo/Keto dieting.

Despite their common public portrayal as merely self-involved weight loss strategies or "fad diets," the discourse surrounding the Paleo/Keto diets argues that a "better body" makes a "better world," that an "improving self creates an improved society," and that more generally, "personal and social transformations go hand in hand" (Johnson 2015, p. 110). Johnson (2015) notes that the influence of nutritional primitivism suggests that these diets are, "a collective solution to a species-wide health crisis" rather than "an individual plan for self-improvement" (p. 110). Thus, the "selfcare" of low-carb dieting strategies offers loftier goals than merely individual weight loss and wellness. Instead, the discourse and practice of Paleo/Keto dieting offers biopedagogical techniques for interpreting the body and its' signals in new ways, ultimately changing Paleo/Keto participants' relationship to the act of eating, consuming, and living as a biologically "ancient body" stuck in the "modern world" and precarious environment of the Anthropocene (Eaton and Konner 1985). The embodied lessons from the enhanced visceral acuity of following the principles of a Paleo/Keto diet led many participants to new understandings of the body-food relationship and the connections between diet and overall health and wellbeing.

Beyond the body, the visceral experience and bodied knowledges of Paleo/Keto dieting led to a greater interest and awareness of ethical, environmental, and health concerns with contemporary food systems as participants began to think more critically about food. Often participants expressed that paying closer attention to the food they were consuming at the scale of the body resulted in an increased attentiveness to the food system in which their food inputs were grown or raised. Thus, the embodied lessons of these diets offered insight beyond the scale of the body at the scale of larger ecologies (notably agri-food systems). In other words, through the biopedagogical insights of an enhanced *visceral acuity*, the body was transformed into a pedagogical site in a more traditional sense, where a commodity chain method of analysis began at the scale of the consuming body and extended beyond the body to food systems and the environment.

For many participants, particularly those following the Paleo Diet, "going Paleo" led to an interest in and critical awareness of the sustainability of contemporary food systems and larger-scale connections between human and environmental health. Often this newfound awareness led to behavioral change, with participants becoming more conscious consumers, paying close attention to food sourcing (e.g., preferring local, organic and humanely raised animal products and produce) and expressing a desire to participate in and manifest a healthier, more sustainable food system in terms of both human and environmental health impacts.

However, despite emerging research that suggests health is co-created by human and non-human actors/the environment across scales in the Anthropocene, we are still predominately staging our ecological crisis interventions at the scale of the body through the micromanagement of individual diets and lifestyles, such as "going

Paleo." While Paleo/Keto dieting enabled many study participants to *see* their bodies and the world with new understanding, often resulting in a greater ecological awareness and more conscious consumption behaviors, self-care and "smart shopping" are by no means a panacea for the ecological crises that abound in the Anthropocene. However, in this paper I argue that there is an underutilized potential of the body as both a biopedagogical site for informing healthy dietary and lifestyle behaviors through *visceral acuity* and a pedagogical site in a more traditional sense for understanding the dynamics between the body, food, health and ecology. At best, the individualized self-care of low-carb dieting can transform the concern for personal health into an outward-facing, ecological awareness of the relationship between human and environmental health with the potential to incite behavioral and sociopolitical change. At worst, the attention of our self-focused society will continue to journey inward and away from the larger political and ecological context in which our health (or lack thereof) is produced and which desperately requires remedial action.

Chapter 5

GOING AGAINST THE GRAIN: GRAIN-FREE DIETS AND THE PROMISE AND LIMITATIONS OF FOOD AS MEDICINE IN AN ORTHOREXIC SOCIETY

5.1 Abstract

The countries of the Global North are increasingly orthorexic societies, obsessed with what and how to eat. Debate rages on in both scientific and popular discourse as to whether saturated fats like coconut oil are "good fats" or "bad fats," how much meat one should include in their diet (if any), and so on. For many advocates of alternative diets that stand in opposition to mainstream nutritional advice, including the higher-fat, grain-free Paleo and Ketogenic ("Keto") diets, the veil has been lifted on the inaccuracies and biases in nutritional research and standard dietary advice from the biomedical establishment to expose a breadth of competing knowledge. This paper, based on in-depth, semi-structured interviews with individuals adhering to either a Paleo or Keto diet, investigates how Paleo/Keto diet followers interpret and navigate the changing landscape of trusted nutritional knowledge and authority to inform their beliefs and practices regarding diet and health, including tensions between dietary and bodily fat. This paper contributes to an acknowledged gap in health literature regarding the theorization of an "orthorexic society" (cf. Nicolosi 2006) by examining the nuance of orthorexic behavior and the fixation on eating "healthy" foods to *heal* the body and obtain health and/or avoid illness/disease through a case study of Paleo/Keto diet followers. Further, this paper contributes to

geographic literature on the body concerned with the biopolitics of managing health risks through diet in an era context of healthism and an increasingly quantifiable, malleable body by arguing that an enduring, problematic emphasis on individual responsibility in a flawed and precarious health environment has culminated in the "orthorexic" individual.

5.2 Introduction

The countries of the Global North are increasingly orthorexic societies, obsessed with what and how to eat. "Orthorexia" refers to a form of disordered eating where people restrict their eating based on quality not quantity and exhibit an obsession or fixation with eating "healthy" foods to attain health and/or avoid illness/disease (Dunn and Bratman 2016). While the Diagnostic and Statistical Manual for Mental Disorders (DSM) does not formally recognize the proposed eating disorder, the National Eating Disorder Association and other health advocacy groups are raising awareness about orthorexia as a legitimate eating disorder. This obsession with what to eat is not unfounded; suboptimal diet is associated with more deaths and disability worldwide than any other modifiable factor (Mozaffarlan 2017). Diet-related chronic illnesses, including obesity, cardiovascular disease, and type 2 diabetes, are among the leading causes of morbidity in industrialized countries and are on the rise worldwide as chronic conditions overtake acute conditions as the leading causes of morbidity. The aforementioned diet-related chronic illnesses are not the result of an inability to consume enough food (i.e., malnutrition through inadequate caloric intake) but instead are related to the quality and quantity of foods consumed. In the United States, the almost 1,000 cardiovascular and diabetes deaths that occur daily are attributed (at least in part) to "poor diet" (Micha et al. 2017). Consequently, dietary intake is a method

for mitigating the uncertain and taking control of health in the wake of rising chronic disease.

Despite evidence of the critical role of diet in health, limited financial resources are available for research into health effects of particular foods and nutrients. Most nutrition research takes place in the private sector, in the research and development departments of individual companies or through affiliated academic institutions. Concerns have been raised about the bias in such research, with findings often skewed toward industry benefit rather than collective health (cf. Mozaffarlan 2017). Research bias and food industry coercion in setting nutritional standards and dietary guidelines, such as the USDA food pyramid (now "MyPlate"), has become more transparent, resulting in an increasingly skeptical public. For example, an article published in the Journal of the American Medical Association (JAMA) in 2016 that exposed the role of the sugar industry in singling out fat and cholesterol as the dietary causes of coronary heart disease (CHD) and downplaying evidence that sucrose consumption was a risk factor gained significant media attention last year (Kearns et al. 2016). As a result, the landscape of nutritional authority and trusted dietary knowledge is changing as an increasingly skeptical public reconsiders the dietary advice of healthcare professionals stuck in the "old paradigm" of demonizing fat consumption, encouraging the standard "calorie-in, calorie-out" model of weight loss, and promoting pharmaceutical rather than dietary interventions for the majority of chronic illnesses.

The diet and weight loss world is constantly trying to adjust to the everchanging data and latest opinions in nutritional research and dietary advice. For example, Weight Watchers, which was ranked as the number one best diet for losing

weight by U.S. News and World Report (2017), changed their stance on the oncevilified, cholesterol-containing egg yolk, now encouraging health-conscious consumers to eat eggs in their entirety rather than opting for only egg whites (Koenig 2017). Debate rages on in both scientific and popular discourse as to whether saturated fats like coconut oil are "good fats" or "bad fats," how much meat one should include in their diet (if any) and of what variety, and whether organic produce is more nutritious than conventional produce, and so on. It's no wonder that confusion and anxiety abound as individuals try to interpret this flurry of inconclusive and oppositional nutritional information in order to inform their food consumption decisions. For many, the reliance on alternative networks of independent research and self-experimentation, anecdotal successes, self-knowledge and "DIY" health expertise becomes the most trusted way to navigate the unreliable world of dietary advice.

For advocates of alternative diets that stand in opposition to mainstream nutritional advice, including low-carbohydrate diets like the Ketogenic ("Keto") diet, the veil has been lifted on the inaccuracies and biases in standard dietary advice from the biomedical establishment to expose a breadth of competing knowledge (e.g., shifting opinions on the role of dietary fats in coronary heart disease, cf. Kearns et al. 2016). Simultaneously, over the last few years, there has been a rise in popularity in "fringe" dietary regimens like the Keto and Paleo diets, which avoid grains and processed sugars and embrace "healthy" fats. This paper, based on in-depth, semi-structured interviews with individuals adhering to a Paleo (n=37) or Keto (n=18) diet, investigates how Paleo and Keto dieters interpret and interact with the changing landscape of trusted nutritional and biomedical authority and knowledge and how this

informs their beliefs and practices regarding diet and health¹⁹. This paper contributes to literature in health geography concerned with dietary and consumption politics and contributes to an acknowledged gap in the literature regarding the theorization of a food-obsessed, "orthorexic society" (cf. Nicolosi 2006; Rangel et al. 2012) by examining the nuance of orthorexic behavior and a fixation on eating "healthy" foods to *heal* the body and obtain health and/or avoid illness/disease (rather than focusing explicitly on weight loss) through a case study of Paleo and Keto dieters²⁰. Further, this paper contributes to geographic literature on the body concerned with the biopolitics of managing health risks through diet in an era context of healthism and an increasingly quantifiable, malleable conception of the human body.

