Balancing Diet and Wellbeing: Exploring the Relationship Between Wise Consumption, Meat Reduction, and Psychological Wellbeing

Thesis

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By

Briahna M. Hendey

Graduate Program in Environment and Natural Resources

The Ohio State University

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Thesis Committee:

Dr. Jeremy Brooks, Advisor

Dr. Jeremy Bruskotter

Dr. Kristi Lekies

Dr. Gregory Hitzhusen

Abstract

Consumer wisdom is a novel concept that has been developed to explore whether and how "wisdom" shapes consumer decisions. Wisdom is defined as acting in a way that transcends strictly personal interests and that balances personal and collective interests over the long term. This research examines how sustainable consumption, and reduced meat consumption in particular, relate to consumer wisdom. Meat consumption offers an ideal context to examine how "wise" consumers might balance the perceived tradeoffs between societal/environmental wellbeing and individual wellbeing, owing to its cultural importance and impacts to the environment, animals, and personal health. Using data from an online survey of American adults (N=323), this study builds upon existing literature suggesting that reducing one's meat consumption can have adverse psychological effects, whereas some other types of sustainable consumption might actually improve psychological wellbeing. Results show that "wise" consumers, on average, consume less meat than their less "wise" counterparts. However, the individuals who scored highest in consumer wisdom did not benefit psychologically from reducing their meat consumption, especially in the case of beef. In contrast, individuals who scored low in consumer wisdom did benefit psychologically from reducing their meat and beef consumption. It is suggested that "wise" consumers are perhaps more attune and sensitive to any perceived costs associated with meat abstention.

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Vita

2015…… Native American Environmental Intern,
Environmental Protection Department
Morongo Band of Mission Indians
Banning, CA

2016…… B.S., Human Biology, Psychology Minor,
University of Southern California
Los Angeles, CA

2017 – 2018…… Research Assistant,
Psychology Aging Center,
University of Colorado, Colorado Springs
Colorado Springs, CO

2017 – 2018…… EdVenture Mentor,
Education Department,
Cheyenne Mountain Zoo
Colorado Springs, CO

2018 – 2019…… Graduate Fellow,
School of Environment & Natural Resources,
The Ohio State University
Columbus, OH

2019 – 2020…… Graduate Teaching Assistant,
School of Environment & Natural Resources,
The Ohio State University
Columbus, OH

Fields of Study

Major Field: Environment and Natural Resources

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Chapter 1. Consumer Wisdom and Sustainable Consumption in the Context of Meat Consumption

Introduction

As climate change continues to be a pressing global issue, it has become increasingly apparent that urgent, widespread action is required to avoid irreversible effects (IPCC, 2019). In light of the gravity of both climate change and global social and economic inequities, the United Nations Foundation proposed 17 Sustainable Development Goals (SDGs), which were adopted by 193 countries in 2015. These goals comprise the world's shared plan "to end extreme poverty, reduce inequality, and protect the planet by 2030" (United Nations, 2019). While all of these goals are of critical importance (and inherently interrelated), the 12th SDG of ensuring *responsible consumption and production*—referring to the consumption and production of all material goods (including food) consumed by people—is fundamental in addressing the environmental degradation caused by production and consumption processes (United Nations, 2019).

This literature review will examine how *consumer wisdom*, defined as consuming in a moral fashion that promotes individual wellbeing without compromising that of society's or future generations' (Luchs & Mick, 2018) relates to sustainable consumption. Although consumer wisdom is a novel construct, there is some initial evidence that "wise" individuals are more inclined to consume sustainably, balancing their own wellbeing with that of the collective (Luchs & Mick, 2018). It has been suggested that consumer wisdom is predictive of sustainable

consumption patterns and lifestyles, but there is currently no empirical research examining this relationship.

Sustainable consumption can be defined as "[meeting] the needs of the present without compromising the ability of future generations to meet their own needs" (WCED, 1987). Thus, sustainable consumption represents a social dilemma in situations where individuals might perceive a conflict between maximizing their personal interests versus those of society and future generations (Gleim et al., 2013). This can depend on the context and type of sustainable consumption, and varies between individuals (Brooks & Wilson, 2015). Generally speaking, there are two broad categories of sustainable consumption: adopting more sustainable "green" technologies to meet production demands or reducing consumption altogether. "Green" products can serve as an attractive alternative for many consumers, as opposed to reducing their consumption altogether (Griskevicius, et al., 2010). However, technological advances aren't always a viable solution for long term sustainability, given the overwhelming demand for goods and ever-growing global population (United Nations, 2019). The global *material footprint*, defined as "the total amount of raw materials extracted to meet final consumption demands", has grown from 43 billion metric tons in 1990 to 92 billion metric tons in 2017 (United Nations, 2019). That marks a 113% growth in material footprint in less than two decades, outpacing both population and economic growth (United Nations, 2019). At present, the global material footprint is projected to grow to a staggering 190 billion metric tons by 2060, far exceeding the raw materials that the planet might provide over the long term (United Nations, 2019). These trends suggest that more efficient technologies are not keeping pace with increased resource use

and that there must also be a global transition towards more responsible and sustainable consumption patterns.

One approach to addressing the overwhelming increase in global consumption relates to the second broad category, which involves consumers *reducing* their own consumption, as opposed to merely buying more efficiently produced, "green" alternatives. "Green" consumption can be considered an efficiency behavior, where a purchased good or service is lower in environmental impact than other more consumption-intensive options (Brooks & Wilson, 2015). While efficiency behaviors may be preferred to more consumption-intensive ones, they can still perpetuate the social conditions that lend to overconsumption. More specifically, they don't necessarily require a continued change in behavior beyond the initial purchase decision (e.g., driving an electric vehicle vs. a traditional gas vehicle; Brooks & Wilson, 2015). Accordingly, I will largely focus upon consumption reducing behaviors, which effectively lessen environmental impacts and involve behavioral change that may run counter to existing norms surrounding consumption. Meat reduction can be viewed as a type of reduction behavior, given that it requires repeated behavioral change that is countercultural across most American social contexts. Indeed, omnivorous consumers must consciously make the effort to reduce their meat intake throughout their daily lives in order to achieve the desired benefits. Unfortunately, consumption-reducing behaviors—such as meat reduction or elimination—are often perceived as damaging to the individual owing to the costs involved (e.g., social impacts, time, knowledge, effort; Brooks & Wilson, 2015). Still, there are instances where sustainable consumption can lend to positive social outcomes, especially where status is concerned.

Status and reputational benefits can drive sustainable consumption decisions for those with pro-environmental inclinations, at least in some social and cultural contexts. For example, individuals might be more inclined to purchase a green product in public if it increases their status (Griskevicius, et al., 2010). This phenomenon, known as "going green to be seen" (a type of conspicuous consumption) helps explain why individuals opt for products that signal more prosocial and altruistic motivations (i.e., green products) in public situations, but may prefer more luxurious non-green products in private (Griskevicius, et al., 2010). By signaling their prosocial motivations in visible contexts, these individuals might be viewed as more trustworthy and more desirable social companions by others (Gintis et al., 2001). Consequently, there are associated status benefits.

Whereas consuming something that is clearly labeled as "green" might bolster one's reputation, opting for reduction can have the opposite effect (Brooks & Wilson, 2015). Reducing consumption can be perceived as unpleasant or undesirable, given that there may not be an immediate incentive to reduce. Rather, there can be substantial social costs—in addition to the psychological costs—associated with the behavioral changes that are required to reduce consumption, versus consuming more efficient alternatives (Brooks & Wilson, 2015). Often times, reduction behaviors, such as riding the bus instead of buying an electric vehicle, are stigmatized and perceived as low status. For example, repairing old clothes in lieu of purchasing new clothing could negatively impact one's social status (Brooks & Wilson, 2015). Additional social cues that signal reduction as a choice, versus necessity, can help to signal prosocial

intentions, thereby lending to higher social status (Brooks & Wilson, 2015). Generally speaking, however, the relative social costs and benefits are often determined by the prevailing social norms and values surrounding pro-environmental behaviors in a given group and cultural context (Brooks & Wilson, 2015).

Given the importance of context, there is no clear, universal explanation for consumers' failure to make more sustainable consumption decisions across consumption domains, even among environmentally conscious consumers (Gleim, Smith, Andrews, & Cronin, 2013). Social costs and barriers might vary greatly between contexts and individuals, making it difficult to create a "one-size-fits-all" solution for promoting sustainable consumption.

Here, I will focus on reduced meat consumption in order to better explore specific costs and psychosocial barriers, as well as how *consumer wisdom* specifically relates to these barriers and sustainable consumption more broadly. Meat reduction serves as an ideal type of sustainable consumption to examine, given that it requires substantial behavioral change and runs counter to existing cultural norms in the United States (Dagevos & Voordouw, 2013). To begin, I will first define *consumer wisdom* as a theoretical framework.

Consumer Wisdom

In order to consume in a manner that strategically balances personal and collective wellbeing, consumers must first be both knowledgeable about a given issue, as well as motivated to act accordingly. This idea of acting virtuously—or in a way that transcends strictly personal

interests—is what constitutes *wisdom* in a person (Masmoudi, 2016). Wisdom can be a difficult term to assign a specific definition, given the multitudes of conceptualizations it has been assigned by philosophers, and more recently consumer researchers (Luchs & Mick, 2018). While wisdom is defined differently across domains, it can be thought of as balancing heart and logic, with a clear and equal concern for the future, others' needs, and personal needs (Luchs & Mick, 2018, p. 369). Pure knowledge does not equate to wisdom; in order to be wise, an individual must utilize and build their awareness to benefit themselves while minimizing negative impacts on others (Masmoudi, 2016). "Wise" individuals recognize the interconnectedness between their own wellbeing and that of others. Therefore, they are motivated to act in a way that benefits themselves and society, both in the present and into the future. As such, a "wise" individual might be especially adept at navigating a social dilemma like consuming sustainably.

Despite centuries of philosophical deliberations on the subject of wisdom, the idea of *wise consumption* is a relatively new concept that is domain specific. Consumer wisdom builds upon existing literature regarding general wisdom and research in consumer studies, namely Transformative Consumer Research (TCR; Luchs & Mick, 2018). TCR focuses on the wellbeing of consumers, both individually and as part of the collective (Mick et al., 2012). This research is not necessarily specific to one domain of consumption (e.g., dietary, material), but rather views meaningful consumption—which often involves curtailment or alternative consumption—as an integral component to the wellbeing of individuals (Mick et al., 2012). For instance, the overwhelming nature of even a standard trip to the grocery store can lead to *unwise* consumer decisions that fail to align with individuals' personal interests or values (Schwartz, 2004). Consumers are often presented with an immense number of choices, which in turn is cognitively

overwhelming, lending to the reliance on habits or convenient choices that don't necessarily represent their goals, which might include following a healthy or sustainable diet. However, there has been heightened interest in the concept of wise consumption with respect to both health (e.g., dietary labeling) and the environment (e.g., sustainable consumption), given the gravity of each domain (Mick et al., 2012).

It has been shown that classical conceptualizations of wisdom (e.g., from Aristotle) might be applied to imbue virtue and morality in consumer decisions (see Chapter 32, Mick et al., 2012). Indeed, all consumption decisions have moral implications, in that there are impacts—positive and/or negative—to both the self and others over the long-term. Unsurprisingly, there is variation in the degree that individuals are mindful of such implications. Luchs and Mick (2018) were able to conduct in-depth qualitative interviews with individuals who were especially inclined to make "virtuous" (i.e., morally sound) consumption decisions, and in turn were able to identify those qualities that were especially representative of a "wise" individual. Importantly, "wise" individuals do not necessarily share the same morals and values per se. They do, however, share a general concern for promoting both their own self-interests across dimensions (physical, economic, socio-cultural, psychological, emotional, spiritual, political), as well as societal interests (Luchs & Mick, 2018). Often times, "wise" individuals opt for a "middle-way approach" that considers conflicting objectives, such as personal and societal wellbeing (Luchs and Mick, 2018).

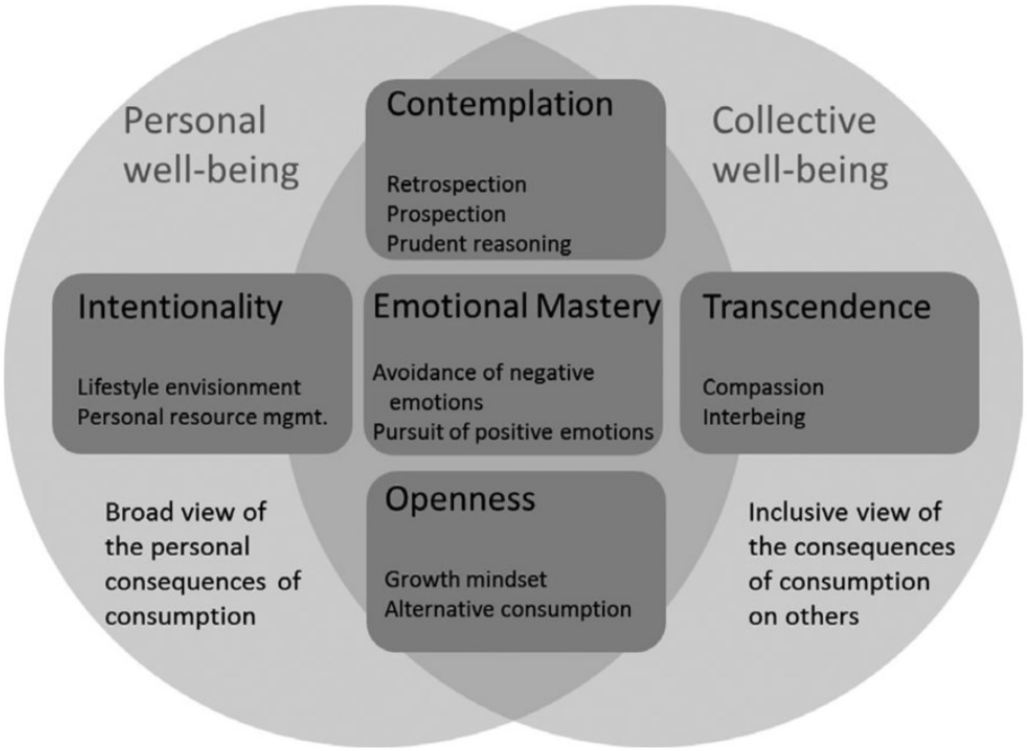

Figure 1. Consumer Wisdom Theoretical Framework. Figure sourced from Luchs & Mick (2018).

This more balanced approach is perhaps owing to the six distinct facets of consumer wisdom: *lifestyle responsibility, purpose, flexibility, perspective, prudent reasoning,* and *transcendence* (Luchs & Mick, 2018; Luchs, Mick, & Haws, n.d.). These facets may interact with one another, but a given individual can be either high or low in any given facet, independent of the others. In their initial conceptualization and organization of consumer wisdom's facets, Luchs and Mick (2018) identified five distinct facets (*contemplation, intentionality, emotional mastery, openness,* and *transcendence*; see Figure 1 above). However, in more recent, unpublished work, they have reconceptualized the organization of the key traits that define each facet of consumer wisdom,

and instead shifted towards a six-facet model. In light of the unpublished nature of their newest study (which is currently under review), I will instead describe the initial five facets, which still contain all relevant factors for consumer wisdom.

When considering consumer wisdom, it is useful to first examine the facet of *intentionality*, which is reflective of the thought and consideration that wise consumers employ. *Intentionality* is characterized by enacting a virtuous lifestyle with respect to one's values and goals (i.e., lifestyle envisionment; Luchs & Mick, 2018). Intentional individuals are also skilled in managing their personal resources, thereby allowing for the faithful planning and execution required to realize one's envisioned lifestyle (Luchs & Mick, 2018). Examples of intentionality include aversion to waste (resource management) and judiciously evaluating how one's lifestyle aligns with values and available resources—both personal and collective—over the long term (Luchs & Mick, 2018). Intentionality might be important for predicting sustainable consumption in a broad sense, given that price has been found to be a key inhibitor regarding "green consumption" (Gleim et al., 2013). That is, intentional individuals would likely be better in allocating their monetary resources in such a way that enables their proposed goal of consuming sustainably, thereby overcoming one of the chief barriers cited by some individuals (Gleim et al, 2013; Luchs & Mick, 2018).

Such intentionality might be informed by the *contemplation* component of consumer wisdom, which is denoted by retrospection, prospection, and prudent reasoning (Luchs & Mick, 2018). Retrospection is characterized by the reflection of behavioral consequences related to consumption, with prospection offering a means of considering the possible consequences of

different consumption decisions (Luchs & Mick, 2018). Prudent reasoning refers to the act of reflecting upon one's knowledge, values, preferences, etc. in order to arrive at a more balanced decision-making that considers both personal and collective wellbeing (Luchs & Mick, 2018). An important consequence of contemplation is that individuals research the products and services that they consume, as well as the motivations of various marketplace actors (e.g., the meat industry), which allows them to make informed decisions (Luchs & Mick, 2018). In contrast to the average consumer, a "wise" consumer tends might approach this research with a sense of curiosity and genuine interest. Thus, contemplative individuals would likely have higher knowledge regarding factors that are important in their consumption decisions (i.e., knowledge of environmental impacts).

