About Me, You, and Us: Understanding Sustainability Worldviews in the United States

by

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ABSTRACT

Understanding sustainability worldviews and resulting behaviors is critical to the field of Sustainability Science. As humans face increasingly complex socio-ecological challenges, it is vital to address the lenses through which individuals see the world and act upon. Thus, it is imperative first to understand people's knowledge about and disposition toward sustainability to promote behavioral change. Equally important is acknowledging the cognitive nuances and limitations experienced by individuals attempting to engage in sustainability practices. Studies have shown that cognitive processes, including cognitive dissonance, carry-over effects, moral licensing, and hypocrisy play a significant role in adopting sustainability practices, even amongst sustainability-conscious individuals. In this dissertation, I present a mixed-method exploration of the public's worldviews of sustainability and the cognitive challenges to the adoption of sustainable lifestyles. In my first study, I explore worldviews of sustainability through the development, administration, and quantitative analysis of an online survey. The survey measured five sustainability constructs to explore the sustainability worldviews of a representative sample of the U.S. population (N = 346). Results indicate two separate groups with distinct worldviews: Ambivalents and Sympathizers. Ambivalents tend toward neutral sustainability worldviews, while Sympathizers perceive sustainability more favorably. In study two, I present an analytical autoethnography, shedding light on the attitude-behavior gap in sustainability by focusing on my sustainability worldviews and experiences as a practitioner. Within, I provide an insider's account of the nuances and limitations one experiences while engaging in and striving for a sustainable lifestyle and practices. The autoethnography results reveal the tensions between cognitive processes

and the adoption of a sustainable lifestyle. Collectively, my research results offer the sustainability movement insights about possible paradigm shifts toward sustainability based on barriers associated with worldview factors and cognitive processes.

DEDICATION

To Apurimak, who spoke the truth of my path.

To Awki who opened my eyes to the stars.

To Helme, who tirelessly walks along with me.

Thank you.

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GENERAL INTRODUCTION

ABOUT SUSTAINABILITY, US, AND ME

I entered this world on a cloudy Friday afternoon of January, thirty-four years ago in 1987. Just as I was venturing into the discovery of existing, unbeknownst to me, the world's nations concluded a decade-long study into what today we recognize as sustainability. Since the Brundtland report of 1987, sustainability has become a mainstream phenomenon and a normative framework (Weder et al., 2019). It has been hailed as an ultimate solution to the increasing global social, economic, and environmental crises (e.g., economic instability, environmental disasters, wars, poverty, etc.) that our political systems have failed to address (Kemper, 2017). Over the last two decades, the need for a stable, equal, fair, and ecology friendly society (Allen, Cunliffe, & Easterby-Smith, 2017; Borland & Lindgreen, 2013; Hopwood et al., 2005; Moore, 2005; Springett, 2003) (Kemper, 2017) has been the primary goal of many governments, NGO'S and business (Weder et al., 2019). In academia, this need has given birth to my field of study, sustainability science, which focuses on indicator and criteria development to provide solutions to local and global sustainability challenges (Hartmuth, Huber, & Rink, 2008; Ingold & Balsiger, 2013).

As I have come to understand it, sustainability encompasses our reflection/acknowledgment of the "interrelationship between natural and social systems on various dimensions of space and time" (Weder et al., 2019, p. 2). But sustainability's synergy with value-based decision-making processes and moral approaches has often rendered it victim to subjective interpretations and left labeled as an "empty and meaningless" word (King, 2016). And in some ways, a "concept where multidimensional discourses have managed to overextend its meaning to the point of trivialization" (Godemann & Michelsen, 2011, p.13), mainly because the terms are blurry, fuzzy, and ambiguous (Fischer et al., 2017). Consequently, it is not uncommon to find multiple interpretations of this concept as it lacks a discernible agreed-upon definition and

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research direction, in part due to its focus on multidimensional issues and the varied theoretical and methodological backgrounds of its scholars (Zwickle & Jones, 2018).

Multiple sustainability definitions can be found in the academic literature with varying emphatic degrees across three dimensions: the economy, society, and the environment. The most popular definition comes from the World Commission's work on the Environment and Development (WCED) report (a.k.a. the Brundtland report). The WCED introduced Sustainable Development (SD) to the world as "... paths of human progress that meet the needs and aspirations of the present generation without compromising the ability of future generations to meet their needs" (WCED, 1987; p. 29). According to the WCED, sustainability and SD 1) focus on the ability of human enterprises and activities to be sustained for the long term (economy); 2) aim for the equal, global distribution of wealth and the eradication of poverty (society); 3) and advocate for the protection of global ecosystems and their services from detrimental human activities and their aftermath, e.g., climate change (the environment) (Kemper, 2017). Following the WCED report, others expanded on the definition of sustainability and its context, fueling the development of Sustainability Science (Brown et al., 1987; Clark, 2007; Clark, Munn, & Conway, 1987; Turner, 1988). Some definitions emphasize the ecological aspect of sustainability, similar to Callicott and Mumford's (1997, p. 32) definition of "meeting human needs without compromising the health of ecosystems." Others focus on the social and economic aspects, like Dauncey's (2009, p. 1) "[...] a condition of existence which enables generations of humans and other species to enjoy social wellbeing, a vibrant economy, and a healthy environment, and to experience fulfillment, beauty, and joy without compromising the ability of future generations of humans and other species to enjoy the same" (Jones et al., 2011).

While academia keeps assessing its understanding of sustainability, differing interpretations of the concept's values and goals have permeated the global community (Harris, 2007; Ihlen & Roper, 2014), clashing over current and future solutions to socio-ecological crises. Subject to these debates is the lay public, to whom the plurality of sustainability interpretations generates uncertainty (Weder et al., 2019). And often, in my

experience, seems to limit their understanding of sustainability to general topics, e.g., recycling, community gardens, organics, or technological fixes such as changing light bulbs or turning to solar panels (Noppers et al., 2014). Notwithstanding the importance of these processes and actions, the perpetuation of such a narrow perspective among the public can be systematically detrimental to global sustainability goals. The transition to a sustainable society depends largely on changes to individual behaviors and lifestyles (Leiserowitz, Kates, & Parris, 2006; Steg & Vlek, 2009; World Watch Institute, 2010).

Consequently, theoretical and applied researchers have placed greater importance on efforts to promote sustainable behaviors among individuals (Hedlund-de Witt et al., 2013; Juvan & Dolnicar, 2014; Kemper, 2017; Wynveen, 2013; Etzioni 1999; Fien, Neil, and Bentley 2008; Corner, 2013; Yavetz, Goldman, and Pe'er, 2014; Chilton et al., 2012). They have used multiple social and psychological theories and transtheoretical approaches to promote behavioral changes, including the theory of planned behavior (Ajzen, 1985); attribution theory (Heider, 1983); beliefs-value-norm theory of environmentalism (Stern, 2000); cognitive dissonance theory (Festinger, 1962); innovation diffusion theory (IDT); and worldviews (Hedlund-De Witt, 2013; Koltko-rivera, 2004). All these theories agree on the importance of understanding our existing knowledge and awareness levels and the prevailing beliefs and perceptions in the effort to communicate and promote sustainable practices (Wynveen, 2013). This understanding of individuals' sustainability knowledge is important, now more than ever, to collectively aid in crafting a sustainable future. As Corner (2013) explains "people with different prior beliefs and worldviews evaluate the same information in very different ways, and therefore reach very different conclusions" (p. 9), adding that "if new evidence fits with our views, we are more likely to accept it" (p.10). Likewise, Chilton et al. (2012) argues that "to communicate something, a speaker must anticipate what a hearer is likely to understand" (p. 36). In keeping with this line of thought, Hedlund-De Witt (2013) has argued that a thorough understanding of individuals' worldviews is essential to address sustainability challenges effectively. Worldviews are composed of belief systems and social values within the system (Olse, Lodwick, & Dunlap, 1992) and are the lenses through which we interpret and operationalize socio-political systems. They also influence our willingness to partake in

solutions to sustainability challenges (e.g., climate change), making them essential in developing effective sustainability interventions.

RESEARCH OBJECTIVES

Research on how our understanding of sustainability and our disposition as a society to act accordingly lacks, especially in the United States, a country whose carbon footprint is the second-largest globally (Union of concerned Scientists, 2020). As a sustainability scholar, I am eager to help promote sustainability values, interventions, and lifestyles. Like my colleagues, I still believe we need to understand people's knowledge about and disposition towards sustainability to effect behavioral change. Thus, in this study, I focused on understanding the American public's sustainability worldviews and my own by examining related values, beliefs, and attitudes. Consequently, this research's findings provide evidence about how accepting the American public is of sustainability and whether they hold favorable values, beliefs, and attitudes needed to achieve a sustainable future. I also contribute an autoethnographic account of my role and experience as a sustainability scholar, practitioner, and advocate. As such, I aim to address the following objectives:

1. To examine how sustainability is perceived by the lay public in the United States.
2. To investigate the theoretical and philosophical barriers and opportunities towards the promotion of sustainability outside academia.
3. To examine the values, beliefs, and attitudes of sustainability among the American public.
4. To explore my understanding of sustainability and my perceived limitations to achieving a sustainable lifestyle.

RESEARCH APPROACH

To understand the world through a Westernized inquiry approach, researchers can employ three methodological approaches: quantitative, qualitative, and mixed methods (Creswell, 2014). A quantitative methodology is based on empiricism, i.e., truth and knowledge are found through induction and observation, focusing on facts and figures. In research, we use this approach when studying large samples, testing, and validating theory, and determining cause-and-effect relationships (Creswell, 2014; Kemper, 2017). Conversely, in line with its sociology and anthropology origins, qualitative methodology is concerned with individuals' conceptualization of the world (Taylor et al., 2015), allowing researchers to view the world through their eyes. Lastly, the mixed-method approach combines quantitative and qualitative research methods to achieve triangulation (Kemper, 2017). For this research, I opted for a mixed-method approach, as I intended to not only quantify but also employ inductive reasoning to interpret the unarticulated meanings and unstated assumptions about sustainability among the American public. Thus, I used an online survey methodology to measure sustainability worldviews and employed qualitative research methodology through an autoethnographic narrative.

INTRODUCTION

The study of sustainability through time is an opportunity to decipher the myriad of concepts, events, and individuals who have helped shape the modern ideas of social and environmental justice. It is also an opportunity for deep reflection and critique of those economic goals that promoted centuries of ecological destruction and social injustice, the same goals that still threaten our societies. However, history is also an invitation to revisit the human practices in equilibrium with the Earth, the same ones we can adapt to modernity. Thus, in this introductory chapter, I present a summary of the evolution of sustainability based on the writings of sustainability historians Jeremy Caradonna and Paul Warde, that have explored the western origins of the concept and associated perspectives. With this chapter, I aim to open a discussion on how definitions of sustainability have evolved based on some historical ideas, events, and people that and their influence on modernity. In this summary, I do not include the development of sustainability in non-Western societies because sustainability as a concept is conceived in the literature as a reaction to European countries' unsustainable practices since the 1600s.

The Evolution of Sustainability

If we want to talk about how definitions of sustainability have evolved throughout time, we need to recognize that sustainability is not a new concept coined by the 1987 Brundtland report, as many authors might argue (Caradonna, 2014; National Research Council, 1999). Instead, we should acknowledge that modern sustainability is just the latest iteration of a three-hundred-year-old debate. According to current literature, sustainability originated and was reinforced by western actors and events. As an ongoing topic of debate, we have not arrived at a precise definition of sustainability; hence the

approximately three hundred definitions found today (Johnston et al., 2007). Yet, we can all agree on its primary focus, the interconnectedness of the environment, society, and the economy. But the fast popularity of sustainability begs for a consensus in its definition as it is at risk of subjective interpretations by becoming a buzzword (Fischer et al., 2017; King, 2016).

In 1987, the Brundtland report, led by the prime minister of Norway, Gro Harlem Brundtland, introduced to the world the concept of Sustainable Development defined as "… paths of human progress that meet the needs and aspirations of the present generation without compromising the ability of future generations to meet their needs" (WCED, 1987; p.29). The report's novelty and audacity left a big impression among the international public, elevating the report to breakthrough status and the author of modern sustainability. Following the report, the new field of sustainability and sustainability science permeated society, encouraging authors and researchers to develop a more complex and precise definition of the concept. Among those that have tried to defined sustainability is Karl-Henrik Robèrt, who, along with his colleagues from the Natural Step organization in 1989, outlined a sustainability framework using the "four systems conditions for sustainability" (Caradonna, 2014; Heinberg, 2010). These conditions aim to safeguard natural ecosystems and individuals' integrity by emphasizing the rights of the environment and human populations to avoid being subjected to mindless destruction. Richard Heinberg, senior fellow-in-residence at the Post Carbon Institute, also contributed to the definition debate by developing five axioms that emphasize the conservation of resources, the protection of ecosystems, and the reduction of pollution but lack the social equity component of the Natural Step (Heinberg, 2010).

But physicist Albert A. Bartlett developed so far the most comprehensive yet complex definition of sustainability. Bartlett's definition of sustainability "focuses on the risks that unchecked population growth, economic growth, and fossil fuels pose to the long-term human existence on the planet" (Caradonna, 2014; p.9). Finally, John Drizek conceived sustainability as a broad debate concerning multiple discourses with less focus on environmental protection and population growth and more on energy supply, animal

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rights, species extinction, anthropogenic climate change, depletion of the ozone layer, toxic waste, the protection of whole ecosystems, environmental justice, food safety, and genetically modified organisms" (Caradonna, 2014).

Other authors have focused on social and economic aspects. For instance, The National Research Council in 1999 described sustainability as "the reconciliation of society's developmental goals with the planet's environmental limits over the long term as the foundation of an idea known as sustainable development." More recently, sustainability has been defined in terms of equity, as a series of positives results that develop a society that "satisfy its citizen's needs, is equitable in the distribution of its natural and social resources, promotes progress in the acquisition of knowledge, and maintains the integrity of all its natural resources" (Corral-Verdugo et al., 201; p. 97). Caradonna (2014), on the other hand, describes sustainability as a desire to create a safe, stable, prosperous, and ecologically minded society by acknowledging how humankind has created ecological imbalances. Finally, sustainability scientists have developed and defined what they call "the science of sustainability." For example, Clark & Dickson (2003) conceive sustainability as a science that conveys multiple sciences addressing a common theme. Kates et al. (2018) coin it as an emerging science "that seeks to understand the fundamental character of interactions between nature and society."

These definitions have contributed to the quest to find new ways to approach modern sustainability. However, it is essential to remember that these definitions were not conceived in a vacuum. They represent the values, beliefs, attitudes, and histories that, as a cultural group, we attach to the concept and reflect the multiple ideas and events that shaped the world starting three hundred years ago. In other words, these definitions are the product of sweeping new European perspectives in the 17th and 18th centuries about the relationship of humans to the environment, a critique of the Industrial Revolution socio-economic systems, the latest theories of economic growth, fears of overpopulation, and resource depletion among other threats. I now present four pivotal historical events that shaped modern sustainability through either the rise of new ideologies or the insights of important characters.

Sustainable Yield Forestry: The Birth of Sustainability 1600-1700s

The origins of our western conceptualization of sustainability go as far back as the 17th century, in western Europe, when imperial governments mobilized to avoid deforestation of their lands. The loss of trees not only affected the growing population of the region that relied on forests as means of work, fuels, and food. But it also threatened to overthrow European empires because, for their worldwide colonizing journeys, their navies required a constant supply of wood for the construction of warships, the key to the empires' economic stability. But the building of these ships was not resource-efficient as they required approximately 2,000-3,000 oak wood boards (Caradonna, 2014). At the time, the rapid deforestation (Europeans removed about 25 million hectares of forest between 1700 and 1850) coupled with a disregard for nature, population growth, and unrest, worrying European empires that began to exert resource conservation measures (Caradonna, 2014; Warde, 2011). Encouraged to protect the woodland in the name of economic stability by the end of the century, characters including British aristocrat John Evelyn, and French Minister of Finances Jean-Baptiste Colbert motivated the literate elite to plant trees or enacted controversial ordinances around forestry aimed to conserve forests. Although the primary objective of Evelyn and Colbert was to maintain naval and state power through energy independence, they defended the old idea of "posterity," commonly used in the protection of customary rights (e.g., the commons), as a new approach for the protection of natural resources, i.e., woods (Warde, 2011).