In the first section, participants comment on the current state of nutritional research and dietary advice in the United States and embracing the consumption of fat

¹⁹ This paper uses the term Paleo and/or Keto "dieter" to refer to an individual following the dietary principles and practices of the Paleo or Keto diet. The term "dieter" is not meant to imply that the individual is dieting for weight loss. In fact, "weight loss" was the primary motivation to start eating a Paleo diet for only 5 of 37 Paleo participants (this number was higher among Keto participants, though many expressed that weight loss became a secondary motivation to overall health improvements in their decision to continue eating a Keto diet). Rather this paper's use of the term "dieter" is meant to imply "diet follower," or "person eating a Paleo/Keto Diet," without implicating their motivations to do so (e.g., weight loss, curing an illness, optimizing their health, etc.).

 $^{^{20}}$ In this paper, the term "orthorexia" is used to refer to the proposed eating disorder and its' pathology. "Orthorexic behavior" refers to the act of restricting food intake based on quality of foods not quantity. The term "orthorexic individual" or "orthorexic society" is used to describe diet-conscious individuals fixated on eating "healthy" foods to *heal* the body and obtain health and/or avoid illness/disease (rather than focusing explicitly on weight loss), without making judgments as to whether this is pathological behavior (unless explicitly stated).

after decades of public vilification. In the next section, participants discuss their personal interactions with medical professionals regarding their health and diet, expressing distrust of the nutritional education and dietary advice of medical professionals, particularly doctors perceived to be overweight or unhealthy themselves. In the following section, participants discuss their opinions of the promise and limitations of food as medicine, articulating the acknowledgement that there is no universal or ideal diet, what they perceive to be the major takeaways of the Paleo approach to diet, barriers to achieving a healthy diet, and the potential for orthorexia in alterative diet communities. The paper concludes with a discussion of the potential of these dietary practices and the future of personalized nutrition, as well as the limitations of an enduring ideology of healthism in an increasingly orthorexic society.

5.3 Healthism, Obesity, and Dietary Politics

In his 1980 article "Healthism and the Medicalization of Everyday Life," Crawford (1980) posits healthism as a neoliberal model of wellness, one that depoliticizes and privatizes health promotion by placing accountability for health on the individual. In the early 1990s, geographers began to engage with "healthism" and other critical approaches to health, breaking away from traditional medical geography's emphasis on disease ecology and spatial analytic approaches toward poststructural engagement and a "post-medical geography of health" or "health geography" (cf. Kearns 1993). This paper contributes to literature in health geography concerned with dietary and consumption politics by examining narratives within the low-carb, Paleo and Keto dieting communities regarding dietary and bodily fat, nutritional expertise, the idea of food as medicine, and food and health more generally

in order to elucidate the responsibilities, presumed agency, and anxieties of managing health and the body through diet in an "orthorexic society."

Under neoliberalism, individual consumer choice and dietary behaviors are politicized. Consequently, chronic diet-related illnesses such as obesity, type 2 diabetes, and cardiovascular diseases are often framed as the result of individual choices. Crawford's (1980) idea of healthism is often invoked by geographers (cf. Evan and Colls 2009, Guthman 2011) in examining the problematization of obesity and other diet-related maladies. For example, in her book Weighing In, Guthman (2011) concludes from her critical analysis of the obesity epidemic that the emergence of healthism in the neoliberal era aided in the transfer of health responsibility from the public sphere to individual action, thus shifting the blame for obesity onto individual dietary and lifestyle choices. She argues that healthism's focus on the individual results in obesity being viewed as violating a "set of norms of self-efficacy," allowing for the, "neglect of those not enrolled in such ethics and exaltation of those who are," with healthism tending to attract those that are already self-efficacious and reasonably healthy (Guthman 2011, p.47). Guthman (2011) takes issue with healthism, by highlighting the role of socioeconomic inequalities in creating unequal access to health practices (e.g., being able to purchase healthy food options) that, according to healthism, are the responsibility of the individual to obtain.

Healthism is particularly problematic in the context of obesity, which is often framed as a disease that is entirely avoidable with self-discipline and the right products. Guthman (2011) makes it a point to state that she is not denying that people have gotten fatter, rather that she takes issue with, "how we interpret these changes, how we treat them, and the consequences of both" (p.45). Guthman's (2011) primary

concern is that healthism can work against social justice, often legitimizing views or behaviors toward fat people that express a lack of empathy, fat-shaming, and fatblaming. Brewis (2012) points out that "bodies have become a primary anchor for our social identities" (p.465), with "fat" conjuring up associations of laziness, unattractiveness, stupidity, and lack of self-control. In contrast, being "thin" is conceptually linked to all that is good, including beauty, intelligence, sexual desirability, and self-control (Brewis, 2012). Based on this cultural valuation, Brewis (2012) posits fatness as "the last socially acceptable form of targeted discrimination" (p.465). Given this deeply engrained cultural adoration for thinness and revulsion to fatness, it is no wonder that an all-out assault on non-normative, "fat" bodies (as well as actual dietary fats) has been waged in the United States (cf. Brewis 2012; Guthman, 2011).

Austin (1999) highlights how public health discourse regarding nutrition, by failing to consider the cultural complexity of the intersection of food, bodies, and diet, gave scientific credibility to "our society's obsession with dieting and loathing of fat" (p.246). Historically, this fat-loathing could be extended to not only bodily fat but dietary fat as well, as the two were seen as mutually implicated. For Austin (1999), contemporary nutritional public health discourse is "overdetermined by biomedical materialism and ideologies of deviance and difference" (p.263), resulting in the "interiorization" and normalization of "extreme self-surveillance of dietary practices and scrutiny of the microcomponents of food" (p.248), which often meant excluding dietary fat from one's diet. This paper highlights a shift from scrutiny and revulsion toward dietary fats to revulsion toward processed, industrialized or "unnatural" food products in one's diet (particularly those that are grain-based). However, while

participants in this study work through mental obstacles toward embracing dietary fats, revulsion toward non-normative "fat" bodies remains. To deepen our understanding of the role of "extreme self-surveillance of dietary practices and scrutiny of the microcomponents of food" (Austin 1999, p.248) in the biopolitics of managing bodies in an era of healthism, the next section examines how advances in the medical sciences are exacerbating the individualization of body governance techniques and increasing anxieties around what and how to eat.

5.4 Healthism, Body Governance, and Orthorexia

Foucault's work on biopolitics, governmentality, and the "care of the self" (cf. Foucault 1984, 1986, 1988; Rabinow and Rose 2003) is often used in discussing the healthism of the neoliberal era and the self-surveillance and management of the human body through dietary and lifestyle modifications (cf. Haman et al. 2015). New advances in the biomedical sciences, particularly in the "omic" sciences such as genomics, microbiomics, and the emerging field of nutrigenomics (the scientific study of the relationship between genes, food, and health), exacerbate the individualization of health and the surveillance and management of an increasingly complex, quantified self. As Harvey (2009) notes, nutrigenomics offers genetic information as "a resource the 'genetic entrepreneur' can use to create a new, optimally healthy, future, rather than revealing a probable future for which the individual can prepare" (p.119). With insight from nutrigenomics, individuals can supposedly ameliorate risk by altering the nutritional environment of one's genome in order to maximize one's "vital capital" (Harvey 2009, p.119). In other words, the future of these genetic risks are not immutable; as Novas and Rose (2000) articulate, "genetic risk does not imply resignation in the face of an implacable biological destiny: it induces new and active
relations to oneself and one's future" (p. 485). In light of these advances in the "omic" sciences, concern for one's "vital capital" (cf. Harvey 2009), "lively capital" (cf. Rajan 2012), and "biocapital" more generally (cf. Rajan 2006) become an increasingly important preoccupation of healthism and staving off future risks of chronic dietrelated illnesses. Franklin and Lock (2003) explain that, "biology-as-capital involves a prioritization of reproduction, rather than production, as the primary generator of wealth, agency, and value" (p.7). Thus, everyday acts of social reproduction, including food shopping, cooking, and eating, become akin to making investments in the stock of one's health. However, the aforementioned advances in biomedical science, notably nutrigenomics, complicate how to properly invest in one's health. As a result, Komduur et al. (2009) argue that the normative assumptions embedded within nutrigenomics research may strengthen, "concerns related to healthism, health anxiety, time frames and individual responsibilities for health" (p. 307). For example, the idea and diagnosis of "orthorexia" is one of the ways that health anxiety can manifest as individuals attempt to manage the risk of an increasingly quantifiable, malleable self through dietary manipulation and investment.

