THE POWER OF FOOD LABELS: MARKETING ENVIRONMENTAL IMPACTS AND ANIMAL WELFARE ON MEAT LABELS AS GAINS VERSUS NONLOSSES AND THE INFLUENCE ON ATTITUDES AND VOTING INTENTIONS

By

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To all of my boys, Brian, Wrigley, and Copper
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LIST OF DEFINITIONS

Credence Attribute Quality attributes of a product that cannot be assessed by the consumer before or after use and affect products’ perceived quality only so much as consumers’ trust in the claims; for example, a label on a pork product indicating “raised under environmentally friendly practices” would be considered a credence attribute (Darbi & Karni, 1973).

Factory Farm A term proliferated by animal and environmental activists to describe conventional livestock production and concentrated animal feeding operations.

Organic Agriculture “A type of agriculture that promotes the use of renewable resources and management of biological cycles to enhance biological diversity, without the use of genetically modified organisms, or synthetic pesticides, herbicides, or fertilizers. Organic livestock production promotes concern for animal welfare, without the use of synthetic foodstuffs, growth hormones, or antibiotics.” (Eicher, 2003)

Production Claim A claim referring to how a food product was produced before slaughter or harvest.

Promotion Focus Refers to a cognitive mechanism in which people view their goals as accomplishments, hopes, and aspirations (ideals or maximal goals), and are sensitive to the presence or absence of positive outcomes, or gains and non-gains.

Prevention Focus Refers to a cognitive mechanism in which people are more concerned with safety, responsibilities, and obligations (oughts or minimal goals), and are sensitive to the absence or presence of negative outcomes, or non-losses and losses.

Regulatory Focus A cognitive style/mechanism that regulates how people attend to information.
Consumers receive information about how their food is (or is not) produced on a regular basis through the labels they see in the grocery store. Production labeling claims like eco-friendly, cage-free, and no hormones offer information about the product they are on and about the conventionally produced products that do not carry these claims. The theories of loss aversion and regulatory focus suggest that messages, such as food production claims, can be framed as gains or nonlosses and have different persuasive effects, but the theories contradict each other. This study used an experimental design with a convenience sample of 660 college students to examine how consumers’ attitudes toward food products are affected by gain- and nonloss-framed production labeling claims about animal welfare and environmental impact and whether this on-package marketing can also affect intent to support an animal welfare ballot initiative.

The results did not reveal different attitudinal effects between gain- and nonloss-framed production claims as predicted by loss aversion and regulatory focus theories; however, the presence of the production claims did significantly reduce positive
attitudes toward the product without claims. Exposure to the production claims increased positive attitudes toward the product they were on, but these attitudes did not translate into intentions to support the animal welfare ballot initiative. Over 75% of the sample indicated they intended to support the policy regardless of the treatment.

This study attempted to frame nonlosses and gains equivalently, but qualitatively. The results suggest that in the absence of numbers or quantifiable information, the biases of loss aversion, framing effects, and regulatory focus fit effect are minimized. Regardless of how production claims were framed, it is clear that they are a source of information affecting consumers’ attitudes towards conventional agriculture products and perhaps even the production system. Agricultural communicators should not underestimate the effects that food marketing and advertising can have on consumers’ attitudes toward conventional agriculture and its products, and consider these effects in addition to messages put forth by activist groups and mass media.
CHAPTER 1
INTRODUCTION

Now that I know how supermarket meat is made, I regard eating it as a somewhat risky proposition … so I don't buy industrial meat (Michael Pollan, 2004, ¶6).

What the well-known author of *The Omnivore's Dilemma* has to say about meat from conventional agriculture—that eating it is a risky proposition—is a viewpoint growing in popularity (DeGregori, 2003). This stems from uncertainty about how animal agriculture production practices, such as administering subtherapeutic antibiotics, confining livestock in crates or cages, and concentrating animals in large numbers, might affect human health, animal welfare, and the environment (DeGregori, 2003; Hughner, McDonagh, Prothero, Shultz, & Stanton, 2007). What makes Michael Pollan different from most people is that he has visited many livestock production facilities while doing research for his books and *Washington Post* articles, whereas the majority of Americans have probably only seen a snapshot of animal agriculture from their car windows at 65 miles per hour.

Science literacy and communication research consistently shows that most people get their science information—which includes agricultural sciences—from news and entertainment media (Nisbet et al., 2002). Many U.S. consumers are likely getting their perspectives on the United States agricultural system from journalists and authors like Michael Pollan, from talk shows like *Oprah* and *Ellen*, and from the news media. These perspectives from mass media are not typically favorable toward conventional agriculture as evidenced in movies like *Food, Inc.*, *Fast Food Nation*, and *King Corn*; and in books like *The Omnivore’s Dilemma* and *Chew on This*. A recent cover story in *Time* magazine entitled “Getting Real About the High Price of Cheap Food” (see Figure 1-1) represents what is typical in this type of coverage. These mass-mediated channels
portray large, conventional farms as having negative characteristics that are detrimental to human health, the environment, and animal welfare.

The United States’ agricultural system has intensified over time as a result of technological and market forces, urban/suburban sprawl, and a decrease in interest of farming as an occupation (Fitzgerald, 2003; Sassenrath et al., 2008). Livestock production, in particular, is highly associated with trends toward greater farm concentration and corporate industrialization, due in part to urban encroachment, government policies, and the geographic availability of feed (Lobao & Meyer, 2001; Morrison, Nehring, Banker, & Somwaru, 2004). These external pressures have led to greater human input and control of food animals’ lives from conception to slaughter.

The intensification of production was noted by activist groups who began referring to large, conventional farms as “factory farms.” According to the Oxford English Dictionary, the first documented use of the term is attributed to a journal of economics in 1890, but started to proliferate in publications in the 1960s (Factory, 1989). Views of this technologically advanced production system have changed since the 1950s. During that decade, Americans viewed products of such a production system more favorably for the system’s ability to provide convenience foods that saved the housewife time and money (Levenstein, 2003). The 1950s were a time in which consumers were focused on the “relentless pursuit of convenience” (Levenstein, 2003, p. 101). This drove food producers and manufacturers to develop additives to aid in processing and preserving, to develop growth additives for animal feed, and to create concentrated animal feeding operations (again, referred to as “factory farms” by activists). These were accepted innovations in agriculture because it meant cheaper and more convenient foods, like TV
dinner and meat with every meal (Hooker, 1981; Levenstein, 2003). “Perhaps it was natural that, in an era when Americans brimmed with confidence in the superiority of their political, economic, military, and even cultural institutions, they should feel similarly about their food and those who produced it” (Levenstein, 2003, p. 118).

Acceptance and confidence in large, conventional agriculture production waned in the late 1960s. In 1969 and 1970, “calls for a return to natural foods resonated far from the hippie enclaves, striking sympathetic chords among the kind of thoughtful middle-class Americans” (Levenstein, 2003, p. 195). In 2002, the market for organically produced meat and produce—which is viewed as more natural (Abrams, Meyers, & Irani, 2009)—increased dramatically with the creation of the United States Department of Agriculture (USDA) certified organic label. Today, people tend to view natural foods more favorably than those produced with human or technological intervention (Rozin et al., 2004).

While U.S. consumers’ preference for natural and organic foods continues to grow stronger, agriculture is still intensifying production practices with selective breeding, medical and feed technologies, and advanced mechanical systems (Fitzgerald, 2003). With these continued changes has come increased concern about the healthiness and safety of meat, poultry, eggs, and dairy for human consumption; environmental impacts; and animals’ welfare in such an agricultural system. These concerns have steadily risen in the U.S., as demonstrated through changes in legislation (states banning cages and crates in hogs, layers, and veal), food labeling (certified organic label in 2002, naturally raised claim in 2009), and growth of the market for products promoting the absence of those perceived risks (Greene et al., 2009).
Types of Food Labeling

A variety of labeling claims are used by food marketers to differentiate products and communicate quality and value to consumers. Among the mix of labels are those addressing consumer concerns regarding food production practices. Some examples include the organic label, natural or all-natural, free range, humanely raised, eco-friendly, no hormones, and no antibiotics. All of these are practices and labeling claims are voluntary. Production labeling claims, which refer to how the food was produced pre-harvest or how the animal was raised, are regulated by the USDA Food Safety and Inspection Service (FSIS). This entity “develops and provides labeling guidance, policies and inspection methods and administers programs to protect consumers from misbranded and economically adulterated meat, poultry, and egg products [to] ensure that all labels are truthful and not misleading” (USDA FSIS, ¶1, 2009). Processing labeling claims, which refer to how the food is altered post-harvest or post-slaughter (i.e., additives, preservatives, coloring), are also regulated by the USDA FSIS.

Perhaps one of the more extensive set of policies and inspection programs created by the USDA is the National Organic Program. An increase in consumers’ interest and confusion about organic products during the 1990s led to the institution of the USDA National Organic Program in October 2002 (California Institute for Rural Studies, 2005). These standards were established to assure consumers that so-labeled products are produced, processed, and certified to meet the consistent national organic regulations (National Organic Program, 2002). The standards provide a set of guidelines for food to be labeled “organic” that affect the growing, handling, and processing of the food. For organic meat production, the standards prohibit the use of antibiotics and growth hormones, require animals to be fed 100% organic feed, and
require animals to have access to outdoors and access to pasture for ruminants. The organic label is considered a certified label because an inspector visits the farm yearly and on an unannounced basis to certify that the farm's practices are meeting the USDA organic standards.

The separate certification process is what makes the organic label different from most production claims. The USDA FSIS has created some claims with specific guidelines, including free range, free roaming, natural, no hormones, and no antibiotics. Other claims producers and marketers want to put on their products—which may be entirely different or variants on those claims (i.e., raised outdoors as opposed to free range)—may be submitted for approval as well. Production claims are upheld by USDA FSIS policies, but are approved differently than those that are certified, like the organic label. The producer or marketer submits the claim to FSIS, along with supporting documentation (operational protocol, affidavits, and testimonials), and the request to use the labeling claim is either approved or denied; however, the operation is never physically inspected before approval or denial (USDA FSIS, n.d.). When USDA inspectors conduct an annual random inspection of the entire operation for adherence to required practices, they will check to ensure the operational protocol meets what they agreed upon to qualify for the voluntary production claim.