But the term sustainability was officially coined in the early 18th century by the German tax accountant and mining administrator Hans Carl von Carlowitz, father of the Sustainable Yield Forestry principle(Caradonna, 2014; Grober, 2007; Heinberg, 2010; Warde, 2011). Influenced by Evelyn and Colbert's philosophies and the Saxon empire's dependence on timber, Carlowitz turned to the study and conservation of forests. In his work, Carlowitz reflected on the interconnection between resource conservation and

economic/social stability and argued that industries could collapse if authorities did not reverse the deforestation trend. Ultimately, in his book Sylvicultura Oeconomica, or The Economic News and Instructions for the Natural Growing of Wild Trees, Carlowitz sketched out the structure of modern sustainability discourse (Grober, 2007) after analyzing connections between forest shrinkage and advances in technology, the propagation of diseases, social unrest, and conservation measures (Caradonna, 2014). However, it is debatable if Carlowitz introduced at the time the three pillars of sustainability. Historian Ulrich Grober argues that Carlowitz indeed referenced the three pillars as among his fundamental ideas was that "everybody has a right to nourishment and subsistence, including the "armen Untertanen" (the poor subjects) and the "liebe Posterität" (dear posterity)" (Grober, 2007, p. 20). But historian Jeremy Caradonna argues that Carlowitz only cared about trees because they were key to the continued wealth and power of the Saxon elites. And thus "as odd and unsavory as it may seem, he concludes that sustainability traces its roots primarily to imperialists (and Imperialists) who cared very little about nature or social justice and very much about state power, industrialization, and profit" (Caradonna, 2014, p. 44)

The Industrial Revolution 1750-1820

The social values with which modern sustainability identifies come from multiple critiques of the Industrial Revolution. In the late 18th century, Europe (and later the whole world) entered a new era of economic growth ushered by the newly conceived economic narrative of progress through industrialization. Although the story goes that the world's industrialization was a matter of moral progress and an undivided blessing, history has proven this to be an overstatement, if not a mixed blessing. The Industrial Revolution set in motion a series of economic and technological changes that have resulted in severe social inequality for the sake of private wealth; economic growth at the expense of the

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integrity of the environment (Commission, 1987); and the glorification of mechanized newness (Caradonna, 2014).

Social inequalities were exacerbated by introducing new technology in the transportation and textile industries, powered by coal, which decimated the workforce as fewer workers were needed for specific jobs, e.g., steam-power engines. The loss of rural incomes forced the proletariat to migrate and seek a living in industrial towns, characterized by pollution, poverty, ghettoization, child labor, loss of duty and reciprocity webs, and inhumane living conditions. Second, the extraction and production of coal since the 1750s opened the doors to a new Age of Human Innovation and Wealth and the Age of Pollution. Studies have shown that machinery gas emissions emitted into the atmosphere since the late 18th are the main culprit for today's climate system's destabilization (Caradonna, 2014; Jonsson, 2012; Schneider, 1989).

By the 19th century, the Industrial Revolution's success gave way to a narrative of resistance and contempt against a new economy that prioritized industry, economic growth, and greed over the population's wellbeing and the environment's health. Characters such as The Luddites, John Stuart Mill, Henry David Thoreau, William Wordsworth, and John Muir criticized some or all aspects of the Industrial Revolution. Their critique of pollution, inequality, and unsustainable growth resonated with political economists, e.g., Thomas Malthus, John Stuart Mill, David Ricardo, and William Stanley Jevons, who questioned the ability (or even desirability) of growth— of cities, of natural resource consumption, of the population— to continue indefinitely. Even though these economists helped establish the classical theory of capitalism, they dissented from the pie-in-the-sky optimism of many of their counterparts (Caradonna, 2014).

Thomas Malthus and Population Growth

In 1798, the British political economist and demographer Thomas Malthus questioned the motivations for unlimited growth and societal progress in his book "An Essay on the Principle of Population." Malthus's critique came "on the cusp of a changing economy and

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of unprecedented population growth in Malthus's backyard, but without much awareness on his part of these imminent great changes" (Bashford, 2014, p. 31). In his book, Malthus argued that economic growth was associated with unsustainable population growth. This growth could overpower the Earth's capacity to produce enough food, leading to a future demographic crisis. To counteract humanity's exponential growth, Malthus spoke of "checks" on the population, which prevented unlimited growth and which he divided into two classes: "positive checks" and "preventive checks" (Bashford, 2014). His central message, though, was that something always prevents the population from getting too large, and society is ethically obliged to face this challenge and do what is necessary and morally appropriate to avoid future catastrophes (Caradonna, 2014).

Malthus's "ecological" approach to population growth proved extremely influential to economists, systems theorists, demographers, and ecologists. For instance, Caradonna (2014) argues that the ecological economists of the 1960s and 1970s took Malthus's warnings as the starting point for their critique of economic growth and its consequences. Malthus's influence can be found in the Club of Rome's 1972 The Limits to Growth. And Herman Daly's 1977 Steady-State Economics, and E. J. Mishan's 1977 The Economic Growth Debate: An Assessment (Caradonna, 2014). Collectively, these "Neo-Malthusians" pushed for the reform of the economic field aimed to consider ecological limits more seriously and to avoid Malthus' demographic crisis.

The Limits to Growth by the Club of Rome

Many scholars agree that the groundbreaking moment for sustainability came with the 1972 Club of Rome groundbreaking report The Limits to Growth (Caradonna, 2014). This paradigm-shift text focused on accelerating industrialization, rapid population growth, widespread malnutrition, depletion of nonrenewable resources, and a deteriorating environment of the moment. The report concluded that:

1. "If the present growth trends in world population, industrialization, pollution, food production, and resource depletion continue unchanged, the limits to growth on this planet would be reached sometime within the next one hundred years.

2. It is possible to alter these growth trends and to establish a condition of ecological and economic stability that is sustainable far into the future. The state of global equilibrium could be designed so that the basic material needs of each person on Earth are satisfied and each person has an equal opportunity to realize his individual human potential.

3. If the world's people decide to strive for this second outcome rather than the first, the sooner they begin working to attain it, the greater will be their chances of success" (Meadows, 1972; p.23-24).

Scholars note that this was the first time the word sustainability appeared in its modern conceptualization. The club depicted it as a philosophy of social stability and the antithesis of suicidal growth. This opened the door for the debates and discussions that followed in 1980, including the 1987 Brundtland report that popularized the term sustainable development. And that push for the conceptualization of sustainability through the three pillars of the environment, economy, and equality (Caradonna, 2014).

CONCLUSION

This short ride through history gives us a glimpse of the evolution of sustainability that as a concept, movement, and science is a combination of past and modern cultural, economic, and societal changes. Thus, as sustainability scholars, researchers, and practitioners, we should recognize the events and the people that shaped our advocacy for the importance of our interconnectedness with the Earth. Sustainability has always been an in-progress centuries-old debate. Its history can serve as a valuable tool to critique capitalist industrialization's status quo and its impact on global societies and ecosystems. It is also an opportunity to envision and develop the sustainable society of the future by rediscovering the past wisdom of pre-industrial societies, the conceptions of renewable resource harvesting of the early eighteenth-century the views of a steady-state economy of the 19th century, and the desire for social justice and equality articulated by the myriad critics of the Industrial Revolution. By paying attention to the pioneers who shaped the

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idea of living in peaceful perpetuity upon the Earth and their warnings to craft new ways to be in equilibrium with the Earth. In the meantime, we also need to recognize that sustainability continues to evolve, integrating under its umbrella new perspectives to consider in our quest for a sustainable future. But what the future holds for the movement is unknown. I can only imagine that in the same way pivotal, historical moments shaped the worldviews of previous generations, our modern climate, and social justice movements, calls for the decolonization of our social and economic systems, and the integration of traditional voices and reparations debates are shaping global sustainability worldviews.

CHAPTER 2

UNDERSTANDING AMERICAN WORLDVIEWS RELATED TO SUSTAINABILITY

ABSTRACT

Understanding sustainability worldviews and resulting behaviors is critical to the field of Sustainability Science. As we face increasingly complex socio-ecological challenges, it is crucial to address the lenses through which individuals see the world and act upon, as these can aid or hinder sustainability goals. Previous research on sustainability discourses has investigated the diverging values and beliefs (worldviews) about what sustainability means to academics. No study has empirically investigated, however, worldviews and conceptualizations of sustainability amongst the American public. Consequently, I explored worldviews of sustainability through the development, administration, and quantitative analysis of an online survey. The survey measured five sustainability constructs to explore the sustainability worldviews of a representative sample of the U.S. population (N = 346). Results indicate two separate groups with distinct worldviews: Ambivalents and Sympathizers. Ambivalents tend toward neutral sustainability worldviews, while Sympathizers perceive sustainability more favorably.

INTRODUCTION

Worldviews are often described as the lenses/mechanisms through which individuals see the world, e.g., mental habits, frames, and assumptions (Kemper, 2017; van Egmond & Vries, 2011; Van Opstal & Huge, 2013). These have been discussed in multiple academic fields, e.g., philosophy, sociology, psychology, and anthropology (Hedlund-de Witt, 2013). Until recently, little attention had been paid to their influence on achieving sustainability goals (Van Opstal & Huge, 2013). Worldviews have been

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described as "the inescapable, overarching systems of meaning and meaning-making that inform how humans interpret, enact, and co-create reality" (Hedlund-de Witt, 2013, p.156); as well as the ontological and epistemological foundations of individuals' belief systems (Koltko-rivera, 2004).

Worldviews are composed of belief systems and social values within the system (Olse, Lodwick, & Dunlap, 1992). A value is "a single belief...that has a transcendental quality to it, guiding actions, attitudes, judgments and comparisons across specific objects and situations beyond immediate goals to more ultimate goals" (Rokeach, 1973; p. 18). Rokeach (1973) identified two types of values: terminal and instrumental. Wherein terminal values concern the set of beliefs a person holds about desirable end-states (e.g., world peace, happiness, national security, equality, etc.), instrumental values concern beliefs about modes of conduct (e.g., honesty, loyalty, responsibility, etc.). On the other hand, beliefs are specific ideas about any aspect of life that individuals believe is true regardless of the evidence (Olsen et al., 1992). Beliefs have been classified as 1) descriptive/existential beliefs, those which may be true or false; 2) evaluative beliefs, wherein the object of belief is judged to be good or bad; and 3) prescriptive/proscriptive beliefs, wherein the desirability of the means or end of action is judged (Kemper, 2017; Koltko-Rivera, 2004). A collection of beliefs regarding a specific object or situation defines an attitude (Rokeach,1973), which then becomes an expression of a value (Rokeach, 1979). Consequently, worldviews are a fundamental part of individuals' identities (Brown et al., 2008) and key influencers in sustainability's highly polarized and deeply entrenched societal debates (e.g., climate change). Thus, theoretical and empirical insights of worldviews are an "essential element in approaches aiming to design and support more sustainable pathways for society" (De Witt et al., 2016; p. 101).

The multiple interpretations and debates about the meaning of sustainability demonstrate that sustainability is essentially a question of beliefs, values, and attitudes, consequently allowing corporations, organizations, communities, and individuals to interpret sustainability through their own lens (Sidiropoulos, 2018). This has led

researchers to investigate the relevancy of worldviews in sustainability, including De Witt, Boer, Hedlund, & Osseweije (2016), De Witt, de Boer, Hedlund, & Osseweijer (2016), De Witt (2013), De Witt (2013) and Kemper (2017). De Witt (2013) operationalized worldviews by distinguishing and articulating five different aspects of worldviews: ontology, epistemology, axiology, anthropology, and societal vision (See Table 1). Of the five, the first three aspects seem to be the most common with other disciplinary approaches (Johnson et al., 2011; Koltko-rivera, 2004), suggesting a fair degree of interdisciplinary agreement and overlap (De Witt et al., 2016).

De Witt et al. (2016) later identified four differing sustainable development worldviews through the Integrative Worldview Framework (IWF): traditional, modern, postmodern, and integrative; and analyzed the relationship between worldviews and the climate change debate. Focusing on academia, Kemper (2017) analyzed sustainability worldviews among faculty members and students at marketing schools worldwide. Her findings show the prevalence of four distinct worldviews for each group, including passionates, advocates, ambivalents, skeptics for faculty members, and believers, supporters, followers, and doubters for students.

Table 1 The five aspects of worldviews, including exemplary questions and concerns for each of them (adapted from Hedlund et al., 2013)

Ontology	A perspective on the nature of reality, often enriched with a cosmogony.	What is the nature of reality? What is nature? How did the universe come about? If there is such thing as the divine, what or who is it, and how is it related to the universe?
Epistemology	A perspective on how knowledge of reality can come about.	How can we know what is real? How can we gain knowledge of ourselves and the world? What is valid knowledge, and what is not?

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Axiology	A perspective on what a 'good life' is, in terms of morals and quality of life, ethical and aesthetic values.	What is a good life? What kind of life has quality and gives fulfillment? What are our most cherished ethical and aesthetic values? What is life all about?
Anthropology	A perspective on who the human being is and what his role and position is in the universe.	Who or what is the human being? What is the nature of the human being? What is his role and purpose in existence?
Societal Vision	A perspective on how society should be organized and how societal problems and issues should be addressed. How should we organize our society? How should we address societal problems and issues?	How should we organize our society? How should we address societal problems and issues? How do we collectively envision our social life?

Societies, just as individuals, hold worldviews. Societal worldviews tend to be the dominant worldviews, i.e., those held by the majority of a society or its most powerful groups (Kemper, 2017; van Egmond & de Vries, 2011). Today, the dominant worldview or dominant social paradigm (DSP) is that of western industrial societies, based on political and economic liberalism (Kemper, 2017; Kilbourne, 2004; van Egmond & Vries, 2011). The DSP espouses beliefs of limitless needs, progress embedded in economic growth, laissez-faire economics, human rule over nature, individual property rights, and technological solutions to environmental problems (Kemper, 2017; Kilbourne, 2004). This worldview is often seen as the root of our unsustainable practices as our consumerist and materialistic society and scientific and technological success/unintended consequences adhere to its beliefs (Kemper, 2017; Kilbourne, 2004; van Egmond & Vries, 2011).

Consequently, sustainability can be seen as a response to the effects of DSP on its economy, social, and environmental dimensions. In this sense, theoretically, the DSP is limited to the last two aspects of a worldview, i.e., anthropology and societal visions, as it encourages human exceptionalism and its power over nature and positions technological advances as the panacea of humankind. Since I am interested in values, beliefs, and attitudes related to sustainability, I focused on these two dimensions to analyze current worldviews of sustainability (Kemper, 2017; Witt et al., 2016). Given a lack of research on the American public's sustainability in this study, I aimed to understand how a sample of the U.S. public perceives sustainability and what are their associated worldviews of the concept.

METHODOLOGY

Survey Development

Following Kemper (2017), who measured sustainability worldviews of marketing academics, I developed an online survey through Qualtrics, focusing on values, beliefs, and attitudes related to sustainability to elicit participants' worldviews. Worldviews were measured through several social constructs, widely discussed in the sustainability literature, including social (in)equality, economic growth, consumption, the environment, and well-being. I assessed each social construct using previously developed and validated scales. Also, I employed a set of multiple-choice questions to evaluate sustainability attitudes and beliefs among the participants.

Social (in)equality was measured through the new Social Dominance Orientation scale developed by Ho et al. (2015). This eight-item measure focuses on individual differences in the preference for group-based hierarchy and inequality. It has been described as a "potent predictor of generalized prejudice against, and persecution of, a wide array of denigrated groups" (Ho et al., 2015, p. 4)

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Economic growth and consumption issues were measured using two separate eight-item scales designed by Kemper (2017). Economic growth was measured through two scales 1) The Economy, an aggregate of four survey items from Killbourne et al. (2001) and one from Gallup polls (2017); and 2) the Social vs. Economic Growth Scale, also an aggregate of survey items designed by Kemper and Drews and van den Bergh (2016). The combined scales reflected "beliefs in the need for economic growth and its benefits" (Kemper, 2017; p. 215). Consumption was measured through the consumption scale developed by Kemper (2017), addressing the need for change in consumption patterns, how change should come about, and why change is needed.

Environmental concerns and values were measured using the revised 15-item New Environmental Paradigm (NEP). Well-being was measured through the Satisfaction with Life (Diener et al., 2013) and Orientations to happiness scales (Peterson & Park, 2005). And lastly, sustainability definitions, attitudes, and conceptualizations were measured with the Australian Government's Australian Learning and Teaching Council (ALTC) sustainability achievement standards, the Sustainability Attitudes Scale (SAS), and Cotton et al., (2007) nine-item, five-point Likert-type scale. An initial open-ended question measured participants' conceptualization of sustainability by asking them to list all the words, ideas, or phrases that come to mind hearing the word sustainability, similar to (Kagawa, 2007).

All survey items were closed questions for ease of analysis and measured using five-point Likert-type scales ranging from 1 = Strongly Agree to 5 = Strongly Disagree. Other items asked respondents to select the 'best' option from a multi-choice set. Likert and modified Likert scales are very common in surveys, especially those in consumer behavior, and those measuring environmental values and agree-disagree scales are especially common. Previous research has shown that 5 answer categories rather than 7 or 11 yield data of higher quality (Revilla, Saris, & Krosnick, 2013). In addition, many validated scales used in the survey were based on a 5-point scale (i.e., NEP). Questions that were positively worded represent the construct of interest (critical view of social equality, consumption,

environment, wellbeing, and positive view of sustainability) (DeVellis, 2012). To examine participants' attention throughout the survey, I added two attention-check questions at the end of the Economic growth and NEP items. After completing all the tasks, participants answered a few demographic questions, including gender, age, race, marital status, and political leaning.

Survey Administration, Participants, and Data Collection

Participants, representative of the U.S. population, were recruited to participate in a 15-minute Qualtrics survey administered through the online platform Prolific. Prolific allows the online recruitment of survey participants (18 years +) in exchange for monetary compensation. For this study, participants received $2.06 for survey completion (a higher amount in comparison to studies such as Truelove & Gillis (2018) that pay ~ 0.75 cents). I chose to perform an online survey instead of a face-to-face, telephone, or mail survey to reduce the data collection period and increase data collection convenience. Online surveys have the advantage of reaching a wide range of potential respondents, are convenient for participants to access, and are low in costs (Bethlehem, 2009). Also, Prolific participants are often used in social science research due to their rapid and high-quality data (Peer et al., 2017). Moreover, online surveys are a standard instrument for assessing environmental worldviews (e.g., Christie et al., 2015; Cotton et al., 2007; Kagawa, 2007).

