REGULATORY FOCUS AND MOTIVES FOR ORGANIC FOOD PREFERENCES IN THE UNITED STATES

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REGULATORY FOCUS AND MOTIVES FOR ORGANIC FOOD PREFERENCES IN THE UNITED STATES

Abstract

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The market for organic food has expanded rapidly. A clear understanding of the consumer motivations driving increased demand can benefit efforts to further develop the organic food market, support environmentally sustainable food systems, and encourage health dietary patterns. This dissertation explores the relative importance of various food choice motives among U.S. consumers with regard to Regulatory Focus Theory. In doing so, it also examines the psychometric properties of the Food Choice Questionnaire (FCQ)—a multidimensional measure of motives that has seen limited use with U.S. samples.

Data from 408 U.S. residents did not support the 9-factor structure of the FCQ. Using a revised model, it was found that the importance of some motives and the strength of some factor correlations differed across consumers who vary in terms of regulatory focus (promotion versus prevention). Prevention-focused consumers (compared to promotion-focused) placed greater important on mood, convenience, and familiarity and expressed a stronger positive correlation between the importance placed on sensory appeal and price as well as sensory appeal and natural content.

The importance placed on health, natural content, sensory appeal, and impression management predicted organic preferences. Those who placed high importance on health and

natural content and low importance on sensory appeal and impression management expressed greater organic preferences. In terms of predicting organic preferences, the relative importance of health motives (e.g., nutrition, vitamins) and natural content motives (e.g., additives, chemical residues) differed across promotion and prevention groups, but there were no significant differences in the strength of the predictors. Specific points of consumer confusion regarding USDA organic certification were also identified.

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REGULATORY FOCUS AND MOTIVES FOR ORGANIC FOOD PREFERENCES IN THE UNITED STATES

Demand for organic foods has grown dramatically in recent years. The United States Department of Agriculture (USDA) reports an average 15% annual increase in organic cropland acreage from 2002-2008 (Greene & Slattery, 2010). Similarly, retail sales of organic foods grew from $3.6 billion in 1997 to $21.2 billion in 2008 (Dimitri & Oberholtzer, 2009). Nonetheless, organic agriculture remains a small portion of U.S. agriculture with about 0.7% of all cropland and 0.5% of all pasture qualifying as certified organic in 2008 (Greene & Slattery, 2010). In terms of organically managed land in proportion to all agricultural land, this puts the U.S. behind over 50 other countries including Australia, Brazil, Canada, India, Mexico, and the entire European Union (Willer, Rohwedder, & Wynen, 2009). Demand for organic foods among U.S. consumers exceeds the domestic supply (Dimitri & Oberholtzer, 2009; Haumann, 2009). Still, the USDA reports that marketing hurdles are one obstacle to farmers' adoption of organic production (Greene & Slattery, 2010). A clear understanding of consumer preferences for organic food is important for researchers, policy makers, and stakeholders with an interest in markets for value-added products or environmentally sustainable food systems. Given the strong associations between organic food and consumers' perceptions of healthiness, such preferences also have implications for efforts to encourage healthy dietary patterns.

Organic consumers are difficult to describe in terms of their socio-demographic profile. Many researchers have reported the influence of variables such as gender, age, income, family status, and education on consumers' consumption of and willingness to pay a premium for organic food (e.g., Aertsens, Verbeke, Mondelaers, & Van Huylenbroeck, 2009; Dimitri & Oberholtzer, 2009; Jolly, 1991; Smith, Huang, & Lin, 2009). One point that can be taken from

such findings is that socio-demographic variables alone do not paint a clear picture of the organic consumer. Indeed, Durham (2007) concludes that in terms of organic food, grouping consumers by interests and motivations is a more effective marketing and policy strategy than grouping consumers by demographic variables. Other lines of inquiry have aimed to identify the extent to which consumers are willing to pay premiums for foods with specific attributes, labeling, or certification, such as pesticide-free, non-GMO, organic, locally-grown, or eco-labeled (Batte, Hooker, Haab, & Beaverson, 2007; Bernard & Bernard, 2010; Loureiro & Hine, 2002; van Doorn & Verhoef, 2011). The current research focuses on the psychological motives that underlie preferences for organic foods.

Measurement of Food Choice Motives

A variety of qualitative and quantitative methodologies can be used to identify the motives underlying consumers' food choices (Barrios & Costell, 2004). Several researchers have applied means-end theory (Gutman, 1982) and employed laddering interviews and hierarchical value maps in an attempt to uncover the motivations driving organic food consumption (e.g., Baker, Thompson, & Engelken, 2004; Makatouni, 2002; Zanoli & Naspetti, 2002). This approach combines qualitative information with quantitative analysis to explain the way by which products and services lead consumers to their valued end-states. Laddering interviews involve probing questions that seek to identify consumers' linkages between product attributes, consequences, and values. To aggregate the information obtained from these interviews, hierarchical value maps are constructed to reveal the attitude-consequence-value chains that are predominant among a group of consumers. Other investigations into organic food consumption have relied upon questionnaire surveys (e.g., M-F. Chen, 2007; Honkanen, Verplanken, & Olsen, 2006; Lockie, Lyons, Lawrence, & Grice, 2004; Michaelidou & Hassan, 2008).

Though it has not been widely used with regard to *organic* food consumption, one such instrument that is popular in a broader context of food choice is the Food Choice Questionnaire (FCQ; Steptoe, Pollard, & Wardle, 1995). The FCQ consists of 36 items assessing nine food choice motives: convenience, price, health, sensory appeal, weight control, natural content, mood, familiarity, and ethical concerns. Lindeman and Väänänen (2000) developed eight complementary items that, in combination with three items from the original FCQ, assess distinct ethical motives: ecological welfare (including animal welfare and environmental protection), political values, and religion. The FCQ has been used in a variety of contexts within the food intake literature. For example, researchers have used this instrument to examine general food choice motives in Britain (Steptoe et al., 1995); Finland (Lindeman & Väänänen, 2000); Japan, Taiwan, Malaysia, and New Zealand (Prescott, Young, O'Neill, Yau, and Stevens, 2002); Canada, Belgium, and Italy (Eertmans, Victoir, Notelaers, Vansant, & Van den Berg, 2006); and Hungary, Romania, Belgium, and the Philippines (Januszewska, Pieniak, & Verbeke, 2011). It has also been used in studying consumption of functional foods in Uruguay (Ares & Gambaro, 2007); traditional foods in Belgium, France, Italy, Norway, Spain, and Poland (Pieniak, Verbeke, Vanhonacker, Guerrero, & Hersleth, 2009); genetically modified foods in Taiwan (M-F. Chen, 2011); and organic foods in Taiwan (M-F. Chen, 2007) and Australia (Lockie et al., 2004).

Clearly, there is much interest in using the FCQ as a cross-cultural instrument. Pieniak et al. (2009) demonstrated measurement invariance across six countries: Belgium, France, Italy, Norway, Spain, and Poland. Importantly, they used a revised measure, which focused only on the factors and items most relevant for their particular research focus (i.e., traditional food consumption). The revised measure did not include a "mood" factor and was limited to three items per factor with some adaptations. Using the original FCQ scale in its entirety, Januszewska

et al. (2011) demonstrated measurement invariance across Hungary, Romania, Belgium, and the Philippines. In contrast to the above findings, others have noted psychometric problems with the FCQ. For example, Eertmans et al. (2006) found that the original nine-factor structure of the FCQ provided a poor fit across three different samples (Canada, Belgium, and Italy). Among their samples, several items showed strong cross-loadings, and the data suggested a potential need for higher-order factors and/or reinterpretation of some first-order factors. Fotopoulos, Krystallis, Vassallo, and Pagiaslis (2009) highlight discriminant validity problems and argue that a higher-order factor structure may provide a more robust measure of food choice motives. These issues and inconsistencies aside, in general, there seems to be agreement that the basic features and overall approach of the FCQ are valuable.

A major appeal of the FCQ is the capacity to examine, simultaneously, multiple motives for food selection and, moreover, to make quantitative distinctions regarding the relative importance of these motives. Despite the number of researchers employing the FCQ in cross-cultural research, this instrument has seen limited use with U.S. samples. When it has been used, analyses were limited to mean comparisons of subscale summary scores (Dellava, Hamer, Kanodia, Reyes-Rodríguez, & Bulik, 2011; Miller & Branscum, 2006; Wells & Cruess, 2006) or a small portion of the scale (e.g., the familiarity subscale; Chang, Brown, Nitzke, & Baumann, 2004). As such, one aim of the current research is to investigate the psychometric properties of the FCQ when applied to a U.S. sample. A multidimensional instrument of food choice motives will be important for addressing questions regarding regulatory focus and motives for organic food preferences, which are the primary focus of the current research.

Motives Predicting Preferences for Organic Food

In regard to everyday food choice, sensory appeal, health, convenience, and price are typically among the most important motives (e.g., Glanz, Basil, Maibach, Goldberg, & Snyder, 1998; Lindeman & Väänänen, 2000; Steptoe et al., 1995). Even so, the order or magnitude of importance can differ across countries (Eertmans et al., 2006; Januszewska et al., 2011). This general pattern and the existence of discrepancies across populations have also been demonstrated regarding motives for organic food consumption. Most studies investigating organic food consumption have identified health and taste as primary motives (e.g., Baker et al., 2004, Hughner, McDonagh, Prothero, Schultz, & Stanton, 2007; Makatouni, 2002; Zanoli & Naspetti, 2002). In addition, high prices and lack of availability (or inconvenience, in a sense) are often cited as barriers to organic food consumption (Hughner et al., 2007). Environmental concern has sometimes been cited as an important motive, but it is typically considered to carry less weight than health and taste concerns (Hughner et al. 2007). However, in reviewing determinants of organic food consumption, Aertsens et al. (2009) contend that although egocentric values such as security and hedonism are generally stronger motives for organic food purchase than altruistic values, universalism—concern for the welfare of other people and nature—is an important motive in certain contexts and among particular groups of consumers.

Anderson, Wachenheim, and Lesch (2006) declare "motivating factors for purchase of organic food products do not differ substantially between US and European consumers." That is, across countries, egocentric motives, such as health, food safety, and taste, tend to be among the strongest motives, and price the biggest deterrent, of organic food consumption. Still, just as is the case with everyday food choice, cross-national studies have demonstrated that the importance of some motives may differ across countries (Baker et al., 2004; Squires, Juric, & Cornwell,

2001). Comparing organic consumers across the UK and Germany, Baker et al. (2004) found that while there were several strong similarities, only the German consumers made a connection between the environment and organic food. Such discrepancies indicate that findings may not always generalize across populations.