The USDA is not the only entity involved in labeling claim creations and operation inspections. Third-party organizations (i.e., Certified Angus Beef and America Grassfed Certified) that operate a product or service certification system can be approved by the USDA International Organization for Standardization Guide 65 (ISO Guide 65) Program to certify operations for meeting the third party's voluntary production or product
standards to qualify for their label. The ISO Guide 65 Program ensures that third-party certification programs are applying their standards in a consistent and reliable manner (USDA Agricultural Marketing Service, 2008). One example of such a program is Humane Farm Animal Care, which provides certification for their Certified Humane label (see Figure 1-2). Their standards are highly specific and vary by species (layer hens, broilers, dairy cows, etc.) and apply from birth through slaughter. In general, this label means the animal had ample space, shelter, and gentle handling to limit stress; no hormones or antibiotics in their feed; were not kept in cages, crates or tie stalls; and were free to engage in natural behaviors such as dust bathing for chickens and rooting for pigs (Humane Farm Animal Care, n.d.).

Many consumers and researchers alike tend to lump all food with production and/or processing labeling claims into the category of “organic and natural foods” for ease of communication, even though the USDA has specific definitions of the terms “organic” and “natural.” More recently, when researchers discuss organic food in the United States, they are referring to food produced according to the National Organic Program standards with the USDA label, but the term “natural” in reference to food still tends to be a catchall term referring to both the processing of the meat and how the livestock were raised (Abrams et al., 2009; USDA FSIS, 1999). This is important to aid in the interpretation of the research regarding the market for such foods.

**Organic and Natural Foods Market**

The $21.1 billion organic food industry in the United States (Greene et al., 2009) is growing due to consumer concerns about food safety, particularly regarding pesticides, antibiotics, growth hormones, and genetic modification (Hwang, Roe, & Teisl, 2005). The organic label distinguishes foods as free of those perceived risks, while other
products attempting to appeal to these consumer concerns use production and processing claims such as all-natural, no antibiotics, no hormones, and free range. These products often have a “no” labeling theme or communicate essentially the same message by saying the livestock or poultry were produced without one of these perceived risks (Abrams et al., 2009). In July 2009, a large market research company report indicated that organic food will be the fastest growing food trend over the next decade with a growth rate of 41% (The NPD Group, Inc., 2009). Organic meat and poultry is one of the fastest growing segments of the organic food market and is predicted to grow 27% annually through 2010 (Storck, 2008). A nationwide survey conducted by the American Meat Institute (AMI) & Food Marketing Institute (FMI) (2008) found 19% of shoppers had purchased organic or natural meats in the past three months; however, many were not sure if the meat they purchased was organic or natural.

The rapid growth of the market for these types of products suggests that a large segment of consumers have come to value production and processing attributes of the food they buy (Caswell, 1998; Thompson & Troester, 2002). These value perceptions have led to increased market diversity as more niche products emerge to fulfill consumers’ needs. Absent of brand differentiation, consumers were willing to accept more uncertainties and a lack of understanding about production characteristics of food products to a greater degree (Levenstein, 2003). Consumers now have a heightened awareness of food production and health factors as a result of recent food scares (e.g., 2008 beef recall due to downer cattle, 2009 salmonella in peanuts), increased media
coverage of these topics (Craven & Johnson, 1999), and societal shifts in values (Caswell & Mojduszka, 1996).

**Consumers’ Considerations in Purchasing Food with Credence Attributes**

Today, a consumer may pick up a generic package of fresh chicken and notice the one next to it advertising no antibiotics, no hormones, and free range. Consumers with different preferences, including different risk preferences, will rationally choose different bundles of attributes in foods. Consumers will buy products that give them the most value in terms of costs and benefits, as long as they are able to accurately judge the quality attributes (Caswell & Mojduszka, 1996). Quality cues at the point of purchase are most often extrinsic qualities, such as brand, labeling, and price. During handling (i.e., cooking, preparing) or consumption is when quality cues are intrinsic attributes (Ziethaml, 1988). Consumers make assumptions about intrinsic values based on information from extrinsic cues (Olson, 1978). For example, an organic label on a bag of potato chips may generate the belief that “it is probably healthier for me.” Consumers often rely on extrinsic attributes in initial purchase situations when they cannot evaluate the relevant intrinsic attributes of a product or when evaluation of intrinsic cues requires more input than the consumer perceives is worthwhile (Ziethaml, 1988).

In most cases, production and processing claims are quality attributes that cannot be assessed by the consumer before or after use. Darbi and Karni (1973) call these credence attributes. Whether or not credence attributes signal high quality depends on consumers’ trust of the claims. If consumers do not trust production or processing claims, then they do not signal good quality. For example, a claim on a package of beef indicating “from cattle raised under environmentally friendly practices” would be considered a credence attribute; the claim, therefore, is referred to as a credence
attribute. Unless the consumer goes to the farm where that cow came from to determine
the environmentally friendliness of the practices, he or she will have to trust the claim to
derive utility from it. Several studies have found themes of consumer distrust in
credence claims (Abrams et al., 2009; Brunsø, Fjord, & Grunert, 2002; Padel & Foster,
2005; Yiridoe, Bonti-Ankomah, & Martin, 2005).

Despite some consumer distrust of the labeling claims, credence attributes are
becoming more important in the set of considerations consumers make when trying to
determine food quality because the perceived benefits outweigh the trustworthiness
element. The total food quality model developed by Brunsø, Fjord, and Grunert (2002)
states that consumers evaluate expected quality on four levels: taste, health,
convenience, and process. Process refers to how the animal was raised and also how
the meat was processed (presence of additives, preservatives, etc.) and it is the most
relevant component of the model to this study. In the model, “quality is not an aim in
itself, but is desired because it helps satisfy purchase motives or values. The model
therefore includes motive or value fulfillment, i.e. how food products contribute to the
achievement of desired consequences and values” (Brunsø et al., 2002, p. 9-10). Bech-
Larson, Grunert, and Poulson (2001) conducted a study assessing consumer choice of
food products marketing different health attributes, such as Omega 3’s, as simply
present in the product or combined with the specific health benefits of that attribute.
They found that when food products are marketed based on these credence attributes,
quality perception becomes a function of communication effectiveness. The
effectiveness of that communication depends on the credibility consumers assign to it,
consumers’ motivation to process the information, and their ability to understand it
Thus, what the label communicates and how it fits with the shopper’s goals is critical to persuading him or her to purchase the product.

Previous research has shown consumers tend to prefer organic foods, foods that were produced in a way that attenuates perceived risks, and foods that appeal to certain value sets (Loureiro, McCluskey, & Mittelhammer, 2005; Yiridoe et al., 2005); however, price is usually the primary barrier between attitudes and purchasing behavior (Padel & Foster, 2005). If organic meat was the same price as conventional meat, the large majority of consumers (95.3%) would purchase it (AMI & FMI, 2008). Outside of price, convenience, and habit, when purchasing these types of meat products, several levels of outcomes are considered; among them are personal health, the environment, and animal welfare (Yiridoe et al., 2005). The latter two are ethical considerations. The environment could also be a health consideration, depending on individual environmental values. Ethical considerations, such as the confinement of livestock in crates and cages, are gaining importance but typically rank below health and meat safety risk perceptions; however, pork and poultry come up most often when consumers perceive risks to animal welfare (Verbeke & Viaene, 1999).

One recent survey found consumers purchase organic and natural meat for a variety of reasons, the top three being: 1) positive long-term personal health effects (47.2%), 2) better nutritional value (47.2%), and 3) better health and treatment of the animal (40.4%). The reduced environmental impact was ranked sixth with nearly 31% of consumers indicating it as a motivation to buy organic or natural meat (AMI & FMI, 2008). Surveys and polls like this do not shed light on the intricacies of the consumer
decision-making process because researchers determine how the choice items are chosen and written. Looking at the response items in the AMI and FMI (2008) study, “positive long-term personal health effects” is framed in a way that suggests this goal for eating organic and natural meat is an attempt to approach a positive outcome for their health. The response item “reduced environmental impact” is framed in a way that suggests the goal is to avoid a negative outcome for the environment. The way researchers choose to frame their questions and response items can affect how respondents answer them (Levin, Schneider, & Gaeth, 1998).

Motivators of “Green” Food Consumerism

“The environmental ethic that gained worldwide prominence with Earth Day 1990 placed emphasis on individual responsibility for personal health and social action on environmental quality and animal welfare” (Yiridoe et al., 2005, p. 196). In the midst of a strong environmental movement (Dunlap & Mertig, 1992; Gottlieb, 2005), a health foods craze (Dubisch, 2004; Nestle, 2007), and a powerful animal rights movement (Rollin, 1990, 2003), meat seems to represent a consumer commodity and issue through which people can demonstrate their values and goals for their health, the environment, and food animals with little direct involvement in a movement or overt campaign.

Personal Health

First and foremost, food safety is the top concern fueling people’s positive attitudes toward organic and natural foods. Consumers want to be assured their food is safe, and organic food is often equated with safer food. Perceptions of food safety and risk typically relate to concern about food production technologies. In the United States, concern is highest for pesticides and hormones, followed by antibiotics, genetic modification, and irradiation (Hwang, Roe, & Teisl, 2005). Labels and claims are used
by marketers to appeal to those concerns. Food safety is a concern because unsafe food could potentially negatively affect a consumer’s personal health (Brunsø, Fjord, & Grunert, 2002). In other words, personal health concerns can be a function of food safety or nutrition.

**Environmentalism**

Eighty-three percent of Americans would agree that global warming is a serious problem and 81% feel it is their responsibility to reduce the impacts of global warming (Yale Center of Environmental Law and Policy’s Environmental Attitudes and Behavior Project, 2007). Environmental sentiments have been on the rise, but clearly, not all Americans hold the same levels of environmentalism.

Researchers have attempted to clarify different value orientations toward the environment. Kempton, Boster, and Hartley (1995) found “environmental values are already intertwined with core American values, such as religion and parental responsibility” (p. 13). Kempton et al. (1995) found environmentalism is built upon cultural models of how nature works and how humanity interacts with it, and is motivated by environmental values. Americans tend to idealize the environmentalism of simpler times and desire to return to that more natural way of life. Environmental values include humanity’s utilitarian need for nature, obligations to future generations, the spiritual or religious value of nature, and for some, the rights of nature in and of itself (Kempton et al., 1995).