To participate in surveys administered through the Prolific, individuals first need to sign up to become members of the platform. During this process, individuals answer questions related to various topics, including family, religion, mental health, consumption patterns, languages, demographics, etc. The answers to these questions aid in tailoring survey populations for research, thus allowing researchers to access target demographics (Palan & Schitter, 2018). Consequently, Prolific members were already screened based on my study's requirements of a representative sample of the United States.

The survey was launched on Prolific on the 6th of November 2020, and it took less than six hours to collect the target amount of 400 survey responses. These responses were

conjunctly recorded in Qualtrics. Only completed survey responses were analyzed. Due to the self-contained nature of the questions, no maximum time limit was applied. Next, initial data cleaning and analysis was completed, transferring Qualtrics data into Excel. Participants that omitted 1-2 answers to different items throughout their surveys (57) were excluded from the current analysis, resulting in a sample size of N= 346.

METHODS

Data Analysis

I employed multiple statistical techniques to analyze the data, including Principal Component Analysis (PCA), cluster analysis, one-way ANOVA, and paired sample t-test. The statistical software SPSS Statistic 23.0 was used to analyze the data. All results were considered significant at the p = 0.05 level.

Principal Component Analysis

Principal component analysis (PCA) is a mathematical algorithm that reduces the dimensionality of data while retaining most of the variation in the data set. It is achieved through the analysis of a data table in which observations are described by several inter-correlated quantitative dependent variables (Ringnér, 2008). Dimensionality reduction is accomplished by identifying directions which are new orthogonal variables called principal components (Cs) that account for a large portion of the total variance in the original measured variables (Xs). By using a few components, samples can be represented by relatively few variables rather than values for thousands of variables. Samples can then be plotted, making it possible to visually assess similarities and differences between samples and determine whether they can be grouped. Reducing the number of variables of a data set naturally comes at the expense of accuracy. Still, the trick in dimensionality reduction is to trade a bit of accuracy for simplicity. Smaller data sets are then easier to explore, visualize, and analyze for machine learning algorithms without extraneous

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variables to process. The quality of the PCA model can be evaluated using cross-validation techniques such as the bootstrap and the jackknife (Williams, 2010).

Emergent components are uncorrelated linear composites of the original variables that extract maximal variance from the data. Reducing the number of attributes (dimensions) of numerical data with PCA has been found to preserve the cluster structure (Combes & Azema, 2013). To identify the number of components to extract from each scale, I used O'Connor's (2000) SPSS and SAS programs parallel analysis procedure and Velicer's Minimum Average Partial test (MAP). In addition, all scale items with low communalities (< 0.5) were eliminated (Hair et al., 2010). After, PCA components were identified based on the loadings of scale items.

One-way ANOVA and T-Tests

One-way ANOVA is a statistical test that compares the variance in the mean between two or more populations considering only one variable or factor (Malhotra, 2010). The One-way ANOVA has several assumptions for valid results: normal distribution, equal variances, groups containing approximately the same sample size, and independence (Malhotra, 2010). T-tests, on the other hand, are parametric tests that yield a t score, a ratio that tests the difference between two groups and the difference within the groups. A T-test assumes and requires the dependent variable to be normally distributed, a population's variance able to be calculated, and a known mean to be present (Malhotra, 2010). The larger the t score, the more difference there is between groups and vice versa. A paired t-test (also called a correlated pairs t-test, a paired samples t-test, or dependent samples t-test) is where you run a t-test on dependent samples. Dependent samples are essentially connected — they are tests on the same person or thing. I used a paired t-test to analyze the difference between cluster solutions and identify the appropriate number of worldviews in my sample (Glen, n.d.)

Cluster Analysis

Cluster analysis is a statistical method widely used to classify and group objects by measuring their dispersion within the clusters or how similar objects are within their classification. These are typically divided into categories or clustering variables based on predetermined characteristics and statistical means. There are multiple types of cluster analysis, including hierarchical, non-hierarchical (k-means), and two-step cluster analysis. In this research, I employed both hierarchical cluster analysis and k-means cluster analysis. In a hierarchical cluster analysis, the data is divided into groups/clusters with minimal differences among subjects within each subgroup, distinguishing similarities among individuals based on the sustainability worldviews. Conversely, the k-means method is a non-hierarchical form of cluster analysis that considers misgrouping errors and allows any cluster or subject to be regrouped later on in the grouping. Initial criteria and the number of groups need to be determined before grouping (Everitt et al., 2011).

I applied hierarchical cluster analysis using Ward's method to the mean item scores of the 11 components. The preliminary analysis resulted in a dendrogram for a range of solutions that, along with one-way ANOVA analysis suggested two to three groups for the data set. I analyzed these solutions further through K-means to identify the best option. I selected the best option by analyzing each grouping's iteration history table, the final cluster centers table, and the post hoc multiple comparison table using Bonferroni correction for the three-cluster solution; along with a paired sample test for the two-cluster solution.

<center>RESULTS</center>

Demographic Profiles for the Sample

Table 2 displays the sample's demographic characteristics, which contained 49.9% females and 48.7% males (less than one percent did not identify their gender). Several

geographic regions are represented with 33.7% from the east coast, 27.7% from the Midwest, 12.1% from the gulf coast, and 24.2% from the west coast, with most individuals identifying as White Americans (67.9%). Regarding education, more than 60% of individuals reported having some college experience, with 34.4% indicating a bachelor's degree, higher than the national average of 32.1% (McElrath & Martin, 2021). When asked about political leaning, 45.7% lean Democrat, followed by 31.2% who identified as Independent.

Table 2 Socio-demographics of the sample (N = 346)

Demographic Variables	Category	Frequency	%
Gender	Female	173	50.0
	Male	169	48.8
	Other	4	1.2
Region of residence*	East Coast	117	33.8
	Midwest	99	28.6
	Gulf region	42	12.1
	West Coast	81	23.4
Race	Black Americans	41	11.8
	Hispanics	14	4.0
	White Americans	235	67.9
	Asian Americans	26	7.5
	Two or more races	22	6.4
	Other	8	2.3
Level of Education	High school diploma	31	9.0
	Some college credit	89	25.7

	Associates or vocational training	41	11.8
	Bachelor's degree	119	34.4
	Graduate degree	62	17.9
	Other	4	1.2
Political Leanings	Democrat	158	45.7
	Republican	52	15.0
	Independent	108	31.2
	Other	28	8.1

Sustainability Attitudes and Definitions

Individuals were asked about their attitude towards sustainability using a multi-choice question. Figure 1 shows that positive attitudes towards sustainability were overwhelmingly high, with most individuals indicating it is "a good thing" (68%) and with 23% identifying themselves as "passionate advocates."

How would you describe your attitude towards sustainability?
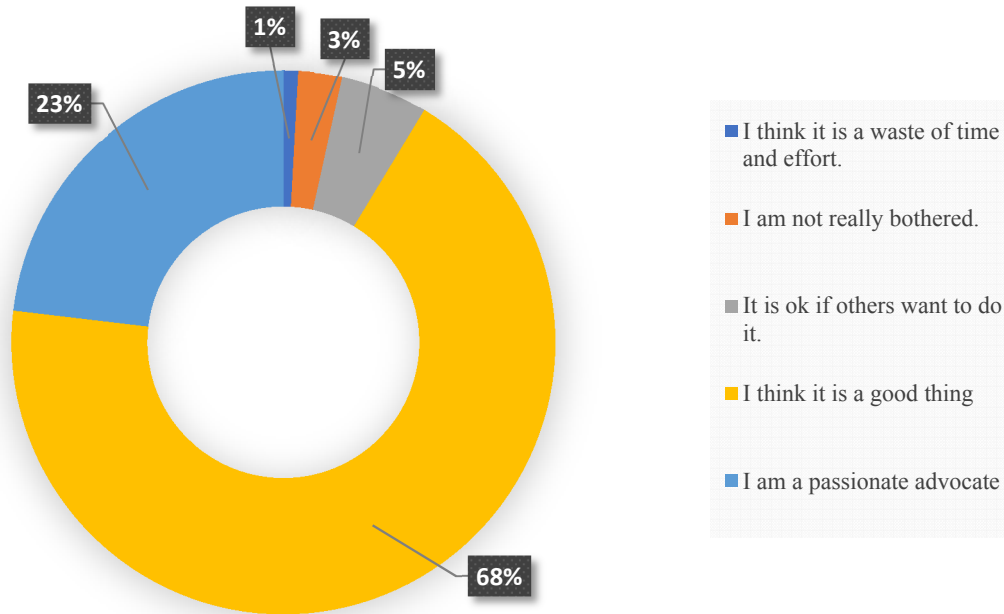
Figure 1 Sustainability Attitudes. Count in percentages (%)

Figure 2 provides definitions of sustainability as described by the ALTC (2010). The majority (73%) of individuals define sustainability, at a minimum, as including three domains: economic, social, and environmental. However, 22% still limit their perception of sustainability to environmental concerns only.

Which sustainability conception is most consistent with your own beliefs?

- 5%
- 22%
- 44%
- 29%

■ Sustainability is limited to the idea of "keeping self or business going."

■ Sustainability is understood in terms of the environmental domain of sustainability.

■ The three broad domains of economic, social, and environmental are discerned, and generational responsibility are acknowledged.

■ Sustainability goes beyond the three domains, critically recognizing the relevance of external
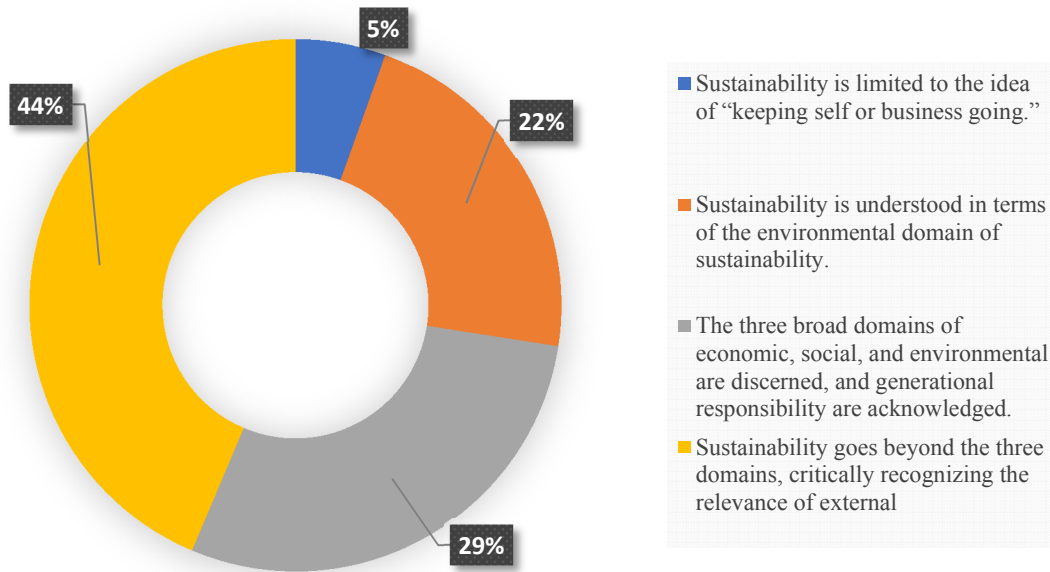
Figure 2 Sustainability Conception. Count in percentages (%)

A total of 3,491 keywords were offered to conceptualize sustainability. More than 75% of the keywords used to describe it are related to the environment, followed by long-term keywords (7%) (See Figure 3). Keywords conceiving sustainability in terms of improvement were the lowest, comprising less than a percentage of the entries. Table 3 describes the different categories, codes, and associated examples.

Sustainability Key Words
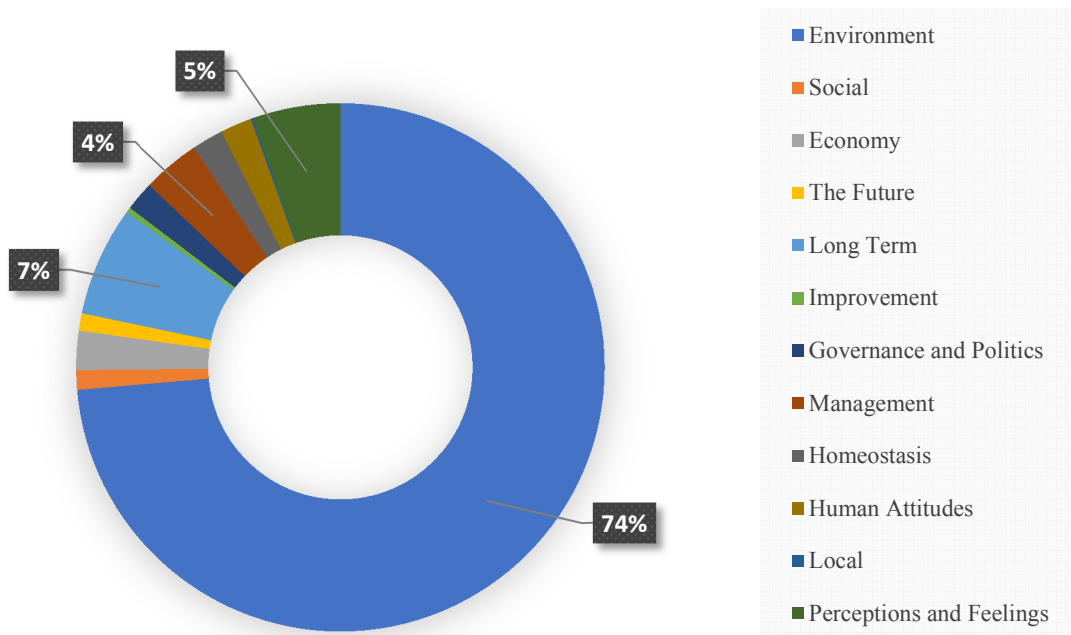
Figure 3 Percentages of Sustainability Key Words

Table 3 Categories used to code keywords for sustainability. Adapted from Kagawa (2007)

Categories	Codes	Examples
Sustainability pillars	Environmental	Alternative/clean energy; biodiversity; conservation; environment/environmental; environmental/eco-friendly; earth; green; organic food; recycle
	Social	Diversity; equality; equity; public transport; people; social; social justice
	Economic	Economy; fair trade; poverty; production
Temporal		

	The Future	Future; future generations; our children;
	Long Term	continuous; long-term; on-going
	Improvement	growth; improvement; progress
	Stability	Consistent; stable; stay the same
Approaches towards sustainability	Governance, policy, politics	Green new deal; legislation
	Management	Control; maintain; manage; plan; prevent; support; conserve
	Homeostasis	Balance; harmony; self-sufficiency ethical
	Human Attitudes	health; moral; responsibility; well-being
Scale/level	Local	Local; community
Perceptions of sustainability	Perceptions/feelings	Beneficial; challenging; controversial; essential; good; needed; necessary; positive
	Sustainability Actions	Not wasting food; walking, veganism; plant-based diet; minimize unnecessary consumption

Responsibility for protecting the environment

As seen in Figure 4, individuals overwhelmingly agree that the government, business and industry, and individual citizens should all have equal responsibility for protecting the environment (80%). This finding suggests that there may be a lesser belief in free-market ideology, at least concerning the treatment of environmental issues. Studies have found that belief in free-market ideology is negatively associated with the perception that companies should respond to climate change (Unsworth, Russell, & Davis, 2016).

Who should have the primary responsibility to protect the environment?
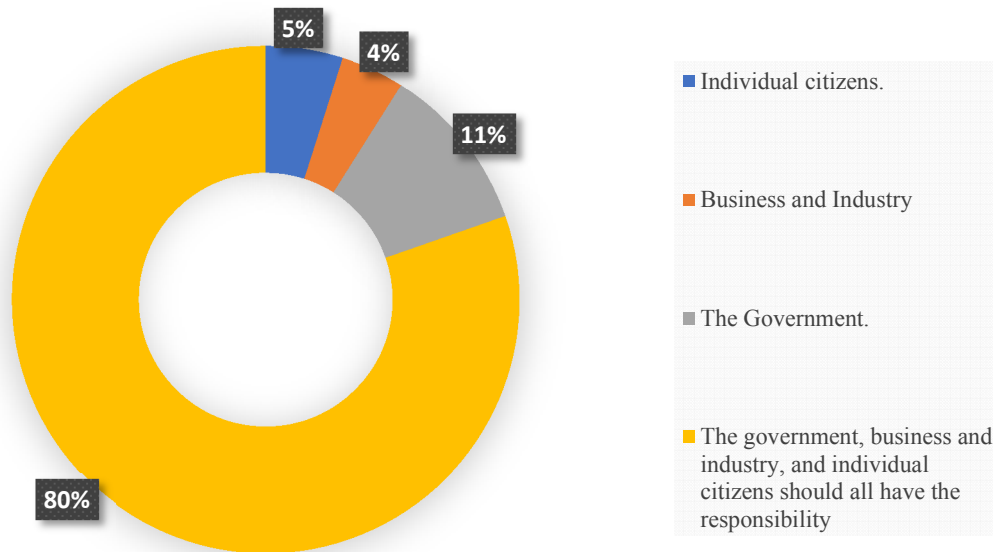
Figure 4 Environmental Responsibility Beliefs. Count in percentages (%)

Climate Change Beliefs

The results in Figure 5 demonstrate that, overwhelmingly, a sample of the U.S. population believes in climate change (75%); over 19%, however, are not sure that climate change is occurring (indicated by the response 'possibly yes'). These results show a change in beliefs among the American public. Past research has also shown that 28% are sure global warming is happening, 32% very sure, 37% somewhat sure, and 3% not sure at all (Leiserowitz et al., 2015).