Any sort of balanced decision-making requires some level of *emotional mastery*. This requires the pursuit of more positive emotions stemming from consumption decisions, and the avoidance of negative emotions (e.g., guilt) that might arise from less virtuous consumption (Luchs & Mick, 2018). Generally speaking, the perceived level of difficulty for a goal can impact approach versus avoidance mechanisms, with avoidance being characterized by the avoidance of punishment or negative affect, distinct from the approach of a desired end state (Fujita & Macgregor, 2012). Thus, wise consumers may be more prudent in establishing realistic and effective goals (i.e., moderate in difficulty; Locke & Latham, 2012) that lend to emotional mastery, thereby promoting approach mechanisms in the form of lifestyle envisionment. In the realm of dietary change, this might be exemplified by the *reduction* of meat consumption, rather than a short-lived attempt at elimination of it from one's diet. Furthermore, emotional mastery might prevent the over-consumption of food (or other goods) as an emotional coping mechanism

(Adams & Leary, 2007). That is, emotional mastery can prevent the over-consumption of foods—such a meat—following a lapse in one's diet (e.g., conscientious omnivorism). "Wise" individuals are not likely to experience negative emotions following a dietary lapse, thereby preventing any boomerang effects in meat consumption (Adams & Leary, 2007). Still, individuals must first be willing to attempt a reduction in meat consumption for this to apply.

It follows that one of the most important aspects of consumer wisdom—at least with respect to dietary change—is *openness*, or the adoption of a growth mindset and willingness to consume in an alternative manner (Luchs & Mick, 2018). A growth mindset is exemplified by an individual who believes their skills, personal qualities, and intelligence are changeable through personal effort and external help (Dweck, 2016; Luchs & Mick, 2018). In turn, this growth mindset lends to a willingness to consume in an alternative manner (i.e., reducing meat consumption). Dweck and Grant (2008) illustrated that an incremental self-theory—when people believe that traits like moral character are dynamic, malleable, and able to be developed—lends to individuals' perceptions that they are capable of learning and changing a given quality through effort, making it analogous to the growth mindset that exemplifies openness. In contrast, those individuals with an entity self-theory—characterized by the belief that individual attributes are fixed in nature—were shown to be more prone to self-handicapping and defensiveness, thereby preventing successful goal attainment (Dweck, Chiu, & Hong, 1995). Naturally, such defensiveness does not lend to self-reflection and positive behavioral change; it is essentially a lack of openness to new behavioral practices, including the alternative of sustainable consumption.

The final facet of consumer wisdom is *transcendence*, which involves a sense of compassion to *all* that are affected by one's consumption, and in turn a deep sense of interbeing (Luchs & Mick, 2018). Interbeing entails an appreciation of the interconnectedness of humans and all life (including animals) on earth that corresponds to more ethical, pro-environmental behavior across domains. This likely starts with an appreciation and compassion towards yourself (i.e., self-compassion), which might then be extended towards others (Neff, 2003). It could be *transcendence* stems from an ecosystem perspective (see Crocker & Canevello, 2008), where individuals view people as interconnected and feel care and concern for the wellbeing of others, regardless of group membership or national identity. That is, once the individual realizes that they can actually *benefit* from acting in ways that promote collective wellbeing, they create a positive feedback-loop in which their positive actions benefit them and the collective whole. This is distinct from prosocial behavior, which is characterize by a perceived *cost* to the self (Crocker & Canevello, 2008). Indeed, people have can multiple goals, but they needn't be in opposition of each other—they can reasonably promote both personal and collective wellbeing. Such goals are likely informed by the research that "wise" consumers put into their consumption decisions, which can lend a more nuanced understanding of collective and long-term impacts (Luchs & Mick, 2018). It might be inferred that while individuals high in consumer wisdom have multiple clearly defined goals (to promote their "envisioned lifestyle," Luchs & Mick, 2018), they recognize that their wellbeing isn't necessarily a zero-sum gain in relation to society. Thus, consumer wisdom offers a pathway to the "double dividend" of wellbeing (Jackson, 2005; Claborn & Brooks, 2019).

While consumer wisdom is a novel construct, it might offer additional insights when compared to other existing theoretical frameworks associated with sustainable consumption (e.g., moral foundations theory, value-belief-norm theory, social identity theory; Chuck et al., 2016; Dickinson et al., 2016; Steg et al., 2014; Stern et al., 1999) by specifically considering consumption and corresponding wellbeing. That is, consumer wisdom offers a more holistic understanding of what predicts "moral" or "virtuous" consumption decisions *in light of* one's values, social identity, etc. In short, "wise" consumers might offer key insights into how individuals might strike an effective balance between their own wellbeing and that of society's, thereby leading to *sustained* sustainable consumption.

Table 1. Facets of Consumer Wisdom and Related Meat Reduction Barriers.

Consumer Wisdom Facet	Overview	Related Barriers	Traits
Intentionality	○ Lifestyle envisionment ○ Personal resource management	○ Habit ○ Norms ○ Values	Critically evaluates how consumption behaviors align with values and personal resources and adjusts otherwise automatic behavior to align with one's values and personal norms.
Contemplation	○ Retrospection ○ Prospection ○ Prudent reasoning	○ Habit ○ Norms ○ Values	Considers one's ongoing and past consumption habits, the potential effects of different consumption options (including normative options), and how different options might serve one's values.
Emotional Mastery	○ Avoidance of negative emotions ○ Pursuit of positive emotions	○ Identity ○ Habit ○ Norms	Learns from previous consumption decisions, and subsequently plans ahead to avoid behaviors (i.e., not automatic behavior) that led to negative emotional outcomes (e.g., feeling guilty after impulsively eating meat in spite of vegetarian identity/personal norm).
Openness	○ Growth mindset ○ Alternative consumption	○ Habit ○ Identity ○ Value	In contrast to more habitual behaviors, *openness* lends to seeking consumption options that provide new experiences, which may extend beyond a fixed identity but that still align with values (e.g., an environmentally minded omnivore trying to eat tofu).
Transcendence	○ Compassion ○ Interbeing	○ Values ○ Identity ○ PCE	Consumes in a way that promotes both individual and collective wellbeing, including at the global level, illustrating a belief that such consumption decisions have an impact (i.e., PCE). Places a value on nature and opts for consumptive decisions that foster a sense of connection with others and the environment, which are likely integrated into one's identity and values (e.g., pro-environmental and egalitarian values).

A hypothetically "wise" individual would likely vary in the extent of their relative consumer wisdom by facet, but here I will describe one version of how an individual who is high in each facet might approach meat consumption, in particular (see Table 1 above). As a *transcendent* individual, they would likely address all of their consumption decisions with a sense of interbeing and compassion, with great concern paid to their consumption impacts, including to animals and the environment. Considering the rather immediate consequences to animal welfare (and the environment) that are associated with meat consumption, this would likely lend to *contemplation* of meat eating in general. However, balanced decision-making is a key component of both *contemplation* and *emotional mastery*. Thus, after having done research on the topic, they would likely consider their values, knowledge, and preferences, and adjust their meat consumption in turn. If meat eating was deemed personally valuable and important, they would likely not entirely cut meat from their diet, in spite of the greater impacts. Instead, a middle-way approach to personal and collective wellbeing might be preferred, as is characterized by flexitarian diets. Alternatively, they could opt for more sustainably and ethically produced meat, although this research will focus on meat reduction. Importantly, either option would allow for the positive emotional benefits of consuming meat, while minimizing negative emotions like guilt. This change (i.e., reduction) in meat consumption represents *openness* to alternative consumption. In addition, meat reduction would allow for the alignment of the individual's values (e.g., pro-environmental, egalitarian values) and lifestyle goals over time, which denotes *intentionality*.

I will next discuss reduced meat consumption in more detail, and how consumer wisdom specifically relates to this domain of sustainable consumption and its many barriers.

Meat Consumption

The rise in global meat consumption is not especially unique when compared to other types of unsustainable consumption—we live in a consumer society that promotes most all types of consumption to an extreme degree (Dhandra, 2019; Hedenus et al., 2014; Komarova Loureiro et al., 2016). This is illustrated by the rise of conditions such as obesity, debt, and materialism, all of which are detrimental to quality of life (Masmoudi, 2016). Regarding individuals' health, the over-consumption of items such as alcohol, unhealthy foods, and cigarettes is one of the leading causes of premature death in the United States (Keeney, 2008). The recent obesity epidemic in the United States is reflective of what can happen when the consumption of such unhealthy foods, such as red or processed meats, goes unchecked (see Rouhani et al., 2014 for systematic review on red and processed meat intake and obesity). Nearly 40% of U.S. adults are considered obese, which can lend to either inability and/or insecurity that prevents these individuals from living the life they might prefer (Ogden & Flegal, 2015). It would seem that the most convenient and most advertised options for consumers rarely benefit their wellbeing (physical, financial, mental, etc.), much less the planet they inhabit. Thus, the impetus falls on individual consumers to make consumption decisions that promote their own wellbeing, in spite of the various structural and cognitive barriers (Komarova Loureiro et al., 2016).

Indeed, some individuals (predominantly from Western countries) are opting out of the status quo and beginning to reduce their meat intake for environmental and health reasons (Rosenfeld & Burrow, 2017; Sanchez-Sabate, & Sabaté, 2019). Underlying this shift is perhaps a growing awareness that, relative to diets that are high in meat consumption, greenhouse gas (GHG) emissions are up to 55% lower for vegetarian and vegan diets, and 35% lower for diets with reduced meat consumption (Hallström, Carlsson-Kanyama, & Börjesson, 2015). In addition, reduced meat consumption can serve as an important way to help prevent negative health implications (Macdiarmid, Douglas, & Campbell, 2016). More specifically, research has shown that the consumption of animal-derived proteins (including all meats, dairy, and eggs) is associated with an increase in overall mortality, cardiovascular mortality, and a 4-fold increase in cancer death risk; however, these risks are eliminated or attenuated when the protein consumed is plant-based (Levine et al., 2014; Song et al., 2016). In short, one needn't entirely eliminate meat from their diet in order to have sizeable positive impacts for both the environment and their health outcomes.

Here I am defining reduced meat consumption as a pro-environmental, consumption-reduction behavior, in that more plant-based diets tend to have lower environmental demands and impacts. Importantly, meat reduction also requires omnivores to repeatedly decide to consume *less* meat, as opposed to merely opting for a more environmentally efficient option that doesn't require real behavioral change. However, it is important to note that the environmental benefits of meat reduction might be negated if an individual instead consumes other resource-intensive food products (e.g., large amounts of dairy products, globally sourced produce). Moreover, it is also

worth considering that not *all* types of meat consumption are inherently damaging to the environment (Pluhar, 2010). Alternatives to more industrialized meat consumption, such as some forms of hunting, are not inherently problematic with respect to the environment and health (Pluhar, 2010). Still, when considering the average American's diet (i.e., high in processed, commercialized foods), meat reduction tends to translate into better environmental outcomes, considering the nature of factory farming (Kanaly et al., 2010). To be sure, most Americans consume high levels of meat that is neither ethically nor sustainably sourced (Daniel et al., 2011). Thus, my characterization of meat reduction is simplified for the sake of this research, in that it is considering individuals' meat intake to be that of the typical American diet. In addition, my consideration of meat reduction assumes that individuals have equal access to diets lower in meat consumption, which may not be the case owing to structural barriers and/or availability.

While there are many benefits from reduced meat consumption, there are also a number of barriers (outside of the access and availability of meat-alternatives) preventing reduction at the individual or societal levels. Such hurdles include the initial knowledge-gap regarding what constitutes both a healthy and a sustainable diet, especially given that this may vary by location and food availability. Still, even if a consumer is knowledgeable of both the implications of diet and what an "ideal" diet for themselves might be, many—if not most—do not adhere to these standards. Even among those who do succeed in adopting an alternative diet such as vegetarianism, the rate of continued dietary adherence isn't always great. However, the levels of adherence are generally higher for ethically or morally motivated—versus health motivated—vegetarians (Hodson & Earle, 2018; Hoffman, et al., 2013). For those individuals who are

morally motivated, the perceived costs to ceasing vegetarianism are perhaps more pronounced when compared to vegetarians who have egoistic motives (i.e., personal health), in that they transcend the individual (de Groot & Steg, 2010; Fox & Ward, 2008).

Indeed, meat-eating has been shown to be a consumption decision that is especially moral in nature, given the impacts to animals, the environment, and the individual (Buttlar & Walther, 2019; De Backer & Hudders, 2015; Pollan, 2006). The moral implications of consuming other animals largely center around the welfare of the animals themselves, but also extend towards the associated environmental and social impacts. Meat-eaters have been shown to morally disengage by presenting, preparing, and discussing meat in a way that distances its association with the killing of an animal (Graça et al., 2016; Kunst & Hohle, 2016). Thus, meat consumption is an ideal area of study for moral consumption (i.e., wise consumption). Next, I will discuss specific barriers to meat reduction, and ultimately how consumer wisdom might help to overcome them (see Table 1 for overview).

Barriers to Reducing Meat Consumption

Perceived Consumer Effectiveness

For some individuals driven by a desire to reduce their contribution to climate change, motivation alone is not always sufficient to stir a change in meat consumption, owing to underlying beliefs that doing so is ineffective or that the associated costs are too great (Hunter & Röös, 2016). This might be explained by individuals' *perceived consumer effectiveness* (PCE), or the degree to which they believe that an individual consumer can be effective in making a

desired impact (Kinnear, Taylor, & Sadrudin, 1974). More specifically, the concept of PCE can be used to describe the individual's perception that they have the ability to have a meaningful effect on the larger issue in question, such as improved health or climate change (Wiebe, Basil, & Runté, 2017). This stands in contrast to their perceived ability to merely perform the behavior in the first place, which is known as *perceived self-efficacy*, a related but distinct concept (Ajzen, 2002). Indeed, it has been shown that PCE is particularly predictive of more sustainable consumption (Gleim et al., 2013; Vermeir & Verbeke, 2006), independent of one's perceived ability consume sustainably. Nonetheless, there are many factors that might impede one's perceived self-efficacy to alter their diet, such as overcoming the strong habitual nature of meat consumption.

Habit

Even those who are highly motivated to disrupt a strong consumption habit (diet in this case) may find difficulty in doing so, owing to the strength of habit (Ji & Wood, 2007; Neal & Wood, 2009; Neal, Wood, Labrecque, & Lally, 2012). For instance, one study conducted by de Boer, Schösler, and Aiking (2017) found that participants often cited habit and household context in reference to meat eating, illustrating that the behavior was neither dictated by thoughtful consideration nor motivation upon each meal. By definition habits are an "automatic response to regularly occurring cues that are acquired through associative learning" (Verplanken, 2018, p. 4). Habits are prompted by the environment in which they take place, making them especially difficult to change when coupled with their automaticity (Maio et al., 2007). In light of the importance of environmental cues, it's no surprise that dietary habits are in large part shaped by cultural norms (Fischler, 1980). For instance, Ji and Wood (2012) found that individuals with

intentions to refrain from eating fast food were drawn back into their unwanted dietary habits by simply driving past a fast food restaurant. Moreover, habits can lead to "tunnel vision," where people have lessened motivation to process and gain new information that conflicts with their given habit, and they are therefore resistant towards information-based interventions (Maio et al., 2007). Neal, Wood, Lebrecque, and Lally (2012) contended that effective habit change strategies include methods such as vigilant monitoring (which is characterized by heightened intentionality), in that the automaticity of the behavior is disrupted. Thus, habits are the result of a lack of *intentionality* in a given situation, and they are difficult to overcome given individuals' lack of *openness* to information that is in opposition to their habit.

Values

This lack of *openness* is likely owing to individuals' biases towards information that encourages a diet with reduced meat intake, depending on existing views (Vainio et al., 2018). Such views are largely informed by values, which according to Schwartz and Bilsky (1987) can be defined as "(a) concepts or beliefs, (b) about desirable end states or behaviors, (c) that transcend specific situations, (d) guide selection or evaluation of behavior and events, and (e) are ordered by relative importance," (p. 551). There are eight motivational domains of values: enjoyment, security, achievement, self-direction, restrictive-conformity, prosocial, social power, and maturity (Schwartz & Bilsky, 1987). Indeed, it has been shown that consuming meat is related to specific values (Graham & Abrahamse, 2017), with food in general being representative of social values and beliefs (Allen & Ng, 2003; Allen, Wilson, Ng, & Dunne, 2000). More specifically, surveys have found that when compared to vegetarians, many omnivores have stronger belief

orientations towards social dominance and right-wing authoritarianism (Allen et al., 2000). Other research has also shown that meat consumption is positively related to self-enhancement and tradition values, and negatively related to transcendence and openness values (Graham & Abrahamse, 2017). That is, while omnivores place higher importance on social power versus social justice, vegans and vegetarians prioritize more transcendent values, such as equality, peace, and justice (Allen et al., 2000). With respect to pro-environmental behaviors specifically, hedonic, egoistic, altruistic, and biospheric values have been implicated, with hedonic values being negatively related (Steg et al., 2014). Consequently, the values of *transcendence* and *openness* are especially important for individuals if they are to move beyond their more hedonic motivations and to begin reducing their meat consumption. This is especially true given the importance of values in informing one's *identity*, which is also key in determining dietary behaviors.

Identity

In the realm of pro-environmental behavior, an environmental self-identity has been shown to predict environmentally-friendly behaviors, owing to heightened intrinsic motivation (van der Werff, Steg, & Keizer, 2013). For reduced meat consumption, dietary identities are especially important (Chuck et al., 2016; Fox & Ward, 2008). Dietary identities are incredibly diverse and nuanced, as they are rather fluid and label definitions can vary between individuals. While the identities of pescatarian, vegetarian, vegan, organic, etc., may be more well-known owing to their sometimes-political nature (Chuck et al., 2016), the spectrum of omnivorous identities is less explored in the literature. However, it can be argued that a good amount of omnivores also

engage in the “countercultural orientation and… resistance through diet” (Chuck et al., 2016, p. 426) that is more typified by those who omit meat entirely. That is, while many strict vegans or vegetarians are quick to condemn the consumption of meat in general (Mullee et al., 2017; Rothgerber, 2015b), others choose to adopt a diet of “conscientious omnivorism” or “flexitarianism” that is personally feasible and that aligns with their values (Dagevos & Voordouw, 2013; Rothgerber, 2015a). Interestingly, this could technically include many self-proclaimed “vegetarians,” given that many of them report eating meat fairly often (Ruby, 2012). There are also self-identified omnivores who try to follow a diet that has either reduced general meat consumption (aka "flexitarianism," see Derbyshire, 2017) or a diet with personally-defined moral standards regarding the types of meat one can consume (“conscientious omnivores”), and there are important distinctions between such omnivores and those individuals with a vegetarian identity (Rothgerber, 2015a, 2015b).