The term "orthorexia" was first introduced by Dr. Steven Bratman in a 1997 issue of Yoga Journal. Bratman described "orthorexia" (from the Greek *ortho* meaning "straight" or "correct" and *orexi* meaning "appetite") as an eating disorder where people restrict their eating based on quality not quantity and exhibit an obsession or fixation with eating "healthy" foods to obtain health and/or avoid illness/disease (Dunn and Bratman 2016). Orthorexia differs from other forms of disordered eating like bulimia or anorexia in that orthorexic individuals do not exhibit the distorted body image or the desire to be thin that is characteristic of most eating disorders (Dunn and

Bratman 2016). For orthorexic individuals, a distinctly pathological drive to be as healthy as possible leads (ironically enough) to malnutrition or impairment of daily functioning (Dunn and Bratman 2016). Both medical professionals and scholars question whether orthorexia should be considered an eating disorder (cf. Ro⁻⁻ssner 2004), a behavioral addiction (cf. Marazziti et al. 2014), or an extreme dietary habit (cf. Varga et al. 2013). While the Diagnostic and Statistical Manual for Mental Disorders (DSM) does not formally recognize the proposed eating disorder, the National Eating Disorder Association and other health advocacy groups recognize and are raising awareness of orthorexia as a legitimate eating disorder.

To help theorize orthorexia, Musolino et al. (2015) call upon Crawford's (1980) concept of healthism, where health is a "self-project" with the pursuit of healthy lifestyles at the center of moral virtue, personhood, and citizenship, and Bourdieu's (1998) concept of "habitus," or the physical embodiment and understanding of what to eat and the way to eat it. The authors focus not on the effects of discourse on the body, but, "how participants embodied their habitus; how ideas about healthy eating were rationalized, internalized and performed as good health care" (Musolino et al. 2015, p.19). The authors suggest that orthorexia is not dieting, but an "ethics of care" (in the mind of the orthorexic individual), where orthorexic behaviors are, "embodied enactments of care in which implicit ethical values are endlessly tinkered with, adapted and reshaped" (Musolino et al. 2015, p.19). In their case study of 25 Australian women with disordered eating, many participants positioned themselves as, "responsibly acting citizens who had incorporated expert medical knowledge into their daily routines and belief system" (Musolino et al. 2015, p.23). This paper uses orthorexia in an era context of healthism to describe diet-

conscious individuals fixated on eating "healthy" foods to *heal* the body and obtain health and/or avoid illness/disease (rather than focusing explicitly on weight loss), without making judgments as to whether this is pathological behavior (unless explicitly raised as a concern).

A number of social and political scholars have argued that Western societies are orthorexic societies (an elaboration of Beck's [1992] "risk society" concept but applied to food choices in late modernity), constantly thinking and talking about food (cf. Nicolosi 2006; Rangel et al. 2012). In Rangel et al.'s (2012) study consisting of eight focus groups with women in Canada, the authors found that participants, "inextricably linked food and health to the point where it was the central organizing determinant guiding their food" (p.124). Participants expressed a constant search for accurate information on diet and health, the instability of what participants considered "expert advice," and, "feelings of anxiety around food choices and a sense of futility in their efforts to navigate through the information available" (p.124). The authors use this data to highlight what they see as the emergence of an "orthorexic society," where individuals are socialized to take charge of their own dietary health (i.e., healthism), and do so, "constrained by a food system that is increasingly complex, contradictory, and opaque and where commercial dietary regimes offer quick yet incomplete solutions" (Rangel et al. 2012, p.124). Haman et al. (2015) point to a need for more empirical-holistic research on orthorexia that applies interpretive qualitative methods and uses a social perspective of health like Rangel et al.'s (2012) Canadian case study. This research will contribute to this gap in the literature by theorizing an "orthorexic society" through a mixed-gender case study of Paleo and Keto dieters (contrasted with Nicolosi's [2006] and Rangel et al.'s [2012] female-exclusive case studies), where the

idea of food as medicine challenges the demarcation between health-conscious and potentially pathological behavior. Consequently, this paper contributes to geographic literature on the body concerned with the biopolitics of managing health risks through diet in an era context of healthism and an increasingly quantifiable, malleable body.

5.5 Low-Carbohydrate Dieting: Questioning Nutritional Authority and Embracing Dietary Fat

The Paleo Diet, a nutritional regimen modeled after the supposed dietary habits of Paleolithic hunter-gatherers (cf. Cordain 2002), is considered an example of nutritional primitivism or, "the pursuit of ostensibly simpler, more natural and authentic ways of eating as part of a quest for health through diet" (Knight 2015, p.442). Paleo Diet discourse claims that civilization has outpaced evolution, resulting in a strained relationship between human biology and the modernity of the Holocene/Anthropocene or Neolithic period (e.g., the advent of agriculture, grain consumption, etc.) (Johnson 2015). In 2013, the Paleo Diet was the most searched diet according to Google Trends' annual search data analysis, with an estimated three million Americans currently following some version of the diet, though some suggest that this is a conservative estimation given the number of Paleo-like diets (e.g., "Primal" and "Whole30") (Barclay 2013).

The Paleo Diet is often associated with the low-carb, "fad diet" trends popularized around the same time Cordain's (2002) *The Paleo Diet* (considered the cornerstone of the Paleo movement) was published. Low-carb diets, such as the Atkins Diet, South Beach Diet, and Zone Diet, popularized "low-carb" dieting in the late 1990s and early 2000s. These diets, like Paleo, attributed rising rates of chronic dietrelated illnesses like obesity and diabetes to the increased consumption of refined carbohydrates (e.g., bread, pasta, rice) in contemporary Western diets. While Paleo shares some discursive features with these low-carb "fad diets," unlike the other lowcarb diets of this era, the Paleo Diet was "explicitly evolutionary" (Chang and Nowell 2016, p.228) and emphasized eating from food groups deemed to have been accessible before the advent of agriculture (e.g. meat, fruit) rather than the close monitoring of one's daily caloric intake of carbohydrates by the gram.

Recently, the Paleo Diet has been associated with increased participation in Ketogenic ("Keto") dieting as a weight loss and overall health strategy. The Keto diet is a low-carbohydrate diet designed to put the body into a state known as ketosis (a metabolic state where the body burns stored fats rather than glucose) by restricting daily carbohydrate intake (usually to between 20-50 grams per day). The Keto diet was developed in the 1920s by physicians looking for a dietary strategy that would emulate the metabolism of fasting or starvation as a treatment for epilepsy. The diet was the first line of treatment for the disorder until the development of antiepileptic drug therapies (Wheless 2008). However, in the past 15 years the Keto diet reemerged as a reputable treatment for epilepsy and was accompanied by an explosion of scientific research and literature on the diet. This increased scientific interest has led to the Keto diet being applied as a general health and dietary strategy beyond the treatment of epilepsy. The Keto diet is essentially the first phase of the Atkins diet, suggesting that an interest in carb-restriction as a weight loss and health strategy endures despite different names and branding efforts. The Paleo Diet is often recommended as a dietary strategy for transitioning off the stricter Keto diet to a "lowcarb" diet than can more easily be sustained long-term.

These low-carbohydrate diets continue to spark controversy for going against mainstream dietary advice, notably the directive that one should limit consumption of fat (especially saturated fat) due to concerns about cardiovascular disease risk (cf. Knight 2015). However, results of clinical research prompted by the rising popularity of such diets does not straightforwardly support concerns about their possible health dangers (cf. Hession et al. 2009; Nordmann et al. 2006). For example, a randomized controlled trial conducted by Nordmann et al. (2006) concluded that low-carb diets appear to be at least as effective as low-fat diets for inducing weight loss with neither diet having a clear advantage over the other for reducing overall cardiovascular risk (e.g., while total LDL-C levels decreased more in individuals following a low-fat diet, HDL-C and triglyceride values changed more favorably among the low-carb dieters)²¹. Consequently, the low-carb diet trend contributes to, "a broader shift over the last decade in both lay and expert beliefs about the role of carbohydrates in a healthy diet" (Knight 2015). In the next section, Paleo and Keto study participants comment on this shift and the current state of nutritional research and dietary advice in the United States, as well as embracing the consumption of dietary fat after decades of the public vilification of the macronutrient.

5.6 Changing Ideas of Weight Loss and Diet: Embracing Fat

Research bias and food industry coercion in setting nutritional standards and dietary guidelines has become more transparent, resulting in an increasingly skeptical public. Meanwhile, the rates of obesity and diet-related illnesses in the United States

²¹ Lower LDL-C levels and higher HDL-C and triglyceride levels are considered optimal for reducing cardiovascular risk (cf. Nordmann et al. 2006).

continue to be concerning to both healthcare professionals and the public, often portrayed as a "crisis" or "epidemic" (cf. Guthman 2011). As a result, the landscape of nutritional authority and trusted dietary and weight loss advice is changing as frustrated consumers reevaluate their beliefs about food, health, and proper diet. In interviews with individuals adhering to a Paleo (n=37) or Keto (n=18) diet, participants often brought up their frustration with mainstream nutritional advice and ideas about food, health, and the body. This section details participants' thoughts on "traditional" nutrition and weight loss advice and changing ideas about the role of dietary fats in health.

As noted in the introduction, the JAMA exposé uncovered documentation through archival research of collusion between nutrition scientists at Harvard and the sugar industry to suggest that the only dietary intervention required to prevent coronary heart disease was to reduce dietary cholesterol (Kearns et al. 2016). For Paleo and Keto advocates, this article was validation of the anecdotal successes in weight loss and overall health seen in the Paleo and Keto communities from a lowcarb (thus reduced sugar), moderate-to-high fat diet and further justified skepticism toward traditional dietary interventions and approaches.