Animal welfare, environmental protection, and political values predicted attitudes toward organic food among consumers in Norway (Honkanen, Verplanken, & Olsen, 2006), and Taiwan (M-F. Chen, 2007). Among Australian consumers, political and ecological values had no direct effect on organic consumption but a significant indirect effect through engagement in green consumption behaviors, such as recycling and composting (Lockie et al., 2004). Lockie and colleagues conclude that while many consumers' food choices are impacted by their political and ecological values, organic food consumption is not necessarily the result. In other words, consumers who are motivated to protect the environment may or may not see organic food choice, or food choice in general, as an important strategy to this end. Related to this, the importance of environmental concern, and other motives as well, may differ across occasional versus frequent consumers of organic food. In a U.S. sample, Durham (2007) demonstrated that environmental protection is an important motive, particularly among consumers for whom organic foods constitute a relatively high proportion of their purchases.

One psychological motive that has not received much attention within the organic consumption literature is impression management concerns, which have been shown to influence eating behavior (Pliner & Chaiken, 1990; Martins & Pliner, 1998; Vartanian, Herman, & Polivy, 2007). Evans and Cox (2006) found that impression management concerns play a role in attitudes toward foods produced by novel technologies, such as genetic modification. Beyond the connection between impression management concerns and eating behavior, socially-oriented

motives may underlie organic food consumption due to the association between organic food and environment. It has been suggested that concerns about image and social status can motivate consumption of environmentally-friendly products, such as the Toyota Prius (Sexton & Sexton, 2011), solar panels (Bollinger & Gillingham, 2010), and other "green" products (Griskevicius, Tybur, and Van den Bergh, 2010). Griskevicius and colleagues argue that by purchasing environmentally friendly products, consumers can signal their prosociality. That is, individuals can communicate their ability and willingness to purchase products that may be more expensive and of lower quality but offer collective benefits in terms of environmental impacts. Such costly prosocial behavior can boost one's social status. Through three clever experiments, Griskevicius et al. (2010) demonstrated that in the context of public (but not private) purchase decisions, experimentally induced status motives lead to increased intentions to purchase green products rather than higher-quality, non-green alternatives. This effect of status occurred when the environmentally friendly products (compared to their non-green alternatives) were more expensive or equal in price, yet it disappeared when the environmentally friendly products were less expensive. Following this line of reasoning, it is possible that organic food consumption may also serve to signal one's prosociality and, in turn, enhance social status. Van Doorn and Verhoef (2011) found a consistent relationship between organic products and consumers' perceptions of the products' prosocial benefits. If this is the case, impression management concerns should be included in a multidimensional picture of psychological motives underlying organic food preferences.

Examining the relative importance of health, sensory appeal, environmental protection, and impression management as motives for organic food preferences among U.S. consumers is one of the major aims of the current research. Another aim is to gain a better understanding of

the types of health concerns that underlie such preferences. Durham (2007) reports that a strong sense of personal responsibility for one's health (compared to placing high responsibility on one's doctor) is associated with higher proportions of organic purchases, but no difference was found with regard to organic preferences. The exact dynamic of this relationship is not explored by Durham. One possibility is that, in general, people tend to believe organic food is healthier than conventional food, but those who take particular ownership over their own health are more likely to translate this association into purchase decisions. It is also possible that the connection between personal responsibility for one's health and organic consumption is partially or fully mediated by another variable. At any rate, it is clear that health-related motives are important among organic consumers, but it is not entirely clear what, exactly, this means. Within the literature, "health motives" include a range of concerns, such as those relating to the nutritional quality of food, the use of pesticides and chemical fertilizers, and other issues related to food safety.

One consistent theme is that concerns about the health implications of pesticide residues are associated with increased preferences for and consumption of organic food (Huang, 1996; Magnusson, Arvola, Koivisto Hursti, Åberg, & Sjödén, 2003; Makatouni, 2002). Many consumers are willing to a pay a premium for pesticide-free foods including fresh produce (e.g., Bernard & Bernard, 2010; Weaver, Evans, & Luloff, 1992) and processed, multi-ingredient foods (Batte et al., 2007), and consumers perceive organic (compared to conventional) food to pose less pesticide residue risk (Williams & Hammitt, 2001). A number of studies also link nutritional concerns to organic food consumption (e.g., M-F. Chen, 2007; Huang, 1996; Lockie et al., 2004). Anderson and colleagues (2006) found that 52.5% of their sample agreed with the statement "Consumption [of organic food] can improve your overall healthy appearance" and

47.8% with the statement "Organic ingredients improve nutritional quality." Investigating the implications of consumers associating "organic" with "healthy," Schuldt and Schwarz (2010) found that participants inferred that cookies made with organic flour and sugar contained fewer calories and could be eaten more frequently (compared to cookies with no organic claim).

While consumers may perceive organic food to provide lower risks *and* higher nutritional value than conventional foods, it may be the case that one of these is more important than the other. It is also possible that food choices are made based on the motive that is most important to a person rather than a more complex additive and weighting process that takes into account multiple motives (Scheibehenne, Miesler, & Todd, 2007). To tease apart the relative importance of these different types of health-related motives, it may be helpful to consider self-regulatory orientations proposed by Regulatory Focus Theory (Higgins, 1997).

Regulatory Focus

Regulatory Focus Theory (Higgins, 1997) maintains that goal-directed behavior can have either a *promotion* focus or a *prevention* focus. A promotion focus is associated with nurturance needs, self-regulation in relation to the ideal self, and desired end-states characterized by aspirations and accomplishments. A prevention focus is associated with security needs, self-regulation in relation to the ought self, and desired end-states characterized by responsibilities and safety. Regulatory focus can be influenced by situational factors including experimental manipulations, but individuals have a dispositional or chronically predominant motivational orientation. Promotion-oriented individuals are particularly attuned to the presence and absence of positive outcomes and tend to adopt approach strategies to ensure outcomes that match their desired end-states. Prevention-oriented individuals are particularly attuned to the presence and

absence of negative outcomes and tend to adopt avoidance strategies to steer clear of outcomes that mismatch their desired end-states.

The same desired end-state might be reached by different means depending on motivational orientation. For example, if a healthy diet is important, a promotion-focused individual may emphasize matches and aim to consume nutritious food while a prevention-focused individual may emphasize mismatches and aim to avoid sweets and fatty foods. Further, promotion- and prevention-focused individuals may be motivated to engage in the same behavior but for different reasons. For example, promotion-focused individuals may be motivated to consume fruits and vegetables because of the benefits associated with these foods while prevention-focused individuals may be motivated to consume fruits and vegetables because of the costs associated with *not* consuming these foods (Spiegel, Grant-Pillow, & Higgins, 2004).

Within the context of health behaviors and consumer behaviors, much of the research examining regulatory focus has emphasized Regulatory Fit Theory (Higgins, 2000), which addresses the match (or mismatch) between motivational orientation and strategies for pursuing goals or the framing of a persuasive message. Relatively few studies have examined the impact that one's motivational orientation has on specific food choices or dietary patterns. Van Kleef, van Trijp, and Luning (2005) found no support for their prediction that preferences for functional foods with either enhanced-function claims or reduced-disease-risk claims would be impacted by motivational orientation. Liekas, Lindeman, Roininen, and Lähteenmäki (2006) investigated the effect of manipulated regulatory focus on perceptions of the likelihood and seriousness of food risks. Prevention-focused individuals (compared to promotion-focused) perceived risks to be more likely, but perceptions of risk seriousness were not impacted by regulatory focus. In an analysis of an Internet forum on veganism Sneijder and Te Molder (2004) argue that vegans

display a prevention focus in the way they discuss the connection between food choice and health.

De Boer and colleagues (2007; 2009) examined the role of regulatory focus on consumers' meat choices with respect to farming methods and the amount of meat in one's diet. They demonstrated that prevention-oriented food choice motives mediated the relationship between valuing universalism and consuming less meat or free-range meat (De Boer, Hoogland, & Boersema, 2007). Further, de Boer, Boersema, and Aiking (2009) examined consumers' strategies for approaching the desired-end state of "getting enough nourishment by eating the right food" and found that promotion-oriented consumers made meat choices that ensured a match to their desired outcomes while prevention-oriented consumers made meat choices that avoided mismatches to their desired outcomes. Specifically, among those who reported eating free-range meat, promotion- and prevention-oriented consumers differed in that only prevention-oriented consumers made strong negative prevention associations ("makes me feel concerned about what I take in" and "is bad for the environment") toward meat produced by intensive farming (de Boer et al., 2009).

De Boer et al. (2007; 2009) suggest that as is the case among consumers of free-range meat, organic consumers' motivations seem to align with a prevention-orientation, yet the relationship between regulatory focus and organic food consumption has received little attention. Grankvist, Dahlstrand, and Biel (2004) considered the role that regulatory focus has on consumer preferences for eco-labeled foods. These researchers suggest that promotion-oriented consumers are sensitive to information about both positive and negative environmental consequences of food choices, but prevention-oriented consumers are mainly sensitive to information about negative environmental consequences. These results are relevant to the current research, but

there are a few important details that limit the connection and should be noted. First, Grankvist and colleagues (2004) did not measure regulatory focus but treated environmental concern as a proxy for the motivational orientation of one's self-guide with strong environmental concern reflecting an ideal self-guide (promotion orientation) and a moderate environmental concern reflecting an ought self-guide (prevention orientation). Second, while the use of eco-labels indicating the degree of a product's positive or negative environmental consequences clearly speaks to environmental concerns and consequences regarding food choice, it has only limited applicability to the wider range of concerns and consequences that are important to organic consumers, such as health, natural content, and sensory appeal. Thus, a definitive answer to the question of how regulatory focus relates to organic food preferences remains. The current research examines the role of regulatory focus regarding the motives underlying U.S. consumers' everyday food choices and their preferences for organic food.

Consumer Confusion About "Organic"

Many researchers have noted the considerable amount of consumer confusion regarding the meaning of the term "organic" (e.g., Haumann, 2009, Hughner et al., 2007; Yiridoe, Bonti-Ankomah, & Martin, 2005). At a very general level, Saher, Lindeman, and Koivisto Hursti (2006) maintain that the way by which organic food is distinguished from conventional food differs across scientists (by production method) and consumers (by attributes of the end product). In some studies, evidence of confusion is displayed by consumers' own acknowledgement (Chryssohoidis & Krystallis, 2005; Finch, 2005). Chryssohoidis and Krystallis (2005) report that among their sample of Greek consumers, only one third agreed with the statement "I believe that I can say the difference between organic and conventional food." In other studies, consumer confusion may be inferred from findings regarding the motives for purchasing organic food and

the extent to which these motives do not align with scientific findings, such as those regarding the nutritional value of organic food. Consumers may be aware of some of the general issues associated with organic versus conventional food (e.g., pesticides, hormones) yet uninformed regarding the specifics of organic farming practices and certification (Hughner et al., 2007; Yiridoe et al., 2005).