As with many dietary identities, “conscientious omnivores” vary in how they define and adhere to their dietary identity, but it generally consists of reduced meat consumption and/or eating meat that adheres to certain ethical standards (e.g., free-range, local; Rothgerber, 2015a). Compared to vegans and vegetarians, they tend to view animals less favorably (which is suggestive of lower levels of compassion) and they are lower in ingroup identification (Rothgerber, 2015b). That is, conscientious omnivores are less attached to their distinct dietary identity than many vegetarians are. Perhaps this is because as an omnivore (as opposed to vegetarian), they needn’t constantly distinguish themselves from other omnivores in social settings (Rosenfeld & Burrow, 2017;

Rothgerber, 2015a). Importantly, this allows such individuals to consume in a way that aligns with their values and virtuous goals, without compromising their social stature or wellbeing.

In contrast to conscientious omnivores, individuals who consume red meat more frequently and vegetables less frequently (sometimes referred to as "contented omnivores", Gendelmen, 2017) are more likely to have strong positive beliefs about meat consumption and less likely to form intentions for dietary change (Vainio et al., 2018). Illustrating this lack of openness towards meat reduction, one survey conducted in Finland found that 48% of the population was unwilling to change their meat and vegetable consumption patterns at all (Latvala et al., 2012). Of those who were willing to change their diet, relatively few were willing to stop eating meat; there were also many who had reduced their meat intake but were unwilling to further modify their diets (Latvala et al., 2012). Chief demographic differences in reducing meat consumption include women being significantly more inclined to reduce intake compared to men, older individuals changing for health reasons, and younger individuals breaking dietary habits for environmental purposes (Tobler et al., 2011). Such demographic differences are reflective of the norms regarding meat consumption.

Norms

Culturally engrained norms surrounding diet can make it difficult to break from the current dietary status quo, which is dominated by high meat consumption and convenience in the U.S. and other Westernized countries (Cordain et al., 2005). Norms can be conceptualized as what one *ought* to do (an injunctive norm) or what one perceives to be typical or normal (a descriptive norm; Cialdini, Kallgren, & Reno, 1990), and they have been shown to heavily influence human

behavior across domains, including dietary and pro-environmental behaviors (Cialdini, Reno, & Kallgren, 1990; Harland, Staats, & Wilke, 1999; Pelletier, Graham, & Laska, 2014; Schultz, Nolan, Cialdini, Goldstein, & Griskevicius, 2007). There is emerging research regarding the current *dynamic norm*—or change of a norm over time—of individuals breaking away from the culturally engrained social norm of eating meat (Sparkman & Walton, 2017). However, if individuals do not attach thought or importance to their reduced meat consumption, it could be no more than any other passing fad (Sparkman & Walton, 2017). This is an especially critical point when it comes to diet, given that individuals rapidly adopt and abandon diets that they may find either meaningless or restrictive. In the interest of maintained adherence to a more beneficial diet, it may be that some flexibility (i.e., *reducing* meat consumption versus eliminating meat entirely) would be more sustainable and manageable for many (Dagevos & Voordouw, 2013). This in turn might lead to an overall decrease in global meat consumption, which has otherwise been climbing over the past century (Daniel et al., 2011; Machovina, Feeley, & Ripple, 2015).

Discussion and Conclusion

Based upon the literature that has been presented, consumer wisdom has potential to help us better understand sustainable consumption behaviors, specifically with respect to reduced meat consumption. By integrating facets that link with multiple psychological and social factors that shape consumption, consumer wisdom can add to existing constructs that have been explored in the literature on sustainable consumption. Indeed, the initial work conducted by Luchs and Mick (2018) suggests that consumer wisdom could be important in better understanding sustainable consumption patterns and dietary decisions. However, there is currently limited empirical

research in how consumer wisdom relates to sustainable consumption, much less reduced meat consumption.

Consumer wisdom offers a promising framework for examining how to effectively balance the tradeoffs between personal and collective wellbeing with respect to sustainable consumption, dietary and otherwise. Developing such an understanding might eventually allow for the minimization of costs incurred by individuals consuming more sustainably, thereby lending to sustainable consumption over time. This highlights the need for further research on the subject of consumer wisdom and sustainable consumption, and reduced meat consumption in particular. The evidence presented here suggests that wise consumption could potentially help transition society away from high levels of meat consumption and towards a more plant-based diet, reducing global mortality rates by 6-10%, and decrease food-related GHG emissions by 29-70% (compared to a reference scenario for the year 2050; Springmann, Godfray, Rayner, & Scarborough, 2016). This improvement in diet translates to roughly 1-31 trillion US dollars in economic benefits, or 0.4-13% of global gross domestic product (GDP) in 2050 (Springmann et al., 2016). In line with multiple United Nations' SDGs (i.e., good health and wellbeing, responsible consumption and production, climate action), decreasing meat consumption serves as one important step in curtailing climate change and the associated environmental damage and health costs (Springmann et al., 2016).

Chapter 2. The Influence of Consumer Wisdom on Reduced Meat Consumption and Psychological Wellbeing

Introduction

In order to effectively address and curtail climate change and other environmental issues, there must be largescale changes made to our current consumption patterns (IPCC, 2019). At present, humans consume far more resources than the planet can support over the long-term, making consumption reduction necessary. Achieving widespread sustainable consumption across domains is challenging owing to perceived individual costs versus benefits, especially for consumption reduction behaviors. While there can be social benefits to sustainable consumption, including status benefits associated with prosocial or altruistic behaviors, these benefits are subject to the specific domain of consumption and the socio-cultural context in which it occurs. Thus, consuming sustainably can sometimes lead to difficult considerations of personal versus collective wellbeing. In turn, I propose Luchs and Mick's (2018) novel construct, *consumer* wisdom, as one potential avenue for better understanding why some individuals can more effectively balance their own wellbeing with their prosocial (e.g., pro-environmental) concerns

Consumer wisdom can be defined as considering personal and collective wellbeing in consumption-related decisions, with a clear regard for future individual and collective needs (Luchs and Mick, 2018). Luchs and Mick (2018) laid the groundwork for consumer wisdom and future studies pertaining to "moral" consumption, including reduction behaviors. Still, current

research regarding consumer wisdom is limited, with no existing quantitative research on the matter. However, this framework seems potentially useful for promoting both sustainable consumption and personal wellbeing. Indeed, Luchs and Mick (2018) laid the groundwork for consumer wisdom and future studies pertaining to "moral" consumption, including reduction behaviors. This research examines consumer wisdom in relation to the adoption of sustainable consumption patterns and personal wellbeing, especially for more difficult reduction behaviors like meat reduction.

Background

In a consumer society, sustainable consumption (meeting the needs of the present without compromising future generations' ability to do so; WCED, 1987) can be a lofty goal. Generally speaking, there are two broad categories of sustainable consumption: purchasing more efficient products in lieu of the traditional, consumption-intensive products, or reducing consumption in general (Brooks & Wilson, 2015). While efficient consumption behaviors might appeal to some consumers, the reduction behaviors that are necessary to achieve sustainability goals can be considered less desirable (Brooks & Wilson, 2015).

Unlike consumption reduction behaviors, efficient consumption behaviors may signal pro-environmental, altruistic motivations (Griskevicius et al., 2010, Brooks & Wilson, 2015). Indeed, there can be social status benefits tied to conspicuous, more efficient, "green" consumption, whereas the opposite effect might hold true for reduction behaviors (Griskevicius et al., 2010, Brooks & Wilson, 2015). More specifically, consumption reduction can be ambiguous in nature,

and in some cases detrimental if there are social stigmas attached to the behavior (e.g., riding the bus; Brooks & Wilson, 2015). Other social cues that signal prosocial intentions can potentially assuage these negative status impacts (Brooks & Wilson, 2015). It is important to note, however, that in either case some social benefits may depend on the sustainable consumption behavior being perceived as prosocial and socially valued by observers.

In addition to the potential for social costs, reduction behaviors are often associated with additional psychological costs when compared to merely consuming "green" products. Curtailment is often viewed as inconvenient and undesirable, as there may be no immediate incentive to reduce one's consumption. Thus, reduction behaviors can be difficult for individuals to achieve over the long term. Even those individuals with strong pro-environmental motivations have difficulty in sustaining long-term reductions in their consumption, owing to the associated social and psychological costs and barriers (Gleim et al., 2013; Phipps et al., 2013). These associated costs and barriers can negatively impact individual wellbeing. Therefore, if curtailment is perceived to be costly for individuals but would be beneficial for the planet, then such behaviors can represent a social dilemma.

However, promoting individual *and* collective wellbeing via consumption reduction is not impossible. Recent work has shown that some individuals are able to achieve this "double dividend" of wellbeing, but their lifestyles are likely shaped by the prevailing social context (Claborn & Brooks, 2019; Herziger et al., 2020). That is to say, there might be psychological benefits related to curtailment *if* the individual curtails their consumption in a way that aligns

with their identity and social norms (Herziger et al., 2020; Venhoeven, Bolderdijk, & Steg, 2013). Here, I will examine how *consumer wisdom* might help to achieve this double dividend of enhancing an individual's wellbeing through a socially and ecologically important curtailment behavior: reduced meat consumption.

When compared to many other forms of sustainable consumption, reduced meat consumption can have greater social and cultural implications. Indeed, it is culturally engrained to consume meat in countries such as the United States. As a result, there can be many social costs associated with meat abstention (in spite of the environmental and health benefits) which might in turn negatively impact individuals' psychological wellbeing (PWB; Earle & Hodson, 2017; Rothgerber, 2015a). The relative costs and benefits of meat-eating, coupled with its uniquely moral nature, make reduced meat consumption an ideal domain for consumer wisdom research. In turn, this research will examine the relationship between consumer wisdom and reduced meat consumption, and will explore the potential role that consumer wisdom plays in moderating the relationship between meat reduction and PWB.

Perhaps owing to the potential associated PWB costs, the mindset and motivations of omnivores can be instrumental in beginning *and* maintaining the transition towards less meat (de Boer, Schösler, & Aiking, 2017; Fox & Ward, 2008). Indeed, while there are vegetarians or meat-reducing flexitarians whose prosocial inclinations outweigh the perceived costs to reducing their meat consumption (Hoffman et al., 2013), outright vegetarianism is considered unrealistic or simply undesirable by most. In fact, only 5% of the American population identified as vegetarian

in 2018 (Hrynowski, 2020). Thus, *reduced* meat consumption could serve as a more suitable alternative for many individuals (Hodson & Earle, 2018; Hoffman et al., 2013; Mullee et al., 2017; Rothgerber, 2015; Malek et al., 2019). By *reducing* their meat consumption, a theoretically "wise" individual might lessen negative health and environmental impacts, while potentially avoiding some of the perceived social costs associated with outright vegetarianism (Rothgerber, 2015a). This balance between individual wellbeing and prosocial concerns (i.e., a middle-way approach) represents an important aspect of consumer wisdom.

Here, I present two studies that explore the relationships between consumer wisdom, sustainable consumption, and PWB. In the first study, I ask if wise consumers consume in a more sustainable manner. In turn, I ask whether each facet of consumer wisdom (*lifestyle responsibility*, *purpose, flexibility*, *perspective, prudent reasoning,* and *transcendence*; Luchs, Mick, & Haws, n.d.) individually corresponds with reduced meat consumption. After examining the relationship between consumer wisdom and pro-environmental behaviors (e.g., reduced meat consumption), I explore how consumer wisdom interacts with meat consumption to effect PWB in *Study 2*. More specifically, this research examines consumer wisdom as a potential moderator of the effect of reduced meat consumption on psychological wellbeing. This moderation effect was tested for composite consumer wisdom as well as for each individual facet. In sum, this research seeks to examine if consumer wisdom (and each of its facets) moderates the effect of reducing meat consumption (overall and by meat type) on psychological wellbeing.

Study 1: Establishing the Relationship Between Consumer Wisdom and Sustainable Consumption

Background

By definition, "wise" individuals consider impacts to both their own wellbeing and collective wellbeing. In addition, they are particularly skilled at balancing goals that might conflict, which is important in making complex decisions. Qualitative interviews conducted by Luchs and Mick (2018) showed preliminary evidence of the relationship between consumer wisdom and sustainable consumption (Luchs and Mick, 2018). However, we lack statistical evidence of the relationship between consumer wisdom and sustainable consumption. Furthermore, it is unknown whether one or more of the distinct facets of consumer wisdom is particularly important for motivating sustainable consumption. The relationship between consumer wisdom and sustainable consumption likely varies between individuals and consumption domains, but it is hypothesized that consumer wisdom is positively related to sustainable consumption, broadly speaking.

The primary objective of *Study 1* is to explore the relationship between consumer wisdom and sustainable consumption, broadly speaking. Using quantitative survey data, this study examines a variety of consumption choices, paying particular attention to meat consumption.

Meat reduction is especially important because of the impact that the production and consumption of meat can have on our health and the environment. Furthermore, many societies

consider meat to be an essential part of any diet (Twigg, 1979). Most people (in Western contexts) have favorable attitudes towards beef, often viewing it as necessary and natural (Piazza et al., 2015; Ruby & Heine, 2011). Compared to other meats, beef is associated with power, strength, and human dominance over nature (Ruby et al., 2016). This might be attributed to the visible blood content of the meat and its association with masculinity (Ruby & Heine, 2011; Ruby et al., 2016). While meat in general is considered essential by many, beef is often considered the most important or superior type of food (nutritionally, culturally, etc.; Twigg, 1979). Moreover, beef endorsement is predictive of anti-vegetarian prejudice in the U.S., where beef is a cultural mainstay (Earle & Hodson, 2017).

Beef, however, is not recommended to be consumed in the large quantities that are typical of an American diet (Rouhani et al., 2014). Although it includes complete proteins and essential vitamins and minerals, beef has also been linked to increased risk for cardiovascular disease, different cancers, and all-cause mortality (Ekmekcioglu et al., 2018; Wolk, 2017). Therefore, reduced beef consumption, can have important health benefits.

In addition to health benefits, reducing beef consumption also has environmental benefits. For instance, less meat consumption would reduce livestock production, which accounts for 14% of all human-caused greenhouse gas emissions (GHG). The beef sector is responsible for 41-54% of total GHGs from livestock, and is responsible for a disproportionately large share of land use change, water use, and pollution (Gerber et al., 2013; Darbandi & Saghaian, 2018). Beef production and consumption represent one of the most environmentally damaging sectors in food

production. Considering the social, health, and environmental impacts, meat consumption serves as an ideal domain to study in relation to consumer wisdom and sustainable consumption more broadly.

Consumer wisdom has been suggested to be correlated with sustainable consumption decisions (Luchs and Mick, 2018), but there is currently no evidence of an empirical relationship. In light of the intriguing and novel nature of consumer wisdom, as well as its potential insights for sustainable consumption behaviors in general, this research will examine this gap in the literature. Meat reduction will be particularly focused on, considering its demonstrated implications for personal and collective wellbeing (Pollan, 2006), and in turn relevance for "wise" consumption.

Study Overview

Here, I first ask if consumer wisdom is associated with sustainable consumption. Based on the emerging theoretical framework on consumer wisdom presented by Luchs and Mick (2018), I hypothesize that individuals who score higher in composite consumer wisdom consume more sustainably. Next, I explore meat reduction as a domain of sustainable consumption that is of particular interest. I hypothesize that individuals who score higher in composite consumer wisdom also consume less meat on average. Lastly, I will explore the relationship between consumer wisdom and reduced meat consumption in more detail by considering each facet. It is predicted that each distinct facet of consumer wisdom is positively correlated with reduced meat consumption.

Methods

Participants and Procedure

This research consisted of an online survey of U.S. adults using Prolific Academic's survey platform during April of 2020 (see Appendix A for full survey). While functionally similar to alternative online survey platforms, such as Amazon's Mechanical Turk (MTurk), Prolific Academic (ProA) has been shown to produce higher quality data, with less dishonest and more diverse participants (Palan & Schitter, 2018; Peer, Brandimarte, Samat, & Acquisti, 2017). Our participants were pre-screened (using ProA filters) to be U.S. citizens (ages 18+) currently residing in the U.S. In order to participate in the online experiment, participants offered their informed consent. All data was collected anonymously using participants' deidentified information. Two attention checks (instructional manipulations) were incorporated in the survey to ensure a minimal level of engagement from ProA participants (Oppenheimer, Meyvis, & Davidenko, 2009). Any participants who failed one or more attention checks were excluded from analysis, leaving a sample of 323 of the original 344 (94%). Participants who successfully completed the survey were compensated $1.50. Data was collected on April 8, 2020.

Prior to the survey's launch on Prolific Academic, it was pretested by graduate students, a post-doctoral scholar, and faculty from the Environmental and Social Sustainability Lab at Ohio State's School of Environment and Natural Resources. In addition, a few non-academics and an Ohio State graduate student from the Department of Design reviewed and pretested the survey. In response to the feedback provided, a few of the survey items were modified in order to improve clarity. The survey was reported to take roughly 11 minutes to complete.