A number of participants brought up the media attention surrounding the *JAMA* article in conversation. One Keto participant articulated that she was not surprised, having long been wary of the political influence of industry on science and the communication of dietary and health advice, particularly regarding low-carb diets. She explained:

"Back when Atkins was enjoying newfound excitement, it had a major economic impact on food processors...I was aware having worked in politics, about the different trade groups coming out with hit pieces, some subtle some aggressive, how that kind of populates the public mind, redefining what our foodstuffs are and what's good food, and that it's crazy to be anti-bread" [PC]

Another Keto participant brought up the sugar industry cover-up, expressing that he was skeptical of mainstream nutrition advice even before reading the article, based solely on the plethora of anecdotal success stories he heard as part of the online Keto community on the website Reddit (subreddit r/Keto):

"All the things the Diabetic Association and FDA tell us to eat...we ate according to those things...but started eating Keto and we're all feeling better...it's anecdotal, but when everyone starts to eat this way and is starting to feel better, it seems like there's something there...I question much more the standard thing we've been taught, question all that much more than I used to" [JB]

However, other participants were more surprised and outraged at the allegations. One Keto participant expressed:

"It really makes you angry...like the guy that said that sugar wasn't the cause of things, fats were, and how we got steered toward eating more grains than fats...It's very twisted and discouraging when you see that so many people still believe that, that fat causes all the health problems when it's probably sugar" [BD]

For this participant, continued trust in what has now been exposed as partially corrupt information is a source of outrage and a discouraging reality for her.

The Kearns et al. (2016) article effectively brought the question of the role of dietary fats in a healthy diet back into the conversation and into public view. While the past generation of low-carb diets (e.g., Atkins) advocated for the reduction of carbohydrates/sugars from one's diet, embracing the benefits of "healthy" fats and

encouraging the generous consumption of fat in one's diet is often credited as unique to the Keto diet. One participant explained:

"I think the high-fat idea of Keto is perhaps a bit more unique than some of these other diets...in a world where fat has been demonized, I feel like Atkins and South Beach felt like they needed to avoid it so they didn't lose interest from people scared of fat" [DF]

While the discourse surrounding Keto whole-heartedly embraces fat consumption, this research asked whether or not this was an uneasy psychological adjustment for Keto participants who had long been warned by public health officials of the dangers of fat consumption as a risk factor for obesity-related illnesses and coronary heart disease. One Keto participant, who had fatty liver disease and cholesterol that was "out of whack" at the outset of eating a Keto diet, expressed his initial reluctance to eat fat:

"You're taught growing up not to eat the fat, it'll clog your arteries, it'll kill you...even now I'll eat something really fatty and be like 'really?' in the back of my mind" [JB]

However, positive bloodwork 2-3 months into a Keto diet changed his perception of the dangers of fat:

"My fatty liver was gone, high cholesterol was gone, everything was in the perfect range, and that was the proof for me, that if I could eat an increase in fat and have my cholesterol go down, that it was better than what I was eating" [JB]

For this participant, the discrepancy between traditional dietary advice that suggests the reduction of fat in one's diet and their drastically improved biomarkers after eating a high-fat Keto diet quelled any residual fear or skepticism toward eating fat. The Paleo Diet also encourages ample consumption of "healthy" fats. However, unlike the Keto diet, the goal of Paleo is not the strict monitoring of macronutrient ratios in order to get the body into a state of ketosis, but rather to mimic the dietary habits of Paleolithic pre-agricultural ancestors by embracing certain foods (e.g., fats) and avoiding others (e.g., grains). As a result, Paleo dieters often consume more carbohydrates (in non-grain forms like sweet potatoes and other tubers, fruits, etc.) and thus require less fat intake to feel satiated and meet nutritional requirements compared with Keto dieters. Still, Paleo participants similarly expressed undergoing a necessary psychological adjustment in order to embrace fat. One Paleo participant articulated:

"The thing that really surprised me was how much fat I needed to eat, and it scared me, because I'm almost 40, and I remember being low-fat, fat-free, all the panicky stuff, and Paleo really embraces that...growing up as a kid in the Midwest, that's everything you're taught not to do...so I was hungry a lot, starving at first, I wasn't eating enough fat to get me through the day" [SJA]

Another Paleo participant, a Professor of Medicine and practicing gastroenterologist who often prescribes a Paleo-inspired diet to his patients, explained the struggle in getting his patients' over the psychological hurdle of embracing fat:

"Yes, people are afraid to eat high-fat diets, there's no question about that...as a gastroenterologist, from basic physiology, we realize that the majority of fat will overwhelm the ability of bile and epithelial cells to absorb lipid and most of the excess will end up being pooped out and won't be absorbed and that the metabolics behind development of atherosclerosis are not necessarily, directly related to fat intake...we realize that, but there's a lot of fear, so explaining that to patients is a hard thing to do, particularly those with a history of cardiac [problems] in their family" [SG]

While this participant expressed the difficulty of explaining the role of dietary fats to his patients and getting them to release deeply engrained beliefs about consuming fat, many participants in the study (both Paleo and Keto) latched onto scientific, biological explanations of the breakdown of different nutrients in the body for reassurance of the logic, effectiveness and safety of eating a low-carb, high-fat diet. For example, one Keto participant explained:

"There's also a lot of science that goes in the Keto diet, and I think a lot of people on Keto really like that, versus the other diets are just like 'we're losing weight'... where Keto people are like, 'I'm training my body to be fat-adapted and burn fat and be in ketosis'...other diets aren't as concerned with the science behind it" [RM]

Other Keto participants similarly communicated that the science behind the diet was what convinced them to embrace fat consumption. One participant stated:

"I thought the science behind it, in terms of switching your body from burning glucose to burning fat...I definitely was aware of low-carb diets but never really understood the science behind why they worked...that convinced me" [TF]

For many study participants, the shifting public perception of the role of dietary fats and carbohydrates awakened or confirmed a distrust of what was perceived as more "conventional," "outdated" biomedical and nutritional authority and directives, as participants selectively favored some scientific evidence over other evidence. While participants expressed difficulty in psychologically and/or viscerally overcoming the cognitive dissonance surrounding fat consumption, many participants turned to scientific logic to carry them through the discomfort in the transition from fearing to embracing dietary fat. Instead of being overwhelmed with orthorexic anxieties, study participants navigated the shifting landscape of nutritional advice and information by relying on personal and anecdotal successes and the strategic and selective use of science to guide their dietary behaviors and confirm their distrust of "conventional" dietary directives. In the next section, participants discuss their personal interactions with medical professionals regarding their health and diet, expressing distrust of the nutritional education and dietary advice of medical professionals, particularly doctors perceived to be overweight or unhealthy themselves.

5.7 Changing Authority and Expertise in Healthcare and Nutrition: Fat Doctors, Health Coaches, and Self-Expertise

The refutation of higher-carbohydrate, low-fat diets as an effective weight loss strategy and/or for mitigating the onset of diet-related illnesses has led both healthcare professionals and individual dieters alike to reconsider the proper role and ratio of carbohydrates and fats in one's diet. For many study participants, this lack of consensus led to a distrust of advice received from healthcare professionals who they felt were stuck in the "old paradigm" of demonizing fat consumption, encouraging the standard "calorie-in, calorie-out" model of weight loss, and promoting pharmaceutical rather than dietary interventions for the majority of chronic illnesses. This section explores Keto and Paleo participants' personal interactions with medical professionals regarding their health and diet. Often these interactions left participants feeling frustrated, disillusioned, and even convinced that they themselves were more educated when it comes to nutrition and dietary interventions than their healthcare practitioners, particularly practitioners perceived to be overweight themselves.

For a number of participants, the failure of the suggestions of Western, allopathic medical professionals to alleviate one's chronic health problems or help with weight loss concerns led to a "DIY" (do-it-yourself) ethos of self-knowledge and health expertise. One Paleo participant, who had seen numerous allopathic and holistic doctors in search of medical and dietary advice for her chronic fatigue, expressed: "I felt like it was just left up to me and nobody out there could help me besides myself" [SJ]. After experimenting with the Whole30 and Paleo diets and seeing drastic improvements in her health, this participant went on to become a health coach so that she could share her wisdom and experience with "healing through diet" with others. Another Paleo participant recounted a similar experience of feeling let down by healthcare professionals in regards to healing their chronic digestive issues. They explained: "I went to the doctor and had a lot of tests done and they basically told me I'd have to live on prescription Proton-Pump Inhibitors (PPIs) for the rest of my life, and I thought, 'I'm pretty young, that can't be right'" [LS]. Like the previous participant, this participant decided to take matters into their own hands by experimenting with their diet. After seeing the alleviation of all of their digestive issues after "going Paleo," this participant went on to become a Primal Health CoachTM, coaching others to heal their ailments through Paleo-inspired dietary and lifestyle adjustments.

Whether or not participants went on to become certified health coaches and help others navigate the precarity of dietary advice or not, many expressed that they felt more informed when it came to nutrition and dietary interventions than their primary care physicians or medical specialists. As one Paleo participant put bluntly, "I don't trust doctors, I don't trust conventional medicine, so I'd rather watch what's going on with my health and make sense of it" [ZR]. Another Paleo participant articulated that while Western medicine is remarkable, particularly for acute or emergency situations, the modern healthcare system is inadequate for addressing and resolving chronic diseases. They explained:

"I really honestly don't think that following doctors is the smart way to go if you want to be healthy... I've been very skeptical of doctors for quite some time, at least 40 years, I mean their diagnostic abilities are great, for traumatic situations they're unbeatable, emergency, gunshot wounds...but when it comes to chronic, systemic, degenerative diseases they don't know shit" [RB]

One Paleo participant who had previously sought advice from nutritionists while attending graduate school in order to maintain her weight during this stressful, sedentary time in her life, described how she came to negotiate her own diet, often disregarding the advice of medical professionals:

"I've seen nutritionists who tell me you can't eat this way this is horrible for you, and I follow their advice for a few weeks and it really messes me up, so I've sort of been negotiating my idea of what's healthy versus a doctor's or medical professional's idea of what might be healthy for me, but I kind of have decided to disregard some of that other information and go ahead with what feels healthy for me" [HN]

Both these participants and others communicated a belief that *you* are your own health authority and dietary expert, echoing the neoliberal ideology of individual responsibility behind healthism.