Because most Americans feel some sense of responsibility to the environment, marketers have begun to recognize the need of environmental or green marketing (Sheth & Paravatiyar, 1995; Grant, 2008).
Green issues and marketing can work against each other. One wants you to consume less, the other more. One rejects consumerism, the other fuels it. But they aren't always opposed. Marketing can help 'sell' new lifestyle ideas. It's a much-needed function today, when we all need to act fast to mitigate the effects of climate change (Grant, 2008, Chapter 1: ¶1).

Purchasing meat with credence attribute marketing claims regarding the environment (i.e., environmentally-friendly, good for the environment) is a relatively simple behavior for consumers to reinforce environmental values. While consumers generally have positive attitudes toward such foods, the difficulty in persuading people to purchase them is that they often are priced at a premium and consumers’ are hesitant to believe their purchase will have an impact (Vermier & Verbeke, 2006). Marketing can help close the gap between attitudes and behavior if the right messages are used. Green marketing often sounds like a good idea, but if it is not based on good intentions and a deep understanding of consumer decision making, then it will not work (Grant, 2008).

**Animal Welfare**

Animals are often seen as a part of nature or at least similar to the natural environment, especially in how people view their purpose. Like nature, animals have some intrinsic value, but generally a utilitarian value, especially when it comes to livestock. In the United States, people desire some protection of farm animals, whether that be based on their intrinsic or utilitarian values. Munro (2005) distinguished between animal welfare and animal rights. Animal rights refers to the idea that animals, like humans, have innate rights and interests that should not be compromised for human benefit. Animal rightists do not believe humans should farm animals at all and often promote vegetarianism and veganism (Munro, 2005). Animal welfare represents a balance between human and animal interests and refers to the idea that animals should
not be treated cruelly or in a way detrimental to their health and well-being (Munro, 2005).

The notion of animal rights is often seen as too extreme for most Americans; however, most support the notion of animal welfare (Garner, 1993). Support or activism in animal welfare and animal agriculture issues (among others) can occur at many levels, from participation in an animal protection group to private behavior such as consumption choices (Seguin, Pelletier, & Hunsley, 1998). In the sphere of individual behavior, a consumer will likely choose a product associated with improved animal welfare or production if they somehow feel responsible and/or that their choices will make a difference (Blandford, Bureau, Fulponi, & Henson, 2002; Vermeir & Verbeke, 2006).

**Political Actions Affecting Meat Production**

If some consumers are not already “voting with their dollar” to voice support for alternative livestock production practices, they are supporting state legislation in the voting booth on initiatives advocated by the Humane Society of the United States and other well-funded opponents of conventional practices. In Florida, Arizona, and California, voters have overwhelmingly supported a policy banning common methods of animal confinement for pregnant pigs, egg-laying hens, and veal calves.

The animal agriculture industry tends to blame animal agriculture opponents, such as People for the Ethical Treatment of Animals (PETA) and the Humane Society of the United States (HSUS), for misleading consumers, voters, policymakers, and the media on issues regarding animal welfare, the healthiness of meat products, and the environmental impacts of conventional practices (Crowell, 2009; Downing, 2009; Gabbett, 2008; Goodwin & Rhoades, 2009; Smith, 2009). The HSUS Factory Farms
campaign website has 31 secondary research reports on the industry’s detriments to animal welfare, eight on environmental impacts, and 13 on human health that it widely distributes to policymakers and corporations (HSUS, 2008; E. Williams, personal communication, December 4, 2008). These reports are not necessarily misleading but show that these organizations are attempting to implicate animal agriculture in detrimentally affecting human health, the environment, and animal welfare. As with any controversial topic, each side in the debate carefully selects sources and evidence that supports their perspective on the issue. The HSUS is known for campaigning heavily for animal agriculture industry reform, using emotional appeals and more persuasive message strategies than the industry groups like Farm Bureau and the Animal Agriculture Alliance (Abrams & Meyers, 2009; Goodwin & Rhoades, 2009).

Answering whether the public’s support of policy initiatives on livestock care is evidence of the animal agriculture opponent groups’ successful campaigning or Americans’ evolving value-systems regarding livestock production would be like answering the chicken or the egg conundrum. It is likely that animal agriculture opponents are more successful as a direct result of changing values and less familiarity with farming, especially livestock production. In the midst of a strong environmental movement (Dunlap & Mertig, 1992; Gottlieb, 2005), a health foods craze (Dubisch, 2004; Nestle, 2007), and a powerful animal rights movement (Rollin, 1990, 2003), meat and livestock production seem to represent a consumer commodity and issue through which people can demonstrate their values and goals for their health, the environment, and food animals. “The environmental ethic that gained worldwide prominence with
Earth Day 1990 placed emphasis on individual responsibility for personal health and social action on environmental quality and animal welfare” (Yiridoe et al., 2005, p. 196).

Within the industry, segments and individuals regard organic agriculture as another foe of the conventional industry (Obach, 2007) because organic products are often touted as better in many dimensions, including taste, nutritional value, and sustainability (Organic Trade Association, 2008). However, whether organic food actually delivers on these desires and beliefs is controversial and the subject of a scientifically inconclusive debate (Obach, 2007). A review of 162 studies conducted over 50 years found that organic food had no nutritional or health benefits over conventional food (Dangour et al., 2009). A USDA publication reviewing several studies comparing organic to non-organic agriculture production did find that, generally (with a few exceptions), organic agriculture has several environmental advantages in “a) maintaining or building soil quality, b) lessening ground and surface water contamination, c) reducing greenhouse gas emissions, d) encouraging biodiversity, e) conserving water and energy resources, and, f) recycling waste” (Gold, 2010, “Find Out More. Issues and References, number 3,” ¶ 1).

Despite the scientific debate, consumers have come to believe in the superiority of organic and more naturally produced foods. The Harris Poll found that more than three-quarters of the U.S. public believes organic food is safer for the environment (79%) and healthier (76%) than conventional foods (“Harris poll results,” 2007). The price and intense marketing of organic and other value-added animal products likely communicates to the consumer that they are indeed better than their conventional counterparts (Klonsky & Tourte, 1998). Higher prices and levels of advertising often
trigger a placebo effect in which consumers believe those products are of higher quality, and subsequently, they have better experiences with the products than those less advertised and/or with lower prices (Shiv, Carmon, & Ariely, 2005).

While some in the agriculture industry may still see organic agriculture as a detriment to the conventional industry, today, many producers and companies have embraced this niche market. This resulted in diversified production practices and purchases of organic farms and brands to capture a piece of the premiums consumers are willing to pay for these products and the positive corporate reputation that comes from being attached to an initiative that is supposedly better for animal welfare, the environment, and human health (Guthman, 2004).

Although the industry often points to animal agriculture opponent groups for the shift in people’s thinking about what is acceptable in livestock production practices in the United States, marketing organic and more naturally produced products as better than unlabeled ones may have unintended consequences. The messages consumers receive in the grocery store week after week are likely far more memorable and pervasive than what the HSUS puts in a video on YouTube or in an ad before a vote on a ballot initiative. Consumers receive multiple exposures, which are more salient than a single or few exposures to TV or Web ads/videos, to messages about meat production through package labeling claims in the grocery store. A 2009 Nielsen poll found 61% of consumers read food labels. Interestingly, shoppers at Whole Foods, Trader Joes, Publix, Costco, and Safeway were mostly likely to read labels (Hale, 2009). Jauregi and Ward (2006) surveyed a little over 14,500 households and found 57% check labels for harmful ingredients and 60% base their food purchase on using the labels.
With less than 1% of the U.S. population involved in production agriculture (Hurt, 2002), most consumers may only learn of certain production inputs from reading food labels. The question becomes, are production claims on meat labels affecting what people believe about the unlabeled product? Limited research has been done to examine the effects of production labeling claims on consumers’ attitudes toward those that do not carry such claims. Empirical research is needed to determine the effects of production claims on consumer beliefs about the conventional meat product in the United States. Such research may shed light on political actions that affect livestock production, revealing why many consumers are unwilling to pay for product attributes they perceive to be better, but are willing to support policy that would make such attributes required of all animal products.

**Loss Aversion**

Food labels are intended to be persuasive communication to convince consumers that the product is different and better than others to cause them to purchase the product (Golan et al., 2001). Many communication and psychology scholars have found numerous conditions under which persuasive communication is more effective. Persuasion, or what convinces people to change beliefs, attitudes, and behaviors, is a function of how our minds naturally want to think. Persuasive communication appeals to those cognitive preferences. One of those cognitive preferences and “perhaps the most successful and widely used explanatory construct in behavioral decision research” (Brenner, Rottenstreich, Sood, & Bilgin, 2007, p. 369) is loss aversion. Loss aversion is one of the main components of Kahneman and Tversky’s (1979) prospect theory; it shows that losses have a steeper value function than gains. In other words, losses loom larger than equivalent gains. The concept of loss aversion does not necessarily imply
that people pay more attention to losses over gains but the hedonic reaction to a loss is stronger than the reaction to a gain (Brenner et al., 2007).