Participants (N=323) were predominantly female (55.4%), younger than average (mean = 31.45, median = 29, standard deviation = 11.56, minimum = 18, maximum = 76), and liberal (14.9% extremely liberal, 34.3% liberal, 14.6% slightly liberal). In addition, the sample was largely comprised of White individuals (72.4%) with an average income of in the range of $35,000 to $49,999 (median = $50,000 to $74,999). 55% of the sample reporting having a bachelor's degree or higher. While the participants were all U.S. citizens living within the country, their specific region within the U.S. was not reported.

Measures

In order to assess participants' level of consumer wisdom, I utilized a scale developed by Luchs, Mick, and Haws (n.d.). While this scale has reorganized the original five facets of consumer wisdom into six facets, the components of consumer wisdom are unchanged (see *Figure 2* below). The scale is comprised of a total of 24 items divided evenly between six subscales (one for each facet of consumer wisdom), and it uses a seven-point Likert scale describing how often or well a statement described them (1 = never, 7 = always). While this scale has yet to be published and is currently under review, it has been shown to score highly on inter-scale reliability (Cronbach's alpha = .91; Luchs, Mick, & Haws, n.d.). Sample items designed to measure each facet are shown in Table 2 below (see Appendix A for complete measurement instrument).

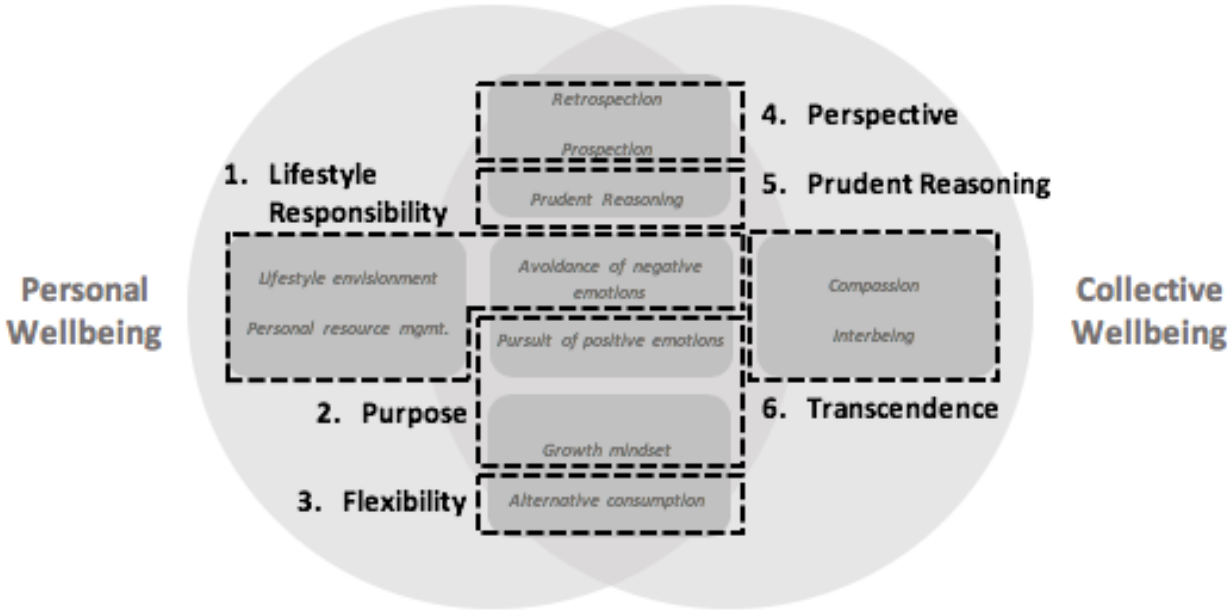

Figure 2. The Reconceptualized Six Facets of Consumer Wisdom. Figure sourced from Luchs, M. G., Mick, D. G., & Haws, K. L. (n.d.).

Table 2. Consumer Wisdom Measurement Tool: Sample Items (see Appendix A for complete measurement tool).

Consumer Wisdom Facet	Sample Items
1. Lifestyle Responsibility	• *"I have a realistic sense of the lifestyle that I can afford"* • *"I am able to resist temptation in order to achieve my budget and lifestyle goals"*
2. Purpose	• *"I manage my budget so that I can spend some money on experiences that give me a lot of pleasure and joy"* • *"I prioritize spending money on products and experiences that help me build and strengthen relationships with others"*
3. Flexibility	• *"My purchases include used products or clothing even though I could just purchase new things if I wanted to"* • *"I borrow or rent products to try them out before deciding if I want to buy them"*
4. Perspective	• *"Before I buy something, I consider the possible costs and benefits over time"* • *"Before I buy something, I make an effort to consider my options from multiple perspectives"*
5. Prudent Reasoning	• *"I know when I've done enough research to make a good purchase decision"* • *"Before buying something, I know how to get the information that I need to make great choices"*
6. Transcendence	• *"My consumption behaviors consistently reflect my concern for the natural environment"* • *"I spend time thinking about how we, as a global community, affect each other through our individual consumption choices"*

To assess participants' frequency of pro-environmental behaviors, including but not limited to meat consumption, the Brick, Sherman, and Kim (2017) scale for pro-environmental behaviors was used (Cronbach's alpha = .61). This scale uses a five-point Likert scale (1 = never, 5 = always) to measure how often participants may or may not perform behaviors such as using reusable bags when shopping, carrying a reusable water bottle, eating organic food, etc. In order to shorten the survey length, I shortened the scale to include eight pro-environmental behaviors

that were deemed most relevant to our study. By including this scale, reduced meat consumption could be easily compared to other pro-environmental behaviors.

In addition to Brick et al.'s (2017) meat consumption item, dietary practices were assessed using a series of additional questions and scales. First, participants were asked their dietary practices with respect to animal products (omnivorous, semi- or partial vegetarian, vegetarian, strict vegetarian or dietary vegan, and lifestyle vegan), and if they have changed their dietary consumption of animal products in the past five years (yes/no). The general direction of any changes in animal product consumption was also assessed on an eight-point scale (1 = strongly moving toward less restrictions, 7 = strongly moving toward more restrictions, 8 = not applicable). Utilizing scales I adapted from Malek et al. (2019), a ten-point (never – everyday), five-item scale will assess participants' frequencies of eating different types of meat (beef, chicken, pork, lamb, fish). Their changes in types of meat consumption within the last year were assessed using a five-item, six-point scale (just started eating / eating more often / no change / eating less often / just stopped eating altogether / other type of change; adapted from Malek et al., 2019). Participants' frequencies of consuming ethically produced meat within the last year were also assessed for each type of meat (five items) on a five-point Likert-scale (1 = never, 5 = always).

Analysis

All analyses were conducted using IBM SPSS (version 25). First, descriptive analyses were conducted for all measures (see Appendix C). Bivariate Pearson correlation analyses were then used to define the relationship between consumer wisdom and each pro-environmental behavior. Here, consumer wisdom was a composite score of all facets of consumer wisdom. For overall meat consumption (see Brick et al., 2017), I explored the relationship between meat consumption and (i) the composite measure of consumer wisdom as well as (ii) each facet of consumer wisdom. The relationship between the frequencies of specific types of meat consumed (beef, chicken, pork, lamb, fish/seafood, plant-based "meat") and consumer wisdom was also examined. In addition, the statistically relevant facets of consumer wisdom were examined in relation to meat types for a more detailed analysis. While included in specific types of meat consumed, plant-based "meat" was not included in the general measure of meat consumption.

Results

Average consumer wisdom (a composite of all six facets) was found to be relatively normal in distribution, with a slightly negative skew (skewness = -.034, kurtosis = -.207). The mean for average consumer wisdom was 4.30 on a seven-point scale (standard deviation = 0.785). For sustainable behaviors, the results were fairly normal in distribution, with no real outliers. With respect to average food consumption, participants reported eating organic food sometimes (mean = 2.83, standard deviation = 0.964), animal products (e.g., dairy and eggs) often (mean = 3.98, standard deviation = 0.845), and meat fairly often (mean = 3.72, standard deviation = 1.102). Of the pro-environmental behaviors, utilizing alternative transportation had the lowest average

(mean = 2.74, standard deviation = 1.182). The vast majority of the sample identified as omnivorous (75.9%), followed by semi- or partial vegetarian (18.2%), vegetarian (4.3%), lifestyle vegan (1.0%), and dietary vegan (0.7%).

Average consumer wisdom was significantly associated with each of the pro-environmental behaviors (alpha = .05 level), save for consumption of animal products such as milk, cheese, eggs, or yogurt. Meat consumption was found to be significantly and negatively correlated with average consumer wisdom, $r(321) = -.122$, $p = .029$, whereas all other significant associations were positive. Importantly, lower meat consumption denotes pro-environmental behavior.

Table 3. Pearson Correlation Results: Pro-environmental Behavior and Average Consumer Wisdom.

Pro-environmental Behavior	**Correlation with Average Consumer Wisdom**
Walk, bicycle, or take public transportation instead of taking a car	$r(321) = .137$, $p = .014$*
Eat organic food	$r(320) = .335$, $p < .001$**
Eat meat	$r(321) = -.122$, $p = .029$*
Eat animal products, such as milk, cheese, eggs, or yogurt	$r(321) = -.043$, $p = .443$
Carry a reusable water bottle	$r(321) = .273$, $p < .001$**
Purchase second-hand instead of purchasing new items	$r(321) = .223$, $p < .001$**
Use reusable bags when shopping	$r(320) = .334$, $p < .001$**
Act to conserve water when showering, cleaning clothes, dishes, or other uses	$r(321) = .474$, $p < .001$**

*** denotes significance at the .01 level, * at the .05 level; 2-tailed test*

When considering each facet of consumer wisdom, only *transcendence* was found to have a statistically significant correlation with meat consumption, $r(321) = -.234$, $p < .001$. Thus, only average consumer wisdom and *transcendence* showed significant relationships with overall meat consumption.

Next, I examined the correlation between different meat types and (i) average consumer wisdom and (ii) *transcendence*, given their significance with overall meat consumption. Average consumer wisdom was found to be positively correlated with both fish/seafood and plant-based "meat" consumption. *Transcendence* was significantly correlated with a number of meat types, and was negatively correlated to beef, chicken, and pork consumption. Like average consumer wisdom, *transcendence* was positively correlated with fish/seafood and plant-based "meat" consumption.

Table 4. Pearson Correlation Results: Meat Consumption Frequency and Consumer Wisdom.

Meat Type	**Correlation with Average Consumer Wisdom**	**Correlation with Transcendence**
Beef	$r(321) = -.106$, $p = .056$	$r(321) = -.159$, $p = .004$**
Chicken	$r(320) = -.070$, $p = .209$	$r(320) = -.175$, $p = .002$**
Pork	$r(320) = -.055$, $p = .322$	$r(320) = -.202$, $p < .001$**
Lamb	$r(319) = -.019$, $p = .739$	$r(319) = .019$, $p = .739$
Fish/Seafood	$r(320) = .177$, $p = .001$**	$r(320) = .173$, $p = .002$**
Plant-based "Meat"	$r(319) = .179$, $p = .001$**	$r(319) = .236$, $p < .001$**

*** denotes significance at the .01 level, * at the .05 level; 2-tailed test*

Discussion

These correlational analyses provide support for the hypothesis that consumer wisdom is related to pro-environmental behavior and sustainable consumption. Average consumer wisdom was positively and significantly correlated with all pro-environmental behaviors, and negatively correlated with overall meat consumption (see Table 3). However, when examining meat consumption in finer detail, only seafood consumption was significantly correlated to overall consumer wisdom, and it was a positive relationship. Plant-based "meat," which was included as

an alternative type of meat (i.e., an alternative consumption option), was also found to be positively correlated with average consumer wisdom. This suggests that consumer wisdom is positively related to more alternative types of protein consumption, including plant-based "meats."

Compared to average consumer wisdom, *transcendence* was found to be especially important in meat consumption. Beef, chicken, and pork were all negatively related to *transcendence*, whereas consuming seafood and plant-based "meat" alternatives were both positively correlated. Lamb consumption showed no significant correlations with either average consumer wisdom or *transcendence*, perhaps owing to the low rates of consumption reported. Importantly, all results presented in this study are correlational, and therefore do not control for a number of other potential factors that could explain both consumer wisdom and meat reduction.

Still, these trends suggest that while consumer wisdom is generally predictive of sustainable behavior, *transcendence* (characterized by a sense of compassion and interbeing) might be an especially important facet for the domain of meat consumption. This finding aligns with existing literature regarding ethically motivated vegetarians, who adapt their diets to achieve their prosocial goals (e.g., animal welfare, environmental benefits). In light of the personal costs that are often associated with reduced meat consumption, I next explored how consumer wisdom might interact with reducing one's meat consumption and ultimately impact one's wellbeing.

Study 2: Consumer Wisdom, Meat Consumption, and Psychological Wellbeing

Background

Reduced Meat Consumption and Psychological Wellbeing

For most forms of sustainable consumption and lifestyles, there is evidence that there are potentially positive impacts to wellbeing, depending on socio-cultural context (Claborn & Brooks, 2019; Dhandra, 2019; Herziger et al., 2020). However, when compared to most other forms of sustainable consumption, which might provide positive impacts to PWB, dietary practices are unique for a number of reasons. First among these reasons is the biological nature of meat-eating. There are very clear benefits to wellbeing (e.g., physical health) associated with reduced consumption of meat (especially for the red and processed meats typical of an American diet; Ekmekcioglu et al., 2018; Rouhani et al., 2014; Wolk, 2017). Next, and perhaps most critical among these reasons, is the cultural significance attached to food. It is no exaggeration to say that cultures are integrally tied to their foods, making dietary practices a culturally embedded form of consumption (Pollan, 2006). Meat is more often than not included in modern diets, save for those cultural contexts where vegetarianism or veganism is common. In the United States omnivorism is the norm, with a very small—yet growing—proportion of vegetarians (Leitzmann, 2014; Ruby, 2012). Many American holidays center around meat consumption, such as Thanksgiving turkeys and Fourth of July barbeques. Perhaps owing to the cultural importance attached to meat consumption, it can feel alienating to *not* eat meat (Pollan, 2006). In many ways, eliminating meat from one's diet means ending ritualistic ties linked to family, religion, nation, and even one's biology (Pollan, 2006). Humans are, after all, a predominantly

omnivorous species. Our society and cultural norms have largely coevolved with meat-eating, differentiating meat reduction to most other forms of sustainable consumption.

In light of this coevolution, there are many social values associated with meat-eating. Indeed, it has been shown that consuming meat is related to different values (Graham & Abrahamse, 2017), with food in general being representative of social values and beliefs (Allen & Ng, 2003; Allen, Wilson, Ng, & Dunne, 2000). More specifically, when compared to vegetarians, omnivores have stronger belief orientations towards social dominance and right-wing authoritarianism and place higher importance on social power versus social justice, while vegans and vegetarians prioritize equality, peace, and justice (Allen, Wilson, Ng, & Dunne, 2000). Other research has also shown that meat consumption is positively related to self-enhancement and tradition values, and negatively related transcendence and openness values (Graham & Abrahamse, 2017). Importantly, meat consumption is also strongly linked to hedonic values (Rothgerber, 2015b). Hedonic values are negatively related to pro-environmental behavior even when controlling for other values (Steg et al., 2014). To be sure, meat consumption is particularly value-laden, and its importance is stressed across many cultural contexts.

Given meat's valued role in many cultures, including American culture, it should come as no surprise that there are social consequences associated with *not* consuming it. Vegetarians are often faced with social stigmas and feelings of social alienation, in addition to the psychological barriers associated with changing their diet in the first place (Earle & Hodson, 2017; Rothberger, 2015a). The vegetarian identity can involuntarily invoke feelings of judgment from omnivores,

especially among those ethically motivated vegetarians, further exacerbating their social strife (Earle & Hodson, 2017). While those individuals who reduce meat consumption (e.g., "conscientious omnivores") might have some immunity towards the negative social consequences, this can likely be explained by their continued meat-eating in social contexts (Rothgerber, 2015a). Indeed, such individuals needn't face the stigma associated with a vegetarian identity, as they are still omnivores (Rothgerber, 2015ab).

For those who entirely avoid meat, however, there are notable psychological consequences. Indeed, while nutrients found in meat have been shown to negatively affect brain activity and mood (see Beezhold & Johnston, 2012), the social costs that might be associated with reduced meat consumption seem to negate any biological benefits. A systematic review on the subject of meat and mental health found increased rates of depression, anxiety, and other related phenomena for those who abstain from meat consumption (Dobersek et al., 2020). While there was no causal relationship found between consumption or avoidance of meat and mental health impacts, the reviewers concluded that meat avoidance was not a good strategy for promoting mental wellbeing (Dobersek et al., 2020). Still, the literature surrounding meat reduction and PWB specifically (as opposed to mental health) is scant. Thus, while the negative relationship between meat reduction and PWB seems to point towards negative PWB impacts (at least in meat-eating cultural contexts), there remains much work to be done regarding how this relationship is impacted by other factors, such as consumer wisdom.

Consumer Wisdom and Psychological Wellbeing

At its core, the idea of consumer wisdom is tied to wellbeing. That is, wise consumers are those who possess mutually reinforcing psychological traits (*lifestyle responsibility*, *purpose, flexibility*, *perspective, prudent reasoning,* and *transcendence*) that promote their wellbeing via consumption choices. Luchs and Mick (2018) explain that "wisdom's leading objective is wellbeing, which is encompassed by a combination of the physical, economic, socio-cultural, psychological, emotional, political, and spiritual dimensions in life" (p. 368). In short, "wise" consumers' consider their wellbeing with every consumption decision they make, balancing concerns for collective wellbeing in the process. While they may opt for a "mid-way" approach in order satisfy multiple, conflicting goals, their decision process is guided by impacts to wellbeing.