A few Paleo study participants were themselves in the healthcare field, either as practicing medical doctors (n=1), advanced medical students (n=1), or graduate students in nutrition or dietetics (n=3). They described the pushback toward low-carb and/or high-fat dieting in the medical community, yet also described the lack of nutritional basics covered in their medical education. The medical school participant explained, "we get a brief nod to fat metabolism in our basic sciences and then it never comes up again" [TP]. A participant working toward a graduate degree in Nutrition mentioned the lag between the latest nutritional studies and what is taught in their program, stating:

"I read studies on the Dietetics Association changing their viewpoints on saturated fats and cholesterol, and then I go to school and I'm still learning what they were teaching 10-15 years ago" [MA]

Even participants who were not in the medical or healthcare professions were often aware of the lack of time spent in medical school educating students about nutrition. One participant, who was prescribed the Keto diet by a neurology specialist to treat her seizures after a traumatic brain injury, explained how, based on their conversations with their neurology specialist and other doctors, they became aware of how medical students often receive little to no formal nutritional education: "If they're lucky, one hour, and it's not even mandatory" [SK]. Thus, participants from both within and outside formal medical education pointed to the inadequacy of nutritional training among most medical professionals.

While for some participants' distrust toward medical professionals stemmed from an awareness of the relatively short amount of time dedicated to nutritional education among medical professionals or from personal experiences with their health that left them feeling "failed" by healthcare professionals, for other participants the source of distrust was more superficial. A number of participants expressed that their own doctors were themselves overweight leading them to automatically question any dietary or nutritional advice they received from them. For example, one Keto participant whose doctor frequently warns him that Keto isn't a sustainable diet for his weight loss goals, expressed:

"He thinks it's gonna blow up in my face, I need to find a new doctor...he's still skeptical, but he's kind of overweight himself, and I'm like the pinnacle of health...it's time you reevaluate yourself" [JR]

Another Keto participant expressed that her primary care doctor, "isn't the most sophisticated guy, he's kind of chunky himself" [SA]. One Keto participant expressed what he perceived as a mind-body connection, where the nutritional advice of an "unhealthy," overweight body clearly could not be trusted:

"Our mind is our body, and if our body is not healthy, then the mind ain't so good...So when I see a guy who's 250 pounds sitting on a committee telling us about what we should and should not be eating, I don't give a fuck what he has to say, cause his mind ain't working right, he's getting bribes or his intuition is dead...All you need to do to know if you're a health authority or not is just look in the mirror..." [RB]

A Paleo participant, who actually received support from healthcare professionals regarding their dietary choices, echoed this frustration with medical professionals who themselves are overweight, stating:

"Anytime I go to a doctor they just keep telling me to do what I'm doing yet they are overweight, they are sick, they are not the image of health, and yet here they are advising the world on how to be healthier or how to treat and remedy the body gone wrong, so I find that to be absolutely frustrating" [SB] Thus, while the last section highlighted participants overcoming the cultural stigma surrounding consuming dietary fat, they still reproduced the stigma, fat-blaming, and lack of empathy surrounding non-normative, "fat" bodies and associations of "laziness" and "stupidity" (cf. Brewis 2012). Thin, healthy looking bodies can be trusted for medical and dietary advice, for they are presumably "doing it right," whereas the advice of overweight, "unhealthy" looking bodies warrants skepticism and distrust. In other words, the physician's body becomes a measure of the accuracy and effectiveness of their dietary and biomedical prescriptions as individuals superficially assess whether or not the physician embodies "health."

Many participants expressed frustration that dietary interventions such as Paleo and Keto diets were not taken seriously by their medical practitioners and the medical community at large as an effective strategy for alleviating chronic health issues. One Paleo participant articulated this frustration, stating: "They go to the doctor and they give a bunch of pills when really the answer is 'hey you've been feeding your body garbage all these years and now you're feeling like garbage" [LS]. In this quote, the participant communicates his belief that poor diet is the root cause of poor health. A significant number of participants echoed this sentiment as well as the complementary belief that a healthy diet of "good," or "natural" foods could be healing or medicinal. For example, one Keto participant articulated this belief, stating that, "Food is the best medicine, and getting people to understand that is a very important thing cause we're dealing with decades and decades of indoctrination of the standard American diet" [CH]. Another Keto participant expressed their desire for the medical community to take dietary interventions more seriously in their directives to patients, explaining:

"I'd love to see it become accepted more in the medical community...I think they need to open up the standards, and the doctors should say 'these are all your options,' things like Paleo or Keto or lifestyle things" [SK]

Frustration with the current state of the healthcare system (e.g., a focus on short-term rather than long-term "solutions," an emphasis on pharmaceutical rather than dietary/lifestyle interventions, etc.) and the perceived inadequacies and inaccuracies of nutritional education and dietary advice among healthcare professionals led many participants to feel that they were more knowledgeable based on their own research and experiences when it came to proper diet than their healthcare practitioners. Participants communicated a distrust of doctors who themselves appeared to be struggling with their own weight and thus, by an assumed correlation, their health more generally. Furthermore, participants articulated the belief that food could be medicinal and expressed frustration toward the use of pharmaceutical rather than dietary interventions as a first line of defense by physicians for chronic health problems such as IBS and other digestive issues, allergies, and high cholesterol, among others. These results suggest that as individuals fail to improve their health through the suggestions of Western, allopathic medical professionals and increasingly distrust the foundation of nutritional science and education, alternative networks of independent research and self-experimentation (e.g., Dave Asprey's "Bulletproof Labs"), anecdotal successes, self-knowledge and "DIY" health expertise become the most trusted way to navigate the unreliable world of dietary advice. In other words, as dietary knowledge and power is decentralized, what is considered legitimate nutritional science and evidence is put to the test in these alternative networks of knowledge creation. Thus, healthism has not only pushed responsibility for health from the public sphere to individual action, but the dissemination and

interpretation of dietary data and science, as the orthorexic individual assesses what is trustworthy advice rather than relying on public healthcare professionals. In the next section, participants discuss their opinions of the promise and limitations of food as medicine, articulating the acknowledgement that there is no universal or ideal diet, what they perceive to be the major takeaways of a Paleo and/or Keto approach to diet, barriers to achieving a healthy diet, and the potential for orthorexic behavior in alterative diet communities.

5.8 The Promise and Limitations of Food as Medicine

Changing public perceptions of dietary fats and a decreased trust in the nutritional advice of medical professionals led many participants to reconsider the role of food and proper diet in one's overall health strategy. Many participants felt that food was medicinal and that a healthy diet could lead to health, wellness and the alleviation of suffering, at least when it comes to chronic illnesses. Further, participants expressed that dietary interventions were often not taken advantage of by the medical community and/or that the dietary strategies of "mainstream" healthcare practitioners or nutritionists were outdated and ineffective. However, when it came to what exactly a proper diet entails, participants often articulated that there was no universally applicable or "perfect diet." For example, one Paleo participant expressed, "I think you have to find what works for you, I don't think [Paleo] is the solution for everyone" [TF]. Many participants communicated this idea of needing to find "what works for you," and that everyone is different.

Adding to the uncertainty of best dietary practice, emerging research in nutrigenomics, or the scientific study of the relationship between genes, nutrition, and health, suggests that there may not be one universally applicable or ideal human diet.

Instead, this research suggests that the future of nutritional advice will be based in personalized nutrition, where nutritional advice is individualized based on information from genetic testing combined with the latest developments in nutrigenomics (cf. Gorman 2006). A number of participants articulated the individuality of ideal diet along these lines, in more explicitly biological terms. For example, one Paleo participant brought genetics into the discussion of whether or not someone should undertake a high-fat, low-carb diet. They explained:

"I don't think Paleo is the universal standard. I am a big proponent of personalized nutrition, because I know for a fact that there are some genetic differences in folks where they can't process fat like other people can" [LS]

Another Paleo participant articulated a similar sentiment, suggesting that, while there are some basic principles that most would agree comprise a "healthy" diet (e.g., limiting sugar intake), an ideal diet is individualized and dependent on one's genetic and microbiotic makeup:

"I don't believe anymore that there is a perfect diet, we need a diverse diet...but that said I still think there is a diet on which most people would do a lot better...and of course there's variety, like you can be adapted to different diet based on gut flora, personal genetics..." [JC]

In these quotes, the influence of the latest research in the "omic" sciences (e.g., genomics, microbiomics), including nutrigenomics, is evident. Research in these areas suggests that the future of medicine, as well as dietary interventions, will be more individualized, tailored to one's genetic and microbiotic makeup. The first Paleo participant went on to explain, "I think Paleo may evolve into personalized nutrition" [LS] and emphasized the importance of paying attention to ancestry and genetic

makeup in his approach to helping individual's develop dietary and lifestyle plans as a health coach.