Most studies examining nonloss- versus gain-message framing used quantitative descriptors (Boettcher, 2004; Idson et al., 2004; Liberman et al., 2005; Kahneman & Tversky, 1979; McDermott, 2004; Tversky & Kahneman, 1981), but limited research has tested whether the predictions of loss aversion hold for qualitatively defined frames/descriptors of equivalent gains and nonlosses. Also, additional research is needed to test this cognitive preference when the implications of the decision are more removed or not immediately known, such as consequences for personal health in the long term, the environment, and animal welfare. The present study intends to test the loss aversion theory in a context in which the consequences are more removed and not immediately obvious. These are perceived consequences for animal welfare, personal health, and the environment as marketed in production and processing claims on meat labels. Most consumers will never experience the impact of their purchase on those aspects first-hand or be able to directly attribute potential changes to it but may be more persuaded by labeling claims that better match their goals in such purchase decisions. If they are indeed loss averse, then conclusions will reflect that loss aversion is a powerful cognitive preference that permeates consumer decision-making even when consequences are more removed and qualitatively described. These findings will offer suggestions for marketers of organic and natural foods, for environmental educators and communicators seeking environmentally responsible behavior change in their audiences, and for extension agents.
Regulatory Focus Framework

Regulatory focus theory (Higgins, 1998) offers another explanation of how consumers’ decision-making and behavior operate that adds to Kahneman and Tversky’s (1979, 1981) loss aversion concept. This theory states that whether negative information is attended to more and weighted more heavily than positive information depends on people’s goals in the decision. The theory posits that individuals function according to two different types of motivations based on mental depictions of an end-state that will result from committing to a particular decision. Individuals using a promotion focus view their goals as accomplishments, hopes, and aspirations (ideals or maximal goals), and are sensitive to the presence or absence of positive outcomes, or gains and non-gains. In contrast, individuals using a prevention focus are more concerned with safety, responsibilities, and obligations (oughts or minimal goals), and are sensitive to the absence or presence of negative outcomes, or non-losses and losses.

One of the fundamental predictions of regulatory focus theory is that individuals attend to information that is relevant to the activated regulatory focus and that they weigh attributes compatible with this focus more carefully. This focus can be activated by persuasive messages such as advertising and product labels. Previous research has also shown some people are chronically self-regulating, using either the prevention focus or promotion focus when making decisions (Higgins & Silberman, 1998). Essentially, it can be a cognitive style; however, cues in the environment may cause a shift from one regulatory focus to another. Situational variables can cause changes in sensitivity, emotions, and strategic inclinations that can activate a promotion or prevention focus (Higgins, 1998).
Idson, Liberman, and Higgins (2000) added to the theory when they found that the pleasure of a gain (promotion success) is stronger than the pleasure of a nonloss (prevention success), while the pain of a loss (prevention failure) is stronger than the pain of a nongain (promotion failure). This is because success in the promotion focus is achieving a maximal goal, whereas success in prevention is failure to achieve a minimal goal. This is a different perspective than the predictions of loss aversion, which explains losses loom larger than corresponding gains. Further research is needed to test how consumers attend to nonlosses versus gains as previous contradictory evidence has been found by others as well. Levin, Schneider, and Gaeth (1998) conducted a comprehensive literature review and found conflicting evidence for loss aversion in studies testing goal framing effects (gains vs. nonlosses and losses vs. nongains) and called for more systematic research in this area.

In the context of the present study, the production labeling claims on meat products often promote the avoidance of negative outcomes with a no labeling theme or by saying how the raising of the livestock or poultry is absent of perceived risks/negative outcomes (i.e., no antibiotics, no hormones), while others may have claims focusing on the positive outcomes that will result from purchasing the product (i.e., eco-friendly, great care). This experiment will test how participants react to gain versus nonloss messages via attitudinal measures in a choice situation in which other product features (price, appearance, cut, and weight) are controlled.

**Purpose and Objectives**

Food marketers and regulators use labels and claims to differentiate products and inform consumers about their options. Government food regulators must consider the effects of food labeling to ensure the policies, standards, and guidelines for such labels
are balancing the market for agricultural products and not misleading consumers (Golan, Kuchler, & Mitchell, 2001).

While previous research shows there is a preference for products marketed as improving animal care, personal health benefits, and environmental impacts (also called credence attributes), no empirical research has examined the effects of marketing these credence attributes on consumers’ attitudes toward products without such attributes. Messages about these credence attributes can be presented (framed) in different ways potentially resulting in varying persuasive effects based on biases in people's cognitive processing. The purpose of this study was to compare the persuasive effects of gain- and nonloss-framed labeling claims. The research objectives were:

**Objective 1:** To compare the attitudinal effects of nonloss-framed claims to gain-framed labeling claims using qualitative descriptors.

**Objective 2:** To determine whether and how consumers’ attitudes toward products with no claims are influenced by production labeling claims.

**Objective 3:** To assess whether consumers’ voting intention on animal welfare policy is affected by credence attribute labeling claims.
Figure 1-1. Cover of Time magazine on August 21, 2009.

Figure 1-2. Humane Farm Animal Care’s label.
CHAPTER 2
LITERATURE REVIEW

The previous chapter established the need for the current study and the research objectives, which are to determine the effects of differently framed labeling claims on consumers' attitudes toward the credence attribute product, the conventional product, and voting intention. This chapter provides an overview of research related to consumer decision-making research with specific emphasis on cognitive biases, prospect theory, loss aversion, framing effects, and regulatory focus theory. Following this is an explanation of the study’s context in sustainable agriculture food products.

Cognitive Biases in the Construction of Choice

In explaining how people arrive at the choices they make, the rational choice theory suggests a straightforward path in which people make logical calculations based on an individually-defined preference ordering system with respect to 1) the benefits of each alternative, 2) the costs of each alternative in terms of utilities foregone, and 3) the best way to maximize utility (Simon, 1955). Therefore, actions or choices are a function of knowledge and a cost/benefit analysis, in which costs are minimized and benefits maximized. However, we now know that people do not always act or think rationally. Numerous studies in decision-making have revealed that people can make unexpected choices based on automatic heuristics and biases and how information and messages about choice options are framed rather than careful reasoning (for a review see Gilovich, 1991; Gilovich, Griffin, & Kahneman, 2002). While these simplifying heuristics often lead to accurate judgments, they also yield systematic error.

Scholars often break down information processing into two parts or two paths: one involving more systematic, careful processing and the other a more superficial or
heuristic processing of available information. One model in this area is the Heuristic-Systematic Model (HSM) (Chaiken, 1987; Todorov, Chaiken, & Henderson, 2002). The HSM describes two cognitive mechanisms called systematic processing and heuristic processing. When engaging in systematic processing, people scrutinize the available information to evaluate the validity of the message and form a judgment based on their elaborations. The systematic mode requires sufficient cognitive resources—which is affected by distraction, message repetition, time pressure, communication modality, and knowledge and expertise—and motivation—which is affected by personal relevance, need for cognition, task importance, accountability for one’s attitudes, and exposure to unexpected message content (Todorov, Chaiken, & Henderson, 2002). When people are not sufficiently motivated or do not have the necessary cognitive resources, they use heuristic processing. This mode is more nonanalytic in nature and is characterized by the use of simple decision rules or heuristics to form a judgment. One common example is the availability heuristic, which refers to the ease with which a circumstance comes to mind. Vivid scenarios such as shark attacks tend to be more top-of-mind than more objectively threatening ones like heart attacks. People may be completely unaware of their heuristic processing and may even deny that they were influenced by peripheral informational cues (Todorov, Chaiken, & Henderson, 2002).

Underlying heuristics are cognitive biases. Biases are defined as deviations from some true or objective value or as violations of basic laws of probability (Gilovich & Griffin, 2002). Tversky and Kahneman (1983) demonstrated how human judgments depart from probability theory or simple logic in their famous “Linda problem.” In this experiment, subjects read the following personality description: “Linda is 31 years old,
single, outspoken, and very bright. She majored in philosophy. As a student, she was
deeply concerned with issues of discrimination and social justice and participated in
anti-nuclear demonstrations." They were then asked to determine which of two options
was more probable: (a) Linda is a bank teller or (b) Linda is a bank teller and active in
the feminist movement. Between 80% and 90% of participants tended to select (b) as
the more probable option, even though probability theory dictates a conjunction cannot
be more likely than either of its parts (Tversky & Kahneman, 1983). Although resulting in
systematic errors, cognitive biases allow people to make decisions efficiently and can
lead to correct decisions (Haselton, Nettle, & Andrews, 2005).

**Prospect Theory**

Prospect theory (Kahneman & Tversky, 1979) was one of the first influential
theories offering a descriptive model of how people make decisions that differed from
normative and rational choice theory. Kahneman and Tversky’s (1979, 1981) studies
were able to show (1) that how the outcomes of a decision are framed can affect the
ultimate choice, and (2) that the decision maker’s evaluation under uncertainty works on
a value function with three characteristics: diminishing sensitivity, reference
dependence, and loss aversion. The theory “sheds light on the interaction between the
person and the situation in decision-making environments” (McDermott, 2004, p. 293).
Before explaining the constructs of prospect theory, a description of the original work
and later tests of the theory will provide some context.

In the original work by Kahneman and Tversky (1979), they presented findings
indicating people treat losses differently than gains in the context of risky choice
decisions involving monetary outcomes. They found 80% of participants preferred a
certain outcome of $3000 to an 80% chance of $4000 and 20% chance of nothing. This
showed, with respect to gains, people tend to be risk averse. When they reversed the prospects, 92% of participants preferred to gamble on an 80% chance of losing $4000 and 20% chance of losing nothing to a certain loss of $3000. With respect to losses, people tend to be risk acceptant. In other words, if a person stands to gain something for certain, they are less willing to take a risk to gain something more; however, if a person stands to lose something for certain, they are more willing to take a risk to lose more (Kahneman & Tversky, 1979).

In later studies advancing prospect theory, Tversky and Kahneman (1981) further examined how the framing of choices/information affects the decision made in the often cited “Asian disease problem.” Subjects given the positively framed version of a sure saving of one-third of the lives versus a one-third chance of saving all the lives and a two-thirds chance of saving no lives chose the option with the certain outcome. Subjects given the negatively framed version of a sure loss of two-thirds the lives versus a one-third chance of losing no lives and a two-thirds chance of losing all of the lives chose the risky option. The outcome of saving one-third of the lives is the same as losing two-thirds of the lives, but in the positively framed version, that was an acceptable choice, whereas in the negatively framed version, it was unacceptable (Tversky & Kahneman, 1981).

Boettcher (2004) found support for prospect theory when individuals evaluated a political decision in the context of a terrorist-hostage situation at a U.S. embassy. In the gain frame, hostages were rescued or not rescued, and in the loss frame, hostages died or did not die. However, when subjects came together in a group to make a decision, the preference reversal did not occur; therefore, support was not found for prospect
theory in group decision making. In a group context, people were more risk acceptant regardless of the frame (Boettcher, 2004; McDermott, 2004). Numerous studies, however, have indicated support for prospect theory in a wide variety of domains including politics, business, finance, management, and medicine (see Maule & Villejoubert, 2007, for a review).