Here, I focus on *psychological wellbeing* (PWB), which denotes an individual's sense of purpose in life, engagement with their activities, perceived respect from others, contribution to others' wellbeing, sense of autonomy, optimism about their future, and having positive social relationships (Diener et al., 2010; Zaucher et al., 2018). In short, PWB describes an individual's sense of growth and meaning in life, and is a distinct concept from merely being happy (Zaucher et al., 2018). For the purposes of our study, PWB is an ideal measure of reduced meat consumption's wellbeing impacts. More specifically, I am interested in the social considerations of sustainable consumption, because social contexts often dictate whether or not a sustainable consumption behavior is performed. Therefore, examining impacts to PWB (as opposed to other wellbeing measures, like health) might allow for a more nuanced understanding of how

individual-level traits (i.e., consumer wisdom) and domain-specific factors influence the performance of sustainable consumption behaviors like meat reduction.

As discussed, reduced meat consumption can be associated with social costs, owing to its social and cultural importance. In addition, there are many psychological barriers that might prevent reducing one's meat consumption, including habit, perceived consumer effectiveness, identity, etc. Here, I am interested in the social considerations of sustainable consumption (i.e., reduced meat consumption), because social contexts often influence whether or not a sustainable consumption behavior is performed. Moreover, social context and prevailing norms help to determine whether impacts to PWB are positive or not (Herziger et al., 2020, Venhoeven et al., 2013). Therefore, examining impacts to PWB might allow for a more nuanced understanding of how individual-level traits (i.e., consumer wisdom) and domain-specific factors influence the performance of sustainable consumption behaviors.

By definition, "wise" individuals ought to consume in a way that enhances their PWB, or at least in a manner that might "balance or take a middle-way approach to resolving alternative or seemingly incompatible goals and options and avoiding extreme responses in most cases" (Luchs & Mick, 2018, p. 268). Thus, a "wise" individual may not necessarily maximize their psychological wellbeing if it allows them to satisfy differing goals. For instance, they might be willing to sacrifice some positive aspects of their social relationships in order to accommodate other personally relevant goals, including prosocial objectives. Importantly, consumer wisdom seems to more directly relate to eudemonic happiness (i.e., self-actualization) than hedonic

happiness (an affective mood; Ryan & Deci, 2001). This could explain why Zacher et al.'s (2018) review on the relationship between general wisdom (i.e., not consumer wisdom, specifically) and PWB found inconsistent results across the literature. In some cases, there was a positive relationship, but in other studies there was no significant relationship (or even a negative relationship) between wisdom and wellbeing, depending on how they were defined (Zacher et al., 2018). Such inconsistencies highlight the need for contextually specific research, including empirical research that pertains to consumer wisdom. While Luchs and Mick (2018) have explored and defined the concept of consumer wisdom through qualitative interviews, there is currently no research that explicitly examines consumer wisdom in relation to PWB. Moreover, there is no existing research regarding the interactions between consumer wisdom, reduced meat consumption, and PWB.

Building upon *Study 1*, which helped to establish that "wise" consumers are more likely to reduce their meat consumption, this study will explore how consumer wisdom interacts with reduced meat consumption to impact psychological wellbeing. More specifically, this study will explore consumer wisdom as a potential moderator of this relationship.

Study Overview

This study seeks to elucidate how consumer wisdom and reduced meat consumption, which I have shown to be positively correlated, might interact and impact PWB. Indeed, while the literature suggests that reduced meat consumption can adversely affect PWB, it is unknown how consumer wisdom interacts with reduced meat consumption. Whereas consumer wisdom is

positively related to PWB, reduced meat consumption is negatively related. In addition, consumer wisdom is positively correlated to reduced meat consumption (see Figure 3). This naturally begs the question of how the two interact to affect PWB. Using the same survey data as *Study 1*, I test for moderation effects of consumer wisdom (see Figure 4 below). It is hypothesized that consumer wisdom moderates meat consumption's effect on PWB, where reduced meat consumption's negative effect on PWB is reduced among those who are higher in consumer wisdom. That is, reducing one's meat consumption would lend to better PWB outcomes for "wise" consumers. This relationship is explored by types of meat consumed as well as by each distinct facet of consumer wisdom.

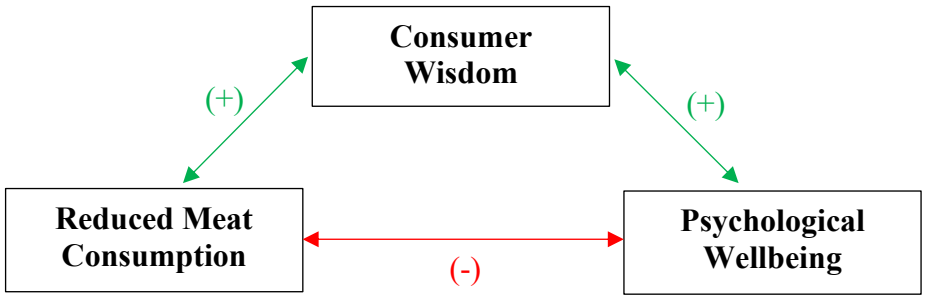

Figure 3. Overview of General Relationships: Reduced Meat Consumption, Consumer Wisdom, and Psychological Wellbeing.

Methods

Measures

This study utilized some of the same measures found in *Study 1*, with the addition of PWB. Consumer wisdom was measured using the same scale developed by Luchs, Mick, and Haws (n.d.). However, here I also created the variable *reduced meat consumption* by first recoding the consumption frequency of each type of meat (beef, chicken, pork, lamb, fish/seafood) into two

values (0 = not reducing, 1 = reducing). These new variables reflected whether or not consumption had been reduced for each type of meat. Next, I added the values for all of the types of meat to create a scale of relative meat reduction, where higher composite scores denote higher levels of meat reduction (0 = not reducing any meat type, 5 = reducing all types of meat).

Psychological wellbeing was assessed using the Flourishing Scale, a brief eight-item scale developed by Diener and Biswas-Diener that effectively measures eudemonic wellbeing (2009; also see Diener et al., 2009). This measurement tool includes several items on social relationships, including having supportive and rewarding relationships, being respected by others, and contributing to others' happiness. Notably, this scale does not capture aspects of hedonic wellbeing, which has been implicated in meat-eating and sustainable diets (de Boer, Schösler, & Aiking, 2018). Perceived purpose and meaning in life were measured, as well as engagement and interest in one's activities. Despite the brevity of this scale, it has been shown to correlate well with other scales measuring PWB and has a Cronbach's Alpha of .87, demonstrating good reliability (Diener & Biswas-Diener, 2009). The scale uses a seven-point Likert scale (1 = strongly disagree, 7 = strongly agree).

Sex, political orientation, and social norms were included as covariates. Dietary norms were assessed using three items adapted from Pelletier et al. (2014) and Malek et al. (2019); these items assess the frequency of friends, family, and participant's significant other eating meat (six-point scale, never – everyday). The perceived frequency of meat consumption for friends and

family were both used to reflect the social norms of all participants' social circle (many participants did not have a significant other) as a control variable.

Analysis

As with *Study 1*, analyses were conducted using IBM SPSS, with moderation analyses conducted via PROCESS macro (Hayes, 2012). PROCESS utilizes listwise deletion, so all missing cases for each given variable were excluded from moderation analyses. As previously stated, all participants who failed one or more attention checks were excluded from analyses, helping to ensure the validity of the responses.

First, all measures were analyzed using descriptive statistics (see Appendix C) and checked to be diagnostically sound. There were no major outliers, the moderator was continuous and the focal predictor (reduced meat consumption) was dichotomous, which was appropriate for the PROCESS model that was used (see Appendix B). Next, moderation analyses were conducted in order to better understand the interaction between reducing one's meat consumption and consumer wisdom on one's PWB, controlling for sex, political orientation, and friends/family perceived meat-eating norms (two separate variables). Other variables including values and education level were also initially included as controls, but were removed as the model was pruned, as they did not affect significance. While all facets of consumer wisdom were analyzed as potential moderators, focus was given to *transcendence* in light of the relationships established in *Study 1*. In addition, consumer wisdom (and all six of its facets) were tested for interaction effects with specific types of meat consumption, in order to better understand specific relationships that might be present. Each statistically significant interaction was then probed

using the Johnson-Neyman technique, which defines values of the moderator (consumer wisdom) where the effect on the focal predictor (reduced meat consumption) is significant (Hayes & Matthes, 2009). The proposed moderation model is visible below (Figure 4).

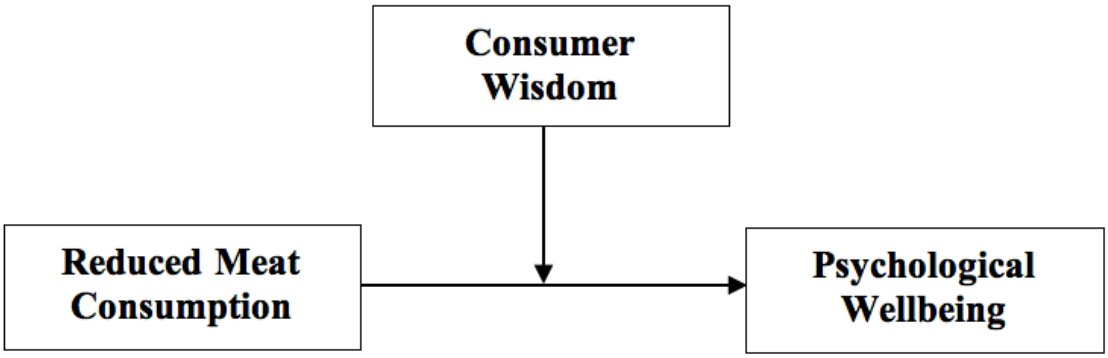

Figure 4. Conceptual Diagram of Moderation Model.

Results

As predicted, *transcendence* was found to have a significant interaction effect with reduced meat consumption on PWB, $F(1,292) = 4.046$, $p = .0452$. In order to probe this interaction, I used the Johnson-Neyman technique, which showed that the region of significance for the moderator's (*transcendence*) effect was quite limited. Indeed, the moderator values that showed significance ($p < .05$) were those above 6.898 on a scale of 1-7.

While the moderating effect of *transcendence* was more limited for overall meat reduction, the effects were stronger beef reduction in particular, $F(1,291) = 6.769$, $p = .0098$. More specifically, reduced beef consumption was found to be significantly related to PWB among those who were low in relative *transcendence* (-1 standard deviation from the mean), $\theta_{X \rightarrow Y|W=2.250} = 3.3666$,

p = .0141, The Johnson-Neyman technique revealed that the moderator's effect was significant specifically for those values of *transcendence* below 3.062 (representing 43.48% of the sample), and for those above 6.502 (2.34% of the sample). See *Figure 5* below for a graphical depiction of this effect. As can be seen, PWB was on average higher for those who reduced their beef consumption. However, those who rate scored higher in transcendence showed evidence of PWB enhancement when they *did not* reduce their meat consumption.

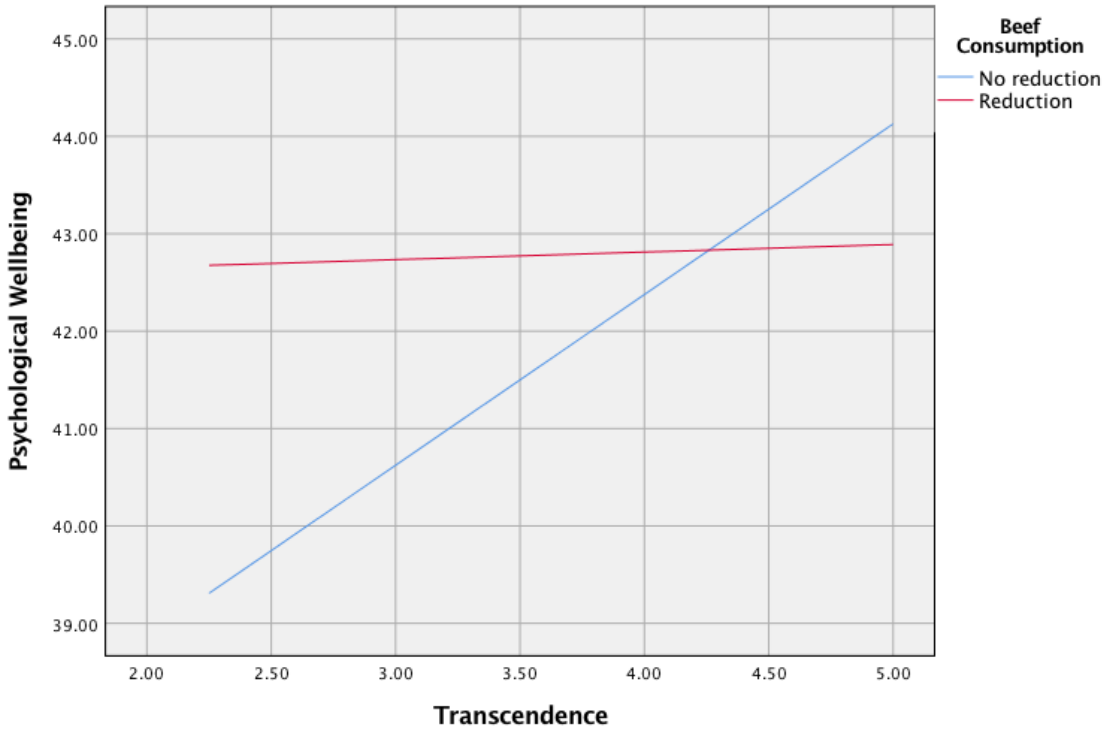

Figure 5. Visual Depiction of Beef Reduction's Interaction Effect with Transcendence on Psychological Wellbeing.

Beef reduction was then analyzed with respect to the remaining facets of consumer wisdom (controlling for sex, political orientation, and friends/family norms), with *flexibility* also showing a significant interaction effect, $F(1,291) = 6.6384$, $p = .0105$. Reduced beef consumption was found to be significantly related to PWB for those in the 16th percentile (-1 standard deviation from the mean) of relative *flexibility*, $\theta_{X \rightarrow Y|W=1.750} = 3.548$, $p = .0036$, as well as those who were average (50th percentile), $\theta_{X \rightarrow Y|W=2.750} = 1.8415$, $p = .0523$. For those who rate the highest in *flexibility*, there was a negative but statistically insignificant effect, $\theta_{X \rightarrow Y|W=4.25} = -.7189$, $p = .05481$. Here, beef reduction resulted in lower PWB outcomes for more *flexible* individuals, and higher PWB for those less *flexible* individuals (see Figure 6 below). The opposite effect also held true, where no reduction in beef consumption was related to better PWB for more *flexible* participants.

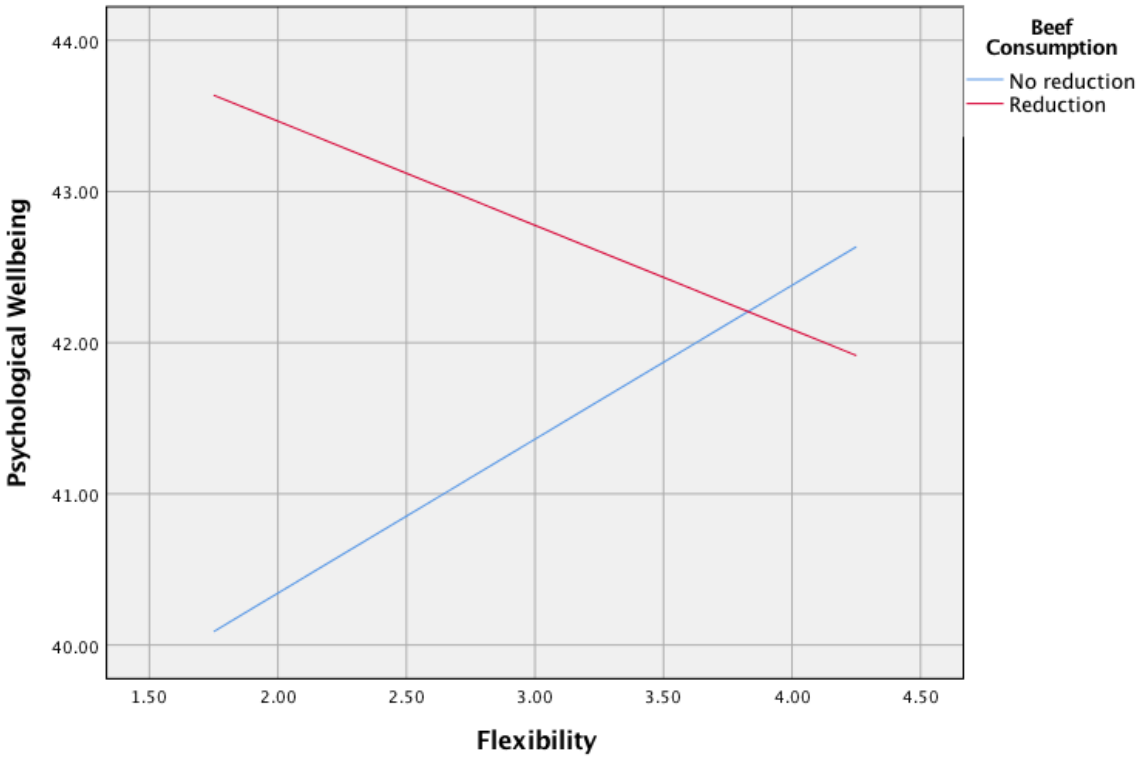

Figure 6. Visual Depiction of Beef Reduction's Interaction Effect with Flexibility on Psychological Wellbeing.