While participants communicated that proper diet is individual and dependent on a number of personal biological, circumstantial, and ethical conditions, the majority of participants articulated a number of broad benefits of eating a Paleo or Keto diet. These broad benefits included learning to pay greater attention to what one consumes, having a greater awareness of how different foods affect your body and make you feel, reading and understanding nutrition labels, eating less processed foods and more "whole" foods, and increasing one's vegetable intake (broad benefits that most participants acknowledged were not necessarily exclusive to Paleo but advocated by other "whole foods" based approaches like Whole30, etc. as well). For example, one Paleo participant suggested:

"I think in general if we look at the framework of Paleo of just eating real foods, meats and fats and seeds and lots of vegetables and fresh organic produce if available, I think that's definitely something that would heal the world and would be good for the majority of people" [ZR]

Another Paleo participant echoed this sentiment, suggesting that the basic framework of Paleo could be healing in light of the public health and obesity crises of contemporary food and agricultural systems:

"I think the basic idea [of Paleo] that you should reject really harmful processed foods is really important and it's really affecting everyone's health, that's why we're in a public health crisis, because the food is terrible for people" [HN]

Another Paleo participant elaborated on the potential of diets like Paleo for alleviating modern health problems like the obesity epidemic. They explained:

"I think the big principles are important, paying attention to what you eat, trying to have a better relationship with food, paying attention to why, when and what you eat, and eliminating more of the processed stuff...I think if everyone can think about those kinds of things, even if they go from two scoops of ice cream everyday to two scoops twice a week and the rest of the time they're having apples or oranges for dessert...I think given the obesity epidemic, that can be huge" [CW]

While the majority of participants suggested that food could be medicinal and that a healthy diet was essential to achieving overall health in the contemporary food and healthcare environment, participants varied in their optimism as to whether or not this was achievable at both an individual and societal level, echoing concerns raised by Guthman (2011) and other scholars regarding inequalities in access to healthy foods. For example, a number of participants acknowledged the difficulty of obtaining the healthy, whole foods required by these specialty diets in the current food environment. For example, one Paleo participant expressed, "my biggest takeaway is that this is something only very privileged people can partake in" [LR]. Another Paleo participant acknowledged the economic privilege required for even thinking critically about food and considering the purchase of more expensive, whole, "real" food products that Paleo encourages, stating that:

"It's certainly a luxury for people to even have the money to think about the option of buying healthful foods, some people don't even have that, so they have to buy cheap and feed their family, so you have to have some sort of economic level to even think about what you're going to buy" [AB] In these quotes, participants acknowledge the politics and privilege of alternative food networks and consumption often brought to attention by critical food scholars (cf. Guthman 2008a, 2008b, 2011; Niles and Roff 2008; Slocum 2007).

In addition to acknowledging financial barriers to healthy foods, a number of participants brought up the challenge of breaking emotional connections to food, including the psychological stigma around certain food products such as dietary fats (as discussed earlier in this article). Consequently, one Paleo participant expressed skepticism as to whether or not individuals in countries like the U.S. and those in Western Europe would be able to adopt a more sustainable diet and lifestyle due to cultural pressures, explaining:

"Other countries look at us for what they want to reach themselves, so it's important that the developed countries develop a lifestyle that's sustainable for humans and the environment...One big problem is how deeply culturally engrained diet is...people don't want to give up foods...becomes a psychological issue...how do we manage dealing with things that need to be changed when the mind has so much resistance against change" [JC]

Other participants expressed concern that the idea of food as medicine and the supposedly healthful properties of a Paleo or Keto diet and lifestyle could be abused, with the potential for undue psychological/emotional stress or disordered eating. For example, one Paleo participant explained her concern regarding pathological orthorexic behavior in the Paleo community:

"Eating should be fun and enjoyable and shouldn't be orthorexic, and I feel like a lot of die-hard Paleo people are orthorexic...it's a form of an eating disorder almost because they obsess over it and they take the fun out of eating and obsess over every item they put in their body and it's

way too much, it puts stress on you, and mental stress effects your health and isn't good for you" [ZR]

A Keto participant articulated a similar sentiment, describing how there needs to be balance between enjoyment and self-monitoring and restraint, they explained:

"I don't want to live my life constantly thinking 'I can't eat that, can't eat that'...there's got to be an equilibrium to enjoying this world and being so concerned with every little thing you put in your mouth" [CH]

However, not all participants shared a concern for the potential for pathological orthorexic behavior with diets like Paleo and Keto. Instead, many participants felt that participating in diets like Paleo and Keto would result in greater self-awareness and reconsideration of long held beliefs about healthcare and diet that would, in turn, usher in profound, positive changes for food systems, healthcare, and society. For example, one participant articulated their optimistic outlook on the potential of these diets, explaining:

"I do have a little optimism, because as people embrace this, I'm noticing a sense of outrage and betrayal, and it's like the veil is dropping from people's eyes about the ways we are fed popular types of information, with industry defining what is good science and good health and diet...I see people more likely to question, and if they're more likely to question, then they're more likely to act on a number of different things in their life that will ultimately have an impact on who we are as a people, as a society" [PC]

In this quote, the participant gets at the heart of the phenomenon this article addresses. As the "veil drops" to reveal corrupt, biased, and/or inconclusive nutritional research, the inadequate nutritional training of medical professionals, and the ineffectiveness of conventional dietary advice for both weight loss and general health and wellbeing, individuals are considering alternative dietary strategies and beliefs such as those advocated by the Paleo and Keto diets in their efforts to reduce the risk of chronic diet-related illnesses.

The low-carb dieting strategies of Paleo and Keto encourage a re-evaluation and re-imagining of the current food and healthcare systems, one where food is medicinal (both preventively and therapeutically) and dietary interventions are individualized based on the ancestry, genetics, and microbiotic makeup of individual bodies. The influence of the postgenomic sciences on this re-imagining of diet and healthcare is evident, where a generalized dietary science and advice becomes obsolete in the wake of the promise of nutrigenomics and personalized interventions. Thus, the orthorexic individual is charged with interpreting the flurry of inconclusive and increasingly unreliable nutritional information in order to inform their individualized dietary strategy for obtaining health and avoiding disease. Regardless of whether participants expressed skepticism or optimism toward these changes in the realm of nutrition and healthcare, a healthist ideology and emphasis on individual responsibility endured. Whether empowering, anxiety-provoking, or simply unattainable or out of reach, health in an increasingly orthorexic society remains fraught with the same concerns for misinterpretation, inward focus, abuse, and/or privilege.

5.9 Conclusions: Food as Medicine in an Orthorexic Society

Shifting public perceptions of the role of dietary fats and carbohydrates in a healthy diet, for many, awakens or confirms a distrust of more "conventional" biomedical and nutritional advice. While Paleo and Keto diet study participants

worked toward embracing fat consumption and shedding years of "indoctrination" warning of the dangers of dietary fats and a visceral aversion to its consumption in light of the recent public re-evaluation of dietary fats, the revulsion toward non-normative "fat" bodies often seen in the dietary and weight loss world remained. For example, a number of study participants expressed automatically questioning any dietary or nutritional advice received from healthcare practitioners they perceived to be overweight and thus, by assumed correlation, unhealthy themselves. Consequently, while study participants discussed overcoming the cultural stigma surrounding consuming dietary "fat," the stigma, fat-blaming, and lack of empathy surrounding non-normative "fat" bodies and associations of "laziness" and "stupidity" (cf. Brewis 2012, Guthman 2011) remained as participants found overweight healthcare practitioners to be untrustworthy and/or intellectually compromised.

Frustration with the current state of the healthcare system and the perceived inadequacies and inaccuracies of nutritional education and dietary advice among healthcare professionals seen as stuck in the "old paradigm" (e.g., demonizing fat consumption), or who were perceived to be overweight themselves, led many participants to feel that they were more knowledgeable based on their own research and experiences when it came to proper diet compared to their healthcare practitioners. While past studies show anxiety around how to eat based on the lack of consensus regarding proper diet (cf. Rangel et al. 2012), many study participants felt empowered rather than overwhelmed by the idea that they were the more educated, trusted authority when it came to their own diet and health than healthcare professionals. Instead of being overwhelmed with orthorexic anxieties, study participants navigated the shifting landscape of nutritional advice and information by relying on personal and

anecdotal successes and the strategic and selective use of science to guide their dietary behaviors and confirm their distrust of "conventional" dietary directives. Thus, while the hyper-focus on food and dietary choices as the primary means to achieving health can certainly be considered "orthorexic," whether this behavior is pathological is debatable at the level of the individual. These results suggest that, for many, alternative networks of independent research and self-experimentation, anecdotal successes, self-knowledge and health expertise become the most trusted way to navigate the unreliable world of dietary advice.

The majority of participants articulated a number of broad benefits of eating a Paleo or Keto diet and felt that participating in these diets would result in greater selfawareness and reconsideration of long held beliefs about healthcare and diet that would, in turn, usher in profound, positive changes for food systems, healthcare, and society. Participants articulated the belief that food could be medicinal and expressed frustration with the use of pharmaceutical rather than dietary interventions as a first line of defense by physicians for chronic health problems. A number of participants believed that the future of nutritional advice would be individualized, based on the latest research in nutrigenomics and one's individual genetic and microbiotic makeup, and therefore much more effective. By positing food as medicine and individualized diets as cure the individual is presumably given control over their own health by placing "healing" within reach, outside of traditional medical authorities, directives, and spaces.