Do you think climate change is happening?
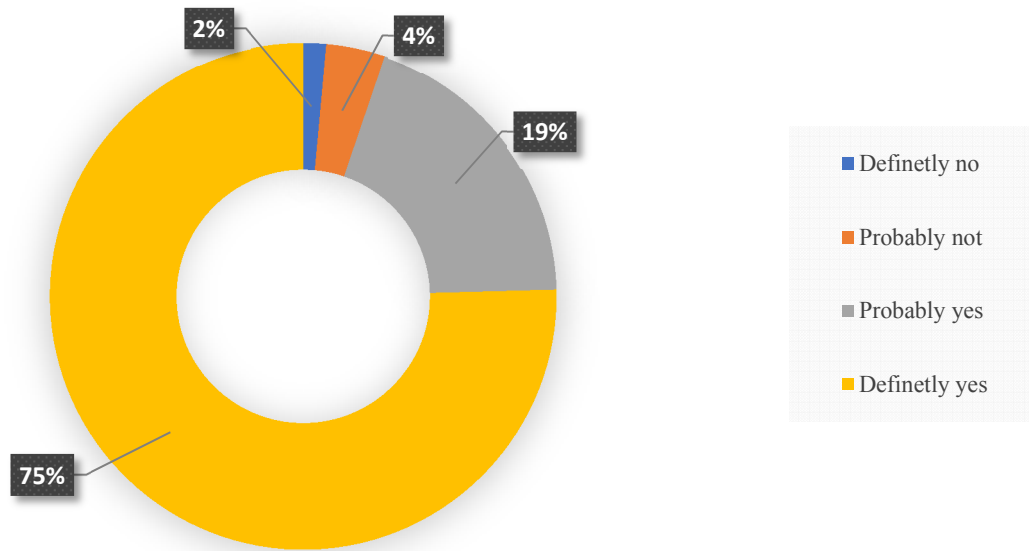
Figure 5 Climate Change Beliefs. Count in *percentages (%)*

Structure of a Sustainability Worldview

Principal component analysis served as a categorizing tool to reduce the original number of variables from 85 to 11 variables/components based on item loadings. The items contributing to each component are added together to create component scores for each respondent; these, in turn, contribute to creating a sustainability construct. I created five distinct constructs related to sustainability (Table 6).

Table 4 indicates that, in general, respondents assert that all social groups are equal, and no group should dominate in a society ($M_{Anti-Dom}$ = 4.00). They also assessed that we should actively work toward equalized conditions for different groups in our society ($M_{ProEqual)}$ = 4.20), and this should be our primary goal (M_{GEqual} = 3.56). This sample of the U.S. population also agrees that western society's consumerism patterns are

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environmentally dangerous and need to be modified ($M_{\text{Anti-Consum}}$ = 4.17). In this regard, as humans, we are responsible for current and future environmental crises ($M_{\text{EcoCrisis}}$ = 4.02), and there is some agreement among individuals that ideas and practices of human domination over nature should be discarded ($M_{\text{AntiAnthro}}$ = 3.27). Individuals also somewhat agree that there are ecological limits to the number of people that the Earth can support (M_{EcoLim} = 3.45). Regarding the economy, most individuals agree that economic practices should not take priority over the environment ($M_{\text{AntiEconLib}}$ = 4.13), and our focus should be on social welfare instead of economic growth (M_{EcoVWel} = 3.80). In terms of wellbeing, individuals somewhat disagree with the constant search for pleasure in their lives ($M_{\text{LifePlleasure}}$ = 2.92) although they're not particularly satisfied with them ($M_{\text{SatisfLife}}$ =2.89).

Table 4 Sustainability constructs with their associated survey items, calculated Mean (M) and Standard Deviation (S.D.). and measured with Likert-type scales ranging from 1= Strongly agree to 5 = Strongly disagree.

Construct	Component	Scale Items	M	SD
Social Equality	Anti- Dominance (AntiDom)	- An ideal society requires some groups to be on top and others to be on the bottom.* - Some groups of people are simply inferior to other groups. * - No one group should dominate in society. - Groups at the bottom are just as deserving as groups at the top.	4.00	0.94
	Pro-Equality (ProEqual)	- We should do what we can to equalize conditions for different groups. - We should work to give all groups an equal chance to succeed.	4.20	0.94
	Group Equality (GEqual)	- Group equality should not be our primary goal.* - It is unjust to try to make groups equal.*	3.56	1.22
Consumption	Anti-consumerism (AntiComsum)	- The Western world (including the U.S.) will have to drastically reduce its levels of consumption to combat growing environmental problems.	4.17	0.81

				Mean	SD
		-	Our present way of life is much too wasteful of natural resources		
		-	We, as a society, should drastically change our way of living to combat growing environmental problems.		
		-	We, as a society, are very preoccupied with acquiring and accumulating things.		
Environment	Ecological-crisis (EcoCrisis)	-	When humans interfere with nature, it often produces disastrous consequences.	4.02	0.80
		-	Humans are severely abusing the environment.		
		-	If things continue on their present course, we will soon experience a major ecological catastrophe.		
		-	The so-called "ecological crisis" facing humankind has been greatly exaggerated.		
		-	The balance of nature is very delicate and easily upset.		
	Anti-anthropocentric (AntiAnthro)	-	Humans have the right to modify the natural environment to suit their needs.	3.27	0.85
		-	The Earth has plenty of natural resources if we just learn how to develop them.		
		-	The balance of nature is strong enough to cope with the impacts of modern industrial nations.		
		-	Humans were meant to rule over the rest of nature.		
		-	Humans will eventually learn enough about how nature works to be able to control it		
	Ecological limits (EcoLim)	-	We are approaching the limit of the number of people the Earth can support.	3.45	1.02
		-	The Earth is like a spaceship with very limited room and resources.		
	Anti-Economic Liberalism (AntiEconLib)	-	The best measure of progress is economic. *	4.13	1.09
		-	If the economy continues to grow, everyone benefits.*		
		-	Economic goals are more important than environmental goals.*		

Economic Growth		- Economic growth should be given priority, even if the environment suffers to some extent.*		
	Economy vs. welfare (EcoVWell)	- We should be more concerned about social welfare (such as happiness, life satisfaction, etc.) than economic growth. - Reducing poverty in the world should get a higher priority than economic growth. - Making income distribution more equal should get a higher priority than economic growth.	3.80	1.01
Wellbeing	Life of Pleasure (LifePleasure)	- Life is too short to postpone the pleasures it can provide. - I go out of my way to feel euphoric. - In choosing what to do, I always take into account whether it will be pleasurable. - I agree with this statement: "Life is short - eat dessert first." - I love to do things that excite my senses. - For me, the good life is the pleasurable life	2.92	0.84
	Satisfaction with Life (SatisfLife)	- In most ways, my life is close to ideal. - The conditions of my life are excellent. - I am satisfied with my life. - So far, I have gotten the important things I want in life. - If I could live my life over, I would change almost nothing.	2.89	1.01

*Reverse coded items

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Sample Cluster Analysis

Ultimately, the results of the cluster analyses suggested a two-cluster solution as the best option (at .05 significance levels) what I have named (1) the Ambivalents (similar to Kemper (2017), and, (2) the Sympathizers. Table 5 displays the means for each component corresponding to each grouping. Next, I will discuss each cluster in relation to these components' means.

Table 5 Sample's Sustainability Beliefs Clusters

	Clusters	
	Ambivalents *(n=131)*	Sympathizers *(n = 215)*
$M_{\text{Anti-Dom}}$	3.16	4.51
M_{ProEqual}	3.41	4.68
M_{GEqual}	2.45	4.24
$M_{\text{Anti-Consum}}$	3.67	4.47
$M_{\text{Eco-Crisis}}$	3.44	4.37
$M_{\text{Anti-Anthro}}$	2.73	3.59
$M_{\text{Eco-Lim}}$	3.06	3.70
$M_{\text{Anti-EconLib}}$	2.70	3.67
M_{EcoVWel}	3.02	4.27
$M_{\text{SatisfLife}}$	3.06	2.79

Ambivalents

Ambivalents, represent 37.86% of the sample. Their name reflects their ambivalent/contradictory beliefs about social equality and, on average, are not too worried about current inequality among groups in society (M_{GEqual} = 3.44). They have mixed feelings about society's focus on economic growth rather than social welfare (M_{EcoVWel} = 3.02). Still, they agree with approaches of economic liberalism, meaning that they believe in economic

growth and material well-being.   They are somewhat anti-consumption ($M_{Anti-Anthro}$ = 3.67). Ambivalents are somewhat concerned about the ecological crisis and ecological limits but at the same time rather anthropocentric.

Ambivalents are more likely to reside in the eastern part of the U.S. (38.93%), have an annual income of more than $50,000 (51.14%). The majority are white males (76.33%) and college educates (64.89%). They likely lean Republican (32.06%) or Independent (33.59%) and are more likely to think that sustainability is limited to the environment (53.44%). They have positive attitudes toward sustainability and think it is a good thing (68.70%) and that everyone, including citizens, governments, and industries, should have the primary responsibility to protect the environment (80.15%). Finally, they think that climate change is probably happening (38.93%) or definitely happening (48.85%).

Sympathizers

Sympathizers represent 62.14% of the sample, and their name reflects their leanings toward sustainability values. They are critical/oppose of values of group dominance ($M_{Anti-Dom}$ = 4.51) and support social equality ($M_{ProEqual}$ = 4.68) as well equality among social groups (M_{GEqual} = 4.24). Although they agree on the relevancy of wellbeing over economic growth ($M_{EcoVWel}$ = 4.27), they are not too critical of economic liberalism. In contrast, Sympathizers are critical of consumption issues in society. While they are concerned ($M_{Anti-EconLib}$ = 3.67) about the ecological crisis, they are less concerned about the ecological limits and somewhat espouse anti anthropocentric beliefs.

Unlike ambivalents, Sympathizers are not limited to geographic regions. They have an annual income of less than $50,000 (55.35%). The majority are females (56.28%) and college-educated (58.14%)—leaning Democrat (57.21%). Similar to Ambivalents, they have positive attitudes towards sustainability, thinking "it is a good thing" (68.37%). They assert that everyone, including citizens, governments, and industries, should have the primary responsibility to protect the environment (80.93%) and that climate change is

"definitely happening" (91.63%). They are overwhelmingly inclined to think that sustainability goes beyond the three domains, critically recognizing the relevance of external authorities, societal rules, and organizational agendas (91.63%).

DISCUSSION

The objective of this study was to examine the sustainability worldview of a sample of the U.S. population. The best way to articulate such worldviews is through the creation of typologies, i.e., grouping individuals by their fundamental values, beliefs, and attitudes broadly related to sustainability. As Kemper (2017) suggests, we can discern the differing views of sustainability in our society and evaluate the current perceptions and need to address certain assumptions or beliefs in specific individuals through typologies.

Typologies are middle-range theories that bridge between general theories and empirical phenomena (Doty & Glick, 1994). Different from classification systems, typologies are used to identify multiple theoretical or "ideal" types. Usually, in middle-range theory, the theorizing process is "characterized by reasoning; where conceptual work is intertwined with empirical research" (Brodie, 2013, p. 96). Since the ideal types rarely exist in the real world in their 'pure' form, the actual values, beliefs, and attitudes can lie between the clusters and may even resemble the ideal types to different degrees (Doty & Glick, 1994). As mentioned above, the cluster analysis for my sample revealed two sustainability worldviews in the United States, Ambivalents and Sympathizers.

The Ways of the Ambivalents

Social Equality: To Dominate or to Subordinate

Individuals who hold an Ambivalent worldview represent 37.86% of the sample. As referenced by their given name, they have a neutral sustainability worldview. While endorsing positive attitudes about sustainability, they have ambivalent beliefs toward

several constructs and scored low in others. For example, they are ambivalent about social dominance and consequently social equality and are not particularly worried about current inequality among groups. Such an ambivalence sheds light on the theory of social dominance (Sidanius et al., 1994).

Social dominance theory describes how we tend to organize ourselves as group-based social hierarchies, with some groups exerting power over others (Lee et al., 2011; Sidanius et al., 1994; Sidanius & Laar, 2004). Social hierarchies are built on our attitudes about inequality between social groups in general, or our social dominance orientation, aiding in the production and reproduction of systems of social inequality (Pratto et al., 1994). Social dominance orientation has been divided into two specific subdimensions, support for intergroup dominance and intergroup anti-egalitarianism. The dominance dimension is characterized by "support for overt oppression and aggressive intergroup behaviors designed to maintain the subordination of one or more groups" (Ho et al., 2015, p. 3); this may indicate old-fashion racism. While Ambivalents do not support the aggressive oppression of social groups, they are not critical of it.

Anti-egalitarianism, on the other hand, is more subtle in its nature as it supports unequal intergroup access to power and resources but without outright domination and oppression, characteristic of the dominance dimension. Ambivalents' attitudes suggest a correlation with the anti-egalitarian dimension of the social dominance scale. Anti-egalitarianism is correlated with political conservatism in the United States (Ambivalents tend to be either Conservatives (32.06%) or Independents (33.59%); the support for inequality leaning ideologies (e.g., the Protestant Work Ethic); and opposition to intergroup equality policies (e.g., affirmative action). Consequently, ideologies and policies that maintain inequality, especially those that have ostensibly different purposes (such as economic efficiency and meritocracy), are an expression of the anti-egalitarianism dimension (Ho et al., 2015).

The Economy and Environmental Contradictions

In terms of the economy, Ambivalents share some more divergent beliefs about the need for and priority given to economic growth. Ambivalents favor notions of economic liberalism, i.e., the necessity of economic growth and the definition of progress as increases in individual material wellbeing (Kilbourne et al., 2001). Indeed, it is a topic of great debate and importance for many Americans who constantly assert that economic growth should be among the top five aims of the United States (The World Values Survey, 2017). The debate has increased more after the economic hiatus by the coronavirus pandemic of 2020. Conversely, Ambivalents are not critical of the prioritization of individuals' wellbeing over economic growth.

Simultaneously, Ambivalents are not aware of the historical tensions between economic growth and environmental protection. Similarly to other studies (Kemper, 2017; Drews & van den Bergh, 2016; Kaplowitz et al., 2011), my results do not show an incompatibility between the two; considering that critics argue that the stabilization or even the reversal of economic growth is needed to improve environmental conditions, while others argue that economic growth is fundamental to improving quality of life (Daly, 2013; Daly, 2005; Howarth, 2012). Consequently, notions of self-interest, economic growth, increased consumption, and a healthy environment seemed to be merged in Ambivalents' minds. Their neutral stance towards the notion of an ecological crisis but lack of concern about the ecological limits that regulate society may speak to Kilbourne et al., 2001 assertion that the influence of the dominant social paradigm (DSP) provokes these ambivalent ideals. Because in a DSP-ruled society sensitivity towards the environment is acknowledged, but actions and behavioral changes to protected are discouraged as political, economic, and technological institutions are tasked with this responsibility.

The way of Sympathizers: A Doomed Living?

Sympathizers are the largest group in the sample. They have positive attitudes about sustainability and espouse values of social equality while rejecting notions of social

dominance. They are against consumerism and believe that human wellbeing should be a priority over economic growth. Nonetheless, they remain neutral on their support of economic liberalism. This seemingly ambivalent stance might suggest a conflict of values within sympathizers. Economic liberalism is the norm in a society developed under the DSP, and its role is the perpetual redirection of analysis and informed thought to preserve the status quo. Sympathizers might find it difficult to altogether abolish, in their minds, the economic systems that give life to their society. Thus, although distancing from it, sympathizers might still have remnants of their pursuit of self-interest in the quest for material wellbeing (Kilbourne et al., 2001). On the other hand, while they recognize the current and future ecological crisis and lean towards anti-anthropocentrism, they are only slightly concerned about the ecological limits shaping society.

When it comes to their wellbeing, Sympathizers seem to be less satisfied with their lives in contrast to ambivalents. This may be related to their high levels of concern regarding the state of the environment. Research on multiple psychological perspectives on ecological threats has found these to be psychologically threatening, potentially undermining individuals' wellbeing (Schmitt et al., 2018), and may result in apathy or a lack of agency to change the world they see.

Climate change, which Sympathizers overwhelmingly believe to be happening, is the main contributor to global climate anxiety. The phenomenon's ongoing nature, associated with the uncertainty of its effects on societies and the environment globally, has provoked shared and rational fear. Individuals may fear disruptions to place identity and place attachment and experience grief about the loss of valued places and things (Wang et al., 2018). Individuals may also feel disempowerment as the average citizen generally have little or no control over their occurrence or consequences of ecological threats. In addition to physical disruptions, they also experiment social and emotional disruptions in their family and friendship ties and might even break because of critical lack of agreement on the severity of the threat or event (Rich et al., 1995). Concern about possible future harm to one's children is common among potential parents. About 38% of Americans between the ages of 18 and 29 – and 34% of Americans aged 30-44 – believe climate change should

influence a couple's decision about having children, according to a 2019 Business Insider Poll. And 33% of young adults say they're expecting to have fewer children than their ideal because they're worried about climate change (Miller, 2018).