Two important points should be made regarding the implications of consumer confusion for research on motives for organic food consumption. First, consumers' preferences for and consumption of organic food is likely influenced by their perceptions or beliefs about organics, regardless of whether or not those perceptions or beliefs are factual. It follows that confusion is not necessarily a problem in identifying consumers' existing motives for organic preferences. Second, while it is valuable to identify and compare motives regardless of consumers' comprehension of organic certification, it is also valuable to identify the specific aspects of consumers' confusion. Such information can reveal misunderstandings that may lead consumers to purchase or not purchase organic food and also inform efforts to facilitate well-informed decision-making.

Specific Aims of the Current Research

(1) Identify some specific points of confusion among consumers regarding USDA organic certification.

(2) Examine the psychometric properties of the FCQ with a U.S. sample and identify the motives that underlie these consumers' everyday food choices.

(3) Test whether the FCQ's measurement properties (factor loadings, item intercepts, and item residuals), the importance of specific food choice motives, or the relationships among the food choice motives differ as a function of regulatory focus.

(4) Identify the motives that underlie U.S. consumers' organic food preferences and the relative importance of these motives with regard to regulatory focus.

Method

Participants

Participants were 408 U.S. residents (69% female, 31% male; 6% Hispanic/Latino, 93% Not Hispanic/Latino; 84% White, 6% Black, 6% Asian, 4% Other). Ages ranged from 18 to 73 (M = 35.76, SD = 13.10). Forty-one percent were married, 34% single, 11% cohabitating, and 7% divorced. Thirty percent had children aged 18 or younger. When asked to describe their current residence, 49% indicated suburban, 32% urban, and 19% rural. Eighty-one percent reported a "non-vegetarian" diet, 11% "flexitarian/semi-vegetarian," and 7% pescetarian (consume fish but not meat), vegetarian, or vegan. Participants were recruited through Amazon's Mechanical Turk, which is a website that is gaining much popularity among social scientists as a useful data collection tool (Buhrmester, Kwang, & Gosling, 2011). They received $0.25 in exchange for completing a short survey about "food-related attitudes, behaviors, and intentions."

Materials

Food choice motives. Measurement of participants' food choice motives was largely based upon the FCQ (Steptoe, Pollard, & Wardle, 1995) and Lindeman and Väänänen's (2000) complementary scales for ethical motives. Together, these instruments assess the following motives: health, mood, convenience, sensory appeal, natural content, price, weight control, familiarity, ecological welfare (environmental protection and animal welfare), political values, and religion. In the current study, the 44 items from these instruments were supplemented with 21 additional items. (See Appendix for full list of items.) The purpose of these additions was three-fold. First, the FCQ does not assess impression management motives, yet the current study

aimed to examine whether or not such a motive predicts preferences for organic food. Second, in some cases, strong factor correlations between the FCQ constructs have raised concerns about discriminant validity including suggestions for fewer, higher-order factors (e.g., Fotopoulos et al., 2009). However, it has been argued that there is value in retaining the specific motives included in the original FCQ rather than investigating fewer, broader dimensions (Steptoe et al., 1995). Third, the ethical subscales contained relatively few items per subscale (e.g., only two items each for animal welfare and religion). The original FCQ and complementary ethical scales were expanded in an attempt to improve the discrimination between related constructs, such as health and natural content as well as animal welfare and environmental protection. The additional items were adapted from Evans and Cox (2006), Lockie et al. (2004), and Shepherd, Magnusson, and Sjödén (2005). All 65 items took the form "It is important to me that the food I eat on a typical day… [e.g., contains a lot of vitamins and nutrients,]" and participants responded to each item using a 7-point bipolar scale (1 = disagree strongly, 7 = agree strongly).

Regulatory Focus. Participants' chronic regulatory focus was measured with the Regulatory Focus Questionnaire (RFQ; Higgins, Friedman, Harlow, Idson, Ayduk, & Taylor, 2001), which assesses individuals' subjective history of their promotion and prevention success with 11 items. The promotion subscale (Cronbach's $\alpha = .68$) contains six items (e.g., "How often have you accomplished things that got you 'psyched' to work even harder?"), and the prevention subscale (Cronbach's $\alpha = .82$) contains five items (e.g., "Not being careful enough has gotten me into trouble at times"). The subscale reliabilities for the current study were a bit low, but they are similar to those reported in other research. Higgins et al. (2001) report promotion $\alpha = .73$, prevention $\alpha = .80$ (see also Fransen, Reinders, Bartels, & Maassen, 2010; Latimer, Williams-Piehota, Katulak, Cox, Mowad, Higgins, & Salovey, 2008). Responses were made on a 5-point

rating scale (1 = never or seldom, 5 = very often), and the prevention subscale total was subtracted from the promotion subscale total to create a difference score. A median split of the difference scores was used to categorically classify participants as predominately promotion- or prevention-focused relative to other participants (*Mdn* = 2.0; Cesario, Grant, & Higgins, 2004; Higgins et al., 2001).

Organic Food Preferences. Consumption of and preferences for organic food were assessed with two self-report measures. First, participants responded to the question "When you are purchasing the following types of foods how often do you choose organic products?" with regard to five categories of foods: fruits and vegetables, dairy, meat and poultry, packaged snacks, and breads and pasta. Responses were made on a 7-point scale (1 = *never*, 2 = *rarely,* 3 = *sometimes,* 4 = *about half of the time*, 5 = *often,* 6 = *usually*, 7 = *always*). Next participants completed a measure of preferences that included the following instructions:

> *Below is a list of several different foods. For each food, imagine that you are about to make a purchase and have two options in front of you: an organic product and a non-organic product. Assume that there is no price difference between the two options. Even if these are not foods that you would normally purchase, please indicate which option you would prefer*.

The list contained 24 foods including fruits and vegetables (bananas, bell peppers, onions, apples, spinach, strawberries, corn, grapefruits), dairy (milk, cheese, yogurt), meat and poultry (chicken, beef, eggs), alcohol (beer, wine), breads and grains (sliced bread, pasta, rice) and prepared snack or convenience foods (packaged cookies, potato chips, chocolate, canned soup, instant oatmeal). Participants indicated their preference, Non-organic versus Organic, and responses on all 24 items were summed with higher scores indicating stronger preference for the

organic products (Cronbach's $\alpha = 0.96$).

Knowledge of USDA Organic Certification. To examine some potential points of confusion regarding consumers' understanding of what it means for food to be USDA certified organic, participants responded to a series of true/false statements on this topic. This included statements that are false (e.g., "To be certified organic, foods must be produced within 300 miles of where they are being sold") as well as statements that are true (e.g., "Organic meat, poultry, eggs, and dairy products come from animals that are given no growth hormones or antibiotics").

Procedure

All materials were administered via Survey Monkey as part of a larger survey. The survey began with the measure of food choice motives, which was followed by organic preferences and the RFQ. Participants then completed several related questionnaires including a second assessment of regulatory focus (de Boer et al., 2007); a measure of consumer confidence in the safety of foods (de Jonge, van Trijp, Renes, & Frewer, 2007); the Food Involvement Scale (Bell & Marshall, 2003); questions about consumption of and experience with locally produced foods, biodynamically grown foods, farmer's markets, community supported agriculture programs, and home gardening; true/false statements about USDA organic certification; and demographic information. All measures that are reported on in the Results sections are included in the Appendix.

Results

Three sets of analyses addressed the following questions: (1) What are some of the misunderstandings that consumers have regarding USDA organic certification? (2) Which motives underlie everyday food choices among U.S. consumers? (3) How do the measurement and importance of these motives vary across individuals who differ in terms of promotion versus

prevention self-regulation? (4) Which motives underlie organic food preferences among promotion- and prevention-focused U.S. consumers?

Measurement models and structural equation models were estimated with Mplus (Version 6; Muthén & Muthén, 1998-2010) using full-information maximum likelihood estimation with robust standard errors. Overall model fit was assessed with multiple indicators: chi-square test (χ^2), the comparative fit index (CFI), the root mean square error of approximation (RMSEA), and the standardized root-mean-square residual (SRMR). The χ^2 test is a measure of absolute fit that assesses the degree to which the model estimates reproduce the sample variances and covariances with a significant χ^2 indicating a poor match. SRMR is also a measure of absolute fit, and it reflects the average discrepancy between the sample correlations and the model-predicted correlations. SRMR ranges 0.0 to 1.0 with smaller values indicating better fit. In some sense RMSEA is another measure of absolute fit, but it includes a parsimony correction by indicating the discrepancy in fit per degrees of freedom in the model. RMSEA values usually do not exceed 1.0, and values close to 0.0 suggest good fit. CFI is a measure of relative fit that compares the estimated model to a null model (no relationships among the variables) with possible values ranging from 0.0 to 1.0 and higher values implying good fit. These particular indicators were selected because they represent qualitatively distinct categories (i.e., absolute fit, comparative fit, and parsimony adjustments). Structural equation modeling theorists generally recommend that each of these categories be considered in model evaluation (Brown, 2006; Kline, 2010).

The following criteria were used as indicators of acceptable fit: non-significant chi-square test, CFI > 0.90 (with > 0.95 being ideal), RMSEA < 0.08, and SRMR < 0.06 (Brown, 2006; Kline, 2010). Researchers have often emphasized the approximate fit indices (CFI,

RMSEA, SRMR) and disregarded significant χ^2 values due to concerns about χ^2, a test of whether the model *perfectly* matches the data, being overly sensitive with large samples. However, Kline (2010) stresses that the χ^2 test should not be ignored. In trying to balance these concerns, in the current research, a significant χ^2 was treated as a "warning flag," prompting a close inspection of model parameters and residuals to identify areas where the model was performing poorly. Potential model respecifications were also explored by examining the modification indices, which are estimates of the improvement in the model χ^2 that would be observed if particular parameters were added to or removed from the model. If no substantively meaningful discrepancies were observed with these inspections, the model was retained.

Demographic Variables

Pearson correlations between age, income, and organic preferences and consumption are presented in Table 1. Consistent with many previous findings, income was largely unrelated to participants' organic preferences and self-reported consumption. The only significant relationship between income and one of the organic outcomes was a negative relationship with purchases of organic breads and pasta. Although age was unrelated to scores on the organic preferences task, it was significantly negatively correlated with all of the self-report measures regarding the relative frequency of organic purchases. This negative relationship between age and organic consumption is also consistent with previous research. Independent-samples *t*-tests were conducted to compare the six measures of organic preferences and consumption across gender, and no significant differences were found, *p*s > .05. Participants who had children age 18 or younger were no more or less likely to prefer or purchase organic food, *p*s > .05.