The implications of prospect theory for the present study suggest individuals may consider messages about credence attributes of meat products differently depending on how the information is presented to them. A person’s attitudes toward the product may be stronger if the message about environmental impacts, for example, is framed as avoiding a loss than if it is framed as achieving a gain for the environment.

Prospect theory (depicted in Figure 2-1) proposed an explanatory model of choice that deviated from rational choice theory in four important ways, resulting in the main constructs of the theory: diminishing sensitivity, reference dependence, loss aversion, and framing effects. What follows is a brief explanation of the constructs relevant to this study and a deeper explanation of the last two, which will be tested.

Kahneman and Tversky proposed that people make choices regarding gains and losses in terms of deviations from a reference point, which is usually the status quo, but can be deviations from an aspiration level or some other reference point (Heath, Larrick, & Wu, 1999). Soman (2004) explained that values are coded as gains and losses relative to a reference point, meaning the decision is reference dependant. Looking at the Asian disease problem in Tversky and Kahneman’s 1981 study, in one condition, “the outcomes are framed in terms of saving lives; the potential disaster of losing all the lives becomes the neutral reference point” (Soman, 2004, p. 383).
The frame, therefore, can change the perceived reference point of the question. A frame refers to how information is described and interpreted (Bottecher, 2004). Credence attribute messages on meat labeling can suggest a reference point of personal health deterioration (when framed as nonloss), thereby causing people to want to avoid the potential loss. These framing effects demonstrated the cognitive bias of loss aversion, in which the notion of a certain loss is more aversive, causing people to accept a risk (with poor odds to gain) to potentially avoid that loss. Following, is an in-depth explanation of loss aversion and framing effects, which are the most relevant to the present study.

Loss Aversion: A Bias and Construct in Prospect Theory

“Loss aversion is perhaps the most successful and widely used explanatory construct in behavioral decision research” (Brenner et al., 2007, p. 369). As one of the main components of Kahneman and Tversky’s (1979, 1981) prospect theory, it shows that losses have a steeper value function than gains. Examining Figure 2-1, losses and non-losses are measured against the steep loss part of the value curve, whereas gains and non-gains are measured against the shallow part of the value curve. In other words, losses loom larger than equivalent gains. Loss aversion was originally proposed as an explanation for the endowment effect, which is what explains people’s tendency to place a higher value on an item that they own than on an identical one that they do not own (Kahneman, Knetsch, & Thaler, 1990).

The concept of loss aversion does not necessarily imply that people pay more attention to losses over gains but the hedonic reaction to a loss is stronger than the reaction to a gain (Brenner et al., 2007). Hedonics refer to the basic human emotions of pleasurable and unpleasurable states of consciousness (Kahneman, Diener, &
Schwartz, 2003). Imagine the reaction of an elementary school student that loses a gold star from their publicly displayed achievement tally. It is likely much more of a reaction than when they received that gold star. Just as “happy marriages can be easily knocked off-line, but it takes an enormous amount of time, effort, and commitment to repair a marriage that is breaking apart, and in many instances even that cannot fix what has already broken” (McDermott, 2004, p. 298). This cognitive bias is why gas stations advertise a lower price for paying cash or using their credit card, rather than an advertised surcharge for using a credit or debit card; people are more willing to forego gains than to accept losses (Thaler, 1980).

Although seemingly irrational in the context of business and market transactions, it has roots in lower-level psychological laws that seem adaptive to basic environmental demands. Thus the asymmetry of people’s reactions to pain versus pleasure is eminently sensible in a world that punishes those who ignore danger signs more than it rewards those who pursue signs of pleasure (Newell, Lagando, & Shanks, 2007, p. 119).

Many studies have found support for loss aversion (see Levin et al., 1998 for a review). One of the more recent studies testing loss aversion found a greater hedonic reaction to losses than to non-gains (supportive of loss aversion) using three different experimental scenarios, including the following one regarding labor union contract negotiations:

**Gain/non-gain condition:** “one of the conditions listed in the proposal is an increase in employee benefits of approximately $200.”

**Loss/non-loss condition:** “one of the conditions listed in the proposal is a decrease in employee benefits of approximately $200.”

Participants in the gain and loss (non-gain and non-loss) conditions answered the question “How would you feel if the condition is written (is removed and not written) into the new contract?” on a scale ranging from −9 (very bad) to 9 (very good). (Liberman, Idson, & Higgins, 2005, p. 531)
The authors found that gains were perceived as more intensely positive than non-losses, a result that is opposite to the prediction derived from loss aversion. The figure used to depict prospect theory and loss aversion in their study includes a depiction of non-gains and non-losses (see Figure 2-2), which makes this alternative finding more visible. Similar findings were presented in Idson et al. (2000). Both studies offered regulatory focus theory as a possible explanation for the findings, although the authors made no mention of measuring regulatory focus. Regulatory focus theory explains that how people evaluate and react to gains and losses is controlled by how they envision the goal or outcome of the decision (Higgins, 1998). The mechanism that moderates this is called the regulatory focus. These findings suggest an area for continued study in other contexts before conclusions can be made regarding the explanatory strength of loss aversion with respect to gains versus non-losses.

In summary, loss aversion theory states that people have stronger reactions to potential losses than potential gains. The theory predicts the same should hold true for nonlosses (avoiding a loss) relative to gains (achieving a gain); however, some scholars (Idson et al., 2000; Liberman et al., 2005) have found inconsistencies with this prediction. More research is needed to compare the persuasive effects of gain- versus nonloss-framed messages. Also, most studies examining nonloss- versus gain-message framing have used quantitative descriptors (Boettcher, 2004; Idson et al., 2004; Liberman et al., 2005; Kahneman & Tversky, 1979; McDermott, 2004; Tversky & Kahneman, 1981). Additional research is needed to test whether the predictions of loss aversion hold for qualitatively defined frames/descriptors of equivalent gains and nonlosses.
Framing Effects

What Kahneman and Tversky (1979, 1981) and other previously mentioned researchers have found is that people will arrive at different decisions depending on how the choice information is framed. Framing, at a basic level, refers to the process through which individuals or groups make sense of their environment; frames are cultural structures that organize understanding of social phenomena. “Packets of incoming information pass through various cognitive, affective, and/or social filters to produce a ‘perception’ of the outside world. This construction of reality then drives judgment and decision-making and ultimately behavior” (Bottecher, 2004, p. 332-333). Although this may be an internal process, it is often constructed by some external actor—either deliberately or unintentionally (Bottecher, 2004).

The focus of framing effects in psychology and marketing is slightly different from media framing and political issue framing. Agricultural communication and general communication researchers often use a different conception of framing, so it is important to understand the differences in how framing effects can be operationalized and studied. The psychology literature’s definition of a framing effect is when two “logically equivalent (but not transparently equivalent) statements of a problem lead decision makers to choose different options” (Rabin, 1998, p. 36; Tversky & Kahneman 1981). This is called equivalency framing. In media and issue framing effects literature, an alternative explanation is used. Druckman (2001) described media or issue framing effects as when “a speaker’s emphasis on a subset of potentially relevant considerations causes individuals to focus on these considerations when constructing their opinions” (p. 1042). In media and issue framing effects studies, the frames are rarely logically equivalent. They are often “qualitatively different yet potentially relevant
considerations” (Druckman, 2004, p. 672). Issue and media framing involve the selection of some aspects of a situation, making them more salient through communicating text with the idea of advocating a particular solution or interpretation of the topic (Entman, 1993). For example, the debate on universal health care is typically framed by one side as “health care is a basic human right” and by the other side as “not the government’s or taxpayers' responsibility.”

This study deals exclusively with equivalency framing and its effects on decision makers, meaning two different, but logically equivalent frames are used. Levin and Gaeth (1988) offer a good example. They found variation in quality preferences regarding beef depending on whether a beef product was labeled as being 75% lean or 25% fat. The ground beef was evaluated by subjects as better tasting and less greasy when it was labeled in the positive light (75%) lean. The common adage that pessimists see the glass half empty, and optimists see it half full, demonstrates a complimentary description of the same object that is viewed in two different ways. Objectively, a glass half empty is a glass half full, but people will make different decisions about that object depending on how it is presented to them.

“Throughout the literature, valence framing effects, wherein the frame casts the same critical information in either a positive or a negative light, are often treated as a relatively homogeneous set of phenomena” explained solely by prospect theory (Levin et al., 1998, p. 150; emphasis in original). Levin et al. (1998) organized and interpreted past literature on framing effects to explain contradictory and weak support of prospect theory, thereby demonstrating the existence of different types of framing effects with different underlying mechanisms and consequences.
Risky Choice Framing Effects

Framing, as defined by Tversky and Kahneman (1981), is a “the decision-maker’s conception of the acts, outcomes, and contingencies associated with a particular choice” (p. 453). This means the choice involves their perceptions of the courses of action, the outcomes associated with the alternative, and the likelihood associated with the outcomes. To study framing effects in the vein of prospect theory, one would set up an experiment as outlined in Figure 2-3; however, many recent studies of framing effects have “deviated greatly from the operational definitions and theoretical concepts used in the original studies” (Levin et al., 1998, p. 151).

The framing effects studied in prospect theory are what they call the risky choice framing paradigm (Figure 2-3) in which the outcomes of a potential choice involving options of differing risk levels are described/framed in different ways. In this type of framing, risk preference is affected as seen in Kahneman and Tversky’s (1979, 1981) original studies. Overall, the evidence from multiple studies on framing effects in the risky choice paradigm show a relatively consistent tendency for people to be more risk acceptant when the options are framed to focus attention on the chance to avoid losses than when options focus on the chance to realize gains (Levin et al., 1998).

Goal Framing Effects

Goals themselves can “govern or ‘frame’ what people attend to, what knowledge and attitudes become cognitively most accessible, how people evaluate various aspects of the situation, and what alternatives are being considered” (Lindenberg & Steg, 2007, p. 119). Goal framing effects refer to the impact of persuasion depending on how a consequence or implied goal of a behavior is framed (see Figure 2-4). What is different about goal framing is that both frames should enhance the evaluation of the issue. It is a
matter of determining which type of goal—to avoid a loss or achieve a gain/benefit (Levin et al., 1998).