Several authors (e.g., Reser & Bradley, (2017)) have used the term "existential" to describe the threat of climate change, reflecting how climate change threatens core understandings and the current social system, if not life itself. This threat to our core understandings can be described as a potential loss of ontological security (Norgaard & College, 2006): a feeling that one's knowledge, and the systems of knowledge that one has relied upon, are no longer valid (Stoknes, 2015). That feeling of uncertainty and lack of understanding is arguably one of the central aspects of climate change; given that no one can predict the exact impacts in a particular place and time, and scientists who model possible futures have emphasized the possibility of unknown feedback loops or tipping points (Clayton, 2020).

CONCLUSION

This study aimed to examine the American public worldviews related to sustainability. Consequently, I explored worldviews of sustainability through the development, administration, and quantitative analysis of an online survey. The survey measured five sustainability constructs to explore the sustainability worldviews of a representative sample of the U.S. population (N = 346). The results were subject to multiple statistical methods, principal component analysis, one-way ANOVA, t-test, and cluster analyses.

Several interesting findings emerged from this work. Most importantly, the American public has positive attitudes towards sustainability, with the majority agreeing "it is a good thing." Their understanding of sustainability goes beyond the three pillars of the economy, society, and the environment, critically recognizing external authorities' relevance, societal rules, and organizational agendas. However, an analysis of

sustainability keywords provided suggests a strong association with notions of the environment. The vast majority believe in climate change and assert that environmental protection is everyone's responsibility, including citizens, governments, and industry.

I further investigated the public's worldviews by conducting a cluster analysis that uncovered two distinct worldviews: Ambivalents and Sympathizers. Ambivalents, as their name references, have mixed feelings concerning sustainability values and beliefs while expressing values of anti-egalitarianism, anthropocentrism, and support for economic liberalism. On the other hand, Sympathizers scored high in sustainability values supporting notions of social justice, anti-consumption, caring for the environment. Nonetheless, they have low concern over the ecological limits, and despite their environmental support, and they are slightly anti-anthropocentric. A notable difference between the two worldviews is their satisfaction with life. Surprisingly ambivalents tend to be more satisfied with their life in contrast to sympathizers. This may be explained by the global rise of climate anxiety among individuals concerned about global; climate change.

Considering the exploratory nature of my investigation and the growing demand to integrate sustainability in all aspects of life, I hope that this research will stimulate further studies on the public's worldview related to sustainability. However, this study's cross-sectional approach limits our understanding of the public over time. The study offers only a snapshot in time, and it is relevant to acknowledge that sustainability values, beliefs, and attitudes can be affected by current news and life events (Lavrakas, 2008), especially as the data was collected during the 2020 Coronavirus pandemic. Therefore, future research should embrace a longitudinal approach that adopts a similar theoretical frame or repeats the cross-sectional survey periodically. At a minimum, I recommend further analysis of these worldviews among the American people to inform sustainability policies.

CHAPTER 3

TO BE OR NOT TO BE SUSTAINABLE? AN AUTOETHNOGRAPHY ON COGNITIVE
CONTRADICTIONS

INTRODUCTION

Now there is more than ever a need for people to act sustainably in their lives. As the threat of climate change looms worldwide, the call for mass behavioral change is increasing. We need to be sustainability-oriented, and consequently, we need to encourage sustainable lifestyles among individuals. Sustainable-oriented people are concerned with environmental conservation and the ethical/responsible consumption of natural resources (Ehrlich & Ehrlich, 2004; Iwata, 2001; Young, 2000) (Ehrlich & Ehrlich, 2004, De Young, 1996; Iwata, 2002). In doing so, they promote equitable access for the use of natural resources, especially to the most vulnerable groups of society (Corral-Verdugo et al., 2011), through altruistic practices and actions that result in the conservation of such resources (Kaiser, 1998; Schultz, 2001). Thus a sustainably oriented person focuses on conserving natural resources while also caring for their fellow human beings. Consequently, sustainable actions can be seen as encompassing pro-ecological, frugal, altruistic, and equitable behaviors (De Young, 1991; Iwata, 2001; Kaiser, 1998; Schultz, 2001; Winter, 2002). Pro-ecological behaviors include actions ranging from environmental conservation and activism (Kaiser, 1998; Thogersen, 2005) to pro-ecological design/construction, and family planning (Bandura, 2002; Kellert, Heerwagen & Mador, 2008; Hsu, 2004; Suarez, 2000), among many others.

But the adoption of a sustainable lifestyle is hindered by our current economic structures that clash with sustainability ideals, as the protection of the common good requires individuals to behave in ways that diverge from their traditional individual utility maximization. What is good for society, in the long run, is not necessarily the best option

for individuals in the short term. Reassuringly, however, consumers seem to be increasingly concerned with sustainability and conscious of the environmental impact of their individual consumption decisions. Unfortunately, for many, these positive attitudes toward sustainability still translate into weak sustainability behaviors. Thus, a discrepancy exists between what consumers say and what they actually do: Although they "talk green," they do not necessarily "walk green." The discrepancy between good intentions and poor behavior has intrigued academic researchers from diverse scientific disciplines. It has been viewed as a particular instance of the traditional attitude-behavior discrepancy or as a manifestation of the conflict between our different selves (angels vs. demons/citizens vs. consumers) and has even been related to the activity of distinct brain areas (more impulsive vs. more considerate) (van Trijp, 2014).

The purpose of this chapter is to provide a personal insider's account of experienced nuances and limitations while attempting to engage in sustainability practices. The intention is to inform, educate, and empathize with others' stories. My account also has the potential to open a discussion and further research on the cognitive factors that limit the adoption of a sustainable lifestyle, even among passionate advocates. This autoethnographic study was guided by the following set of questions that I aimed to explore through my lived experience as a sustainability advocate, student, scientist, and college instructor.

1. Why is it that I struggle to achieve a sustainable lifestyle?

2. How do I become aware of conflicts between my sustainability attitudes and actual behaviors?

3. As a member of the sustainability community, how do I attempt to reduce my attitude-behavior conflict?

4. What cognitive strategies can I employ to help achieve a more sustainable life?

METHODOLOGY

The design of this autoethnographic study adhered to the naturalistic inquiry paradigm championed by Guba & Lincoln (1982). The naturalistic paradigm favors the holistic, value, and context-bounded research of reality, in which researchers develop an idiographic body of knowledge through "working hypothesis" and their interaction with the research's object. This paradigm offers contextual relevance and richness by displaying sensitivity to the research process. It is driven by theory grounded in the data and "takes full advantage of the power of the "human-as-instrument" providing a more than adequate trade-off for the presumably more "objective" approach that characterizes rationalistic inquiry" (Guba & Lincoln, 1982; p. 235). In other words, autoethnography as a research method offers a space for the development of this naturalistic inquiry.

Autoethnography as Research Method

As a qualitative research method, autoethnography allows researchers to draw on their own experiences to explain a cultural phenomenon (Méndez, 2013), thus, making the researcher the focus of the research. Consequently, autoethnography has been defined as "a genre of writing and research that connects the personal through multiple layers of consciousness" (Stinson, 2015). An "autobiographical genre of writing that displays multiple layers of consciousness, connecting the personal to the cultural" (Ellis and Bochner, 2000; p. 739). And, according to McIlveen, (2008), a process that "...entails the scientist or practitioner performing narrative analysis pertaining to herself as intimately related to a particular phenomenon" (p. 3). Thus, unlike other forms of qualitative research where the researcher's bias is nonexistent in writing, autoethnography is a first-person voice narrative. Nonetheless, autoethnography is not just writing about oneself but also being critical about personal experiences and their connection to cultural dynamics.

As Chang (2008) contends autoethnographic writing is a narrative of the "self as a main character along with others as supporting actors" (Stinson, 2015, p. 35)

Two different approaches to autoethnographic writing exist, evocative and analytical. Evocative autoethnography focuses on the researchers' introspection on a particular topic allowing readers to empathize with the researchers' feelings and experiences (Méndez, 2013). Although popular, this approach remains largely marginalized in mainstream social science venues due to its rejection of traditional social science values and styles of writing (Anderson, 2006). Analytic autoethnography, on the other hand, is an approach directed towards objective writing and analysis of a cultural group. In this autoethnography, the researcher is "(1) a full member in the research group or setting, (2) visible as such a member in published texts, and (3) committed to developing theoretical understandings of broader social phenomena" (Anderson, 2006). Hence, analytical autoethnography comes to be a critical reflection of personal experiences in the development of the research being undertaken or about experiences of the topic being investigated (Méndez, 2013). For this study, I developed an analytical autoethnography to reflect on my internal conflict regarding my sustainability values and my contradictory behaviors as a cultural phenomenon.

However, given its personal narrative nature, autoethnography faces strong resistance to being accepted as a valuable research method as it is seen as a self-indulgent, narcissistic, introspective, and individualized account (Méndez, 2013). However, although this research is bound to my own experience in the sustainability field, complementary theoretical data is presented to link this experience to current cultural dynamics. Another limitation of the method concerns the learning of the method. Autoethnography cannot be learned from books as it requires guidance from experienced ethnographers to produce a high-quality cultural research account. I have attempted to account for this limitation through the guidance of my teachers and mentors.

Research Design

This autoethnography was influenced by the theoretical analysis and interpretation of both external and internal data (lived experiences). External data was collected through academic literature reviews and research on sustainability framing analysis, sustainability worldviews, and psychological theories related to cognitive dissonance, attitude-behavior gaps, behavioral carry-over effects, morals licensing, and hypocrisy (Bem, 1967; Festinger, 1962; Juvan et al., 2016; Stone & Fernandez, 2008; van Trijp, 2014). In contrast, internal data was collected through a process of reflective journaling directly linked to several emergent themes from the literature that characterize my lived experience, including:

1. Psychological discomfort in practicing sustainability (Juvan & Dolnicar, 2014; van Trijp, 2014).
2. Attitude-behavior gap among ecologically conscious individuals (Juvan & Dolnicar, 2014b; Truelove & Gillis, 2018).
3. Morality and sustainable behaviors (van Trijp, 2014; Young, 2000).
4. The use of hypocrisy to motivate sustainable behaviors (van Trijp, 2014).

Data Collection

The first step in the collection of internal data concerns the compilation of periodic "field notes" on actions, experiences, and relevant events in my life related to these themes. I recorded all notes by hand in a pocket notebook in the form of "jottings" or mnemonic keywords and phrases that capture the essence of an observed event. Jottings help ethnographers sketch evocative descriptions of "social scenes, recurring incidents, dialogue among those present, and their own conversations in the field of study" (Emerson, Fretz, & Shaw, 2011; p. 31). I then used my jottings to develop autoethnographic

memos. In qualitative research, memos are used to elaborate on field observations by liking codes and bits of data together to explicate the nature of the observations (Emerson et al., 2011). For this research, all memos encompassed the narrative of my lived experience and were structured following six interrogative questions to provide a high-quality account of the experience, including Who? What? Where? When? And How? Memos were complemented with imagery and sensory details and research on emergent concepts during the process.

I employed a creative nonfiction format for this chapter, as its basic tenets are in line with the autoethnographic methodology. Creative nonfiction is informed by a 5 Rs approach concerning: Real-life events, Reflection, Research, Reading, and wRiting. In this sense, the author anchors their story in a real-life situation linked to a cultural dynamic; and gathers data through research and the reading of relevant work. Thus the product of this research is an educational narrative interspersed with personal reflections and experiences, methodologically driven to avoid a solipsistic egocentric account of my life, and accomplished through conscious adherence to the naturalistic inquiry paradigm. Creative nonfiction is distinguished from other writing styles by its focus on scenes within a frame (Gutkind, 1996, 1997). Scenes are action-oriented written events that contain dialogue and evocative descriptions with specificity and intimacy. Scenes fall within frames that help in their organization and development of the writer's narrative (Gutkind, 1996). This structural design aims to focus the readers' interest in the substantive fact-based educational nature of the text, including cited research. In this way, the text is written to appeal to both academic and non-academic audiences as an invitation to participate in an intellectual conversation (Guillion & Williams, 2019) and associated practices and outcomes.

THE AWAKENING

I was left standing still in the middle of my kitchen, in a two-story house powered by the scant resources of the Arizona desert. In my brain, images of discoloration lines contouring the Colorado river at the bottom of the Grand Canyon, a detail so common in all pictures of this crucial water source. These are lines that tell a story of long-forgotten water abundance and a dwindling river the result of our inconsiderate water overuse. They speak about our polluting industries destroying the air we breathe. Our radical agricultural practices destroying the soil we rely on to eat. The decimation of Earth's biodiversity responsible for providing a habitable planet. And let us not forget our consumerism patterns... My spirit dropped to the floor, in front of the Amazon boxes at my feet.

In front of me, an altar of smiling Amazon boxes seemed to glow to the beat of an ethereal sound of divinity. Smiles. Smiling boxes. Smiling caricature boxes. Amazon's signature trademark that seem to bow in honor of my divine material consumerism. They appeared to mock my sustainability ideals as I supported a multimillion-dollar company founded on the proliferation of humanity's carbon footprint... *Their carbon footprint. What about my carbon footprint?* I questioned myself. *In the age of climate change, I burn gas every two weeks with my daily twenty-minute commute from home to work, from work to home, and everything in between. I am the poster child for a list of social wrongs. Oh, my God! Am I a failure? A phony? A Hypocrite?* I asked in silent confidentiality. *After all, I am a sustainability scientist. I should know better. Right? Shouldn't I?*

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I Should Know Better! The Attitude Behavior Gap Dilemma Among Ecologically Conscious Individuals

During the first year of graduate school, I found myself flying to South America for the second time and the first to Peru. I was on my way to a 3-week research training program on interdisciplinary qualitative field methods taking place on the outskirts of the Cordillera Blanca, seven hours northeast of the capital Lima. This training was the opportunity that I had been waiting for - to jumpstart my Ph.D. research. It was the perfect setting. I had access to social networks and the opportunity to engage in ongoing investigations while developing my research. Unexpectedly, I realized the program was much more than just learning about qualitative field methods, as it took place in a sustainable village. I experienced a living museum of sustainability ideals with adobe buildings, solar panels, solar ovens and cookers, a huge vegetable garden, and free-range cows, chickens, and sheep. I was in awe and so grateful for the unexpected experience.

In the village, the idea of a sustainable lifestyle was real and tangible, two things I had not been able to grasp from the books and stories I encountered about ecological villages in school. And life in this Peruvian village felt organic, humbled, respectful, and disciplined, overall, by living in accordance with nature. A part of me fell easily into the sustainability rhythm. I had the luxury of eating fresh-baked bread out of a solar oven every morning, homemade yogurt courtesy of our cows and delicious garden-to-table meals. I made peace with my shadows at night as I walked around, guided by candlelight or, even better, the moonlight. And I learned about the dual purpose of on-site ponds that served as natural greywater filtration systems and breeding grounds for spectacular white lilies, with which my hostess adorned the dinner table. It was a sustainability advocate's dream to live in such an amazing place. Waking up every morning knowing that your ecological impact on the planet is minimal, that's the goal in our hearts. And this whole experience made me feel at home, as part of the circle of life. I was not above anything in that space; I had the same rights as any other living organism to eat and live, and it was

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fair and liberating. I did not have the responsibility of managing the system. My responsibility was to be part of the system. For the first time, I was living a frugal life. And I was happy.

In the age of climate change, frugality is needed more than ever. In his work *Expanding and Evaluating Motives for Environmentally Responsible Behavior,* environmental psychologist Raymond De Young asserts that frugality is a satisfying activity worth pursuing. As a sustainable lifestyle, it predicts a state of satisfaction that leads not only to psychological wellbeing but also to satisfaction and intrinsic motivation allowing the maintenance of a lighter consumption (De Young, 1996). Something similar occurs with those behaviors aimed at the conservation of the physical environment: people who frequently practice pro-ecological behaviors perceive themselves as being happier than those who do not engage in such a practice (Brown & Kasser, 2005; Corral-Verdugo et al., 2011). Yet, frugality need not be adopted solely on utilitarian grounds but also on a self-interested focus on achieving personal happiness, suggesting that an ecocentric orientation may be derived from self-interest (Young, 2000).

But truth to be told, the city girl in me was annoyed by the scant light of candles, the lack of electricity and electrical outlets to charge cellphones and computers, and the unreliable Wi-Fi connection to study or to communicate with family. Unfortunately, the happiness gained through the frugality I experienced did not account for the remnant of luxury desires still within me. Even if I did not experience an austere or somber sustainability lifestyle as early work on environmentally responsible behavior (ERB) studies suggested, I found an internal dissonance during this exposure to a conservation-focused lifestyle (Young, 2000).