Discussion

In contrast to the initial hypothesis, the results of these moderation analyses suggest that being relatively high in consumer wisdom—*flexibility* and *transcendence* in particular—does not necessarily translate to improved PWB upon reducing meat consumption. Instead, "wise" individuals might actually experience *worse* PWB outcomes upon reducing their meat intake. The initial hypothesis of improved PWB for "wise" meat-reducers was based upon the idea that "wise" individuals would recognize the value in reducing their meat intake, and in turn benefit psychologically from their "moral" consumption reduction. However, this study suggests that

while “wise” individuals are more likely to reduce their meat consumption (because of perceived benefits), they also recognize the associated *costs* to personal wellbeing (hedonic, social, etc.).

In considering why this might be, it’s important to recall that “wise” consumers often balance conflicting goals by opting for a “middle-way” approach (Luchs & Mick, 2018). Thus, “wise” individuals might be willing to reduce their meat consumption to satisfy a more personally important goal (e.g., environmental protection), while also being more sensitive to associated personal costs. That is to say, while “wise” individuals may recognize the importance of reduced meat consumption for collective wellbeing, they also recognize that it might not personally benefit them in an immediate fashion, per se. Based off these findings, balancing the relative costs and benefits associated with meat reduction might be indicative of consumer wisdom. Importantly, these perceived costs and benefits would vary between “wise” individuals, based upon values, personal preferences, social context, etc. In addition, distinct facets of consumer wisdom (e.g., *flexibility*) could be present in varying degrees among individuals, where each facet differentially impacts meat reduction.

Among these facets, *flexibility* is predictive of seeking alternative consumption options that provide new experiences (possibly extending beyond a fixed identity) and that align with individual values. In the context of meat reduction, *flexibility* is arguably more impactful than some other facets because of its focus on alternative consumption. Depending on the person, this could entail reducing one’s meat consumption and/or opting for other more ethical (e.g., sustainable, cruelty-free) options that better align with their values (vs. factory-farmed meat).

However, such individuals are still prone to negative social repercussions that can often accompany meat reduction or alternative types of consumption (e.g., hunting). Such social costs likely hold true for *transcendence* as well.

Across consumption domains, *transcendent* individuals are especially motivated to consume in a way that embodies compassion and interbeing. As our findings from both *Study 1* and current study illustrate, these traits are especially relevant in the domain of meat consumption. That is, meat consumption has very clear moral implications towards both animals and the planet (Buttlar & Walther, 2019; De Backer & Hudders, 2015; Pollan, 2006), so it is somewhat unsurprising that *transcendence* has emerged as the most impactful facet of consumer wisdom for meat reduction. One clear example of how *transcendence* impacts meat consumption was described by Luchs and Mick (2018). The "wise" individual described how "veganism saves on the environment, saves on the planet, and it's kinder to animals. And we have this vegan spirituality group… to explore how veganism relates to spirituality… Spirituality is how you deal with other beings" (p. 384). This individual was able to identify how their consumption related not only to the animals directly impacted or to the environment, but also how all of these beings (including themselves) were connected. Notably, *transcendence* does not necessarily predict vegetarianism or veganism, but rather a general appreciation and respect for what one consumes. For instance, a hunter could feel very spiritually connected to the animals that they catch and eat, therefore embodying *transcendence* without reducing their meat intake. However, this sense of interbeing and connection cannot be reasonably sustained in the commercialized meat production and consumption that is typical for most American diets (Pollan, 2006). Thus, it is an unsurprising

finding that *transcendence* was correlated with reduced meat intake among the Americans surveyed.

In sum, these findings suggest that depending on the domain of consumption, "wise" individuals may not always benefit psychologically from consuming sustainably compared to less "wise" individuals, depending on context. Cultural diets serve as important ways for individuals to connect to others, so non-adherence to a typical meat-centric American diet could lend to negative social implications for many meat-reducing Americans (Pollan, 2006). In contrast, a more socially accepted type of sustainable consumption (e.g., carrying a reusable water bottle, buying "green" technologies) would positively impact PWB. However, "wise" individuals might be willing to take a "middle-way" approach to satisfy both their transcendent consumption objectives while sacrificing some aspects of their PWB in the process. Indeed, although "wise" individuals ate less meat on average, PWB was better among those who did not reduce their meat consumption.

Discussion and Overview of Research

The studies presented in this research suggest that while consumer wisdom can be predictive of sustainable consumption, there may not always be positive impacts to PWB depending on the consumption domain and sociocultural context. *Study 1* illustrated that relatively "wise" individuals are more inclined to participate in sustainable consumption behaviors, including reduced meat consumption. Importantly, this was the first study to provide empirical evidence of such a relationship. *Study 2* then explored the moderating relationship between consumer wisdom, and the effect of reduced meat consumption on PWB. Likely owing to the sociocultural context of the United States, there were negative impacts to PWB among the "wiser" participants.

This work builds upon existing literature that highlights the importance of the consumption domain and sociocultural context on wellbeing impacts (Herziger et al., 2020; Venhoeven et al., 2013). Meat proved to be an especially useful context to examine for a multitude of reasons. First, "wise" individuals seem to be willing to make important social tradeoffs in order to consume sustainably. While "green" consumption behaviors can provide rather immediate status benefits to the individual, it is generally more difficult to get consumers to opt for consumption reduction behaviors (Brooks & Wilson, 2015). Thus, consumer wisdom might offer key insights for promoting more challenging curtailment behaviors, such as meat reduction.

Based off of the research that has been presented, there is emerging evidence that while wise consumers might be willing to make a consumption reduction decision, they might do so in

consideration of their sociocultural context. In the domain of meat consumption, I found that "wise" individuals were still willing to reduce their meat consumption, in spite of the salient meat-eating culture in the United States. However, unlike other more valued pro-environmental behaviors, they incurred PWB costs in the process. Importantly, this research suggests that "wise" consumers might be willing to make difficult self-sacrifices in order to promote collective wellbeing (e.g., protect the environment). Although further research is needed, these preliminary findings are intriguing for better understanding why some individuals are able to make seemingly difficult reductions in their consumption.

While "wise" consumers might sacrifice some aspects of their PWB in order to meet other, more personally important wellbeing goals, it is unknown how long these sacrifices might last. That is, it is currently unclear if wise consumers maintain their consumption reduction behaviors over time. Although "wise" individuals might recognize that many things worth doing come with a cost, it remains unclear how long they might be willing to incur these costs. It could be that "wise" individuals have better developed their ability to cope with difficulty, which might translate into long-term sustainable lifestyles, in spite of perceived costs. Still, "wise" consumers could be important in shifting norms towards more sustainable consumption patterns. If widespread enough, such shifts in consumption patterns might help to prevent any negative social costs associated with sustainable consumption.

Limitations

There are several important limitations that are worth nothing with respect to the research at hand. First and foremost is the use of self-reported data from online surveys, which have been shown to have sometimes unreliable results (Gonyea, 2005; Palan & Schitter, 2018). In addition, the surveys being used cannot be used to illustrate any concrete causality or directionality in the relationships that were explored, given that all of the data was correlational. Moreover, the survey utilized some abbreviated forms of published scales in order to reduce survey time. While all of the constructs of interest were still measured, this might limit the generalizability of some of the results, at least in comparison to existing findings in the literature that use such scales.

Regarding participants, there are also important limitations that merit notice. The sample was younger than not, thereby limiting its generalizability. However, I posit that the ages of the participants are perhaps not as important with respect to "wise" food consumption (compared to other types of consumption that might require more resources), in that most young adults have the opportunity to make their own food selections. Still, further research would benefit from utilizing a more representative sample. The sample was predominately liberal in their political orientation and racially White, highlighting the need for future research. Lastly, the sample size of Prolific survey was smaller (N=323) due to financial constraints. In short, future research could benefit from a larger, more representative sample.

One final key limitation in this research is the current state of the consumer wisdom framework, which is still under active development. Given the new nature of Luchs and Mick's (2018)

conceptualization of consumer wisdom, it remains to be known if this framework is truly valid. Indeed, the scale that I used from Luchs, Mick, and Haws' (n.d.) newest iteration of consumer wisdom could need further refinement. The work I have presented here suggests that social norms might be a key deficit, with respect to aspects that are captured by their six facets of consumer wisdom.

Future Directions

Given the exploratory nature of this research, there is still much work to be done. As noted in the limitations, future research would greatly benefit from a more representative sample. This work suggests that cultural dietary context might play a critical role in how consumer wisdom moderates the effect of reducing meat consumption on psychological wellbeing, but additional work is necessary to better understand this relationship. Indeed, the research presented here cannot compare across cultural contexts, nor determine causality. Future work should examine if there are psychological benefits, as opposed to detriments, for "wise" consumers in cultural and social contexts where reduced meat consumption is more normative. It is possible that in a different cultural context where reducing or eliminating meat consumption is more normative, "wise" individuals might psychologically benefit from reducing their meat consumption. In short, while our findings show the importance of consumer wisdom in relation to PWB in general U.S. context, more research is needed to understand this relationship across different American regions, as well as other countries.

In addition to better establishing how consumer wisdom impacts sustainable consumption and psychological wellbeing, exploring how to cultivate consumer wisdom is a logical next step for researchers. Understanding how to cultivate consumer wisdom in individuals is arguably necessary to eventually apply this work to sustainability work. Emerging work from Frank and Stanszus (2019) offer self-inquiry-based and self-experience-based learning models to develop a "holistic, experiential, action-oriented, and transformational pedagogy supporting self-directed and problem-oriented learning" (pp. 2). Their focus on developing "personal competencies" stands in contrast to mere education-based interventions; theirs is a holistic approach to individual and societal consumption-related challenges in a self-determined and responsible manner. While the concept of personal competencies is distinct from consumer wisdom, the two seem to overlap in relation to sustainable consumption. However, there is currently no research relating this learning format to the cultivation of consumer wisdom. Future research might explore the development of personal competencies as one potential pathway for cultivating consumer wisdom.

Conclusions

Based upon the studies presented, there are several key conclusions from this research. First, consumer wisdom is associated with more sustainable consumption, generally speaking. Importantly, consumer wisdom was shown to be related to multiple types of sustainable consumption in *Study 1*, highlighting the wide-ranging impacts consumer wisdom has on consumption decisions. Unlike many education-centered approached to sustainable consumption, which often target specific behaviors, consumer wisdom is all-encompassing. *Study 1* suggests

that “wiser” individuals are able to overcome substantial psychosocial barriers in order to achieve pro-environmental behaviors across domains, including meat consumption reduction. In addition, *Study 1* provided evidence that consumer wisdom (namely *transcendence*) has a stronger association with lower beef consumption when compared to other types of meat. This is likely owing to the cultural importance of beef in American society (Twigg, 1976). Thus, while consumer wisdom seems to influence sustainable consumption decisions across domains, its influence likely depends upon sociocultural factors.

Previous research has shown that sustainable consumption can positively impact wellbeing, but this is specific to the consumption domain and sociocultural context (Herziger et al., 2020; Venhoeven et al., 2013). I was able to explore how “wise” individuals’ PWB might be affected by reduced meat consumption, a curtailment behavior that is often stigmatized in American culture (Earle & Hodson, 2017; Rothgerber, 2015a). *Study 2* found that individuals who scored highest in consumer wisdom did not benefit psychologically from reducing their meat consumption, especially in the case of beef. In contrast, individuals who scored low in consumer wisdom did benefit psychologically from reducing their meat and beef consumption. This could be owing to the cultural norms surrounds meat consumption in the United States, as there are social costs associated with breaking from “normal” omnivorous diets. Thus, cultural norms might help to explain why wise consumers do not necessarily benefit psychologically from reducing their beef consumption, but additional research is needed to understand this relationship. While it is predicted that negative PWB impacts would be eliminated or attenuated

in social contexts where sustainable behaviors are normative and valued, this should be tested across consumption domains and cultural contexts.

Closing Remarks.

While consumer wisdom is a rather new theoretical framework, it offers preliminary insights into achieving more costly sustainable consumption behaviors. “Wise” consumers differ from other consumers in their willingness to sacrifice some aspects of wellbeing (PWB in this case) in order to achieve greater collective and personal wellbeing. Importantly, consumer wisdom extends beyond pure sustainability knowledge and domain-specific, knowledge-based interventions. Instead, consumer wisdom might offer a better understanding of sustainable consumption patterns *across* consumption domains. Our research, along with the initial work presented by Luchs and Mick (2018), suggests that “wise” consumers lead sustainable lifestyles that effectively balance personal and collective wellbeing.

Moreover, this research suggest that social context could be important in determining sustainable consumption behaviors and PWB outcomes among the “wise.” This research has been exploratory in nature, but it highlights the need to better understand how socio-cultural contexts interact with consumer wisdom—and PWB in turn—across consumption domains.

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Appendix A. Survey Instrument

Dietary Consumer Wisdom - ProA Survey

Start of Block: Consent

consent **The Ohio State University Consent to Participate in Research**
Study Title: Dietary Consumer Wisdom Protocol Number: 2020E0327 Researcher: Dr. Jeremy Brooks Sponsor: The Ohio State University

This is a consent form for research participation. It contains important information about this study and what to expect if you decide to participate. **Your participation is voluntary.** Please consider the information carefully. Feel free to ask questions before making your decision whether or not to participate. **Purpose:** The purpose of this research is to understand how dietary consumption decisions influence psychological wellbeing. **Procedures/Tasks:** You will be asked a series of questions regarding your consumption behaviors, including dietary consumption, as well as your dietary motivations, values, proenvironmental behaviors, psychological wellbeing, and demographic questions. **Duration:** You may leave the study at any time. If you decide to stop participating in the study, there will be no penalty to you, and you will not lose any benefits to which you are otherwise entitled. Your decision will not affect your future relationship with The Ohio State University. We expect the survey will take about 11 minutes to complete. **Risks and Benefits:** By participating in this study, you have the opportunity to gain hands-on experience with research. You are contributing to a project which may improve the understanding of sustainable consumption and wellbeing. In online research there is a minimal risk of breach of confidentiality. **Confidentiality:** We will work to make sure that no one sees your online responses without approval. But, because we are using the Internet, there is a chance that someone could access your online responses without permission. In some cases, this information could be used to identify you. Also, there may be circumstances where this information must be released. For example, personal information regarding your participation in this study may be disclosed if required by state law. Also, your records may be reviewed by the following groups (as applicable to the research): · Office for Human Research Protections or other federal, state, or international regulatory agencies; · The Ohio State University Institutional Review Board or Office of Responsible Research Practices; · The sponsor, if any, or agency (including the Food and Drug Administration for FDA-regulated research) supporting the study. **Incentives:** You

will receive $1.50 for participation in this study, paid directly to your Prolific account upon your participation. Your payment is not contingent upon study completion. By law, payments to subjects are considered taxable income. **Participant Rights:** You may refuse to participate in this study without penalty or loss of benefits to which you are otherwise entitled. If you choose to participate in the study, you may discontinue participation at any time without penalty or loss of benefits. By agreeing to participate, you do not give up any personal legal rights you may have as a participant in this study. **Future Research:** Your de-identified information will not be used or shared with other researchers. **Contacts and Questions:** For questions, concerns, or complaints about the study, or you feel you have been harmed as a result of study participation, you may contact Briahna Hendey at hendey.4@osu.edu . For questions about your rights as a participant in this study or to discuss other study-related concerns or complaints with someone who is not part of the research team, you may contact Ms. Sandra Meadows in the Office of Responsible Research Practices at 1-800-678-6251 or hsconcerns@osu.edu. **Providing consent:** I have read (or someone has read to me) this page and I am aware that I am being asked to participate in a research study. I have had the opportunity to ask questions and have had them answered to my satisfaction. I voluntarily agree to participate in this study. I am not giving up any legal rights by agreeing to participate. To print or save a copy of this page, select the print button on your web browser.

Please click the button below to proceed and participate in this study. If you do not wish to participate, please close out your browser window.

End of Block: Consent

Start of Block: Prolific ID

proID
Before you start, please switch off phone/ email/ music so you can focus on this study.

Thank you!

Please enter your Prolific ID:

_____

End of Block: Prolific ID

Start of Block: CW Responsibility

CWresp How well (or how often) does each of the following statements describe you?

	Never (1) (1)	Occasionally (2) (2)	Sometimes (3) (3)	Often (4) (4)	Frequently (5) (5)	Usually (6) (6)	Always (7) (7)
I have a realistic sense of the lifestyle that I can afford (wisdom_1-responsibility)	○	○	○	○	○	○	○
I spend my money responsibly (wisdom_2-responsibility)	○	○	○	○	○	○	○
I find it easy to focus on buying only what I really need without getting tempted by things that others have (wisdom_3-responsibility)	○	○	○	○	○	○	○
I am able to resist temptation in order to achieve my budget and lifestyle goals (wisdom_4-responsibility)	○	○	○	○	○	○	○

End of Block: CW Responsibility

Start of Block: CW Purpose

CWpurp How well (or how often) does each of the following statements describe you?

	Never (1) (1)	Occasionally (2) (2)	Sometimes (3) (3)	Often (4) (4)	Frequently (5) (5)	Usually (6) (6)	Always (7) (7)
I manage my budget so that I can spend some money on experiences that give me a lot of pleasure and joy (wisdom_5-Purpose)	○	○	○	○	○	○	○
I prioritize spending some money on unique experiences that help me develop my full potential (wisdom_6-Purpose)	○	○	○	○	○	○	○
I manage my budget so that I can spend some money on experiences that help me learn new things (wisdom_7-Purpose)	○	○	○	○	○	○	○
I prioritize spending money on products and experiences that help me build and strengthen relationships with others (wisdom_8-Purpose)	○	○	○	○	○	○	○

End of Block: CW Purpose

Start of Block: CW Flexibility

CWflex How well (or how often) does each of the following statements describe you?