Knowledge About USDA Organic Certification

Participants' responses (true versus false) to the statements regarding USDA organic

certification are presented in Table 2. The distribution of responses, including a near equal split in some cases, showed that, as expected, there is confusion about the meaning of "organic." Approximately 30% of participants erroneously endorsed the three statements indicating that organic food (a) must be produced within 300 miles of where it is sold, (b) can be genetically modified, and (c) must be certified fair trade. Although USDA organic certification does allow for the use of certain pesticides, 79% of participants believed that no pesticides can be used on certified organic food. However, it seems considerably fewer (42.4%) incorrectly believed that even certified pesticides are banned. Participants were largely correct (87.9%) regarding prohibition of growth hormones and antibiotics, but there was little consensus in terms of "free-range" and "grass-fed" regulations. Most participants appeared to make a connection between organic certification and environmentally friendly farming practices (e.g., emphasizing renewable resources, conserving soil and water).

U.S. Consumers' Food Choice Motives

All items on the measure of food choice motives were screened for skewness or kurtosis, and no problems were found (largest skew = -2.3, SE = .12; largest kurtosis = 7.13, SE = 0.24). A confirmatory factor analysis (CFA) was conducted on the 36-item, 9-factor FCQ. Although the item loadings were all statistically significant, several were relatively weak (five standardized loadings < 0.50), and the global fit of the model was poor, χ^2 (558) = 1450.841 ($p < .05$), CFI = 0.833, RMSEA = .063, SRMR = .083. Modification indices pointed to a number of correlated errors and cross-loadings that would improve model fit. To identify the best-fitting measurement model, I returned to an exploratory factor analysis (EFA) framework to examine additional items that could improve the subscales and incorporate an impression management factor.

The initial EFA models included all 36 FCQ items and only these items. That is, although

the questionnaire assessing food choice items included eight items from Lindeman & Väänänen's (2000) expanded ethical subscales and 21 items adapted from Evans and Cox (2006), Lockie et al., (2004), and Shepherd et al. (2005), these were not initially included in the EFA. This research aimed to test the psychometric properties of the FCQ including invariance across regulatory focus. As such, the starting point for the measurement model was the FCQ, and the additional items were used only to identify a good-fitting revised model. The EFA models with the 36 FCQ items included several items with primary loadings below 0.40 and/or cross-loadings within 0.30 of the primary loading. In addition, a few items' primary loadings were not on their expected factor. Items that displayed any of these patterns were carefully considered and revisions were made with an eye toward identifying a measurement model that would be appropriate for examining predictors of organic food preferences. To revise the model, 13 items were dropped and 11 items were added. The specific problems and associated revisions are discussed in the following paragraph, and all items in the final measurement model are listed in Table 3 (new items are identified in the table).

There were four main problems observed in the initial EFA models. First, the ethical concern items merged with the natural content items. To improve the distinctions among these items, the two FCQ-ethical concern items related to political values were replaced with three items related to environmental protection. Two of these new items were drawn from Lindeman and Väänänen (2000) and one from Shepherd et al. (2005). In addition, the FCQ-natural content item "contains no artificial ingredients" was replaced with three items adapted from Lockie et al. (2004). Second, two mood items loaded primarily on the health factor ("keeps me awake/alert" and "makes me feel good"), and these unexpected primary loadings were weak (< 0.45). These two FCQ-mood items were dropped. Third, one health item emerged on its own factor ("is high

in fiber and roughage"). Two other health items did have primary loadings on the health factor, but those loadings were weak (≤ 0.40; "is high in protein" and "is good for my skin/teeth/hair/nails etc"). These three FCQ-health items were dropped, and one new item, adapted from Lockie et al. (2004), was added. Fourth, two convenience items loaded primarily on the price factor ("can be bought in shops close to where I live or work" and "is easily available in shops and supermarkets"), and these unexpected primary loadings were weak (< 0.45). These two FCQ-convenience items were dropped.

In addition to the above changes, the revised model of food choice motives included four new items concerning impression management. Two of these were adapted from Evans and Cox (2006), and two were constructed specifically for this study. Lastly, the weight control factor (3 items) was dropped from subsequent analyses due to negative residual variance for one of its items ("helps me control my weight"). The exploratory factor analyses suggested that a 34-item, nine-factor model provided a good fit to the data. A CFA on this revised measure also yielded good fit, χ^2 (491) = 889.068 ($p < .05$), CFI = 0.937, RMSEA = .045, SRMR = .060. Table 3 presents the items, completely standardized loadings, and subscale reliabilities (Cronbach's alpha). Table 4 presents the factor correlations.

Regulatory Focus and Food Choice Motives

To investigate the role of self-regulation, multiple-group CFA was conducted to assess the equivalence, or invariance, of the measurement and structural parameters of the nine-factor food choice motive measure across promotion- and prevention- focused individuals. This approach involved estimation of CFA models that impose equality constraints across groups on corresponding unstandardized parameters. The invariance tests were conducted with the model-building approach recommended by Brown (2006), wherein increasingly restrictive nested

models were estimated to evaluate invariance across regulatory focus groups in the following order: factor loadings, item intercepts, item residuals, factor variances, and factor covariances. Following these tests, latent means on each of the nine factors were compared across groups. Prior to the invariance tests, the nine-factor model was estimated separately in each group. It provided acceptable fit for both the promotion group and the prevention group, χ^2 (491) = 836.983 & 750.324 (ps < .05), CFI = 0.903 & 0.924 RMSEA = 0.0057 & 0.053, and SRMR = 0.069 & 0.069, respectively.

Criteria for evaluation of invariance. There is no widely agreed-upon method for evaluating invariance, and different approaches offer unique advantages and disadvantages (F. F. Chen, 2007). Thus, multiple procedures were used to test for meaningful differences across regulatory focus groups. After each step in the sequence of invariance models I examined the changes in goodness of fit indices. Following F. F. Chen's recommendations, a CFI decrease ≥ 0.01 accompanied by either a RMSEA increase of ≥ 0.015 or a SRMR increase ≥ 0.01 was considered indicative of a significant decrement in model fit and a lack of invariance across gender. Second, using these same cutoffs for changes in model fit, I compared the baseline model (i.e., all parameters free to vary across groups) to the fully constrained model. Third, I examined the modification indices for each of the 95 parameter constraints in the final model. To maintain a family-wise error rate of $p < .05$ the per-comparison error rate for each modification index was $p < .0005$. If there were no changes in goodness of fit indices beyond the above cutoffs and no modification indices suggesting that a significant improvement in fit would result from releasing a constraint, this would represent strong evidence for invariance of the nine-factor model of food choice motives.

Measurement invariance. The first model, invariance of form, did not include any

parameter constraints across regulatory focus groups. It simply assessed whether the pattern of salient and nonsalient loadings was similar across groups and served as the baseline for the invariance tests. To assess measurement invariance, the factor loadings, item intercepts, and item residuals were then constrained equal across groups. It has been argued that invariance of item residuals is an overly restrictive constraint (Brown, 2006). As such, the constraints on residuals were included to assess measurement invariance but then released before testing for group differences in the structural parameters.

Table 5 displays the fit of the invariance models. Each of the invariance models provided acceptable fit (all CFI values ≥ 0.913 all RMSEA values ≤ 0.065, and all SRMR values ≤ 0.084). Interestingly, the global fit actually shows improvement in terms of CFI and RMSEA with the implementation of equality constraints, indicating that any minor deviations across groups are outweighed by the increased parsimony of the nested models. However, when comparing the baseline model (invariant form) to the model with all constraints in place (invariant factor covariances) the change in SRMR exceeded the cutoffs suggested by F. F. Chen (2007). This suggests that at least one of the constrained parameters is not statistically equivalent across groups.

The final test of invariance, which involved examination of the modification indices for the 95 constraints in the model with all constraints in place, allowed for identification of the problematic constraints. The largest modification index among the constrained parameters corresponded to the covariance between the price and sensory appeal factors. At 5.88, this modification index did not exceed the pre-established cutoff for a lack of invariance (i.e., critical $\chi^2(1) = 12.02$ based on 95 constraints and $p < 0.0005$), but the expected parameter change suggested this covariance may display a substantively meaningful difference across regulatory

focus groups. As such, the constraint was released, the model re-estimated (Model 7 in Table 5), and the new modification indices and expected parameter changes examined. It was determined that the covariance between sensory appeal and natural content should also be released, so this constraint was removed and the model re-estimated (Model 8 in Table 5). In both cases, the positive association between the importance of the two motives was stronger among the prevention group. After releasing these two factor covariances, the modification indices and expected parameter changes did not signal any other statistically significant or substantively meaningful discrepancies across groups.

The finding that loadings, intercepts, and residuals were equivalent across groups indicates that this nine-factor model of food choice motives shows complete measurement invariance across regulatory focus groups. This indicates that for each of the nine factors, a particular level of the latent construct is expected to cause the same item score for promotion- and prevention-focused individuals. It allows for group differences among the latent factors to be attributed to actual differences in the constructs rather than to bias in the measurement scale.

Latent mean differences. Compared to the promotion group, the prevention group had higher factor means on mood (Cohen's D = 0.26, $p < .05$), convenience (Cohen's D = 0.25, $p < .05$), and familiarity (Cohen's D = 0.21, $p = .06$). All other mean differences were non-significant. The findings regarding the latent means suggest that individuals with a relatively strong prevention focus (compared to those with a promotion focus) tend to place more weight on mood, convenience, and familiarity when making everyday food choices. In other words, to a greater extent than promotion-focused consumers, the prevention-focused consumers prefer foods that are helpful in terms of mood regulation, convenient to prepare, and familiar to them.

Motives Underlying Organic Preferences

With regard to the prediction of organic preferences, two basic questions were addressed. First, among the total sample of U.S. consumers, which of these nine motives are significant predictors of organic preferences? Second, how does this prediction differ between promotion-focused and prevention-focused consumers? Predictors were tested with a partially latent structural regression analysis. That is, food choice motives were treated as latent constructs defined by multiple observed indicators, yet the organic preferences variable was a single indicator. This single-indicator outcome measure was a participant's total score on the 24-item organic versus non-organic selection task. Although the item-level data for organic preferences was not included in the model, this summary score was corrected for measurement (Cronbach's $\alpha = 0.96$ for the total sample).