Nonetheless, at the end of my three weeks in Peru, I promised myself and my hostesses I would keep up the same lifestyle I adopted during my research training. I never received congratulatory remarks for my promises, but I could see the satisfaction on their faces knowing that their teachings and outcries had an impact on me. Armed with experiences, ambition, field notes, and selfies of a sustainable life on the farm, I came back

to the US, convinced I would achieve my goals. But, of course, that did not happen. I struggled and did not do much of what I promised. I intended to behave sustainably, but intentions, accumulating information, do not translate into behavioral change, "a change" that the smiling boxes in front of me dwarfed by the second in that revealing afternoon. I remembered Peru; I remembered the person I was meant to become. But, in the shock of the moment, in a split of a second afraid of judgment, I leaned on excuses to explain why I could not behave as I promised.

> *I do not live on a farm.* I reminded myself. *I cannot even attempt to start a vegetable garden. Despite all the pictures, manuals, and videos I store in my Pinterest DYI account, I do not feel capable of building and successfully maintaining any plant alive. I do not have the joy of fresh milk in the morning to prepare yogurt because I do not own a cow. I cannot raise my own laying hens because my community's Homeowner Association rules prohibit owners from raising farm animals in their backyards. But also, how would I care for laying hens during Arizona's triple digits summer temperatures? No one should be outside during the summer. Without any animal husbandry experience, I would share a bed with these birds for three consecutive summer months: not ideal by any means. Electricity-wise, as much as we try to conserve energy in our house, installing solar panels is not possible or cost-effective. After an initial in-house consultation, my family's average energy consumption was very low, and we were told no economic benefit would come from installing solar panels.* One by one, these excuses hit me by the second as I stood still, trying to discredit the shame and judgments growing inside of me, to avoid blame, responsibility, and change. I experienced an episode of cognitive dissonance.

THE SHAME

Cognitive Dissonance: A Story of Conscious and Unconscious People

In 1957, Festinger described this tornado of contradictions within oneself as cognitive dissonance, i.e., an experience of psychological discomfort that arises when our cognitions (e.g., attitudes, beliefs, values, etc.) are inconsistent with our behavior and surroundings (Bem, 1967; Festinger, 1962). In this context, the dissonance I experienced was a discomfort, a feeling that made me equivocal, confused, unclear, anxious, uncertain, and doubtful of who I was (Juvan & Dolnicar, 2014). Dissonance is known to emerge at various stages in the decision-making process of an individual (Soutar & Sweeney, n.d.) And the intensity of the dissonance leads people to reduce their discomfort by adjusting either beliefs or behaviors, such that "states of dissonance are transformed into states of consonance, and the inconsistencies are eliminated" (Juvan & Dolnicar, 2014; p 79). I adjusted my beliefs to a list of excuses regardless of their validity. And felt lost, questioning the strength of my values and goals to contribute to the sustainable development of this world. "You cannot build a better world without improving the individual," said Nobel laureate Marie Curie. How much improvement did I need? Was I alone on this insane cognitive path?

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I went down to the first floor of the hotel and directly to the breakfast room. I love breakfast, my favorite meal of the day, especially if I can have it buffet style. There is something about a breakfast buffet that fills my dreams of a decadent warm meal. Maybe it's the fantasy of unlimited carbs to be burned throughout the day. Maybe it's the dream of bacon, the delicate and varied pastries, the oatmeal, the pancakes, the waffles, eggs, milk, and everything that tells me that I'm feeding my body well. Lucky Charms! I stood still staring

at this cereal option in the cereal dispenser. Lucky Charms is a sugary, unhealthy excuse for breakfast. I have loved Lucky Charms ever since my childhood mornings in which eating this candy as my first meal of the day wasn't a sin but a satisfaction. As I have grown older, I have realized that eating sugary cereal has never been a good choice, and I have replaced it with healthy smoothies, chock full of strawberries, bananas, butternut squash, beets, blueberries, chia seeds, walnuts, milk, spinach, and a multivitamin. I have been strict about it. I enjoy being strict about it. It gives me a satisfaction that lifts my spirit...

"I'm getting Lucky Charms. No one has to know. I am alone; no one would be here to give me a judgmental look or to make a comment implying that I haven't stopped eating this junk. That all these mornings, I have been sneaking out of bed to eat it secretly at breakfast. Then I do not need to defend myself, claiming that "it has been the only time I have done it, that I had an internal conflict. "Should I or shouldn't I?, was all I could ask myself. Believe me, I know I shouldn't, but it is only this one time. To remember the good old days." Regardless of whatever I could have said, I would have been left alone as the sole sinner.

I got myself a good-looking styrofoam bowl of Lucky Charms with whole cow milk. Nowadays, it is not uncommon to see me drinking soy milk. It is the healthiest and more sustainable option for the family, but Lucky Charms deserved to be eaten with real milk. I made it to a table outside the breakfast room wide enough for me to set up my breakfast and computer too; after all, I was doing remote work developing a course on Sustainable Foods Systems. I put a spoon of cereal in my mouth and opened my computer to start working. To my right was the book I was consulting, sitting as an open invitation for everyone to notice the college student making a library out of the hotel lobby. "Who's reading that?" a woman's voice asked. *What? Who is that? Why? Why do you expose yourself, Natalia? Who is this person talking to you?* I asked

myself as I raised my gaze. I noticed a middle-aged woman standing in front of me. "I'm sorry?" I asked back, confused.

Woman: "Who's reading that book?" she asked again, pointing to the sustainable local food systems book. "That book is really good." she asserted. I sat still, not really sure what to say back.

Me: "I am. I am using it for a class I'm developing." I managed to respond.

Woman: "That's great! We should get together to talk about it. If you have time at night around 8:00, we should meet. My room number is…" she said.

I don't think so, lady. I said to myself as I offered a polite smile and nodded yes with my "that ain't happening" face. *My mom taught me not to follow strangers to hotel rooms,* I thought.

Woman: "Oh, and you know? You shouldn't be eating that", she commented, pointing at my Lucky Charms bowl before saying goodbye.

Me: "Yes, I know," I said while nodding apologetically.

I felt ashamed, caught in the middle of an ongoing crime. I looked briefly at my bowl, and I could not come up with a smart, rational explanation for why I was eating it. Or why someone working on a sustainable food systems class was eating crap manufactured by the same industrial unsustainable system she planned to confront in the class. It was beyond me. Such an early defeat for such a promising day! I could not escape the judgment.

The only time I ate it, I ended up looking so bad. Would she have understood if I told her about my childhood memories and Lucky Charms? But, wait a second! Who is this woman for me to care about her opinions, anyway? I will eat whatever I want; she is not my mother. I owe her nothing, no loyalty to her opinions." I thought as I sat still at the lobby table, looking like a computer rebooting itself.

I was angry at this woman, but I also felt invigorated by my newfound sense of independent thought, even though I knew what she said was accurate. But I blocked any idea of guilt or shame and focused on her. *I will not hear any other word of judgment from a stranger, someone that doesn't know me or what I have gone through. You know what? Now, I will eat more cereal than I planned to—end of discussion.*

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Cognitive dissonance is not new among environmentally conscious individuals. For example, studies have found that emotional dissonance is a recurrent state for environmentally conscious plane travelers who try to avoid it by dismissing information on the negative environmental effects of their tourism-related activities (Drury et al., 2012). In the same way, we find local environmental activists who display an attitude-behavior gap when justifying their vacation plans (Juvan & Dolnicar, 2014). And, although people are aware of the negative implications of using airplanes for vacations, many do not modify them in the face of climate change, possibly aligning their attitudes towards holidays and climate change to be more consistent with their behavior (Hares et al., 2009).

But I want to travel. What does this say about me? I thought, pushing myself abruptly toward the back of my desk chair after reading these studies. *Does that make me a bad sustainability scientist? I am a human being with goals and desires. The studies are not only talking about the impact of tourism activities but also modes of transportation and associated pollution. I know airplanes create vast amounts of pollution in the environment, but how else will I make it to countries on the other side of the world, on time and on a budget? What will I do if I need to travel for work, for research, family business?* I wondered. *Neither my family nor I have the time and resources to travel abroad through a less polluting mode of transportation. Trains are not an option for exiting the U.S. Ships are…but, in this society, we are*

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always on a schedule, and I need to make the most of the seven-day vacation time I can take from work. Ships are expensive and take weeks to arrive at a single destination, plus finding myself in the middle of the open ocean is no dream of mine.

Many of us do not wish to harm the environment, but it seems inevitable when on vacation (Juvan et al., 2016). Perhaps it is because we are not aware of personal impact and behavioral alternatives (Becken, 2007); maybe we prioritize personal benefits over the health of the environment (Becken, 2004); or we compensate through pro-environmental behaviors at home and in our communities (Becken, 2007; Juvan & Dolnicar, 2014a). But the truth is that air travel is the second biggest contributor to carbon emissions in the world (9%) (EPA, 2020). The industry is responsible for approximately 4.6% of the total anthropogenic greenhouse gas emissions, and these numbers are expected to grow considerably in the future (Becken, 2007); because we keep burning kerosene fuel in airplanes which generates carbon monoxide, hydrocarbons, nitrogen oxides, amongst other air pollutants (Becken, 2007; Kumaş et al., 2019). Today the U.S. accounts for 40% of the world's aviation CO_2 emissions, even though air travel makes up just 9% of the nation's transportation emissions (Kamga & Yazici, 2014). Efforts to offset aviation pollution have not yet succeeded, and pollution may eventually become more critical because of the opportunity for passengers to travel greater distances to their vacation destinations (Kumaş et al., 2019).

I try to live by the cannons of a sustainable life, taking care of the environment and the people. At the same time, I realized that even as a sustainability scientist, I am just about as on the fence like everyone else about defending my rights to the luxuries of life. How sustainable can someone be and still pass this social test?

The Problem with the Carry-Over Effects

It is so easy yet so difficult at the same time. I said to myself one winter night as I pushed a defeated exhale of frustration out of my mouth towards the Amazon bubble-lined pouch sitting on the kitchen floor next to the recycling bin. *I never know what soft plastics I can recycle. I am growing tired of always looking for labels to guide me through the process,* I told myself. Recycling is a requirement in my house; I feel an enormous responsibility to make sure waste is classified correctly. I think I do a pretty good job at sorting. And, given the recycling industry's current struggle to stay afloat after the China debacle, I pay extra attention to cleaning and sorting my recyclables. I want to make sure this resident does not give her city a reason to drop its recycling program.

The extra attention has brought me to understand better recycling labels, especially those of the Amazon prime bubble-lined packages we receive. I recently learned such material needs to be processed in a different facility than your everyday recyclables (i.e., cardboard, glass, and paper), meaning that individuals must collect and drop off this material at a plastic recycling facility. Target, Walmart, Fry's, Safeway, and Food City are some locations where plastic bags can be dropped off; this newly found behavioral competence brings satisfaction to my life. As proposed by American psychologist Robert White, competence is a basic human concern, an inclination to strive for ever more effective interactions with our environments, and is regarded as an enjoyable personal skill linked to environmentally responsible behaviors (Young, 2000).

But it is STILL TOO MUCH WORK. I sighed angrily. After thoroughly sorting my trash and following my city's recycling guidelines, taking extra steps toward an activity demanding more time of my day turns off my sustainability senses. That is the reason why I stared with disdain at the three-week-old Amazon package on the floor next to my recycle bin. And I questioned if I would ever take them to Fry's. *Maybe on my next grocery shopping trip? Would I even remember to take them with me? Would I even remember to take them out of the car and get rid of them? Would I just drop them in the recycling container and act as nothing happened? I thought.* After staring at them for thirty more

seconds, I concluded I needed a rest. I had acted sustainably enough throughout the day and was entitled to some less virtuous acts. The fate of the plastic lying on the floor remained unknown, depending on my future mood.

<p style="text-align:center">***</p>

When applied to sustainability, research on self-perception and cognitive consistency (Bem, 1967; Festinger, 1962; Swann et al., 1990), carry-over effects suggest that individuals who behave sustainably will continue to do so. But carry-over effects are not always seen after an individual's initial sustainability act. Recent research indicates that "people who make sustainable choices are actually less likely to make environmentally sustainable choices later" (van Trijp, 2014). The result is explained through the concept of moral licensing. Moral licensing entails that, after performing a virtuous deed and satisfying the need to be a moral person, individuals refrain from further virtuous behavior. Evidence of moral licensing effects in sustainability has been collected through the study of consumers of green products. The studies show that these individuals are more likely to behave selfishly after shopping at an environmentally sustainable store than conventional store shoppers (Mazar & Zhong, 2010; van Trijp, 2014).

THE FIXER?

The Ways of Hypocrisy

They are in front of me. Strawberries, my sustainability nemesis, wink at me from across the kitchen.

Today is a different Monday morning during the covid pandemic as I prepare the kitchen and the living room for ceiling paintwork. *The workers should be here soon*, I said to myself. I am doing my best to tidy up everything, especially the kitchen island and the sink when I become aware of the tension in the room. There, in front of me, on the kitchen countertop, left of the stove, four feet from the pantry door, stood the box of strawberries, winking at me. I locked eyes with my nemesis.

K and I are going to be upstairs said N, passing by the strawberries as they entered the kitchen floor, while their teacher in an online classroom emphasized the "no scary stuff at school" rule during the Halloween festivities

Scary. That's what strawberries are to me! I thought.

I didn't say anything to N; I just nodded in affirmation to their comment. As they left, without breaking eye contact with the adversary, I grabbed a chair and sat at the dining table. *What will I do with these girls? Freaking strawberries, so delicious, so sensitive to room temperature. Does it ever happen to you? You go to Fry's Market and find these delicious two for $5 boxes of bright, red, seed popping strawberries that promise a picture-perfect snack, a perfect breakfast, or an out-of-this-world Epicurus Magazine photoshoot. Well, how do I go from such delicious thoughts to the tense staring contest I juggle with them while cleaning the room?*

They have been out of the fridge for a day now. They dropped their gorgeous splendor the moment they entered my home. Two days in the fridge, and they are unappealing. Three days in the fridge, and my eyes try to avoid them. I definitely don't care for them anymore. I left them out of the fridge for two consecutive days, and now the dark, rotten, red color of their skin pushes me away. *What should I do with them? Should I put them back in the fridge? Should I just throw them out? Because, eventually, that's what will happen. Oh, I just don't want to admit to myself.* I am horrible at preserving food. *That's always the cry. I want action to preserve our world; still, I let resources go to waste. That is hypocrisy. I have to do something about these strawberries and myself.*

<div align="center">***</div>

Episodes of cognitive dissonance open the doors to behavioral change. As Festinger proposed, inconsistencies between beliefs and actions need to be eliminated for individuals to avoid psychological discomfort. But, to avoid the justification process that often excuses the discrepancy between the values and actions, behavioral changes toward sustainability could benefit from the theory on hypocrisy. Hypocrisy is one way to induce dissonance and motivate individuals to change. When facing hypocritical discrepancy, studies have shown that people feel motivated or forced to adjust their actions based on their advocacy (Aitken et al., 1994; Aronson et al., 1991; Fried & Aronson, 1995; Kantola et al., 1984; Orlove et al., n.d.; Stone & Fernandez, 2008). According to the hypocrisy paradigm, when individuals advocate a prosocial course of action that promotes sustainability values, they put themselves in a role supported by prevailing injunctive norms that are difficult for them to distort to reduce their discomfort. And when made mindful of failures to uphold the advocated norms for the targeted behavior, the discrepancy activates cognitions linked to perceptions of self-integrity (van Trijp, 2014).

For years now, I have occupied the role of a sustainability advocate. But hypocrisy has been a threat to my core self-beliefs about honesty and sincerity when practicing it. I have often found myself failing to "walk the walk." A deep reflection of my failures gave birth to this dissertation in which I try to understand why I, you, and us often struggle to

put words into actions, especially those that can ensure our existence on this planet. It has been through episodes of hypocritical discrepancy that I have come to know myself. Studies show that the effects of hypocrisy on behavioral change work best when people have written statements of their proposed normative actions. Throughout my academic career, I have accumulated in my computers' hard drive countless reflections and research on why we should live a sustainable life. Now, they have resurfaced to teach me. Today, they are part of a mindful, provocative discussion with myself about my standing in the sustainability movement and my achievements. But, this has been years in the making mornings, evenings, and of inner conversations that, with time, have made me aware of my shortcomings. We need a social change in the world if we want to combat and defeat poverty, social injustices, structural racism, environmental justice, and climate change, among many other challenges. And deep conversations with ourselves about our values, beliefs, worldviews, needs, wants, shortcomings, and failures are the starting point. Finally, we need time to reflect; the amount of deliberation people undergo when recalling past behavior determines the conditions that will motivate a behavioral change (Stone & Fernandez, 2011).

CHAPTER 4

GENERAL CONCLUSIONS

Since the 1987 Brundtland report, sustainability has become a mainstream phenomenon and a normative framework (Weder et al., 2019). It has been hailed as an ultimate solution to increasing global social, economic, and environmental crises (e.g., economic instability, environmental disasters, wars, poverty, etc.) that our political systems have failed to address (Kemper, 2017; Hopwood et al., 2005). However, sustainability solutions and strategies greatly depend on humanity's disposition to support them through individual decisions and collective actions. Thus, as a sustainability scientist, I must understand people's knowledge about sustainability to promote behavioral change. Equally important is acknowledging the cognitive nuances and limitations experienced by individuals attempting to engage in sustainability practices. The effects of cognitive processes that play a significant role in our adoption of sustainability practices must also be understood, even amongst sustainability-conscious individuals. Thus, in this dissertation, I explored our understanding of sustainability and the disposition society may (not) lack for a sustainable future.