	Never (1) (1)	Occasionally (2) (2)	Sometimes (3) (3)	Often (4) (4)	Frequently (5) (5)	Usually (6) (6)	Always (7) (7)
I borrow or rent products to try them out before deciding if I want to buy them (wisdom_9-Flexibility)	○	○	○	○	○	○	○
Before I buy something that I might not use very often, I try to rent it or borrow it from someone instead (wisdom_10-Flexibility)	○	○	○	○	○	○	○
My purchases include used products or clothing even though I could just purchase new things if I wanted to (wisdom_11-Flexibility)	○	○	○	○	○	○	○
I like to share, swap, or trade for things with my friends and neighbors (wisdom_12-Flexibility)	○	○	○	○	○	○	○

End of Block: CW Flexibility

Start of Block: CW Perspective

CWpersp How well (or how often) does each of the following statements describe you?

	Never (1) (1)	Occasionally (2) (2)	Sometimes (3) (3)	Often (4) (4)	Frequently (5) (5)	Usually (6) (6)	Always (7) (7)
Before I buy something, I consider my previous experiences with similar purchases (wisdom_13-Perspective)	○	○	○	○	○	○	○
Before spending money on something, I visualize what the experience of owning and using it is likely to be (wisdom_14-Perspective)	○	○	○	○	○	○	○
Before I buy something, I consider the possible costs and benefits over time (wisdom_15-Perspective)	○	○	○	○	○	○	○
Before I buy something, I make an effort to consider my options from multiple perspectives (wisdom_16-Perspective)	○	○	○	○	○	○	○

End of Block: CW Perspective

Start of Block: CW Reasoning

CWreas How well (or how often) does each of the following statements describe you?

	Never (1) (1)	Occasionally (2) (2)	Sometimes (3) (3)	Often (4) (4)	Frequently (5) (5)	Usually (6) (6)	Always (7) (7)
I understand which product features are the most important (wisdom_17-reasoning)	○	○	○	○	○	○	○
I know when I've done enough research to make a good purchase decision (wisdom_18-reasoning)	○	○	○	○	○	○	○
I know where and how to buy things so that I get the best value (wisdom_19-reasoning)	○	○	○	○	○	○	○
Before buying something, I know how to get the information that I need to make great choices (wisdom_20-reasoning)	○	○	○	○	○	○	○
Please mark this statement as something you 'usually' do (wisdom_25-Attention)	○	○	○	○	○	○	○

End of Block: CW Reasoning

Start of Block: CW Transcendence

CWtrans How well (or how often) does each of the following statements describe you?

	Never (1) (1)	Occasionally (2) (2)	Sometimes (3) (3)	Often (4) (4)	Frequently (5) (5)	Usually (6) (6)	Always (7) (7)
I buy products from companies that promote environmental responsibility, even when they cost more (wisdom_21-Transcendence)	○	○	○	○	○	○	○
My consumption behaviors consistently reflect my concern for the natural environment (wisdom_22-Transcendence)	○	○	○	○	○	○	○
I buy products from companies that demonstrate that they share my ethical values (wisdom_23-Transcendence)	○	○	○	○	○	○	○
I spend time thinking about how we, as a global community, affect each other through our individual consumption choices (wisdom_24-Transcendence)	○	○	○	○	○	○	○

End of Block: CW Transcendence

Start of Block: deGroot Values pt I

values1 Please **rate how much each of the following values is a guiding principle in your life** from 0 (not important) to 7 (of supreme importance). Use -1 if you are opposed to this value.

	Opposed to my values (-1) (1)	Not important (0) (2)	(1) (3)	(2) (4)	Important (3) (5)	(4) (6)	(5) (7)	Very important (6) (8)	Of supreme importance (7) (9)
Social power: control over others, dominance (1)	○	○	○	○	○	○	○	○	○
Authority: the right to lead or command (3)	○	○	○	○	○	○	○	○	○
A world at peace: free of war and conflict (7)	○	○	○	○	○	○	○	○	○
Preventing pollution: protecting natural resources (10)	○	○	○	○	○	○	○	○	○
Unity with nature: fitting into nature (12)	○	○	○	○	○	○	○	○	○
Ambitious: hardworking, aspiring (13)	○	○	○	○	○	○	○	○	○

End of Block: deGroot Values pt I

Start of Block: deGroot Values pt II

values2 Please **rate how much each of the following values is a guiding principle in your life** from 0 (not important) to 7 (of supreme importance). Use -1 if you are opposed to this value.

	Opposed to my values (-1) (1)	Not important (0) (2)	(1) (3)	(2) (4)	Important (3) (5)	(4) (6)	(5) (7)	Very important (6) (8)	Of supreme importance (7) (9)
Wealth: material possessions, money (2)	○	○	○	○	○	○	○	○	○
Influential: having an impact on people and events (4)	○	○	○	○	○	○	○	○	○
Equality: equal opportunity for all (6)	○	○	○	○	○	○	○	○	○
Helpful: working for the welfare of others (9)	○	○	○	○	○	○	○	○	○
Respecting the earth: harmony with other species (11)	○	○	○	○	○	○	○	○	○
Protecting the environment: preserving nature (13)	○	○	○	○	○	○	○	○	○

End of Block: deGroot Values pt II

Start of Block: Behavior

behavior Below is a list of behaviors you may or may not do. Please indicate how often you do these behaviors. There are no right or wrong answers, so your first thought is probably the most accurate.

	Never (1) (1)	Rarely (2) (2)	Sometimes (3) (3)	Often (4) (4)	Always (5) (5)
Walk, bicycle, or take public transportation instead of taking a car (1)	○	○	○	○	○
Eating organic food (2)	○	○	○	○	○
Eat meat (3)	○	○	○	○	○
Eat animal products such as milk, cheese, eggs, or yogurt (4)	○	○	○	○	○
Carry a reusable water bottle (6)	○	○	○	○	○
Purchase second-hand items instead of purchasing new items (7)	○	○	○	○	○
Use reusable bags when shopping (8)	○	○	○	○	○
Act to conserve water when showering, cleaning clothes, dishes, or other uses (13)	○	○	○	○	○

End of Block: Behavior

Start of Block: PWB Disclaimer

Q62 **The next set of questions regards your psychological wellbeing, which may have been affected by the ongoing COVID-19 pandemic. To the best of your ability, please report your agreement with each of the statements under more normal circumstances (i.e., before the pandemic).**

End of Block: PWB Disclaimer

Start of Block: Psych well-being - Diener and Biswas-Diener 2009

WB1 Below are 8 statements with which you may agree or disagree.

Using the 1–7 scale below, indicate your agreement with each item by indicating that response for each statement.

	Strongly disagree (1) (1)	Disagree (2) (2)	Somewhat disagree (3) (3)	Neither agree nor disagree (4) (4)	Somewhat agree (5) (5)	Agree (6) (6)	Strongly agree (7) (7)
I lead a purposeful and meaningful life (1)	○	○	○	○	○	○	○
My social relationships are supportive and rewarding (2)	○	○	○	○	○	○	○
I am engaged and interested in my daily activities (3)	○	○	○	○	○	○	○
I actively contribute to the happiness and well-being of others (4)	○	○	○	○	○	○	○
I am competent and capable in the activities that are important to me (5)	○	○	○	○	○	○	○
I am a good person and live a good life (6)	○	○	○	○	○	○	○
I am optimistic about my future (7)	○	○	○	○	○	○	○
People respect me (8)	○	○	○	○	○	○	○

End of Block: Psych well-being - Diener and Biswas-Diener 2009

Start of Block: Diet

Diet
What are your **current dietary practices** with respect to animal products?

"Animal products" refers to anything that comes from an animal, including meat, dairy, eggs, honey, leather, fibers (wool, silk, etc.), and animal-derived ingredients that are used in a variety of products, such as toiletries.

○ **Omnivorous**: Consume animal products, except those excluded for taste preference, medical (e.g., allergy, intolerance), and/or religious reasons (1)

○ **Semi- or Partial Vegetarian:** Consume some, but not all, of the following: red meat (beef, veal, etc.), pork, poultry, fish, and/or seafood. Consume eggs, and dairy products (2)

○ **Vegetarian:** Never consume red meat (beef, veal, etc.), pork, poultry, fish, or seafood, but may consume eggs and/or dairy products (3)

○ **Strict Vegetarian or Dietary Vegan:** Never consume any animal products, including red meat (beef, veal, etc.), pork, poultry, fish, seafood, eggs, dairy, products, or other animal products (e.g., gelatin, casein, etc.) (4)

○ **Lifestyle Vegan:** Never consume any animal products, and avoid some or all non-food animal products (e.g., leather, silk, cosmetics containing animal ingredients, etc.) and/or products tested on animals. (5)

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diet.change Have you changed your dietary consumption of animal products in the past five years?

○ Yes (1)

○ No (2)

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diet.change2 How would you describe the **general direction of your changes in dietary restrictions** with respect to your consumption of **animal products** over the last 5 years?

Fewer restrictions means greater consumption, whereas *more restrictions* means lower consumption of animal products.

- ○ Strongly moving towards **fewer restrictions** (1) (1)
- ○ (2) (2)
- ○ (3) (3)
- ○ Fluctuating between restricting and not restricting (4) (4)
- ○ (5) (5)
- ○ (6) (6)
- ○ Strongly moving toward **more restrictions** (7) (7)
- ○ Not Applicable (9)

End of Block: Diet

Start of Block: Meat consumption - Malek et al. (2019)

Meat.frq To the best of your ability, please rate the frequency of consumption for each of the following.

	Never (1)	Less than once per month (2)	1 to 3 times per month (3)	1 day per week (4)	2 days per week (5)	3 days per week (6)	4 days per week (7)	5 days per week (8)	6 days per week (9)	Everyday (10)
Beef (1)	○	○	○	○	○	○	○	○	○	○
Chicken (2)	○	○	○	○	○	○	○	○	○	○
Pork (3)	○	○	○	○	○	○	○	○	○	○
Lamb (4)	○	○	○	○	○	○	○	○	○	○
Fish / Seafood (5)	○	○	○	○	○	○	○	○	○	○
Plant-based Meat (ex: Impossible Burger) (8)	○	○	○	○	○	○	○	○	○	○

Meat.change Have you made any of the following changes to your consumption of each of the following within the last year?

	Just started eating (2)	Eating more often (4)	No change (5)	Eating less often (6)	Just stopped eating altogether (7)	Other type of change (8)
Beef (1)	○	○	○	○	○	○
Chicken (2)	○	○	○	○	○	○
Pork (3)	○	○	○	○	○	○
Lamb (4)	○	○	○	○	○	○
Fish / Seafood (5)	○	○	○	○	○	○
Plant-based Meat (ex: Impossible Burger) (8)	○	○	○	○	○	○

End of Block: Meat consumption - Malek et al. (2019)

Start of Block: Ethical/Sustainable Meat

ethicm How often have you consumed ethically produced meat for each of the following within the last year?

	Never (2)	Rarely (4)	Sometimes (5)	Often (6)	Always (7)	N/A (9)
Beef (1)	○	○	○	○	○	○
Chicken (2)	○	○	○	○	○	○
Pork (3)	○	○	○	○	○	○
Lamb (4)	○	○	○	○	○	○
Fish / Seafood (5)	○	○	○	○	○	○

sustm How often have you consumed sustainably produced meat for each of the following within the last year?

	Never (2)	Rarely (4)	Sometimes (5)	Often (6)	Always (7)	N/A (9)
Beef (1)	○	○	○	○	○	○
Chicken (2)	○	○	○	○	○	○
Pork (3)	○	○	○	○	○	○
Lamb (4)	○	○	○	○	○	○
Fish / Seafood (5)	○	○	○	○	○	○

End of Block: Ethical/Sustainable Meat

Start of Block: Dynamic Norms - Adapted from Sparkman and Walton (2017)

dnorms1 How would you describe **Americans' current meat consumption**? Meat includes the eating of any animals, including poultry and fish.

- Strongly decreasing. *Many Americans are eating less meat.* (1) (1)
- (2) (2)
- (3) (3)
- Neither increasing nor decreasing (4) (4)
- (5) (6)
- (6) (7)
- Strongly increasing. *Many Americans are eating more meat.* (7) (5)

dnorms2 Are you interested in changing your meat consumption?

- Very interested in eating more meat (1) (1)
- (2) (2)
- (3) (3)
- Not interested in changing meat consumption (4) (4)
- (5) (5)
- (6) (6)
- Very interested in eating less meat (7) (7)
- Not applicable (9)

End of Block: Dynamic Norms - Adapted from Sparkman and Walton (2017)

Start of Block: Norms - Pelletier et al. (2014) with Malek et al. (2019) adapted scale

norms.friends On average, how often do your friends eat meat?

- ○ Never (1)
- ○ Less than once per month (2)
- ○ 1 to 3 times per month (3)
- ○ 1 day per week (4)
- ○ More than once per week (5)
- ○ Everyday (6)

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norms.fam On average, how often does your family eat meat?

- ○ Never (1)
- ○ Less than once per month (2)
- ○ 1 to 3 times per month (3)
- ○ 1 day per week (4)
- ○ More than once per week (5)
- ○ Everyday (6)

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norms. SO If applicable, how often does your significant other eat meat?

- ○ Never (1)
- ○ Less than once per month (2)
- ○ 1 to 3 times per month (3)
- ○ 1 day per week (4)
- ○ More than once per week (6)
- ○ Everyday (11)
- ○ Not applicable (12)

End of Block: Norms - Pelletier et al. (2014) with Malek et al. (2019) adapted scale

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Start of Block: Food Motives - Steptoe et al. (1995)

motive

For each of the following, please rate the level of importance to you.

It is important to me that the food I eat on a typical day...

	Not at all important (1)	A little important (2)	Moderately important (3)	Important (4)	Very Important (6)
Keeps me healthy (1)	○	○	○	○	○
Helps me to cope with life (2)	○	○	○	○	○
Is easy to prepare (3)	○	○	○	○	○
Smells nice (4)	○	○	○	○	○
Please select the 'important' option (16)	○	○	○	○	○
Has a pleasant texture (7)	○	○	○	○	○
Contains no additives (5)	○	○	○	○	○
Contains natural ingredients (6)	○	○	○	○	○
Is not expensive (8)	○	○	○	○	○
Is good value for money (9)	○	○	○	○	○
Helps me control my weight (11)	○	○	○	○	○
Is what I usually eat (12)	○	○	○	○	○
Is ethically produced (14)	○	○	○	○	○
Is packaged in an environmentally friendly way (13)	○	○	○	○	○
Is trendy (10)	○	○	○	○	○

Is cruelty-free (15)	○	○	○	○	○

End of Block: Food Motives - Steptoe et al. (1995)

Start of Block: 4N Scale

4N-short Please rate your attitudes towards the statements below:

	Strongly disagree (1)	Disagree (2)	Somewhat disagree (3)	Neither agree nor disagree (4)	Somewhat agree (5)	Agree (6)	Strongly agree (7)
It is only natural to eat meat (1)	○	○	○	○	○	○	○
Human beings naturally crave meat (2)	○	○	○	○	○	○	○
Human beings need to eat meat (3)	○	○	○	○	○	○	○
It is normal to eat meat (4)	○	○	○	○	○	○	○
Meat adds so much flavor to a meal it does not make sense to leave it out (5)	○	○	○	○	○	○	○
Meals without meat would just be bland and boring (6)	○	○	○	○	○	○	○

End of Block: 4N Scale

Start of Block: Political Orientation

pol.or Generally speaking, when it comes to political orientations how would you describe yourself?

- ○ Extremely liberal (1)
- ○ Liberal (2)
- ○ Slightly liberal (3)
- ○ Moderate (4)
- ○ Slightly conservative (5)
- ○ Conservative (6)
- ○ Extremely conservative (7)
- ○ Don't know (8)

End of Block: Political Orientation

Start of Block: Demographics

gender Which most closely represents your gender identity?

- ○ Male (1)
- ○ Female (2)
- ○ Other (3) _____
- ○ Prefer not to answer (4)

age What is your age?

_____

race What is your race? Please check all that apply.

- [ ] White (1)
- [ ] Black or African American (2)
- [ ] Hispanic (9)
- [ ] Native American or Alaska Native (3)
- [ ] Asian (including Asian Indian) (4)
- [ ] Native Hawaiian or Pacific Islander (5)
- [ ] Arab/Middle Eastern (10)
- [ ] Other (7) _____

income What is your annual household income?

- ○ Less than $10,000 (1)
- ○ $10,000 to $14,999 (2)
- ○ $15,000 to $24,999 (3)
- ○ $25,000 to $34,999 (4)
- ○ $35,000 to $49,999 (5)
- ○ $50,000 to $74,999 (6)
- ○ $75,000 to $99,999 (7)
- ○ $100,000 to $149,999 (8)
- ○ $150,000 to $199,999 (9)
- ○ $200,000 or more (10)

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edu What is your highest level of educational attainment?

- ○ No high school diploma (1)
- ○ High school (2)
- ○ Bachelor's degree (3)
- ○ Professional or graduate degree (4)

End of Block: Demographics

Start of Block: End of Survey

end

Thank you for participating in this survey! Please click the arrow to ensure your response is marked as completed for Prolific.