Levin, Gaeth, Evangelista, Albaum, and Schreiber (2001) directly tested goal framing effects in the context of reducing red meat consumption with American and Australian subjects. The manipulation was:

**Positive frame condition:** If you discontinue eating red meat you will be able to reduce the level of cholesterol in your blood. Thus, you will significantly decrease the likelihood of the early onset of heart disease.

**Negative frame condition:** If you continue eating red meat you will not be able to reduce the level of cholesterol in your blood. Thus, you will fail to significantly decrease the likelihood of the early onset of heart disease.

Participants in each condition were then asked to write a number between 0 and 100 to indicate how likely they are to eliminate red meat from their diet, and to write a number between 0 and 100 to indicate how likely they are to reduce by at least 1/3 the amount of red meat in their diet. (Levin et al., 2001, p. 66)

American subjects rated the complete elimination of red meat and the reduction of red meat significantly higher in the negative frame condition; however, this effect was not significant for Australian subjects. Several other studies have generally found a similar loss aversion bias in which avoiding a loss is greater than the desire to obtain a gain of So for example, a meat product with credence attribute claims framed as avoiding loss or damage to personal health, animal welfare, and the environment may create a different attitudinal response in comparison to claims framed as achieving gains or repairing personal health, animal welfare, and the environment.

Later research found this loss aversion bias in goal framing effects can be mitigated by age (Shamaskin, 2009), involvement (Maheswaran & Meyers-Levy, 1990; Miller & Miller, 2000), and culture (Levin et al., 2001) such that that those higher in age and those higher in involvement are more influenced by positive frames.
Levin et al. (1998) found the evidence for goal framing is less homogenous than for risky choice and attribute framing and called for more research in this area of framing effects. Furthermore, the findings explained earlier from Idson et al. (2000) and Liberman et al. (2005) revealed inconsistencies with loss aversion with respect to gains versus non-losses. These scholars and others have developed theory to explain a cognitive style underlying how people process information and their goals, called regulatory focus.

**Regulatory Focus Theory**

Regulatory focus theory (Higgins, 1998) offers another explanation of how consumers’ decision-making and behavior operate that adds to Kahneman and Tversky’s (1979, 1981) loss aversion concept. This theory states that whether negative information is attended to more and weighted more heavily than positive information depends on people’s goals in the decision, which is controlled by the individual’s regulatory focus. The theory posits that individuals function according to two different types of motivations based on mental depictions of an end-state that will result from committing to a particular decision. Those with a prevention focus will regulate their behaviors away from negative outcomes, while those with a promotion focus will regulate their behaviors toward positive outcomes (Higgins, 1998).

Individuals using a promotion focus view their goals as accomplishments, hopes, and aspirations (ideals or maximal goals), and are sensitive to the presence or absence of positive outcomes, or gains and non-gains. When the end-state is desired/positive, individuals are said to have an approach goal. Approach goals are achieved by maximizing the presence or minimizing the absence of positive outcomes (Higgins, 1998; Aaker & Lee, 2001). For example, an environmentally conscious consumer may
wish to improve the environment (desired end-state) and purchase meat with credence attributes (strategy that maximizes the presence of a positive outcome). In contrast, individuals using a prevention focus are more concerned with safety, responsibilities, and obligations (oughts or minimal goals), and are sensitive to the absence or presence of negative outcomes, or non-losses and losses. When the end-state is undesired/negative, individuals are said to have an avoidance goal. Avoidance goals are achieved by minimizing the presence or maximizing the absence of negative outcomes. For example, an environmentally conscious consumer may wish to avoid damaging the environment (undesired end-state) by purchasing meat with credence attributes (strategy that minimizes the presence of a negative outcome). The examples used with meat purchasing demonstrate that people can envision their goals for the environment slightly differently (improve or repair vs. avoid damage) but still use the same strategy (purchase meat with credence attributes) to attain the goal. Products, like meat with credence attributes, can be “regarded as a means to approaching a positive outcome or avoiding a negative one” (Florack, Scarabis, & Gosejohann, 2005, p. 240).

**Sources of Regulatory Focus**

Regulatory focus is affected by three sources: chronic regulatory focus of the decision maker, contextual priming during or before the decision task, and the decision task itself (Florack et al., 2005). A chronic regulatory focus is determined by caretaker-child interactions. A child’s behavior regulated by positive reinforcement increases their sensitivity to promotion goals, whereas negative reinforcement increases their sensitivity to prevention goals (Higgins & Silberman, 1998; Higgins, 1998). “Like other motivational orientations, regulatory focus may vary between individuals not only dispositionally, but also momentarily” and independently of the chronic focus (Florack et
al., 2005, p. 237). Situational variables can cause changes in sensitivity, emotions, and strategic inclinations that can activate a promotion or prevention focus (Higgins, 1998). This is shown in studies through which subjects are primed to adopt a promotion or prevention focus. The priming is typically done through having individuals complete a thought-listing activity. Freitas and Higgins (2002) offer the following induction script:

**Promotion:** Please think about something you ideally would like to do. In other words, think about a hope or aspiration that you currently have. Please list the hope or aspiration below.

**Prevention:** Please think about something you think you ought to do. In other words, think about a duty or obligation that you currently have. Please list the duty or obligation below (Freitas & Higgins, 2002, p. 3).

A decision task or consumer good can also be associated with a certain regulatory focus. Zhou and Pham (2004) found participants who made prevention-related investment decisions were more likely to have adopted a prevention focus as indirectly measured through participants choosing a product with prevention claims. In examining regulatory fit effects, Florack and Scarabis (2006) discovered that sunscreen is a product category that prompts a prevention focus. Limited research has been done to determine what other decision tasks and consumer goods can be associated with a particular regulatory focus.

**Regulatory Focus in Consumer Decisions**

Regulatory focus theory has been tested in a number of consumer decision making contexts to determine the robustness of the theory and continue its expansion. What follows is a review of the key studies in this area.

**Regulatory fit effect**

One of the fundamental predictions of regulatory focus theory is that individuals attend to and have stronger hedonic reactions to information that is relevant to the
activated regulatory focus and that they weigh attributes compatible with this focus more carefully (Higgins, 2002). This is called the regulatory fit effect. Florack and Scarabis (2006) found a relationship between an advertising claim and consumers’ regulatory focus had an impact on product preferences. Their study compared participants that were primed to adopt a promotion focus or prevention focus, and their preferences for sunscreen, based on the packaging claims on the bottle. One set of claims emphasized a promotion focus (“Enjoy the sun”) while the other emphasized a prevention focus (“Give sunburn no chance”). Participants who were asked to think about negative (positive) things they try to avoid (pursue) while on vacation showed a stronger preference for a brand with a prevention-focused claim (promotion-focused claim). The product was a means to achieve the goals of approaching a positive outcome (getting a tan) or avoiding a negative outcome (sunburn) (Florack & Scarabis, 2006). As mentioned in the discussion on sources of regulatory focus, they found sunscreen is a product category that prompts the prevention focus. Their manipulation checks, however, did show successful priming.

One explanation for the regulatory fit effect “is that the fit of the message with a person’s regulatory focus leads to enhanced persuasion because individuals evaluate messages more positively when they are in line with their attitudes, motivations, and needs” (Florack et al., 2005, p. 244). The perception of fit may be used as a heuristic and lead to biased message processing. Regulatory fit evokes a feeling of importance or “feeling right,” which gets interpreted as a positive evaluation (Higgins, 2002). Furthermore, it increases the recipient’s engagement with the message and is perceived as more persuasive (Cesario, Higgins, & Scholer, 2008). If the consumer’s
attention to meat with credence attributes prompts a particular regulatory focus, then the messages that fit that focus would be the most appealing.

**Moderators of regulatory focus effects**

Wang and Lee (2006) looked at how regulatory focus theory affects consumers’ evaluations of products to determine if advertising promotion and prevention messages simultaneously would enhance or diminish persuasion. In addition, they examined the effects of involvement on the regulatory fit effect. They found subjects in the low-involvement condition place more weight on features that fit their regulatory focus when reviewing both fit and non-fit product feature claims. Timing subjects’ evaluations of the product feature claims showed those primed with a prevention focus spent more time looking at the prevention claims, while those with a promotion focus spent more time on promotion claims. Again, this only occurred in the low-involvement condition. In the high-involvement condition, subjects spent about the same amount of time on both types of claims. They did show that their evaluation of the products was driven more by their perceived attractiveness of the features than by the extent of processing. That is important because one could have argued that their preference for the product with feature claims that fit their regulatory focus was a function of (mediated by) time spent processing that information. In sum, “people rely on their regulatory focus as a filter to process information selectively to construct their preferences when cognitive resources are limited” (Wang & Lee, 2006, p. 36).

The research on regulatory fit effect demonstrates that it is more reflective of heuristic versus systematic processing. Evan and Petty’s (2003) finding that the regulatory fit effect is moderated by need for cognition is consistent with Wang and Lee’s (2006) findings regarding involvement.
In a study aptly titled “I seek pleasures and ‘we’ avoid pains: The role of self-regulatory goals in information processing and persuasion,” Aaker and Lee (2001) found individuals who viewed themselves as independent were more persuaded by promotion-focused product information, whereas, those who viewed themselves as interdependent were more persuaded by prevention-focused product information. Subjects evaluated messages on the Welch’s Grape Juice website. The independent variable of self-view was manipulated in two ways: (1) picture focusing on an individual or family, and (2) text that emphasized the individual (“you,” “your”) or the interdependent-self (“family”). The independent variable of regulatory focus was manipulated through product claims about Welch’s Grape Juice. The promotion focus emphasized messages its ability to increase energy. The prevention focus messages emphasized its ability to prevent cancer and heart disease (Aaker & Lee, 2001). Figure 2-5 illustrates their findings that promotion information appeals more to the independent self-view. Aaker and Lee’s (2001) findings were important because they demonstrated that accessible self-view moderates the persuasiveness of promotion-/prevention-focused messages that could easily be manipulated through advertising and a strategy to approach different audience segments (families vs. individuals).