Predictors Among the Total Sample. Of the food choice motives included in the nine-factor model, health, natural content, sensory appeal, environmental protection, convenience are all identified in the literature as motives underlying organic food consumption. In addition, the current research aimed to examine impression management as a predictor of organic consumption. For this particular outcome measure, it does not make sense to include price or convenience as predictors. Although price and convenience are often cited as barriers to organic consumption, the nature of this particular outcome measure was such that these variables were equated across the organic and non-organic options. Specifically, instructions for this task indicated that participants should indicate which option they prefer (non-organic or organic) in a situation where both varieties are readily available and have no price difference. As such, for this measure of organic preferences, it does not make sense to include price or convenience as predictors.

The initial regression model provided good fit, χ^2 (195) = 358.296 ($p < .05$), CFI = 0.959, RMSEA = .045, SRMR = .052. The path coefficients for health, natural content, sensory appeal, and impression management were significant. Emphasizing health and natural content was associated with higher scores on the organic preferences measure. Emphasizing sensory appeal and impression management was associated with lower scores on the organic preferences measure. Environmental protection did not emerge as a significant predictor, but it was retained in the model so that subsequent analyses could examine whether regulatory focus moderates this path. Completely standardized path coefficients and standard errors are presented in Figure 1.

Predictors Within Each Regulatory Focus Group. The partially latent structural regression model with five food choice motives as predictors was also estimated for each subgroup. For the promotion group ($n = 220$) χ^2 (195) = 343.881 ($p < .05$), CFI = 0.935, RMSEA = .059, SRMR = .062. For the prevention group ($n = 188$), χ^2 (195) = 275.676 ($p < .05$), CFI = 0.961, RMSEA = .047, SRMR = .057. Completely standardized path coefficients and standard errors for each subgroup are presented in Figure 2. Among the promotion group, none of the paths were statistically significant. Health approaches statistically significant, with $p = 0.058$ (unstandardized path coefficient), and $p = 0.071$ (standardized path coefficient). Among the prevention group, natural content, impression management, and sensory appeal were all significant predictors of participants' organic preferences score. To test whether any of these apparent group differences were statistically significant, multiple-group structural regression analysis was used to examine regulatory focus as a moderator.

First, a baseline model was estimated wherein path coefficients were simultaneously estimated for each subgroup but free to vary across groups (loadings were constrained equal across groups). This model provided acceptable fit, χ^2 (406) = 624.058 ($p < .05$), CFI = 0.950,

RMSEA = .051, SRMR = .063. Then the five paths were constrained equal across groups. This model also provided acceptable fit, and the changes in global fit indices did not suggest that these constraints caused a significant decrement in the overall fit, χ^2 (411) = 632.524 ($p < .05$), CFI = 0.949, RMSEA = .051, SRMR = .063. To assess whether the path coefficients are significantly different across groups, the modification indices for releasing each of these five constraints were examined. All indices were below the cutoff of 3.84 (critical χ^2 value for 1 degree of freedom and $p < .05$). Thus, although some paths were significantly different from zero among one group but not the other, the coefficients for these two groups were not significantly different from one another. In other words, regulatory focus did not moderate the path coefficients.

Summary of Findings

Regarding everyday food choices, the 36-item nine-factor model of the FCQ was not supported by these data. However, a revised model that excluded 13 FCQ items including one factor (weight control) and included 11 new items including one new factor (impression management) provided a good fit. The measurement properties of this revised model did not differ across promotion- and prevention-focused consumers. The majority of the factor correlations and factor means were also equivalent across regulatory focus groups. Exceptions included the factor means for mood, convenience, and familiarity as well as the sensory appeal—price and sensory appeal—natural content factor correlations. Compared to the promotion group, in terms of everyday food choice the prevention-focused consumers placed greater importance on mood, convenience, and familiarity. Prevention-focused consumers also expressed a stronger positive correlation between the importance of sensory appeal and the importance of price and natural content.

Regarding the motives that underlie organic preferences, there were significant relationships between those preferences and the degrees to which consumers considered health, natural content, sensory appeal, and impression management to be important components of their everyday food choices. Consumers who expressed relatively strong organic preferences tended to place high importance on health and natural content and low importance on sensory appeal and impression management. The importance of environmental protection was not a significant predictor of organic food preferences. When prevention- and promotion-focused consumers were examined separately, they did not show the same pattern of significant and non-significant relationships between motives and organic preferences, but across groups there were no statistically significant differences in the strength of these relationships.

Discussion

FCQ In a U.S. Sample

One aim of this study was to examine the psychometric properties of the FCQ with a U.S. sample. The nine subscales showed good internal consistency, but the nine-factor model could not be replicated with a confirmatory factor analysis. From a larger pool of items, exploratory factor analyses revealed a revised model that provided a good fit. This revised model included many of the items and factors contained in the FCQ, but a number of items were excluded. The FCQ-factor "weight control" was eliminated, and "ethical concern" was modified to focus specifically on environmental protection. In addition, a new "impression management" factor was included.

It is worth noting that some of the problems encountered when trying to replicate the nine-factor structure of the FCQ have been reported in previous research. This includes a few items that loaded weakly on their expected factors. First, the item with the largest skew and

kurtosis was the sensory appeal item "tastes good." This item had a relatively weak factor loading (.553), and also performed somewhat poorly in at least two previous studies (Eertmans et al., 2006; Januszewska et al., 2011). Second, to obtain a good-fitting model, three health items needed to be dropped. Fotopoulos et al. (2009) found improved subscale reliability and global fit with a revised model that excluded several items including two of these three health items ("is high in protein" and "is good for my skin/teeth/hair/nails etc.").

Other problems included items that not only loaded weakly on their expected factors but also were more strongly associated with another factor. In the EFA models, two convenience items loaded more strongly on the price factor than on the convenience factor ("can be bought in shops close to where I live or work" and "is easily available in shops and supermarkets"). Eertmans et al. (2006) reported a similar finding in Belgian and Canadian samples and Fotopoulos et al. (2009) in a Greek sample. Because the primary loadings were still weak (< .40), I decided to drop these items, but Eertmans et al. (2006) suggested it may be appropriate to re-interpret the price and convenience factors as "accessibility of food" and "ease of preparation." Two FCQ-mood items were dropped because they loaded more strongly on the health factor than on the mood factor. One of these items ("makes me feel good") also lacked a strong loading in an Italian sample (Eertmans et al., 2006). The other ("keeps me awake/alert") lacked a strong loading in a Canadian sample (Eertmans et al., 2006) and also performed poorly in a Greek sample (Fotopoulos et al., 2009).

A final similarity concerns the strong correlation between the natural content and environmental protection factors. In Eertmans et al.'s (2006) Italian and Belgian samples the natural content items merged with the health items. In their Canadian sample, the natural content and ethical concern items loaded on the same factor, and the FCQ item concerning packaging

and environment loaded on its own factor. In this U.S. sample, when only the original FCQ items were included in EFA models, the ethical concern items also loaded on the same factor as the natural content items. However, by including three additional items referring to environmental protection (from Lindeman & Väänänen, 2006 and Shepherd et al., 2005), environmental protection and natural content emerged as separate, but highly correlated, factors. Other researchers, including Steptoe et al. (1995), also report significant correlations between the natural content, health, and ethical concern factors.

In addition to the issues noted above, the revised measure of food choice motives differs from the FCQ in that it contains an impression management factor. Steptoe et al. (1995) investigated the extent to which food is liked by one's family and friends as a potential motive but found that no such factor emerged. However, the inclusion of impression management concerns is consistent with Martins and Pliner's (1998) findings. Their Food Motivation Scale is largely similar to the FCQ, but it assesses two motives not included in the FCQ: novelty and impression management. Although the original FCQ model could not be replicated in this U.S. sample, this revised model was similar in several ways, which supports Fotopoulos et al.'s (2009) argument that a new model of food choice motives could be constructed upon some of the basic features of the FCQ. At the same time, the present findings are also consistent with Eertmans et al.'s (2006) argument that the FCQ-items and underlying constructs may have evolved since the scale was developed and may not be invariant across western cultures. Although the 36-item, nine-factor FCQ could not be replicated, an *ad hoc* revised model did provide a good fit in the U.S. sample. This revised model should be replicated with an independent sample—a task that could not be accomplished in the current study due to sample size.

Regulatory Focus and Everyday Food Choice Motives

The revised measure of food choice motives included 34 items and nine latent factors (health, mood, convenience, sensory appeal, natural content, price, familiarity, and impression management). Although the global fit of this model was slightly better in the prevention subgroup than in the promotion subgroup, this measure showed complete measurement invariance (loadings, intercepts, and residuals) across these two groups of consumers who differed in terms of self-regulatory focus. This indicates that subscale scores have the same meaning across promotion- and prevention-focused consumers.

Regarding everyday food choices, mood, convenience, and familiarity were more important among those consumers who have a relatively strong prevention focus. In other words, compared to consumers who tend to be oriented toward the ideal self, aspirations, and accomplishments (i.e., promotion-focused), those who tend to be oriented toward the ought self, responsibilities, and safety (i.e., prevention-focused) reported that it was important for their food to help them with stress, coping, and mood; be easy to prepare; and be familiar. In addition, the sensory appeal factor was more strongly correlated with two other factors (price and natural content) in the prevention group (compared to the promotion group).

In general, consumers who placed high importance on sensory appeal also placed high importance on price, but this positive correlation was stronger in the prevention group ($r = 0.56$) than in the promotion group ($r = 0.31$). One possible interpretation of this finding is that promotion-oriented consumers are more open to potential trade-offs between financial costs and sensory qualities. In addition, valuing sensory appeal was moderately associated with valuing natural content in the prevention group ($r = 0.28$), but this relationship was rather weak in the promotion group ($r = 0.10$). In other words, prevention-oriented consumers may associate the

"naturalness" of food with its sensory qualities, yet promotion-focused consumers tend to value natural content for reasons other than sensory appeal and may make inferences about the sensory qualities of a food with indicators other than its naturalness.

Motives for Organic Food Preferences

As expected, health and natural content appear to be two motives that underlie U.S. consumers' organic preferences. Consumers who placed high importance on the health and natural content aspects of their everyday food choices tended to prefer organic foods at a relatively high rate. In contrast, sensory appeal and impression management appear to be two motives that undermine organic preferences. That is, organic preferences were highest among consumers who reported that sensory appeal and impression management were relatively unimportant considerations for their everyday food choices. Of these relationships, organic preferences were most strongly associated with natural content motives, followed by sensory appeal, health, and impression management.