End of Block: End of Survey

Appendix B. Moderation Analysis Syntax and Output

Transcendence Moderator Model

```
Process y=PWB_comp/x=redbeef/ w=cwtrans/cov=Sex pol.or norms.fr
norms.fa/model=1/jn=1/plot=1.
```

Run MATRIX procedure:

**** PROCESS Procedure for SPSS Version 3.4 ****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2018). www.guilford.com/p/hayes3

****

Model : 1
Y : pwb_comp
X : RedBeef
W : cwtrans

Covariates:
sex pol.or norms.fr norms.fa

Sample
Size: 299

****

OUTCOME VARIABLE:
pwb_comp

Model Summary

R	R-sq	MSE	F	df1	df2	p
.3136	.0983	46.1151	4.5343	7.0000	291.0000	.0001

Model

	coeff	se	t	p	LLCI	ULCI

constant	29.0192	3.4133	8.5018	.0000	22.3013	35.7370
RedBeef	7.1350	2.6415	2.7011	.0073	1.9362	12.3339
cwtrans	1.7528	.3729	4.6999	.0000	1.0188	2.4868
Int_1	-1.6748	.6438	-2.6017	**.0098**	-2.9418	-.4078
sex	-.3745	.7999	-.4682	.6400	-1.9488	1.1997
pol.or	.9224	.2638	3.4963	.0005	.4032	1.4417
norms.fr	.3946	.5591	.7057	.4809	-.7059	1.4951
norms.fa	.3202	.4935	.6489	.5169	-.6511	1.2915

Product terms key:
Int_1 : RedBeef x cwtrans

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	.0210	6.7686	1.0000	291.0000	.0098

Focal predict: RedBeef (X)
Mod var: cwtrans (W)

Conditional effects of the focal predictor at values of the moderator(s):

cwtrans	Effect	se	t	p	LLCI	ULCI
2.2500	3.3666	1.3629	2.4702	.0141	.6843	6.0490
3.2500	1.6918	.9637	1.7555	.0802	-.2049	3.5885
5.0000	-1.2392	1.1393	-1.0877	.2776	-3.4814	1.0031

Moderator value(s) defining Johnson-Neyman significance region(s):

Value	% below	% above
3.0615	43.4783	56.5217
6.5016	97.6589	2.3411

Conditional effect of focal predictor at values of the moderator:

cwtrans	Effect	se	t	p	LLCI	ULCI
1.0000	5.4602	2.0455	2.6694	.0080	1.4344	9.4859
1.3000	4.9577	1.8728	2.6472	.0086	1.2718	8.6437
1.6000	4.4553	1.7046	2.6137	.0094	1.1004	7.8101
1.9000	3.9528	1.5422	2.5632	.0109	.9176	6.9881
2.2000	3.4504	1.3877	2.4865	.0135	.7192	6.1815
2.5000	2.9479	1.2440	2.3697	.0185	.4995	5.3963
2.8000	2.4455	1.1154	2.1925	.0291	.2502	4.6407
3.0615	2.0075	1.0200	1.9682	.0500	.0000	4.0151
3.1000	1.9430	1.0076	1.9284	.0548	-.0400	3.9261
3.4000	1.4406	.9279	1.5526	.1216	-.3856	3.2668
3.7000	.9381	.8839	1.0614	.2894	-.8015	2.6778

4.0000	.4357	.8810	.4945	.6213	-1.2983	2.1696
4.3000	-.0668	.9196	-.0726	.9422	-1.8767	1.7432
4.6000	-.5692	.9949	-.5722	.5677	-2.5273	1.3888
4.9000	-1.0717	1.0993	-.9749	.3304	-3.2353	1.0919
5.2000	-1.5741	1.2255	-1.2845	.2000	-3.9860	.8378
5.5000	-2.0766	1.3674	-1.5187	.1299	-4.7678	.6146
5.8000	-2.5790	1.5206	-1.6961	.0909	-5.5718	.4137
6.1000	-3.0815	1.6820	-1.8320	.0680	-6.3920	.2290
6.4000	-3.5839	1.8496	-1.9377	.0536	-7.2242	.0563
6.5016	-3.7541	1.9074	-1.9682	.0500	-7.5081	.0000
6.7000	-4.0864	2.0217	-2.0213	.0442	-8.0654	-.1074
7.0000	-4.5888	2.1973	-2.0884	.0376	-8.9134	-.2642

Data for visualizing the conditional effect of the focal predictor:
Paste text below into a SPSS syntax window and execute to produce plot.

```
DATA LIST FREE/
  RedBeef    cwtrans    pwb_comp   .
BEGIN DATA.
     .0000     2.2500    39.3087
    1.0000     2.2500    42.6753
     .0000     3.2500    41.0615
    1.0000     3.2500    42.7533
     .0000     5.0000    44.1288
    1.0000     5.0000    42.8897
END DATA.
GRAPH/SCATTERPLOT=
 cwtrans  WITH     pwb_comp BY       RedBeef  .
```

********** ANALYSIS NOTES AND ERRORS **********

Level of confidence for all confidence intervals in output:
 95.0000

W values in conditional tables are the 16th, 50th, and 84th percentiles.

NOTE: Variables names longer than eight characters can produce incorrect output.
     Shorter variable names are recommended.

------ END MATRIX -----

Flexibility Moderator Model

```
Process y=PWB_comp/x=redbeef/ w=cwtrans/cov=Sex pol.or norms.fr
norms.fa/model=1/jn=1/plot=1.
```

Run MATRIX procedure:

**** PROCESS Procedure for SPSS Version 3.4 ****

Written by Andrew F. Hayes, Ph.D. www.afhayes.com
Documentation available in Hayes (2018). www.guilford.com/p/hayes3

****

Model : 1
Y : pwb_comp
X : RedBeef
W : cwflex

Covariates:
sex pol.or norms.fr norms.fa

Sample
Size: 299

****

OUTCOME VARIABLE:
pwb_comp

Model Summary

R	R-sq	MSE	F	df1	df2	p
.2417	.0584	48.1564	2.5798	7.0000	291.0000	.0136

Model

	coeff	se	t	p	LLCI	ULCI
constant	34.0703	3.2283	10.5537	.0000	27.7166	40.4240
RedBeef	6.5355	2.1806	2.9971	.0030	2.2437	10.8274
cwflex	1.0181	.3792	2.6847	.0077	.2717	1.7644
Int_1	-1.7069	.6625	-2.5765	**.0105**	-3.0108	-.4030
sex	-.3948	.8181	-.4826	.6298	-2.0050	1.2154
pol.or	.6759	.2615	2.5842	.0102	.1611	1.1906
norms.fr	.2866	.5750	.4984	.6186	-.8451	1.4182

norms.fa	.1682	.5045	.3334	.7390	-.8247	1.1611

Product terms key:
Int_1 : RedBeef x cwflex

Test(s) of highest order unconditional interaction(s):

	R2-chng	F	df1	df2	p
X*W	.0215	6.6384	1.0000	291.0000	.0105

Focal predict: RedBeef (X)
Mod var: cwflex (W)

Conditional effects of the focal predictor at values of the moderator(s):

cwflex	Effect	se	t	p	LLCI	ULCI
1.7500	3.5484	1.2106	2.9310	.0036	1.1657	5.9311
2.7500	1.8415	.8904	2.0681	.0395	.0890	3.5940
4.2500	-.7189	1.1957	-.6013	.5481	-3.0722	1.6343

Moderator value(s) defining Johnson-Neyman significance region(s):

Value	% below	% above
2.8102	53.5117	46.4883

Conditional effect of focal predictor at values of the moderator:

cwflex	Effect	se	t	p	LLCI	ULCI
1.0000	4.8286	1.5957	3.0260	.0027	1.6880	7.9692
1.3000	4.3165	1.4334	3.0113	.0028	1.4953	7.1378
1.6000	3.8044	1.2815	2.9687	.0032	1.2822	6.3266
1.9000	3.2924	1.1440	2.8779	.0043	1.0408	5.5440
2.2000	2.7803	1.0268	2.7078	.0072	.7594	4.8011
2.5000	2.2682	.9374	2.4196	.0162	.4232	4.1132
2.8000	1.7561	.8845	1.9855	.0480	.0154	3.4969
2.8102	1.7387	.8834	1.9682	.0500	.0000	3.4773
3.1000	1.2441	.8745	1.4225	.1559	-.4771	2.9653
3.4000	.7320	.9090	.8052	.4213	-1.0571	2.5211
3.7000	.2199	.9833	.2236	.8232	-1.7153	2.1551
4.0000	-.2922	1.0892	-.2683	.7887	-2.4359	1.8515
4.3000	-.8043	1.2186	-.6600	.5098	-3.2025	1.5940
4.6000	-1.3163	1.3647	-.9646	.3356	-4.0023	1.3696
4.9000	-1.8284	1.5228	-1.2007	.2308	-4.8255	1.1687
5.2000	-2.3405	1.6895	-1.3853	.1670	-5.6657	.9847
5.5000	-2.8526	1.8625	-1.5316	.1267	-6.5183	.8132
5.8000	-3.3646	2.0402	-1.6492	.1002	-7.3801	.6508
6.1000	-3.8767	2.2215	-1.7451	.0820	-8.2490	.4955

```
    6.4000   -4.3888    2.4055   -1.8245     .0691   -9.1233     .3457
    6.7000   -4.9009    2.5917   -1.8910     .0596  -10.0018     .2001
    7.0000   -5.4130    2.7797   -1.9473     .0525  -10.8838     .0579

Data for visualizing the conditional effect of the focal predictor:
Paste text below into a SPSS syntax window and execute to produce plot.

DATA LIST FREE/
  RedBeef   cwflex    pwb_comp   .
BEGIN DATA.
     .0000    1.7500   40.0890
    1.0000    1.7500   43.6374
     .0000    2.7500   41.1071
    1.0000    2.7500   42.9486
     .0000    4.2500   42.6343
    1.0000    4.2500   41.9154
END DATA.
GRAPH/SCATTERPLOT=
 cwflex   WITH    pwb_comp BY      RedBeef  .

************************ ANALYSIS NOTES AND ERRORS ************************

Level of confidence for all confidence intervals in output:
  95.0000

W values in conditional tables are the 16th, 50th, and 84th percentiles.

NOTE: Variables names longer than eight characters can produce incorrect output.
      Shorter variable names are recommended.

------ END MATRIX -----
```

Appendix C. Supplementary Tables

Sample Demographics

Total Sample (N=323)

Table 5. Gender.

Gender	Frequency	Percent
Male	137	42.4
Female	179	55.4
Other	6	1.9
Prefer Not to Answer	1	0.1

Table 6. Age.

Age	
Minimum	18
Maximum	76
Average	31.45
Standard Deviation	11.558

Table 7. Political Orientation.

Political Orientation	Frequency	Percent
Extremely Liberal	46	14.9
Liberal	106	34.3
Slightly Liberal	47	15.2
Moderate	54	17.5
Slightly Conservative	29	9.4
Conservative	22	7.1
Extremely Conservative	5	1.6
Missing	14	-
Total	323	100

Table 8. Race.

Race	Frequency	Percent
White	234	72.4
Asian	44	13.6
Hispanic	42	12.7
Black or African American	27	8.4
Native American or Alaskan Native	5	1.5
Native Hawaiian or Pacific Islander	2	0.6
Arab / Middle Eastern	1	0.3
Non-White	89	27.6
Other	6	1.9

Participants were able to select more than one option, so some individuals are represented in multiple categories. Non-White refers to the number of participants who did not select White as an ethnicity.

Table 9. Annual Income.

Annual Income	
Minimum	Less than $10,000
Maximum	$200,000 or more
Average	$53,000

Table 10. Education Level.

Education Level	Frequency	Percent
No high school diploma	7	2.2
High school	138	42.9
Bachelor's degree	142	44.1
Professional or graduate degree	35	10.9
Missing	1	-
Total	323	100

Descriptive Statistics

Table 11. Consumer Wisdom.

Consumer Wisdom	N	Minimum	Maximum	Mean	Std. Dev.
Average CW	323	2.08	6.50	4.30	0.785
Responsibility	323	1.00	7.00	4.88	1.171
Purpose	323	1.00	7.00	3.97	1.261
Flexibility	323	1.00	7.00	2.93	1.295
Perspective	323	1.25	7.00	5.07	1.267
Reasoning	323	2.00	7.00	5.34	1.028
Transcendence	323	1.00	7.00	3.58	1.389

Table 12. Dietary Identity.

Dietary Identity	Frequency	Percent
Omnivorous	230	75.9
Semi- or Partial Vegetarian	55	18.2
Vegetarian	13	4.3
Strict Vegetarian / Dietary Vegan	2	0.7
Lifestyle Vegan	3	1.0
Missing	20	-
Total	323	100

Table 13. Direction of Dietary Restrictions.

Direction of Dietary Restrictions	Frequency	Percent
(1) Strongly moving towards fewer restrictions	18	7.2
(2)	13	5.2
(3)	21	8.4
(4) Fluctuating between restricting and not restricting	92	36.9
(5)	50	20.1
(6)	34	13.7
(7) Strongly moving towards more restrictions	21	8.4
Missing	74	-
Total	323	100

Table 14. Meat-Eating Frequency by Type.

Meat-Eating Frequency	N	Minimum	Maximum	Mean	Std. Dev.
Beef	323	1.00	10.00	4.28	1.881
Chicken	322	1.00	10.00	5.25	1.819
Pork	322	1.00	10.00	3.19	1.621
Lamb	321	1.00	5.00	1.60	0.785
Fish / Seafood	322	1.00	8.00	3.12	1.604
Plant-Based Meat	321	1.00	10.00	2.35	1.789

Table 15. Ethical Meat-Eating Frequency.

Ethical Meat-Eating Frequency	N	Minimum	Maximum	Mean	Std. Dev.
Beef	284	1.00	5.00	2.86	1.205
Chicken	288	1.00	5.00	2.99	1.180
Pork	267	1.00	5.00	2.46	1.227
Lamb	216	1.00	5.00	1.96	1.253
Fish / Seafood	262	1.00	5.00	2.69	1.271

Table 16. Sustainable Meat-Eating Frequency.

Sustainable Meat-Eating Frequency	N	Minimum	Maximum	Mean	Std. Dev.
Beef	280	1.00	5.00	2.81	1.169
Chicken	284	1.00	5.00	2.94	1.181
Pork	262	1.00	5.00	2.43	1.207
Lamb	214	1.00	5.00	2.05	1.297
Fish / Seafood	257	1.00	5.00	2.75	1.230

Table 17. Psychological Wellbeing.

	N	Minimum	Maximum	Mean	Std. Dev.
Average PWB	320	8.00	56.00	41.47	7.442

Table 18. Dynamic Norms.

	N	Minimum	Maximum	Mean	Std. Dev.
How would you describe Americans' current meat consumption?	323	1.00	7.00	3.88	1.122
Are you interested in changing your meat consumption?	313	1.00	7.00	4.75	1.303

Interested in changing meat consumption (1=very interested in eating more, 7=very interested in eating less)

Table 19. Perceived Meat-Eating Norms.

Meat-Eating Frequency	N	Minimum	Maximum	Mean	Std. Dev.
Friends	323	2.00	6.00	5.19	0.842
Family	323	1.00	6.00	5.24	0.936
Significant Other	203	1.00	6.00	4.90	1.456

Table 20. Values.

Value	N	Minimum	Maximum	Mean	Std. Dev.
Social Power	323	1	9	2.81	1.918
Authority	322	1	9	3.68	1.967
A World at Peace	322	2	9	7	1.838
Preventing Pollution	322	1	9	6.81	1.861
Unity with Nature	323	1	9	6.17	2.009
Ambitious	322	2	9	6.86	1.732
Wealth	323	1	9	4.66	1.736
Influential	322	1	9	4.99	2.009
Equality	322	1	9	7.15	1.910
Helpful	323	1	9	6.61	1.915
Respecting the Earth	320	1	9	6.60	1.996
Protecting the Env.	322	1	9	6.84	1.908

Table 21. 4N Scale.

	N	Minimum	Maximum	Mean	Std. Dev.
Average 4N Score	323	1.00	7.00	4.354	1.241

Table 22. Food Motivations.

Food Motivation	N	Minimum	Maximum	Mean	Std. Dev.
Keeps me healthy	322	1	5	3.91	0.885
Helps me to cope with life	322	1	5	3.30	1.185
Is easy to prepare	322	1	5	3.70	0.982
Smells nice	319	1	5	3.58	1.048
Has a pleasant texture	323	1	5	3.83	0.981
Contains no additives	321	1	5	2.80	1.156
Contains natural ingredients	322	1	5	3.22	1.156
Is not expensive	323	1	5	3.91	0.949
Is good value for the money	322	2	5	4.08	0.791
Helps me control my weight	322	1	5	3.24	1.191
Is what I usually eat	323	1	5	3.03	1.124
Is ethically produced	322	1	5	3.03	1.112
Is packaged in an environmentally friendly way	322	1	5	2.98	1.131
Is trendy	323	1	5	1.41	0.812
Is cruelty-free	323	1	5	3.07	1.206

Table 23. Sustainable Behaviors.

Sustainable Behavior	N	Minimum	Maximum	Mean	Std. Dev.
Walk, bicycle, or take public transportation instead of taking a car	323	1	5	2.74	1.182
Eat organic food	322	1	5	2.83	0.964
Eat meat	323	1	5	3.72	1.102
Eat animal products, such as milk, cheese, eggs, or yogurt	323	1	5	3.98	0.845
Carry a reusable water bottle	323	1	5	3.85	1.178
Purchase second-hand instead of purchasing new items	323	1	5	3.19	1.002
Use reusable bags when shopping	322	1	5	3.46	1.287
Act to conserve water when showering, cleaning clothes, dishes, or other uses	323	1	5	3.26	1.097

Correlational Analyses

Table 24. Pearson Correlation: Consumer Wisdom and Average Meat Consumption.

Consumer Wisdom Facet	Average Meat Consumption
Responsibility	$r(321) = -.070$, $p = .210$
Purpose	$r(321) = -.017$, $p = .763$
Flexibility	$r(321) = -.034$, $p = .538$
Perspective	$r(321) = -.097$, $p = .083$
Reasoning	$r(321) = .021$, $p = .712$
Transcendence	$r(321) = -.234$, $p < .001$