Chapter 1 introduced what I propose to be pivotal moments in the history of sustainability that birthed dominant sustainability worldviews. Most importantly, the discovery that the sustainability movement evolved in the backdrop of European worldviews more than 300 years ago. And that sustainability was a western European, imperialist reaction to the 17th-century deforestation that threatened empires with the specter of societal collapse as they feared running out of the raw material that fueled their navies and their colonizing quests, wood. That same fear towards environmental/economic challenges fueled the evolution of the sustainability movement and the multiple experts that contributed to its modern conceptualization through the three pillars of the economy, social, and the environment.

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Having understood the environmental and imperialist origins of sustainability, in Chapter 2, I explored worldviews of sustainability. Through the development, administration, and quantitative analysis of an online survey, I measured sustainability constructs, consequently exploring the sustainability worldviews of a representative sample of the U.S. population (N = 346). I developed the sustainability constructs by performing Principal Component Analysis on the survey results, which allowed me to identify five sustainability constructs: social equality, the economy, the environment, consumption, and well-being. I used these constructs in a hierarchical and k-means and cluster analysis to identify sustainability worldviews among the American public. Results indicated two separate groups with distinct worldviews: Ambivalents and Sympathizers. Ambivalents, though endorsing sustainability, have ambivalent beliefs toward several sustainability constructs and scored low in others. Conversely, while adhering to social equality, anti-consumption and anti-anthropocentrism values, Sympathizers are only slightly concerned about the ecological limits shaping society. A notable difference between the two worldviews is their satisfaction with life. Surprisingly ambivalents tend to be more satisfied with their life in contrast to sympathizers. This may be explained by the rise of climate anxiety among individuals concerned about global climate change and other associated sustainability challenges.

After exploring others' sustainability worldviews in Chapter 3, I presented an analytical autoethnography that sheds light on the attitude-behavior gap in sustainability by focusing on my sustainability worldviews and experiences as a practitioner. Using autoethnography as my research methodology, I explored my positionality in the sustainability field and my motivation to act sustainably. By focusing on four cognitive processes, cognitive dissonance, carry-over-effects, moral licensing, and hypocrisy, I provided a personal insider's account of experienced nuances and limitations while engaging in sustainability practices. With this chapter, I intend to inform, educate, and empathize with others' stories of struggle while attempting to be sustainable. My account can also open a discussion and further research on the cognitive factors that limit the adoption of a sustainable lifestyle, even among passionate advocates.

Collectively, my research results offer the sustainability movement insights about possible paradigm shifts toward sustainability based on barriers associated with worldview factors and cognitive processes. In short, I found that fears of societal and economic collapse due to environmental degradation have aided the evolution of the sustainability movement. Although today, many understand it as going beyond the three pillars, i.e., economy, society, and the environment, sustainability is highly associated with environmental conservation, a nod to its western European origins. Also, there is a general understanding that we are at a pivotal moment of environmental change, and everyone should act to safeguard our future, with sustainability being a relevant approach.

On the other hand, the two distinct sustainability worldviews found among the American public suggest that it is essential to bolster the sustainability movement through comprehensive sustainability policies informed by their target population's worldviews. Nonetheless, my analytical research reliance on a cross-sectional approach provides only a snapshot in time about sustainability values, beliefs, and attitudes. Thus, future research should embrace a longitudinal approach to further analyze these worldviews among the American people to inform the sustainability movement. Finally, this research allowed me to recognize my sustainability worldviews and shortcomings in my practice and empathize with others' worldviews, which in some way or another resemble my own.

BIBLIOGRAPHY

Aitken, C. K., McMahon, T. A., Wearing, A. J., & Finlayson, B. L. (1994). Residential Water Use: Predicting and Reducing Consumption 1. *Journal of Applied Social Psychology*, *24*(2), 136–158.

Ajzen, I. (1985). From intentions to actions: A theory of planned behavior. In *Action control* (pp. 11–39). Springer.

Anderson, L. (2006). Analytic autoethnography. *Journal of Contemporary Ethnography*, *35*(4), 373–395. https://doi.org/10.1177/0891241605280449

Aronson, E., Fried, C., & Stone, J. (1991). Overcoming denial and increasing the intention to use condoms through the induction of hypocrisy. *American Journal of Public Health*, *81*(12), 1636–1638. https://doi.org/10.2105/AJPH.81.12.1636

Bashford, A. (2014). Confined in Room. A spatial history of Malthusianism. In *Global population: history, geopolitics, and life on earth* (pp. 29–51). Columbia University Press.

Becken, S. (2004). How tourists and tourism experts perceive climate change and carbon-offsetting schemes. *Journal of Sustainable Tourism*, *12*(4), 332–345. https://doi.org/10.1080/09669580408667241

Becken, S. (2007). Tourists' perception of international air travel's impact on the global climate and potential climate change policies. *Journal of Sustainable Tourism*, *15*(4), 351–368. https://doi.org/10.2167/jost710.0

Bem, D. J. (1967). Self-Perception: an Alternative Interpretation of Cognitive Dissonance Phenomena. *Psychological Review*, *74*(3), 183–200. https://doi.org/10.1037/h0024835

Brown, K. W., & Kasser, T. (2005). Are psychological and ecological well-being compatible? The role of values, mindfulness, and lifestyle. *Social Indicators Research*, *74*(2), 349–368. https://doi.org/10.1007/s11205-004-8207-8

Caradonna, J.L. (2014). *Sustainability: A history* (1st ed.). University Press.

Clark, W. C., & Dickson, N. M. (2003). *Sustainability science : The emerging research program*. *100*(14), 8059–8061.

Clayton, S. (2020). *Climate anxiety : Psychological responses to climate change*. *74*(June).

Commission, W. (1987). *Report of the World Commission on Environment and Development : Our Common Future Acronyms and Note on Terminology Chairman᾽s Foreword*.

Corral-Verdugo, V., Mireles-Acosta, J., Tapia-Fonllem, C., & Fraijo-Sing, B. (2011). Happiness as correlate of sustainable behavior: A study of pro-ecological, frugal, equitable and altruistic actions that promote subjective wellbeing. *Human Ecology Review*, *18*(2), 95–104. https://doi.org/10.3390/su5020711

Creswell, J. W. (2014). *A Concise Introduction to Mixed Methods Research*. SAGE.

De Witt, A., de Boer, J., Hedlund, N., & Osseweijer, P. (2016). A new tool to map the

major worldviews in the Netherlands and USA, and explore how they relate to climate change. *Environmental Science and Policy*, *63*, 101–112. https://doi.org/10.1016/j.envsci.2016.05.012

Diener, E., Inglehart, R., & Tay, L. (2013). Theory and Validity of Life Satisfaction Scales.

Social Indicators Research, *112*(3), 497–527. https://doi.org/10.1007/s11205-012-0076-y

Drury, E., Miller, M., Macal, C. M., Graziano, D. J., Heimiller, D., Ozik, J., & Perry, T. D. (2012). The transformation of southern California's residential photovoltaics market through third-party ownership. *Energy Policy*, *42*, 681–690. https://doi.org/10.1016/j.enpol.2011.12.047

Ehrlich, P., & Ehrlich, A. (2004). One with Nineveh: Politics, Consumption and the Human Future. In *Island Press* (Issue 1). https://doi.org/10.1071/pc050074

Emerson, R. M., Fretz, R. I., & Shaw, L. L. (2011). *Writing Ethnographic Fieldnotes* (Second Edi). University of Chicago Press.

EPA. (2020). *Inventory of U.S. greenhouse gas emissions and sinks: 1990-2018* (Vol. 76, Issue 36).

Everitt, B. S., Landau, S., Leese, M., & Stahl, D. (2011). *Cluster Analysis* (D. J. Balding, N. A. C. Cressie, G. M. Fitzmaurice, H. Goldstein, G. Molenberghs, D. W. Scott, A. F. M. Smith, R. S. Tsay, S. Weisberg, & B. S. Everitt (Eds.); 5th ed.). John Wiley & Sons, Incorporated.

Festinger, L. (1962). *Theory of cognitive dissonance*. Stanford Press.

Fischer, D., Haucke, F., & Sundermann, A. (2017). What Does the Media Mean by ' Sustainability ' or ' Sustainable Development ' ? an Empirical Analysis of Sustainability Terminology in German Newspapers Over Two Decades. *Sustainable Development*, *624*(December 2016), 610–624. https://doi.org/10.1002/sd.1681

Fried, C. B., & Aronson, E. (1995). Hypocrisy, Misattribution, and Dissonance Reduction. *Personality and Social Psychology Bulletin*, *21*(9), 925–933. https://doi.org/10.1177/0146167295219007

Glen, S. (n.d.). *T Test (Student's T-Test): Definition and Examples*. StatisticsHowTo.Com.

Godemann, J., & Michelsen, G. (2011). Sustainability Communication Interdisciplinary Perspectives and Theoretical Foundations. In *Sustainability Communication: Interdisciplinary Perspectives and Theoretical Foundations*. http://www.springerlink.com/index/10.1007/978-94-007-1697-1%0Ahttp://link.springer.com/10.1007/978-94-007-1697-1

Grober, U. (2007). Deep roots: A conceptual history of 'sustainable development' (Nachhaltigkeit). *WZB Discussion Paper P 2007-002*, *February*, 1–30. http://skylla.wz-berlin.de/pdf/2007/p07-002.pdf

Guillion, J. S., & Williams, J. S. (2019). Creative Nonfiction in Qualitative Inquiry. In *The*

Oxford Handbook of Methods for Public Scholarship (pp. 533–550).

Gutkind, L. (1996). From the Editor: The 5 Rs of Creative Nonfiction Published by: Creative Nonfiction Foundation From the Editor. In *The Essayist at Work* (Issue 6, pp. 1–14). Creative Nonfiction Foundation. https://www.jstor.org/stable/44363477

Gutkind, L. (1997). Scenes the Building Blocks of Creative Nonfiction. In *The art of Creative Nonfiction Writing and Selling the Literature of Reality* (pp. 33–48).

Hares, A., Dickinson, J., & Wilkes, K. (2009). *Climate change and the air travel decisions of UK tourists*. https://doi.org/10.1016/j.jtrangeo.2009.06.018

Hedlund-De Witt, A. (2013). Worldviews and their significance for the global sustainable development debate. *Environmental Ethics*, *35*(2), 133–162. https://doi.org/10.5840/enviroethics201335215

Hedlund-de Witt, A., de Boer, J., & Boersema, J. J. (2013). Exploring inner and outer worlds: A quantitative study of worldviews, environmental attitudes, and sustainable lifestyles. *Journal of Environmental Psychology*, *37*, 40–54. https://doi.org/10.1016/j.jenvp.2013.11.005

Heider, F. (1983). *The psychology of interpersonal relations*. Psychology Press.

Heinberg, R. (2010). What Is Sustainability? *The Post Carbon Reader*, *11–19*. http://www.postcarbonreader.com.

Ho, A. K., Kteily, N., Pratto, F., Foels, R., Sidanius, J., Sheehy-Skeffington, J., Henkel, K.,

& Stewart, A. L. (2015). The Nature of Social Dominance Orientation: Theorizing and Measuring Preferences for Intergroup Inequality Using the New SDO7 Scale. *Journal of Personality and Social Psychology. Please, in press*.

Iwata, O. (2001). Attitudinal determinants of environmentally responsible behavior. *Social Behavior and Personality*, *29*(2), 183–190. https://doi.org/10.2224/sbp.2001.29.2.183

Johnson, K. A., Hill, E. D., & Cohen, A. B. (2011). Integrating the study of culture and religion: Toward a psychology of worldview. *Social and Personality Psychology Compass*, *5*(3), 137–152. https://doi.org/10.1111/j.1751-9004.2010.00339.x

Johnston, P., Everard, M., Santillo, D., & Robèrt, K. H. (2007). Reclaiming the definition of sustainability. *Environmental Science and Pollution Research*, *14*(1), 60–66. https://doi.org/10.1065/espr2007.01.375

Jonsson, F. A. (2012). The Industrial Revolution in the Anthropocene. *Journal of Modern History*, *84*(3), 679–696. https://doi.org/10.1086/666049

Juvan, E., & Dolnicar, S. (2014a). The attitude-behaviour gap in sustainable tourism. *Annals of Tourism Research*, *48*, 76–95. https://doi.org/10.1016/j.annals.2014.05.012

Juvan, E., & Dolnicar, S. (2014b). The attitude-behaviour gap in sustainable tourism. *Annals of Tourism Research*, *48*, 76–95. https://doi.org/10.1016/j.annals.2014.05.012

Juvan, E., Ring, A., Leisch, F., & Dolnicar, S. (2016). Tourist segments' justifications for

behaving in an environmentally unsustainable way. *Journal of Sustainable Tourism*, *24*(11), 1506–1522. https://doi.org/10.1080/09669582.2015.1136635

Kagawa, F. (2007). Dissonance in students' perceptions of sustainable development and sustainability: Implications for curriculum change. *International Journal of Sustainability in Higher Education, 8*(3), 317–338. https://doi.org/10.1108/14676370710817174

Kaiser, F. G. (1998). A general measure of ecological behavior. *Journal of Applied Social Psychology, 28*(5), 395–422. https://doi.org/10.1111/j.1559-1816.1998.tb01712.x

Kantola, S. J., Syme, G. J., & Campbell, N. A. (1984). Cognitive dissonance and energy conservation. *Journal of Applied Psychology, 69*(3), 416–421. https://doi.org/10.1037/0021-9010.69.3.416

Kates, R. W., Clark, W. C., Corell, R., Hall, J. M., Carlo, C., Lowe, I., Mccarthy, J. J., Schellnhuber, H. J., Bolin, B., Nancy, M., Faucheux, S., Gallopin, G. C., Grübler, A., Huntley, B., Jäger, J., Jodha, N. S., Kasperson, R. E., Mabogunje, A., Matson, P., …

Svedin, U. (2001). *Sustainability Science. May*.

Kemper, J. A. (2017). *Comparing the Worldviews of Marketing and Sustainability by*. University of Canterbury.

Kilbourne, W. E. (2004). *Sustainable communication and the dominant social paradigm : can they be integrated ? 4*(3), 187–208. https://doi.org/10.1177/1470593104045536

73

Kilbourne, W. E., Beckmann, S. C., Lewis, A., & Van Dam, Y. (2001). A multinational examination of the role of the dominant social paradigm in environmental attitudes of university students. *Environment and Behavior*, *33*(2), 209–228. https://doi.org/10.1177/00139160121972954

King, A. D. (2016, August 29). It 's time to ban the empty word 'sustainability.' *The Conversation*, 2–5.

Koltko-rivera, M. E. (2004). The Psychology of Worldviews. *Review of General Psychology*, *8*(1), 3–58. https://doi.org/10.1037/1089-2680.8.1.3

Kumaş, K., Aksu, H. H., Anan, O., Akyüz, A., & Güngör, A. (2019). Estimation of carbon dioxide emissions from airplanes: A case study of a turkish airport. *AIP Conference Proceedings*, *2178*(November). https://doi.org/10.1063/1.5135441

Lavrakas, P. J. (2008). *Encyclopedia of survey research methods*. Sage Publications.

Lee, I.-C., Pratto, F., & Johnson, B. T. (2011, November). Intergroup Consensus/Disagreement in Support of Group Based Hierarchy: An Examination of Socio-Structural and Psycho-Cultural Fators. *Psycological Bulletin*, 1029–1064. https://doi.org/10.1037/a0025410

Leiserowitz, A., Maibach, E., Roser-Renouf, Feinberg, G., & Rosenthal. (2015). *Climate change in the American mind: March, 2015*. Yale University and George Mason University, New Haven, CT: Yale Project on Climate Change Communication. Web.

Mazar, N., & Zhong, C. B. (2010). Do green products make us better people? *Psychological Science*, *21*(4), 494–498. https://doi.org/10.1177/0956797610363538

McElrath, K., & Martin, M. (2021). *Bachelor's degree attainment in the United States: 2005 to 2019* (Issue February). https://www.census.gov/library/publications/2021/acs/acsbr-009.html

McIlveen, P. (2008). Auto ethnography as a method for reflexive research and practice invocational psychology. *Australian Journal of Career Development*, *17*, 13–20.

Meadows, D. H. M. (1972). The Limits to Growth. *The Club of Rome*, 211. https://doi.org/10.1111/j.1752-1688.1972.tb05230.x

Méndez, M. (2013). *Autoethnography as a research method : Advantages , limitations and criticisms La autoetnografía como un método de investigación : ventajas , limitaciones y críticas. 15*(2), 279–287.

Miller, C. C. (2018, July 5). *Americans Are Having Fewer Babies. They Told Us Why.* https://www.nytimes.com/2018/07/05/upshot/americans-are-having-fewer-babies-they-told-us-why.html

National Research Council. (1999). *Our Common Journey : A Transition Toward Sustainability* (pp. 1–14).

Norgaard, K. M., & College, W. (2006). "People Want to Protect Themselves a Little Bit": Emotions, Denial, and Social Movement Nonparticipation*. *Social Inquiry*, *76*(3), 372–396.

Orlove, B., Wiegandt, E., & Luckman, B. H. (n.d.). *The Place of Glaciers in Natural and Cultural Landscapes*. 3–19.