At first glance, the negative path coefficient for sensory appeal is surprising because it has often been reported that taste is a primary motive for organic consumption. To reconcile this seemingly inconsistent finding, it is important to consider the types of sensory qualities and the types of foods that were included in this study. The FCQ and the revised measurement instrument used for the current research define the sensory appeal construct with four items, which relate to smell, appearance, texture, and taste. There is some evidence suggesting that cosmetic defects may be a barrier to purchasing organic produce because consumers report that they are unwilling to accept produce with blemishes or insect damage (Ott, 1990; Thompson & Kidwell, 1998). To the extent that organic produce may have such defects, consumers may be deterred from purchasing it. Regarding the findings of the current study, it is possible that the

broad focus of the sensory appeal factor includes some components that consumers may perceive to have conflicting relationships with organic preferences (i.e., "looks nice" and "tastes good"). Although this is one potential explanation for the negative path from sensory appeal to organic preferences, it should be considered cautiously and merits further investigation. Indeed, there is mixed evidence for this position. Huang (1996) found that even though consumers were largely unwilling to purchase produce with cosmetic defects, they did not perceive organic produce to be particularly likely to possess such qualities. On the other hand, some studies have found that consumers who frequently purchase organic food tended to be relatively unconcerned about product appearance (Goldman & Clancy, 1991; Schifferstein & Oude Ophius, 1998). Complicating this issue is the possibility that beliefs about the sensory appeal of organic food may vary depending on the type of food. Van Doorn and Verhoef (2011) found that among "virtue" foods (e.g., margarine, yogurt, rice), there was no consistent relationship between quality inferences and organic claims, but among "vice" foods (e.g., soft drinks, chocolate, alcohol), organic claims resulted in perceptions of decreased quality. In the current study, the organic selection task included several items from both of these categories. In sum, it is possible that a more specific focus regarding sensory appeal (e.g., taste only) and/or a different assortment of foods (e.g., virtue foods only) would yield an alternate finding.

Another surprising finding was the negative path from the impression management factor to organic preferences. This indicated that consumers who were particularly concerned with the image portrayed by their food choices tended not to select organic foods when given a choice between organic and non-organic options of equal price. In other words, as impression management concerns decreased, organic preferences tended to increase. This finding is inconsistent with research on status motives and consumption of environmentally friendly goods.

One possible explanation for this discrepancy is that consumers simply do not perceive organic foods under the same category of "environmentally friendly" goods that have been the focus of other lines of research. Griskevicius et al. (2008) focused on products that were clearly "green" but also clearly inferior in terms of their luxury and/or performance. In other words, the products offered a prosocial (i.e., environmental) advantage, but they also necessitated self-sacrifice regarding quality. Even if consumers perceive organic food to have prosocial or environmental benefits it may be the case that organic foods are regarded first and foremost in terms of private benefits (e.g., health, taste, safety). That is, unlike the products included in Griskevicius et al. (2008), consumers may not see organic food as an avenue for signaling prosociality. In comparing the current findings to those from Griskevicius et al. (2008), it should also be noted that they specifically primed status and observed effects on public (but not private) purchase decisions. In contrast, the current study considered a more general measure of image motivation and only examined responses on an anonymous survey.

It is also possible that the effects of impression management motives on organic consumption may depend on the normative attitudes and beliefs about environmental issues and organic agriculture within one's own social groups. Researchers in the fields of marketing and economics have suggested that the dynamics of the social group may influence consumers' adoption of green energy technologies (Bollinger & Gillingham, 2010). Future research could investigate this issue to determine whether ideology and attitudes among, for example, one's friends, family, and community impact the relationship between impression management concerns and organic preferences.

While the path coefficients for sensory appeal and impression management were both negative, the coefficients for health and natural content were both positive. Moreover, in the

model for the total sample, the path coefficient for the natural content factor is larger than the path coefficient for the health factor. This suggests that organic food preferences are driven by concerns related to additives, processing, preservatives, and pesticide residues to a greater extent than they are driven by concerns related to nutritional value and vitamins. This is an important, and perhaps promising, finding for those who may be concerned that consumers are drawn to organic food because they erroneously presume it has higher nutritive value. For example, Hughner et al. (2007) raise questions about the potential consequences of an organic market that is dependent upon unfounded health claims. Although natural content appears to be a stronger underlying motive than nutritional concerns, consumers clearly still associate organic food with good nutrition. For consumers who are concerned about pesticides, additives, etc., organic food may be one of the most attractive or available options. On the other hand, consumers who are concerned about nutritional content may perceive organic food to be one of many options. Further, even if nutritional content may not be the primary motive for organic consumption, the association between good nutrition and organic food can still have important implications. For example, the "organic halo" effect observed by Schuldt and Schwarz (2010) suggests that the inferences consumers make from organic claims may facilitate overeating and other poor health-related decisions.

Regarding the distinction between nutrition-oriented health concerns and natural content concerns, it was predicted that consumers' regulatory focus could be an important variable to consider. The predictive models that were estimated separately for each regulatory focus group look quite different in terms of the magnitude and significance of the path coefficients. More specifically, among the promotion group, none of the paths were statistically significant though the path associated with nutrition-oriented health concerns was close ($p = .06$). Among the

prevention group, natural content, impression management, and sensory appeal were all significant predictors or organic preferences. However, regulatory focus did not moderate the magnitude of the path coefficients. This means that although some paths were significantly different from zero among one subgroup but not the other, there was no statistical difference between the groups' coefficients.

Another interesting pattern that emerged from these separate models relates specifically to the *relative* strength of the health and natural content paths within each subgroup. Among prevention-focused consumers, the natural content path coefficient is considerably larger than the health path coefficient, yet among the promotion-focused consumers the health coefficient is larger than the natural content path coefficient. This reversed pattern is consistent with predictions that could be made based on Regulatory Focus Theory. That is, with regard to organic consumption, the relative importance of the different types of health-related concerns may differ as a function of regulatory focus. Although the observed differences are in the expected direction, three of these four paths were not statistically different from zero. It is also important to note that the standard errors for these path coefficients were quite large. A larger sample may provide more stable estimates and, therefore, a more accurate test of the role of regulatory focus.

Consumer Knowledge About Organic

As expected, consumers did not appear to have an entirely accurate understanding of USDA organic certification. This finding coincides with previous research (Chryssohoidis & Krystallis, 2005; Finch, 2005; Haumann, 2009, Hughner et al., 2007; Yiridoe et al., 2005), but the current study also aimed to identify some specific areas of confusion. Although it was not the case for the majority of participants, a sizable portion of the sample appeared to infer that

organic certification also indicates information about fair trade certification as well as the size and location (distance from point of sale) of the production site. Results also demonstrated that consumers' understanding of the nuances of organic certification and pesticide use is likely rather poor. Given that natural content was found to be the primary motive underlying organic preferences, it will be important to consider how organic preferences and consumption may be impacted by new, perhaps more accurate, knowledge about pesticide use.

Another interesting pattern regarding consumers' knowledge about organic concerns the apparent association between organic certification and environmentally friendly farming practices. Although environmental protection was not a significant motive for organic preferences among this sample, the majority understood organic certification to say something about the use of renewable resources and conservation of soil and water. This raises questions about what could be done to make such concerns a more salient motive in the content of food choice. It also suggests the potential for licensing effects whereby organic consumption may have negative behavioral consequences in other domains. For example, Mazar and Zhong (2010) found that people who purchase organic foods and environmentally friendly products (compared to those who purchase conventional foods and products) were rated as more cooperative, more altruistic, and more ethical. Moreover, in an experimental setting, *exposure* to a fictitious store featuring green products (including a few organic products) led to increased prosocial behavior, yet *purchasing* of green products led to decreased prosocial behavior. Purchasing green products (compared to conventional products) also led to higher rates of lying and stealing in an ostensibly unrelated activity. In some ways, this coincides with Schuldt and Schwarz's (2010) findings that participants judge someone who skipped her exercise routine more leniently if she had previously chosen to eat organic dessert (rather than conventional dessert). In both cases, the

"halo" of green products and organic food has implications for subsequent behaviors.

Future Research

The results form this study suggest a number of directions for future research. At the most basic level, the revised-FCQ model identified in this study should be replicated with an independent sample. With a new, larger sample it would also be possible to confirm the findings regarding the role of regulatory focus with respect to everyday food choices as well as organics. In aiming to replicate these models, it would be advantageous to employ another set of measures for regulatory focus and the organic outcomes. For example, a larger sample would allow the use of a tertiary split (rather than a median split) with the RFQ. It is also possible to induce a situational regulatory focus with experimental manipulations. To the extent that these approaches facilitate a comparison of more extreme promotion and prevention orientations, they may offer a more powerful test of group differences. These same models should also be examined with respect to organic consumption (rather than preferences), and ideally, with a measure of actual (rather than self-reported) consumption.

In addition to replicating the measurement model of food choice motives and the structural regression model predicting organic preferences, future research should also investigate the unexpected findings regarding sensory appeal and impression management. The distinction between taste and appearance concerns and the distinction between vice and virtue foods will hopefully shed light on the negative path coefficient for sensory appeal. The negative path coefficient for impression management was also unexpected. In further exploring the role of image and other socially based motives, future research should take into consideration interaction effects with dominant or salient social groups. Perhaps impression management is a motive for organic consumption in certain contexts yet a deterrent in others. Another avenue for

future research concerns potential licensing effects of organic food consumption. Can organic purchases lead consumers to be more lenient regarding, for example, their energy and water usage? Does organic consumption have implications for consumers' support of environmental policy? Finally, research on organic consumption should certainly aim to more fully understand the consequences of consumer confusion about organic food. This includes identifying effective ways to reduce confusion, but it also includes examination of the ways in which organic consumption and the motives for such consumption are impacted by increased awareness of and improved knowledge about organic food.