While empowering for some, other participants saw limitations with this "healthist" (cf. Gutman 2011) approach to food and healthcare. A number of participants communicated the psychological/emotional, financial, and practical

barriers to eating a "healthy" diet. Furthermore, a number of participants articulated concern for potentially pathological orthorexic behavior in alternative diet and health communities such as those associated with the Paleo and Keto diets. These participants expressed apprehension toward the transition from food as enjoyable, social, and cultural to solely nutrition, medicine, or "fuel," echoing concerns raised by Gorman (2006) who queries, "Will personalized nutrition contribute to a good life? Or will personalized nutrition instead limit the role of some or all food to medicine and transform eating to a lifelong medication?" (p.16). As nutrigenomics and personalized nutrition are gradually introduced into a increasingly orthorexic society, careful attention will need to be paid toward where the line will be drawn between admirable self-care and pathology. Future research should investigate whether and how the healthcare system can adapt to the requirements of personalized medicine, who will be included or excluded from the privilege of orthorexic self-care, and whether or not individual and collective health will actually see any improvement from these changes.

Whether skeptical or optimistic toward the decentralization of dietary knowledge and power and the possibilities of a future of personalized healthcare, a problematic healthist ideology and emphasis on individual responsibility not only endures but adds new responsibilities, with the orthorexic individual now tasked with interpreting nutritional data and science and assessing what is trustworthy, reliable dietary advice for obtaining health and avoiding disease through healthy eating. While these diets acknowledge the ills of contemporary food and healthcare systems, responsibility is still positioned at the scale of the individual who must make sense of the precarious world of dietary advice in addition to making healthy food consumption

decisions and lifestyle choices to manage the body in this flawed health environment. Thus, whether empowering, anxiety-provoking, or simply unattainable or out of reach, obtaining health in an increasingly orthorexic society remains fraught with the same concern for misinterpretation, inward focus, abuse, and privilege.

Chapter 6

CONCLUSION: THE BODY'S ECOLOGY AND THE FUTURE OF HEALTH

6.1 Summary and Conclusions

In this dissertation, I examined how food choices are used as a way to mediate and ameliorate the relationship between human health and ecology in the Anthropocene. By focusing on food consumption and dietary practice at the scale of the individual, I explored the ways in which agri-food production and consumption are a collaboration that makes both bodily ecologies as well as larger-scale environments/ecologies. In particular, I focused on the discourse and practices of two popular health trends in countries in the Global North, the Paleo and Keto diets, which draw upon evolutionary theory and new models of the body and body-environment relationship for insight to "re-wild" health, diet, bodies, and ecology amidst the ecological uncertainty of the Anthropocene.

This dissertation stands as an empirical investigation of "going Paleo" in the Anthropocene: from the *ancestral futurism* of Paleo philosophy as a new environmentalism and healthism that is both reactionary to and an active producer of the ecological imaginaries of the Anthropocene, to how this *ancestral futurism* is interpreted and translated into dietary and lifestyle practices, to how community and an *embodied ecological health movement* is built around these practices, to how the lived, embodied experience of Paleo health practice offers new methods of knowledge production regarding food, health, bodies, and ecology through *visceral acuity* (or a heightened bodily awareness and ability to interpret the signals of the body). Based on in-depth, semi-structured interviews with 55 individuals following a Paleo (n=37) or Keto (n=18) nutritional regimen, this dissertation serves as a case study of Paleo/Keto dieting and an exploration of the idea and practice of health as ecology in the Anthropocene. In the preceding chapters, I investigated how the discourse and practices surrounding the Paleo and Keto dietary movements engage with the shifting landscape of healthcare and nutrition politics in the United States, new conceptions of human health and bodies as ecologies, and a growing understanding of the connection between human and non-human/environmental health in an era of ecological crisis or transformation designated the Anthropocene.

This research contributes to emerging literature on the political ecology of health and bodies (e.g., Guthman and Mansfield 2013, Guthman 2012, Jackson and Neely 2015), offering a case study of Paleo/Keto dieting as an example of how health as ecology moves beyond theory and is put into practice. By investigating the idea of re-wilding the body's ecology, this research contributes to the broader field of nature-society studies, which has considered re-wilding as a conservation strategy at larger scales, but has only recently turned attention to the scale of the body (c.f., Lorimer 2017). Through an emphasis on qualitative methodologies, personal narrative, and the body as a (bio)pedagogical site, this research contributes to "visceral geographies" of food and the body (cf. Hayes-Conroy and Hayes-Conroy 2010) and political ecologies of health and the body (cf. Guthman and Mansfield 2013; Jackson and Neely 2015). In addition, by focusing on the use of food as a strategy for re-wilding the body's ecosystem, this research adds to literature in health geography and critical food studies concerned with dietary, consumption, and embodied food politics and contributes to

an acknowledged gap in the literature regarding the theorization of an "orthorexic society" (cf. Nicolosi 2006; Rangel et al. 2012) by unpacking the relationship between beliefs, narratives, visceral experience, and food practices.

Throughout this dissertation, I argue that Paleo is much more than merely a dietary trend or fad diet. Instead, I position the controversial Paleo movement as both a reaction to and active in the construction of the environmental and health anxieties of life in the Anthropocene. This growing community of Paleo Diet and Ancestral Health enthusiasts has offered the Paleolithic era as a temporal intervention for healthconscious consumers seeking refuge from illness and the key to longevity in an era of anxiety and uncertainty concerning both human and planetary health. The ancestral futurism of the Paleo movement (based on evolutionary theory, nutritional primitivism, and new models of the body and body-environment relationship) encourages the reconsideration of not only contemporary dietary choices but also lifestyle behaviors and one's outlook toward and understanding of the dynamics between health, bodies, food and ecology more broadly. In this respect, the perception of Paleo as an eccentric fad diet becomes an obvious oversimplification of what in reality is a complex, multifaceted phenomenon: a diet, an environmental philosophy, a consumer culture, and an *embodied ecological health movement* that serves as an example of how health as ecology is put into practice at the scale of the individual. For this reason, I argue that the Paleo community offers unique insight into health, diet, and environmentalism in our current ecological moment that, no matter how problematic (and perhaps because of this very characteristic), should not be dismissed but instead unpacked, organized, and thoughtfully scrutinized.

Environmental politics in the Anthropocene are focused on ameliorating relations with nature and the non-human, an undertaking that is increasingly seen as critical to human health and survival (e.g., reducing carbon emissions to combat global climate change). Like the debates surrounding ecological conservation and interventions at larger scales, re-wilding and the paradoxical ancestral futurism of Paleo body politics complicates the delineation between scientific and technical interventions that are beneficial and those that are harmful in our efforts to survive and thrive in the Anthropocene. Re-wilding as a human health strategy suggests we are trying to escape the ecosystem we created for ourselves not only at the scale of larger biomes, but at the scale of the human body as well, turning to our Paleolithic huntergatherer ancestors for insight as for how to achieve a (presumably) more healthy human-environment relationship. Thus, while the Anthropocene has forced us to confront and abandon the wilderness myth held dear to the American ecological imaginary, romantic ideas of returning to nature (even an admittedly different or adulterated nature) in a quest for improved health endures, along with the American frontier mentality of rugged individualism. Only now the frontier is our body. In other words, the body is a new frontier for an ecological ethic of health and sustainability based on re-wilding, and a microcosm for interrogating the politics that go along with it.

In our current political moment, marked by inaction and even outright denial of the threat of looming ecological crises like global climate change, there is urgency among environmental scientists and activists to make ecological concerns personal and tangible to consumers and the public. Unlike most environmental or health movements, the Paleo movement lacks clearly outlined political goals (e.g., no

collective mobilization, no protests, etc). However, the Paleo movement is not depoliticized, as the undertones of neoliberalism, consumerism, libertarianism, elitism, and environmental and health activism amidst Paleo communities suggests (e.g., at the PALEOf(x)TM conference). Instead Paleo body politics, like Paleo discourse and practice, are paradoxical and can be interpreted in a number of ways: collectively focused, individualistic, reactionary, and productive. In this dissertation, I consider whether the microcosm of the Paleo/Keto body might be an entry point for engaging individuals in ecological health politics at larger scales. I argue that there is an underutilized potential of the body as both a biopedagogical site (for tuning into bodied knowledges through enhanced *visceral acuity*) and, in turn, a pedagogical site in a more traditional sense for understanding the dynamics between the body, food, health and ecology, potential that can and should be harnessed by educators, activists, and curious individuals alike.

When it comes to developing ecological awareness beyond the body, I argue that the individualized self-care of Paleo/Keto dieting holds potential for transforming the concern for personal health into an outward-facing, ecological awareness of the relationship between human and environmental health with the potential to incite behavioral and socio-political change as dieters consider the dynamics between health, bodies, food, and ecology. Perhaps a silver lining to what can too often be a privileged, individualistic quest for an optimal body, optimal health, and an optimal life without consideration of the broader context and implications of these choices. As such, there is also always the risk that the attention of our self-focused society will continue to journey inward and away from the larger political and ecological context in which our health (or lack thereof) is produced and which desperately requires

remedial action. The fantasy among scientists, health enthusiasts, and environmentalists alike that the idea of the body as an ecosystem and an emerging understanding of the dependency of humans on the non-human/environment will give us a new collective imaginary and politics that works toward ecojustice may be just that; a fantasy. The neoliberal consumer politics, individualism, and elitism found within the Paleo community make it easy to write-off Paleo's new healthism or environmentalism as perhaps akin to a trickle-down theory of health as ecology. Yet if we acknowledge the impact of grassroots movements and the individual actions of many, it's worth asking, can collective good come from selfishness? Perhaps a dangerous optimism to have, but optimism certainly worth entertaining in a political and ecological moment that necessitates radical re-thinking, uncomfortable ideas, and last-ditch efforts.