Implications for Loss Aversion

Other researchers (Idson et al., 2000; Idson, Liberman, & Higgins, 2004; Liberman et al., 2005) added to the theory when they found that the pleasure of a gain (promotion success) is stronger than the pleasure of a non-loss (prevention success), while the pain of a loss (prevention failure) is stronger than the pain of a non-gain (promotion failure) (see p. 44 of this document for a complete description of the experiment).
Regulatory focus theory predicts that because promotion success (gain) is success in achieving a maximal goal (a standard one hopes to achieve), it should be experienced more intensely than prevention success (nonloss), which is success in achieving a minimal goal (a standard one must achieve) (Liberman et al., 2005, p. 269).

The pleasure of a gain being stronger than the pleasure of a non-loss is a different perspective than the predictions of loss aversion, which explains losses loom larger than corresponding gains. Idson et al. (2000), however, did not directly examine the predictions derived from loss aversion, where as Idson et al. (2004) and Liberman et al. (2005) did. They suggested “that more caution is needed in using [loss aversion] to explain decision making phenomena in economics, political science, and social psychology,” particularly when examining gains versus non-losses (Liberman et al., 2005, p. 534). Furthermore, they called for more research to determine whether regulatory focus effects overwhelm the predicted loss aversion effect for gains versus non-losses, which is what the present study intends to address.

**Summary of Regulatory Focus Theory**

The studies presented on regulatory focus theory demonstrate that decision makers evaluate information that fits their focus more favorably than information that does not. People tend to elaborate, better-understand, and “feel right” when presented with information in tune with their regulatory focus (Cessario et al., 2008). Regulatory focus theory offers implications for the design of messages as evidenced in Aaker and Lee’s (2001) self-view study and Liberman et al.’s (2005) study of gains versus non-losses. Figure 2-6 provides a conceptual model of regulatory focus theory.

**Measuring Framing Effects through Attitudes**

Studies in agricultural economics often examine different ways of labeling food to determine people’s preferences (Hu, Woods, & Bastin, 2009). They determine
preference by measuring people’s willingness to pay (WTP) for a product with certain attributes. The concept of a preference is, in some ways, the counterpart in economics to the concept of an attitude in psychology, “but the logic of attitudes and the logic of preferences are quite different” (Kahneman & Sugden, 2005, p. 164). Preferences are subjective, but their logical structure is objective. If a consumer prefers a ground beef product that is 25% fat, they should prefer a product that is 75% lean. Attitudes are not objective in structure; therefore, a consumer might have a negative attitude toward a ground beef product that is 25% fat but have a positive attitude toward one that is 75% lean. The occurrence of framing effects does not violate the logic of attitudes as it does the logic of preference (Kahneman & Sugden, 2005). Preferences are best measured by making people choose between two options, while attitudes are best measured by affective responses to a single object. Attitudes have a reasonable amount of stability. “This stability of attitudes lends some stability to the choices that people make, but attitudes are also susceptible to a lot of manipulations that are not allowed to have any effect in a rational theory of preferences” (Kahneman & Sugden, 2005, p. 165). Therefore, a framing effect should yield a change in attitude.

An attitude is defined as an association between an object of thought and a valence evaluation with three components: cognitive, emotional, and behavioral (Ostrom, Bond, Krosnick, & Sedikides, 1994). Cognitive responses are based on beliefs, inferences, knowledge, and assumptions about the attitude object. Emotions are the feelings connected to thinking or experiencing an attitude object. Behavior is the action or actions taken in response to the attitude object (Ostrom et al., 1994). Similarly to Ostrom et al. (1994), Batra and Ahtola (1991) state that “consumer attitudes have
distinct hedonic and utilitarian components” (p. 168). The hedonic component refers to affective/emotional gratification from consumption behavior. The utilitarian component refers to the instrumental, practical reasons. Attitude, therefore, can be measured through utilitarian and hedonic descriptors.

**Context of the Theoretical Research**

The term “sustainable agriculture” is often used to incorporate the dimensions of personal health (food safety), the environment, and animal welfare. It is difficult to define because both conventional and organic agriculture attempt to frame their practices as sustainable. Definitions of sustainable agriculture vary widely. A basic, conservative definition is:

The primary goals of sustainable agriculture include: (1) providing a more profitable farm income; (2) promoting environmental stewardship, including protecting and improving soil quality, reducing dependence on non-renewable resources, such as fuel and synthetic fertilizers and pesticides, and minimizing adverse impacts on safety, wildlife, water quality and other environmental resources; (3) promoting stable, prosperous farm families and communities. (Sustainable Agriculture Research & Education [SARE], n.d., ¶3)

It is also defined as “a way of raising food that is healthy for consumers and animals, does not harm the environment, is humane for workers, respects animals, provides a fair wage to the farmer, and supports and enhances rural communities” (Sustainable Table, n.d., ¶1). Even those using conventional agricultural practices could argue that they are sustainable whether they ascribe to either definition. These two definitions may lead one to conclude that ‘the devil is in the details’ and sustainability is in the eye of the beholder. Regardless, most people have strong, pleasurable associations with the idea of sustainable agriculture (Williams & Wise, 1997); therefore, products marketed on dimensions of sustainability benefit from those associations.
The problem with the marketing of these food products is that it could suggest the unlabeled or conventionally-produced foods are inferior and from unsustainable agricultural systems. The United States government frames the organic label as a “marketing label,” and rejects the idea that organic food production would have relative advantages to the environment, health or food quality (Boström & Klintman, 2003). The organic label and production claims are not meant to differentiate the food as safer, but unintentionally, they may have. Government regulations have typically been used to distinguish between safe and unsafe foods; therefore, organic standards could give consumers the impression that conventionally produced foods are unsafe (Klonsky & Tourte, 1998). In addition, the price and intense marketing of organic and other value-added animal products likely communicates to the consumer that they are indeed better than their conventional counterparts (Klonsky & Tourte, 1998). Higher prices and levels of advertising often trigger a placebo effect in which consumers believe those products are of higher quality, and subsequently, they have better experiences with the products than those less advertised and/or with lower prices (Shiv et al., 2005). Food regulators need to have an understanding of how production claims labeling affects consumers’ beliefs about meat in order to balance the market for such products and avoid misleading consumers. Research investigating whether consumers’ attitudes toward conventionally produced products are affected by production claims and how these attitudes might translate into behavioral intent (e.g., intent to support an animal welfare ballot initiative) has yet to be done. Such research may also shed light on political actions that affect livestock production, revealing why many consumers are unwilling to
pay for product attributes they perceive to be better, but are willing to support policy that would make such attributes required of all animal products.

The attitudes toward products from sustainable agricultural systems are typically positive. Consumers’ reasons for preferring meat products from such agricultural systems are: (1) health and nutritional benefits, (2) improved animal welfare, and (3) decreased environmental impact (AMI & FMI, 2008, Yiridoe et al., 2005). What is unknown is how consumers envision these three goals: are they trying to approach positive outcomes, or avoid negative outcomes? Testing the theories of loss aversion, and regulatory focus in the context of food labeling offers implications for marketing sustainable agricultural products and the market for all agricultural products. Furthermore, this application context can be used to test whether regulatory focus effects can overwhelm the predictions of loss aversion, and how the predictions of loss aversion hold when communicating gains and nonlosses qualitatively.

**Summary**

The review of the literature outlined in this chapter provided an overview of biased information processing with an emphasis on loss aversion, framing effects, and regulatory focus theory. Current gaps in the literature illustrate the need to further explore message framing effects of gains versus nonlosses communicated qualitatively and the effects of credence attribute labeling on consumers’ attitudes toward products without such claims and voting intention on an animal welfare ballot initiative.
Figure 2-1. Value function as proposed by prospect theory. Obtained from Jacob and Ehret (2006).

Figure 2-2. Value function under prospect theory with reference to gains/non-gains and losses/non-losses. Obtained from Liberman et al. (2005).
Figure 2-3. Risky choice framing paradigm (Levin et al., 1998)

Figure 2-4. Goal framing paradigm (Levin et al., 1998).
Figure 2-5. Website evaluations as a function of situational prime and regulatory focus (Aaker & Lee, 2001).
Figure 2-6. Regulatory focus theory conceptual model.
CHAPTER 3
METHODOLOGY

The purpose of this study was to compare the persuasive effects of gain- and nonloss-framed labeling claims. The objectives of this study were to determine the effects of differently framed labeling claims on consumers’ attitudes toward the credence attribute product, the conventional product, and voting intention. The theories of loss aversion (Tversky & Kahneman, 1981) and goal framing effects (Levin et al., 2001) predict that losses and potential losses garner a stronger hedonic reaction than gains; therefore, avoiding a loss should yield a stronger response than achieving a gain. Although two studies have suggested gains are reacted to more strongly than nonlosses (Idson et al., 2005; Liberman et al., 2005) and offer the regulatory focus theory as an explanation, the literature testing and supporting the predictions of loss aversion is far more extensive. However, to ensure regulatory focus is not affecting the attitudinal response, subjects' chronic regulatory focus will be measured and controlled statistically. Subsequently, the following hypothesis is offered:

**H1**: When controlling for regulatory focus, subjects exposed to nonloss-framed claims will have more positive attitudes toward the product with production claims than those exposed to gain-framed labeling claims or control group claims.

The literature has suggested the intense marketing of sustainable agriculture products or food products with production claims could communicate that the unlabeled or conventionally produced foods are inferior and from unsustainable agricultural systems (Klonsky & Tourte, 1998). Therefore, in examining the effects of production claims on attitudes toward conventional products that do not have production claim labeling and subsequent voting behavior on an animal welfare ballot initiative, the following hypotheses are:
H2: When controlling for regulatory focus, subjects exposed to nonloss-framed claims will have less positive attitudes toward the product without production claims than those exposed to gain-framed labeling claims or control group claims.

H3: Subjects exposed to a food product with production claims and a product without such claims will have less positive attitudes toward the product without the claims than those who do not see a food product with production claims.

H4: Subjects exposed to a food product with production claims will be more likely to have intentions to vote “yes” for an animal welfare ballot initiative than those who do not see a food product with production claims.