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Table 1

Pearson Correlations Between Age, Income, and Organic Preferences and Consumption

Measure	Income	Age
Organic preferences	.038	.012
Purchase of organic (average for all categories)	-.071	-.185*
Purchase of organic fruit and vegetables	-.027	-.169*
Purchase of organic dairy	-.028	-.142*
Purchase of organic meat and poultry	-.042	-.131*
Purchase of organic packaged snacks	-.097	-.183*
Purchase of organic breads and pasta	-.113*	-.149*

*$p < .05$

Table 2
Statements About USDA Certified Organic Food (Percentage of True/False Responses)

Measure	True	False
To be certified organic, foods must be produced within 300 miles of where they are being sold.	28.3%	71.7%
Organic meat, poultry, eggs, and dairy products come from free-range animals.	58.4%	41.6%
To be certified organic, no pesticides can be used.	79.0%	21.0%
Organic foods are produced by famers who emphasize the use of renewable resources.	63.7%	36.3%
Organic meat, poultry, eggs, and dairy products come from animals that are given no growth hormones or antibiotics.	87.9%	12.1%
Conservation of soil and water is an important goal for organic farmers.	84.7%	15.3%
No chemicals can be used to produce organic foods.	70.9%	29.1%
Genetically modified foods can be certified organic.	33.5%	66.5%
Organic beef must be grass-fed.	53.0%	47.0%
Fertilizers cannot be used to grow organic foods.	39.9%	60.1%
Organics foods can be grown with pesticides as long as the pesticides are certified organic.	57.6%	42.4%
Foods must be certified fair trade to be called organic.	29.1%	70.9%
Organic foods are grown only on small farms.	10.1%	89.9%

Table 3
Factors, Items, and Loadings of the Measure of Food Choice Motives

Factor and Reliability	Item It is important to me that the food I eat on a typical day…	Completely Standardized Loading
Health	Contains a lot of vitamins and minerals	0.707
$\alpha = 0.860$	Keeps me healthy	0.851
	Is nutritious	0.899
	Provides enough energy	0.685
Mood	Helps me cope with stress	0.901
$\alpha = 0.874$	Helps me to cope with life	0.837
	Helps me relax	0.813
	Cheers me up	0.642
Convenience	Is easy to prepare	0.884
$\alpha = 0.826$	Can be cooked very simply	0.781
	Takes no time to prepare	0.711
Sensory	Smells nice	0.615
Appeal	Looks nice	0.558
$\alpha = 0.684$	Has a pleasant texture	0.691
	Tastes good	0.533
Natural	Contains no additives	0.715
Content	Contains natural ingredients	0.859
$\alpha = 0.908$	Has undergone minimal processing	0.862
	Is free of chemical preservatives	0.843
	Is free of residues from chemical sprays and pesticides	0.813
Price	Is not expensive	0.867
$\alpha = 0.777$	Is cheap	0.756
	Is good value for money	0.603
Familiarity	Is what I usually eat	0.753
$\alpha = 0.679$	Is familiar	0.763
	Is like the food I ate when I was a child	0.444
Environmental	Has been prepared in an environmentally friendly way	0.922
Protection	Has been produced in a way which has not shaken the	0.830
$\alpha = 0.925$	balance of nature	
	Is packaged in an environmentally friendly way	0.856
	Reduces pollution of soil and water	0.871
Impression	Would be met with approval by relatives	0.654
Management	Gives people the right impression of me	0.861
$\alpha = 0.877$	Portrays a positive image of me	0.885
	Makes a statement about me	0.816

Note. All loadings significant a $p < .05$

Table 4

Factor Correlations in the 9-Factor Model of Food Choice Motives

Factor	H	M	C	SA	NC	P	F	EP
Health (H)								
Mood (M)	0.18							
Convenience (C)	0.00	0.27*						
Sensory Appeal (SA)	0.50*	0.31*	0.24*					
Natural Content (NC)	0.58*	0.16*	-0.02	0.18*				
Price (P)	0.16*	0.10	0.49*	0.43*	-0.02			
Familiarity (F)	0.07	0.36*	0.57*	0.44*	-0.09	0.44*		
Environmental	0.50*	0.30*	0.02	0.24*	0.80*	-0.01	-0.01	
Protection (EP)								
Impression	0.18*	0.49*	-0.01	0.05	0.28*	-0.05	0.13*	0.41*
Management (IM)								

*$p < .05$

Table 5

Measurement and Structural Invariance of the nine-factor Model of Food Choice Motives

	Overall Fit Indices						Comparative Fit Indices		
Model	*df*	χ^2	CFI	RMSEA	SRMR	Model	ΔCFI	ΔRMSEA	ΔSRMR
1. Form	982	1589.29*	.913	.055	.069				
2. Loadings	1007	1590.83*	.916	.053	.071	2 v. 1	.003	-.002	.002
3. Intercepts	1032	1609.32*	.917	.052	.071	3 v. 2	.001	-.001	.000
4. Residuals[a]	1066	1647.31*	.917	.052	.078	4 v. 3	.000	.000	.007
5. Factor variances	1041	1621.98*	.917	.052	.078	5 v. 3	.000	.000	-.006
6. Factor covariances	1077	1677.30*	.914	.052	.086	6 v. 5	-.003	.000	.008
						6 v. 1	.001	-.003	.017
7. Factor covariances[b]	1076	1670.14*	.915	.052	.085	7 v. 1	.002	-.003	.016
8. Factor covariances[c]	1075	1663.77*	.916	.052	.084	6 v. 1	.003	-.003	.015

Note. CFI = comparative fit index; RMSEA = root-mean-square error of approximation; SRMR = standardized root mean square residual; Δ = difference between comparison and nested models.

[a]Constraints on residuals were not included in tests of structural parameters (factor variances and covariances)

[b]Constraint on covariance between price and sensory appeal released

[c]Constraint on covariance between sensory appeal and natural content released

*$p < .001$

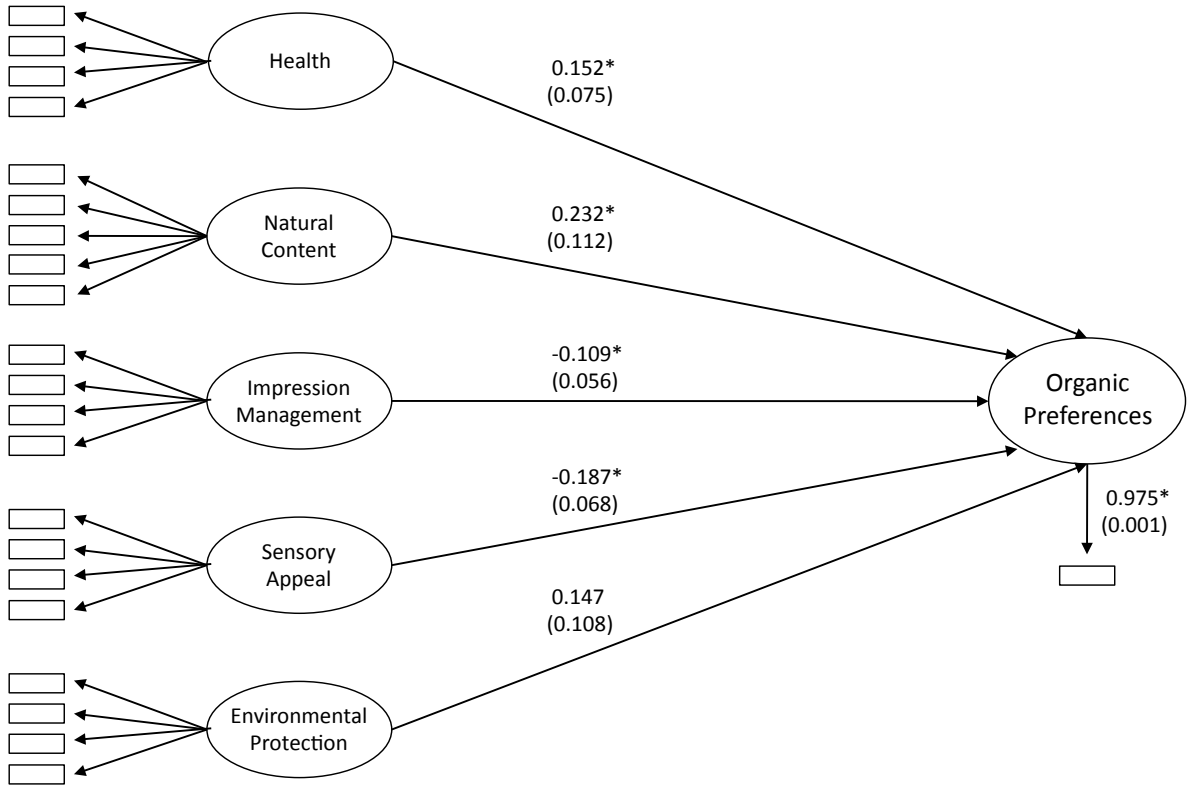

Figure 1. Completely standardized path coefficients and standard errors for the total sample.

*$p < .05$

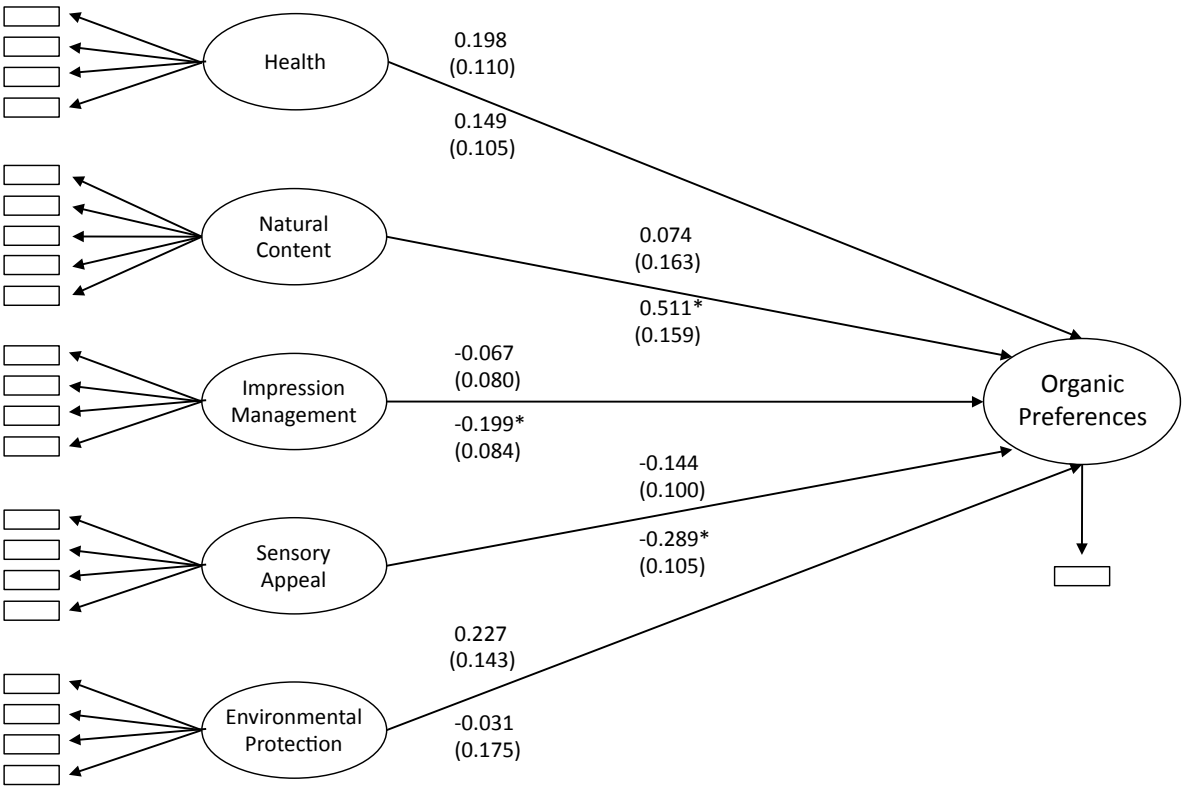

Figure 2. Completely standardized path coefficients and standard errors by regulatory focus subgroups. Values for promotion group are presented above the corresponding paths. Values for prevention group are presented below corresponding paths.