Regardless of whether ecological health awareness and its potential sociopolitical implications are a reliable byproduct of Paleo/Keto dieting, at the scale of the individual Paleo/Keto dieting body, bodied knowledges and the lessons of *visceral acuity* obtained through dieting consistently offered insight for individual's regarding their personal health. These insights often led individuals to renegotiate their health and dietary beliefs (as the bodied knowledges of Paleo/Keto dieting were often at odds with mainstream dietary and medical advice, and sometimes even at odds with the very prescriptions of the diet they were following) and engage in alternative networks of knowledge production and sharing. While it is arguably a privilege to participate in these diets, I, somewhat ironically, see potential in the lessons of the visceral, embodied experience of dieting for challenging privilege, particularly when it comes to imagining and pursuing optimal health and bodies. Privileging self-

knowledge based on the lessons of visceral acuity and bodied knowledges pushes back against hegemonic and normative health knowledge production by acknowledging the diversity of individual bodies and challenging attempts at writing universal prescriptions onto them (including Paleolithic-inspired nutrition).

Whether skeptical or optimistic toward the decentralization of dietary knowledge and power and the possibilities of a future of personalized healthcare, I argue that a problematic healthist ideology and emphasis on individual responsibility not only endures but adds new responsibilities. These new responsibilities include tasking the orthorexic individual with interpreting nutritional data and science and assessing what is trustworthy, reliable dietary advice for obtaining health and avoiding disease through healthy eating. While the Paleo and Keto diets acknowledge the ills of contemporary food and healthcare systems, responsibility is still positioned at the scale of the individual who must make sense of the precarious world of dietary advice in addition to making healthy food consumption decisions and lifestyle choices to manage the body in this flawed health environment. Thus, whether empowering, anxiety-provoking (perhaps to the point of "orthorexic" pathology), or simply unattainable or out of reach, obtaining health in an increasingly orthorexic society remains fraught with the same concerns for misinterpretation, inward focus, abuse, and privilege.

6.2 Future Research Directions

While I point toward a number of concerns with the discourse and practice surrounding the Paleo/Keto communities in the preceding chapters (e.g., the paradox of re-wilding and *ancestral futurism*, the privilege of orthorexia, etc.), I don't believe these critiques should invalidate the lived experiences, transformations, and
perceptions among individuals in these communities or dismiss the insights and analysis I've presented in this dissertation based on my interactions with these individuals. Rather, in concluding this dissertation and looking toward future paths of this research, I see a number of useful future directions for geographic inquiry.

This research examines how food and dietary manipulation are used as a strategy for managing bodily ecologies, how individuals perceive the relationship between their body's ecology and larger-scale ecologies, and how these perceptions coupled with visceral, embodied experiences of food and health ultimately influence behavior. This objective was accomplished through a case study of Paleo/Keto dieting, serving as an example of health as ecology put into practice. By focusing on the body as a microcosm for the environmental and health anxieties and politics of the Anthropocene at larger scales, a number of pathways are opened up for future geographic inquiry into the relationship between health, bodies, and ecology. For example, what other examples exist of health as ecology put into practice? What other interventions are being made to manipulate and/or manage the body's ecology and what are the sociopolitical and cultural implications of the ideology and practice of these methods? Beyond food and consumption, in what other ways can the body be used as a space for ecological knowledge production?

Bodily ecologies are a subject ripe for geographic inquiry, particularly the attention paid to spatial, scalar, and human-non-human/environment relationships within the discipline. As human health and the body are increasingly conceptualized and substantiated as a co-created ecology in the medical and health sciences, it will continue to be important to understand how this research is being interpreted and put into practice at the scale of the individual and how community is built around these

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ideas and practices in the form of *embodied ecological health movements*. In order to accomplish this, however, it will be critical for health geographers to adopt and advance a political ecology of health and the body approach. Future research should continue to examine how the body's ecology is embodied, lived in, and managed/cared for within the broader context of environmental, health, and nutritional politics in the Anthropocene, and the sociopolitical and cultural implications of the *embodied ecological health movements* that develop around these beliefs and practices. However, future research should remain vigilant in critically interrogating these topics and exposing issues (structural and otherwise) that trouble the practice of making health. For example, how will the increasing popularity and (relative) accessibility of genetic and microbiome testing impact the care and maintenance of the body's ecology? Who will be afforded or denied access to these technologies? What are the biopolitical implications of these new technologies within the context of an orthorexic society?

Future research examining the relationship(s) between bodies, health, diet, and ecology should continue to pay close attention to the interplay of how ideology influences practice and how practice influences ideology at the scale of the individual, the tensions between scientific and (em)bodied knowledges (as well as the empirical/logical and the visceral/phenomenological), and thoughtful consideration of alternative networks of knowledge production and circulation and ways of living and being. Furthermore, human geographers should continue to advance the use of visceral methods within the discipline, using the body, embodiment, visceral experience, and personal narrative as both a method and an entry point for understanding how

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individuals interpret and make sense of the world and the sociopolitical implications of this method of knowledge production.

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Appendix A

SEMI-STRUCTURED INTERVIEW QUESTIONS

The following is a list of questions that will be used to guide the semistructured interviews to be performed for this study. Because the interviews will not adhere to a strict structure, but will instead be designed to proceed and unfold as a natural conversation, these questions should be viewed as providing the general frame and structure of the interview. However, there are intended goals in order to keep the interviews on track. The goal of interviews with Paleo/Keto Diet follower participants is to understand how they learned about the diet, why they chose to adopt the diet, how they view the diet compared to other carbohydrate-restricted diets, what the diet means to them, and whether/how it has changed their relationship to their body, food, food systems, and the environment.

Framing Questions and Possible Sub-Questions:

- 1. How and when did you first learn about the Paleo/Keto Diet? What was your first impression?
- 2. How would you explain what the Paleo/Keto Diet is to someone who has never heard of it?
- 3. How is the Paleo Diet different than other carbohydrate-restricted diets, for example, the Atkins Diet?
- 4. Is there a lifestyle component to the Paleo Diet beyond dietary restrictions? If so, what does it entail?

- 5. What compelled you to change your dietary habits and start following the dietary restrictions of the Paleo/Keto Diet?
- 6. What does your version of Paleo/Keto look like (For example, do you include dairy? Are you 100%? 80/20? Primal?)
- 7. Was it difficult adjusting your dietary habits to follow the Paleo/Keto Diet?
- 8. Did you make any lifestyle changes in addition to dietary changes (for example, barefoot running, blocking out blue light from electronics after dark, etc.)?
- 9. Was changing from your previous way of eating to eating Paleo/Keto an added financial burden in any way?
- 10. Where do you live/work? Do you find it easy to eat Paleo/Keto in your area? Is Paleo/Keto popular at all in your community? Have you found community around eating Paleo?
- 11. Have you noticed any changes in your life (physical health, mental health, etc.) since starting the Paleo/Keto Diet? Benefits? Drawbacks? How soon did you notice these changes?
- 12. Has being on the Paleo/Keto Diet made you think differently about the relationship between your body and the food you consume?
- 13. Has being on the Paleo/Keto Diet made you think differently about the relationship between your body and the environment/nature (for example, where your food is grown/the quality of your food inputs, where you live/work, the need for outdoors/nature in your life, etc.)?
- 14. Do you think we would have a healthier society if everyone followed a Paleo/Keto diet? Do you/would you suggest Paleo/Keto to anyone and everyone?
- 15. Do you anticipate stopping following a Paleo/Keto Diet at any time in the future?
- 16. Is there anything else you'd like to share regarding your opinions on the rising popularity of the Paleo/Keto Diet and lifestyle movement or personal experience modeling your diet after the Paleo/Keto Diet?

Appendix B

IRB APPROVAL LETTER

February 21, 2017



DATE:

RESEARCH OFFICE

210 Hullihen Hall University of Delaware Newark, Delaware 19716-1551 *Ph*: 302/831-2136 *Fax:* 302/831-2828

TO:	Chelsea Leiper
FROM:	University of Delaware IRB (HUMANS)
STUDY TITLE:	[1012653-1] Re-Wilding the Body in the Anthropocene: Lessons from the Microbiome and the Paleo Diet
SUBMISSION TYPE:	New Project
ACTION:	APPROVED
APPROVAL DATE:	February 21, 2017
EXPIRATION DATE:	February 20, 2018
REVIEW TYPE:	Expedited Review
REVIEW CATEGORY:	Expedited review categories #6 & #7

Thank you for your submission of New Project materials for this research study. The University of Delaware IRB (HUMANS) has APPROVED your submission. This approval is based on an appropriate risk/benefit ratio and a study design wherein the risks have been minimized. All research must be conducted in accordance with this approved submission.

This submission has received Expedited Review based on the applicable federal regulation.

Please remember that <u>informed consent</u> is a process beginning with a description of the study and insurance of participant understanding followed by a signed consent form. Informed consent must continue throughout the study via a dialogue between the researcher and research participant. Federal regulations require each participant receive a copy of the signed consent document.

Please note that any revision to previously approved materials must be approved by this office prior to initiation. Please use the appropriate revision forms for this procedure.

All SERIOUS and UNEXPECTED adverse events must be reported to this office. Please use the appropriate adverse event forms for this procedure. All sponsor reporting requirements should also be followed.

Please report all NON-COMPLIANCE issues or COMPLAINTS regarding this study to this office.

Please note that all research records must be retained for a minimum of three years.