Palan, S., & Schitter, C. (2018). Journal of Behavioral and Experimental Finance Prolific . ac — A subject pool for online experiments ☆. *Journal of Behavioral and Experimental Finance*, *17*, 22–27. https://doi.org/10.1016/j.jbef.2017.12.004

Peer, E., Brandimarte, L., Samat, S., & Acquisti, A. (2017). Beyond the Turk: Alternative platforms for crowdsourcing behavioral research. *Journal of Experimental Social Psychology*, *70*, 153–163. https://doi.org/10.1016/j.jesp.2017.01.006

Peterson, C., & Park, N. (2005). Orientations to Happiness and Life Satisfaction: The full Life Versus the Empty Life. *Journal of Happiness Studies*, *6*, 25–41. https://doi.org/10.1007/s10902-004-1278-z

Pratto, F., Sidanius, J., Stallworth, L. M., & Bertram, F. (1994). Social Dominance Orientation : A Personality Variable Predicting Social and Political Attitudes Social Dominance Orientation : A Personality Variable Predicting Social and Political Attitudes. *Journal of Personality and Social Psycology*, *67*(4), 741–763.

Reser, J. P., & Bradley, G. L. (2017). Fear Appeals in Climate Change Communication. In *Oxford Research Encyclopedia of Climate Science* (Issue September 2017). https://doi.org/10.1093/acrefore/9780190228620.013.386

Ringnér, M. (2008). *What is principal component analysis ? 26*(3), 303–304.

Schmitt, M. T., Aknin, L. B., Axsen, J., & Shwom, R. L. (2018). Unpacking the Relationships Between Pro-environmental Behavior, Life Satisfaction, and Perceived Ecological Threat. *Ecological Economics*, *143*, 130–140. https://doi.org/10.1016/j.ecolecon.2017.07.007

Schneider, S. (1989). The Changing Climate. *Scientific American*, *261*(3), 70–79.

Schultz, W. P. (2001). The structure of environmental concern: Concern for self, other people, and the biosphere. *Journal of Environmental Psychology*, *21*(4), 327–339. https://doi.org/10.1006/jevp.2001.0227

Sidanius, J., & Laar, C. Van. (2004). *Social Dominance Theory : Its Agenda and Method*. *25*(6), 845–880.

Sidanius, J., Pratto, F., & Mitchell, M. (1994). In-Group Identification, Social Dominance Orientation, and Differential Intergroup Social Allocation. *Social Psycology*, *13*(2), 151–167.

Soutar, G. N., & Sweeney, J. C. (n.d.). *Are There Cognitive Dissonance Segments? 28*(3), 227–249.

Stinson, A. B. (2015). *An Autoethnography : A Mathematics Teacher ' s Journey of Identity Construction and Change.*

Stoknes, P. E. (2015). *What we think about when we try not to think about global warming: Toward a new psychology of climate action*. Chelsea Green Publishing.

Stone, J., & Fernandez, N. C. (2008). To Practice What We Preach: The Use of Hypocrisy and Cognitive Dissonance to Motivate Behavior Change. *Social and Personality Psychology Compass*, *2*(2), 1024–1051. https://doi.org/10.1111/j.1751-9004.2008.00088.x

Stone, J., & Fernandez, N. C. (2011). When thinking about less failure causes more dissonance: The effect of elaboration and recall on behavior change following hypocrisy.

Social Influence, *6*(4), 199–211. https://doi.org/10.1080/15534510.2011.618368

Swann, W. B., Hixon, J. G., Stein-Seroussi, A., & Gilbert, D. T. (1990). The Fleeting Gleam of Praise: Cognitive Processes Underlying Behavioral Reactions to Self-Relevant Feedback. *Journal of Personality and Social Psychology*, *59*(1), 17–26. https://doi.org/10.1037/0022-3514.59.1.17

Taylor, S. J., Bogdan, R., & DeVault, M. (2015). *Introduction to qualitative research methods: A guidebook and resource*. John Wiley & Sons.

Truelove, H. B., & Gillis, A. J. (2018). Perception of pro-environmental behavior. *Global Environmental Change*, *49*, 175–185. https://doi.org/10.1016/J.GLOENVCHA.2018.02.009

Union of concerned Scientists. (2020). *Each Country's Share of CO2 Emissions*. https://www.ucsusa.org/resources/each-countrys-share-co2-emissions

van Egmond, N. D., & Vries, H. J. M. De. (2011). Sustainability : The search for the

integral worldview. *Futures*, *43*(8), 853–867.

https://doi.org/10.1016/j.futures.2011.05.027

van Trijp, H. C. M. (Ed.). (2014). *Encouraging Sustainable Behavior*. Psycology Press.

Wang, S., Leviston, Z., Hurlstone, M., Lawrence, C., & Walker, I. (2018). Emotions

predict policy support: Why it matters how people feel about climate change. *Global*

Environmental Change, *50*(January), 25–40.

https://doi.org/10.1016/j.gloenvcha.2018.03.002

Warde, P. (2011). The invention of sustainability. *Modern Intellectual History*, *8*(May),

153–170.

WCED. (1987). *Our common future*.

Weder, F., Lemke, S., & Tungarat, A. (2019). (Re)storying sustainability: The use of story

cubes in narrative inquiries to understand individual perceptions of sustainability.

Sustainability (Switzerland), *11*(19). https://doi.org/10.3390/su11195264

Williams, L. J. (2010). *Principal component analysis*. 433–459.

https://doi.org/10.1002/wics.101

Witt, A. De, Boer, J. De, Hedlund, N., & Osseweijer, P. (2016). Environmental Science &

Policy A new tool to map the major worldviews in the Netherlands and USA , and explore

how they relate to climate change. *Environmental Science and Policy*, *63*, 101–112.

https://doi.org/10.1016/j.envsci.2016.05.012

Wynveen, B. (2013). *Attaining Sustainable Behavior among Non- environmentally-motivated Individuals : A Formative Experiment.* Clemson University.

Young, R. De. (2000). *Expanding and Evaluating Motives for Environmentally Responsible Behavior. 56*(3), 509–526.

Zidansek, A. (2007). *Sustainable development and happiness in nations. 32*, 891–897. https://doi.org/10.1016/j.energy.2006.09.016

APPENDIX I

SUSTAINABILITY WORLDVIEWS SURVEY

Research Study: Sustainability Worldviews

I am a graduate student under the direction of Professor Scott Cloutier in the School of Sustainability at Arizona State University. I am conducting a research study to understand worldviews of sustainability among the American public. I am inviting your participation in this study, which will involve the completion of a short online survey (approximately 13 minutes). You must be 18 or older to participate in the study. Your participation is voluntary, and you have the right not to answer any question and to stop participation at any time. After completing the survey you will be redirected back to Prolific to record your participation and receive your compensation of $2.06. You must complete the survey to receive any compensation for participating in this study.

There are no direct benefits to you from participating in this study. However, information gained from the study will help researchers better understand the beliefs and attitudes related to sustainability. There are no foreseeable risks or discomforts to your participation. Your responses will be anonymous, as no personal information will be collected. You will not be identified in any report of the completed study as only the aggregated results will be reported in presentations or publications. All collected data will be kept securely on a password-protected computer server to which only research members will have access.

If you have any questions concerning the research study, please contact the research team at: Dr. Scott Cloutier, ASU School of Sustainability at Scott.Cloutier@asu.edu, or Natalia Rodriguez at narodri2@asu.edu. If you have any questions about your rights as a subject/participant in this research, or if you feel you have been placed at risk, you can contact the Chair of the Human Subjects Institutional Review Board, through the ASU Office of Research Integrity and Assurance, at (480) 965-6788.

By clicking below, I consent to participate in the study:

○   I consent

Before you start, please switch off phone/e-mail/music so you can focus on this study.

Thank you!

Please enter you Prolific ID here:

_____

 List all the words, ideas, or phrases that come to your mind when you hear the word **SUSTAINABILITY**

     _____

     _____

     _____

Imagine someone you know recently heard about the idea of sustainability. Since you are familiar with this idea they are interested in hearing your perspective. What are the things you would be most likely to mention when discussing this issue? What words would you use? How would you organize your thoughts?

SORTING: The list below contains words and phrases relating to sustainability. Scan the list and decide which ones explain your understanding of sustainability. Sort them into meaningful groups that explain your understanding by dragging and dropping them to the boxes. **SELECT AS MANY OR AS FEW AS YOU WANT**.

Group 1	Group 2	Group 3	Group 4	Group 5	Group 6	Group 7	Group 8
adaptation							
balance							
biodegradable							
biodiversity							
carbon emission							
climate change							
CO2 pollution							
composting							

conservation

deforestation

eco-friendly

ecological
footprint

economic growth

electric cars

energy efficient

environmental
crisis

environmental
risk

equality

fair trade

finite natural
resources

fossil fuels

frugality

future generations

green economy

green products

innovation

justice

locally sourced

natural resources

organic

polar bears

pollution

racial justice

recycling

reuse

LABEL THE GROUPS: Assign a descriptive name /title to each group you created.

Group 1

_____

Group 2

_____

Group 3

_____

Group 4

_____

Group 5

_____

Group 6

_____

Group 7

_____

Please indicate to what extent do you agree or disagree with the following statements. You can work quickly; your first feeling is generally best.

	Strongly agree	Agree	Neither agree nor disagree	Disagree	Strongly disagree
An ideal society requires some groups to be on top and others to be on the bottom					
Some groups of people are simply inferior to other groups.					
No one group should dominate in society.					
Groups at the bottom are just as deserving as groups at the top.					
Group equality should not be our primary goal.					
It is unjust to try to make groups equal.					
We should do what we can to equalize conditions for different groups.					
We should work to give all groups an equal chance to succeed.					

Please indicate to what extent you agree with the following statements about
ECONOMICS

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Individual behavior should be determined by economic self-interest, not politics					
The best measure of progress is economic					
If the economy continues to grow, everyone benefits					
Economic goals are more important than environmental goals					
We focus too much on economic measures of well-being					
Economic growth should be given priority, even if the environment suffers to some extent					
We should be more concerned about social welfare (such as happiness, life satisfaction, etc.) than economic growth					
Reducing poverty in the world should get a higher priority than economic growth					
Making income distribution more equal should get a higher priority than economic growth					

Please indicate to what extent you agree with the following statements about **CONSUMPTION**:

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
The Western world (including the U.S.) will have to drastically reduce its level of consumption to combat growing environmental problem					
Our present way of life is much too wasteful of natural resources					
We, as a society, should drastically change our way of living to combat growing environmental problems					
We, as a society, are very preoccupied with acquiring and accumulating things					
Our society's strong focus on buying things has a positive effect on us as individuals					

Do you think that **climate change** is happening?

○   Definitely yes

○   Probably yes

○   Probably not

○   Definitely not

Please indicate to what extent you agree with the following statements about the **ENVIRONMENT**:

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
We are approaching the limit of the number of people the earth can support					
Humans have the right to modify the natural environment to suit their needs					
When humans interfere with nature, it often produces disastrous consequences					
Human ingenuity will ensure that we do not make the earth unlivable					
Humans are severely abusing the environment					
The earth has plenty of natural resources if we just learn how to develop them					
Plants and animals have as much right as humans to exist					
The balance of nature is strong enough to cope with the impacts of modern industrial nations					
If things continue on their present course, we will soon experience a major ecological catastrophe					
Despite our special abilities, humans are still subject to the laws of nature					
The so-called "ecological crisis" facing humankind has been greatly exaggerated					
The earth is like a spaceship with very limited room and resources					

Humans were meant to rule
over the rest of nature

The balance of nature is very
delicate and easily upset

Humans will eventually learn
enough about how nature works
to be able to control it

It's important that you pay
attention to this study. Please
click "Strongly disagree"

Who should have the primary responsibility to protect the **ENVIRONMENT**?

○   The government

○   Business and industry

○   Individual citizens

○   The government, business and industry, and individual citizens
should all   have equal responsibility

How would you describe your attitude towards **SUSTAINABILITY**?

○   I think it is a waste of time and effort

○   I am not really bothered

○   It is OK if others want to do it

○   I think it is a good thing

○   I am a passionate advocate

Which sustainability conception is most consistent with your own beliefs?

○   Sustainability is limited to the idea of 'keeping self or business going'

○   Sustainability is understood in terms of the environmental domain of sustainability

○   The three broad domains of economic, social, and environmental are discerned, and generational responsibility is acknowledged

○   Sustainability goes beyond the three domains, critically recognizing the relevance of external authorities, societal rules, and organizational agendas

Please indicate to what extent you agree with the following statements about what **SUSTAINABILITY** implies:

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Developing new technologies to reduce the impact of harmful by-products of production					
Maintaining biodiversity in the local environment					
Recycling waste products					
A significant degree of local production and consumption					
Helping people to avoid starvation and disease					
Social progress which recognizes the needs of everyone					
Exploiting natural resources for human benefit while maintaining critical natural capital					
Maintaining high and stable levels of economic growth					
Putting the needs of nature before those of humanity					

Please indicate to what extent you agree with the following statements

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Equal rights for all people strengthen a community					
Community cooperation is necessary to solve social problems					
Generally speaking consumerism is not sustainable					
Access to clean water is a universal human right					
I am willing to put forth a little more effort in my daily life to reduce my environmental impact					
An unsustainable economy values personal wealth at the costs of others					
I believe that many people can work together to solve global problems					
Clean air is part of a good life					
Our present consumption of natural resources will result in serious environmental challenges for future generations					
The well-being of others affects me					
Biological diversity is, in itself good					

How often do you engage in the following activities?

	Very often	Often	Occasionally	Rarely	Never
Pick up litter					
Recycle paper, plastic, and metal					
Conserve water in my home					
Buy environmentally friendly and/or energy-efficient products					
Minimize driving a car for environmental reasons					
Make my yard or my land more desirable for wildlife					
Volunteer to enhance or restore natural areas in my community					
Plant trees to improve natural habitat					
Contribute to ecological monitoring (citizen science) projects					
Talked to others in my community about environmental issues					
Worked with others to address an environmental problem or issue					
Participate as an active member in a pro-environmental group					
Vote to support a policy/regulation that affects the environment					
Sign a petition about an environmental issue					
Donate money to support environmental protection					
Write a letter in response to an environmental issue					
Please choose "Very often"					

Thoughts About Your Life. Please choose the degree to which the following statements apply to you.

	Very much unlike me	Somewhat unlike me	Neutral	Somewhat like me	Very much like me
Life is too short to postpone the pleasures it can provide					
I go out of my way to feel euphoric					
In choosing what to do, I always take into account whether it will be pleasurable					
I agree with this statement: "Life is short - eat dessert first"					
I love to do things that excite my senses					
For me, the good life is the pleasurable life					

Thoughts About Your Life. Indicate your agreement with each item by selecting the appropriate answer. Please be open and honest in your responding.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly agree
In most ways my life is close to ideal.					
The conditions of my life are excellent.					
I am satisfied with my life.					
So far I have gotten the important things I want in life.					
If I could live my life over, I would change almost nothing.					

Age

○   18-20

○   21-24

○   25-34

○   35-44

○   45-54

○   55-64

○   65+

With which gender identity do you most identify?

○   Male

○   Female

○   Gender Variant/Nonconforming

○   Not listed

○   Prefer not to answer)

Race: How would you describe yourself? (choose all that apply)

Black or African American (For example, African American, Jamaican, Haitian, Nigerian, Ethiopian, Somalian, etc.)

Hispanic, Latino, or Spanish origin (For example, Mexican or Mexican American, Puerto Rican, Cuban, Salvadoran, Dominican, Colombian, Ecuadorian, Chilean, etc.)

Asian (For example, Chinese, Filipino, Asian Indian, Vietnamese, Korean, Japanese, etc.)

Native Hawaiian or Other Pacific Islander (For example, Native Hawaiian, Samoan, Chamorro, Togan, Fijian, Marshallese, ect.)

White (For example, German Irish, English, Italian, Polish, French, etc.)

Native American or American Indian (For example, Navajo Nation, Blackfeet Tribe, Mayan, Aztec, Native Village of Barrow Inupiat Traditional Government, Nome Eskimo Community, etc.)

Some other race, ethnicity, or origin
_____

What is the highest degree or level of school you have completed? If currently enrolled, highest degree received

○　　　No schooling completed

○　　　Nursery school to 8th grade

○　　　Some high school, no diploma

○　　　High school graduate, diploma or the equivalent (for example: GED)

○　　　Some college credit, no degree

○　　　Trade/technical/vocational training

○　　　Associate degree

○　　　Bachelor's degree

○　　　Master's degree

○　　　Professional degree

○　　　Doctorate degree

Household Income

    ○   Less than $20,000

    ○ $20,000 to $34,999

    ○ $35,000 to $49,000

    ○ $50,000 to $74,000

    ○ $75,000 to $99,000

    ○   Over $100,000

Generally speaking, do you usually think of yourself as a Republican, Democrat, Independent, or something else?

    ○   Republican

    ○   Democrat

    ○   Independent

    ○   Something else

Marital Status

     ◯   Married/Living as

     ◯   Single

     ◯   Widowed

     ◯   Divorced

     ◯   Separated

Where did you grow up? (City, State, Country)

_____

In which state do you currently reside?

_____

You have reached the end of the survey. If you have any feedback on the issues asked about in this survey or is there anything about your responses and/or perceptions that you would like us to know please enter your comments in the text box below.

Thank you for your participation