*$p < .05$

Appendix A

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

	disagree strongly	disagree moderately	disagree slightly	neither agree nor disagree	agree slightly	agree moderately	agree strongly
Is low in calories	◯	◯	◯	◯	◯	◯	◯
Contains no additives	◯	◯	◯	◯	◯	◯	◯
Is high in protein	◯	◯	◯	◯	◯	◯	◯
Is not forbidden in my religion	◯	◯	◯	◯	◯	◯	◯
Has not been treated with antibiotics	◯	◯	◯	◯	◯	◯	◯
Is good value for money	◯	◯	◯	◯	◯	◯	◯
Is in agreement with my friends' expectations of me	◯	◯	◯	◯	◯	◯	◯
Is free of residues from chemical sprays and pesticides	◯	◯	◯	◯	◯	◯	◯
Makes me feel good	◯	◯	◯	◯	◯	◯	◯
Has not undergone food irradiation	◯	◯	◯	◯	◯	◯	◯
Comes from a country I approve of politically	◯	◯	◯	◯	◯	◯	◯

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

	disagree strongly	disagree moderately	disagree slightly	neither disagree nor agree	agree slightly	agree moderately	agree strongly
Keeps me healthy	◯	◯	◯	◯	◯	◯	◯
Would be met with approval by relatives	◯	◯	◯	◯	◯	◯	◯
Is low in fat	◯	◯	◯	◯	◯	◯	◯
Comes from a country in which human rights are not violated	◯	◯	◯	◯	◯	◯	◯
Is what I usually eat	◯	◯	◯	◯	◯	◯	◯
Takes no time to prepare	◯	◯	◯	◯	◯	◯	◯
Cheers me up	◯	◯	◯	◯	◯	◯	◯
Is free of chemical preservatives	◯	◯	◯	◯	◯	◯	◯
Is not in conflict with my religious practices	◯	◯	◯	◯	◯	◯	◯
Is like the food I ate when I was a child	◯	◯	◯	◯	◯	◯	◯
Can be bought in shops close to where I live or work	◯	◯	◯	◯	◯	◯	◯

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

	disagree strongly	disagree moderately	disagree slightly	neither agree nor disagree	agree slightly	agree moderately	agree strongly
Smells nice	◯	◯	◯	◯	◯	◯	◯
Helps the U.S. and/or local economy	◯	◯	◯	◯	◯	◯	◯
Is not expensive	◯	◯	◯	◯	◯	◯	◯
Improves the state of the environment	◯	◯	◯	◯	◯	◯	◯
Is grown and prepared in the United States	◯	◯	◯	◯	◯	◯	◯
Has undergone minimal processing	◯	◯	◯	◯	◯	◯	◯
Reduces my exposure to natural toxins	◯	◯	◯	◯	◯	◯	◯
Helps me to cope with life	◯	◯	◯	◯	◯	◯	◯
Makes a statement about me	◯	◯	◯	◯	◯	◯	◯
Can be cooked very simply	◯	◯	◯	◯	◯	◯	◯
Contains natural ingredients	◯	◯	◯	◯	◯	◯	◯
Has been prepared in a way that does not conflict with my political values	◯	◯	◯	◯	◯	◯	◯

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

	disagree strongly	disagree moderately	disagree slightly	neither agree nor disagree	agree slightly	agree moderately	agree strongly
Provides enough energy	◯	◯	◯	◯	◯	◯	◯
Is good for my skin/teeth/hair/nails etc	◯	◯	◯	◯	◯	◯	◯
Minimizes the risk of foodborne illness, such as Salmonella, E. coli, and Listeria	◯	◯	◯	◯	◯	◯	◯
Is easily available in shops and supermarkets	◯	◯	◯	◯	◯	◯	◯
Has a pleasant texture	◯	◯	◯	◯	◯	◯	◯
Helps me cope with stress	◯	◯	◯	◯	◯	◯	◯
Is high in fiber and roughage	◯	◯	◯	◯	◯	◯	◯
Has been produced in a way that animals have not experienced pain	◯	◯	◯	◯	◯	◯	◯
Portrays a positive image of me	◯	◯	◯	◯	◯	◯	◯
Is packaged in an environmentally friendly way	◯	◯	◯	◯	◯	◯	◯
Keeps me awake/alert	◯	◯	◯	◯	◯	◯	◯
Is nutritious	◯	◯	◯	◯	◯	◯	◯

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

	disagree strongly	disagree moderately	disagree slightly	neither agree nor disagree	agree slightly	agree moderately	agree strongly
Has been produced in a way which has not shaken the balance of nature	◯	◯	◯	◯	◯	◯	◯
Contains no artificial ingredients	◯	◯	◯	◯	◯	◯	◯
Helps me relax	◯	◯	◯	◯	◯	◯	◯
Improves circumstances and health of farm animals	◯	◯	◯	◯	◯	◯	◯
Helps create jobs in the U.S.	◯	◯	◯	◯	◯	◯	◯
Is familiar	◯	◯	◯	◯	◯	◯	◯
Is in harmony with my religious views	◯	◯	◯	◯	◯	◯	◯
Has been prepared in an environmentally friendly way	◯	◯	◯	◯	◯	◯	◯
Tastes good	◯	◯	◯	◯	◯	◯	◯
Reduces pollution of soil and water	◯	◯	◯	◯	◯	◯	◯

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

	disagree strongly	disagree moderately	disagree slightly	neither agree nor disagree	agree slightly	agree moderately	agree strongly
Looks nice	◯	◯	◯	◯	◯	◯	◯
Is free of growth hormones	◯	◯	◯	◯	◯	◯	◯
Is easy to prepare	◯	◯	◯	◯	◯	◯	◯
Is cheap	◯	◯	◯	◯	◯	◯	◯
Has the country of origin clearly marked	◯	◯	◯	◯	◯	◯	◯
Helps me control my weight	◯	◯	◯	◯	◯	◯	◯
Contains a lot of vitamins and minerals	◯	◯	◯	◯	◯	◯	◯
Gives people the right impression of me	◯	◯	◯	◯	◯	◯	◯
Has been produced in a way that animals' rights have been respected	◯	◯	◯	◯	◯	◯	◯
Is safe for me to prepare at home	◯	◯	◯	◯	◯	◯	◯

Appendix B

***When you are purchasing the following types of foods how often do you choose organic products?**

	Never	Rarely	Sometimes	About half of the time	Often	Usually	Always
Fruits and vegetables	○	○	○	○	○	○	○
Dairy	○	○	○	○	○	○	○
Meat and poultry	○	○	○	○	○	○	○
Packaged snacks	○	○	○	○	○	○	○
Breads and pasta	○	○	○	○	○	○	○

Below is a list of several different foods. For each food, imagine that you are about to make a purchase and have two options in front of you: an organic product and a non-organic product. Assume that there is no price difference between the two options.

Even if these are not foods that you would normally purchase, please indicate which option you would prefer.

*****

	Non-organic	Organic
Bananas	○	○
Milk	○	○
Chicken	○	○
Packaged cookies	○	○
Sliced bread	○	○
Bell peppers	○	○
Beer	○	○
Canned soup	○	○
Cheese	○	○
Onions	○	○
Pasta	○	○
Beef	○	○

*****

	Non-organic	Organic
Apples	○	○
Instant oatmeal	○	○
Rice	○	○
Spinach	○	○
Yogurt	○	○
Strawberries	○	○
Eggs	○	○
Chocolate	○	○
Corn	○	○
Potato chips	○	○
Grapefruits	○	○
Wine	○	○

Appendix C

This set of questions asks you HOW FREQUENTLY specific events actually occur or have occurred in your life. Please indicate your answer to each question by selecting the appropriate circle.

***Compared to most people, are you typically unable to get what you want out of life?**

	Never or seldom		Somtimes		Very often
.	○	○	○	○	○

***Growing up, would you ever "cross the line" by doing things that your parents would not tolerate?**

	Never or seldom		Somtimes		Very often
.	○	○	○	○	○

***How often have you accomplished things that got you "psyched" to work even harder?**

	Never or seldom		Somtimes		Very often
.	○	○	○	○	○

***Did you get on your parents' nerves often when you were growing up?**

	Never or seldom		Somtimes		Very often
.	○	○	○	○	○

***How often did you obey rules and regulations that were established by your parents?**

	Never or seldom		Somtimes		Very often
.	○	○	○	○	○

***Growing up, did you ever act in ways that your parents thought were objectionable?**

	Never or seldom		Somtimes		Very often
.	○	○	○	○	○

***Do you often do well at different things that you try?**

	Never or seldom		Somtimes		Very often
.	○	○	○	○	○

***Not being careful enough has gotten me into trouble at times.**

	Never or seldom		Somtimes		Very often
.	○	○	○	○	○

***When it comes to achieving things that are important to me, I find that I don't perform as well as I ideally would like to do.**

	Never true		Sometimes true		Very often true
.	○	○	○	○	○

***I feel like I have made progress toward being successful in my life.**

	Certainly false				Certainly true
.	○	○	○	○	○

***I have found very few hobbies or activities in my life that capture my interest or motivate me to put effort into them.**

	Certainly false				Certainly true
.	○	○	○	○	○

Appendix D

***Please indicate whether, to the best of your knowledge, the following statements about USDA certified organic foods are true or false.**

	True	False
To be certified organic, foods must be produced within 300 miles of where they are being sold.	○	○
Organic meat, poultry, eggs, and dairy products come from free-range animals.	○	○
To be certified organic, no pesticides can be used.	○	○
Organic foods are produced by farmers who emphasize the use of renewable resources.	○	○
Organic meat, poultry, eggs, and dairy products come from animals that are given no growth hormones or antibiotics.	○	○
Conservation of soil and water is an important goal for organic farmers.	○	○
No chemicals can be used to produce organic foods.	○	○
Genetically modified foods can be certified organic.	○	○
Organic beef must be grass-fed.	○	○
Fertilizers cannot be used to grow organic foods.	○	○
Organic foods can be grown with pesticides as long as the pesticides are certified organic.	○	○
Foods must be certified fair trade to be called organic.	○	○
Organic foods are grown only on small farms.	○	○