The experiment focused on determining how an individual’s attitudes toward meat products are influenced by differently framed credence claims and how voting behavior on animal welfare initiatives is influenced. A subject’s regulatory focus (prevention, promotion) and the two independent variables (presence or absence of production labeling claims, frame of production labeling claims) should lead to different effects on attitudes toward the product with the claims and toward the product without the claims and the subject’s intent to support an animal welfare ballot initiative. See Figure 3-1.

Research Design

This study used a 2 (production claims: present and not present) x 3 (claim frame: nonloss, gain, and neutral) between-subjects incomplete factorial design. This design was chosen to determine (1) the effects of gain-framed claims and nonloss-framed labeling claims regarding animal welfare and environmental impact on attitude toward the product, and (2) the effects of production claims on attitudes toward products without production labeling claims and voting intention. Factorial designs allow the determination of the effect of two manipulated independent variables on the dependent variables and the interaction among the variables.

The design of the study is depicted in Table 3-1 and was implemented as follows: R= random assignment, X= treatment (independent variable), O= dependent variable
X_{A1}= Exposure to production claims and product without production claims
X_{A2}= No exposure to production claims (control)
X_{B1}= Environmental and animal welfare nonloss-framed claims
X_{B2}= Environmental and animal welfare gain-framed claims
X_{B3}= Neutral-framed general product claims (control)
O_1= posttest measure of attitude toward product with claims
O_2= posttest measure of attitude toward product without claims
O_3= posttest measure of voting on animal welfare ballot initiative

An incomplete factorial design is used when some combinations of values of factors are non-sensical or not of theoretical interest (Shadish, Cook, & Campbell, 2002). The cells of X_{A2B1} and X_{A2B2} are considered non-sensical because when the production claims are not present, they clearly cannot also have a frame. X_{A2} and X_{B3} serve as the control levels for each factor. The X_{A1B3} cell is of no theoretical interest.

**Controlling Threats to Internal and External Validity**

The research design accounted for a number of threats to internal and external validity. The threat of selection to internal validity was controlled by using random assignment to conditions using a random number generator, in addition to measuring some antecedent and intervening variables that could be controlled for statistically if necessary. Attrition/mortality was not a major concern in this design, however, extensive pretesting helped determine the ease and length of time it takes to complete the experiment aided in preventing attrition and fatigue. The threat of instrumentation (the instrument changing from person-to-person) was a concern in this study given the reliance on technology to administer the treatment and collect data. The online survey tool was extensively pretested on various computers, Internet browsers, and operating
systems to protect against this threat. Furthermore, subjects were asked if they could view the images depicting the treatment and automatically skipped the dependent variable measurements if they were not able to view the photos. Finally, other extraneous variables related to the treatment that would potentially interfere with the internal validity were controlled across conditions, including the chicken product, label design, brand, and price. The labels were designed by the researcher, printed on label paper, and placed directly on a package of boneless, skinless chicken breasts. The labels were swapped for the different treatment groups on the same package of chicken, which was photographed in a controlled studio environment by a professional photographer to ensure reliability between the treatment groups.

Construct validity threats were controlled through pretesting, pilot testing, and manipulation checks in the experiment and also by ensuring the constructs were well-defined and measured using multiple questions (which controls for non-measure bias). Mono-operation bias was controlled by using two different treatments (gain and nonloss frame) and a control group that did not receive the treatment. Suspicion/hypothesis guessing was controlled for by not telling participants that they are participating in an experiment. Instead, they were told upfront that it is a survey. This also controlled for compensatory rivalry, since they will not know there may be different surveys (treatment conditions). Administering the experiment online and by not using leading language or leading questions also controlled for the experimental expectancies threat. The interactions of other treatments on the outcomes were controlled for by measuring some of those potential interactions (previous purchasing behavior, label attention) and using random assignment to conditions.
Subjects

The convenience sample for this study included students from four courses at a large southeastern university: a research and business writing class (N= 192), a public speaking class (N= 176), an introduction to journalism class (N= 138), and an introduction to mass media class (N= 234). Subjects were offered course extra credit to incentivize participation. When the online experiment was sent out, 740 students were enrolled in these classes. The courses contained students from a variety of colleges and majors and at varying phases in their program (freshman, sophomore, juniors, and seniors). Students enrolled in more than one of these courses were accounted for and only allowed to participate in the study once; however, students enrolled in more than one of the classes used in the sample were given extra credit in all of them by taking the questionnaire once.

Convenience sampling is often used in psychology research, usually with easily accessible college students (Peterson, 2001). This method involves choosing a sample based on what is convenient to access. Cognitive psychologists argue that when examining cognitive mechanisms, like memory, attention, or biases, college students are an acceptable sample because they will maintain the same neural networks. Making generalizations about consumer behavior from college students may be more difficult. Peterson (2001) reviewed experimental studies using different subject samples and found differences in the direction and magnitude of effect sizes between student and non-student samples. He advised that making generalizations about consumer behavior from college student samples to non-student samples should be done with caution. However, when examining a theoretically interesting causal relationship (strictly theory testing), the focus may need to be more on internal validity than external, and,
therefore, using a college student convenience sample is appropriate (Kam, Wilking, & Zechmeister, 2007).

The nature of the study is to examine cognitive mechanisms (framing effects, loss aversion, and regulatory focus) that have shown prevalence in multiple nonstudent samples (Druckman, 2001) as well as student samples (Liberman et al., 2005; Tversky & Kahneman, 1981). The theoretical contribution being whether exposure to production claims affects attitudes toward conventional products without such claims and how the frame affects attitudes toward the production attribute product. While generalizations cannot be made to all consumers from this convenience sample, providing data about the sample characteristics can aid in external validity conclusions because readers can determine how similar other populations of consideration may be to the sample used in this study. It is unlikely this group will have much previous exposure to or knowledge about these kinds of labels; therefore, perhaps this sample is ideal to make a theoretical contribution.

In the case of marketing value-added meat products, another key issue is identifying users or potential users for the product category. Young adults, and specifically college students, are one segment of consumers for food products. Currently, there are over 15.9 million college students in the United States, representing a $9.2 billion market that is viewed by packaged goods marketers as "a meaningful segment" on its own, with distinct characteristics, brand loyalties, and preferences for consumable goods, including food (Ness, Gorton, & Kuznesof, 2002, p. 506). As a segment, traditional 18- to 24-year-old college students have been shown to differ from their similar aged nonstudent peers, in that they are much more likely to live away from
home, and thus are able to establish an independent lifestyle, including the need to develop life skills such as food shopping and meal preparation (Mintel, 1999). Students may even spend more on food as a percentage of their total living expenses compared with other consumers (Ness, Gorton, & Kuznesof, 2002). They are also more likely to be aware of diet and health issues as compared with the population as a whole (Ness, Gorton, & Kuznesof, 2002), which makes them a relevant target for marketing new food products and technologies. Also, research shows that young consumers (18-32), and those with a college education are more likely to purchase organic food products (Onyango, Hallman, & Bellows, 2007).

Most researchers who use college student samples do so because of cost and convenience factors, and the practice must therefore be viewed as a limitation of the study. In the present study, however, college students were also used because they represent a group of consumer prospects whose attitudes have long been tracked by industry for their ability to influence and predict mainstream consumer trends, and this predictive value is particularly significant for attitudes toward meat products.

Independent Variables

Regulatory Focus

Regulatory focus theory suggests that a cognitive mechanism regulates how individuals attend to loss/non-loss and gains/non-gains (Higgins, 1998); therefore, subjects’ regulatory focus was measured to control for these effects. The regulatory focus questionnaire (RFQ) (Higgins et al., 2001) contains 11 items (see Table 3-2) with two subscales. Subjects were given the RFQ before the treatment was administered to prevent regulatory focus priming from the framed production claims.
Pretesting of Message Stimuli

To determine the labeling claims that would be used as the treatment, a three-step process was used. First, the researcher and an assistant visited six grocery stores (three regional chain supermarkets, one national superstore, one local grocer, and one natural and organic foods retailer chain) and recorded all unique meat labeling claims addressing health, animal welfare, and environmental impacts. When the lists were collapsed, 33 unique claims resulted. This first step was taken to improve the study’s external validity by using real labeling claims. The second step involved pretesting these 33 claims with three focus groups (two face-to-face and one online) with a total of 20 college student participants (7 in the first, 8 in the second, 5 in the third). The claims were assessed for basic understanding, claim type (health, animal welfare, or environmental), and perceived frame (gain or nonloss). Participants used nominal group assessment to categorize the claims first as individuals and then discussed discrepancies and claim clarity as a group to resolve differences.

Because no clear animal welfare claim with a nonloss frame and no clear equivalently framed health claims emerged from the nominal group assessments, a third step was needed. The third step consisted of pretesting the labeling claims using an online survey with different samples of college students. Ultimately, two online surveys were conducted: the first tested the original 33 claims with the addition of the claim “No cages,” and the second tested the original 33 claims, “No cages,” and “No fat.” The first online survey was done with 23 college students, who were not part of the original sample for the nominal groups. The second one also had 23 college students, who were not a part of either of the samples already used. Between the nominal groups...
and two online surveys, 66 college students participated in the pretesting of the labeling claims to determine type and frame. The results are presented in Table 3-3.

The claims were chosen based on 1) a Chi-square analysis of the combined data, and 2) whether they were equivalent frames. Unfortunately, no clear equivalently framed (nonloss and gain) health claims were found, and subsequently, the health claim was eliminated from the study. Most studies examining nonloss- versus gain-message framing used quantitative descriptors (Boettcher, 2004; Idson et al., 2004; Liberman et al., 2005; Kahneman & Tversky, 1979; McDermott, 2004; Tversky & Kahneman, 1981), but this study used qualitative descriptors to improve external validity, meet the applied research objectives, and further test the limits of loss aversion. The environmental gain-framed claim chosen was “Good for the environment,” and the nonloss-framed claim chosen was “No negative environmental impacts.” These two claims are qualitatively equivalent in that a product produced in a way that does not have negative environmental impacts is good for the environment. In the same line of logic, a product produced in a way that is good for the environment does not have negative environmental impacts. The animal welfare gain-framed claim chosen was “No cages,” and the nonloss-framed claim chosen was “Free to roam.” These two claims are qualitatively equivalent in that animals raised in a production system with no cages would be free to roam, and animals free to roam are not in cages.

The claims were printed on a label, placed on a package of boneless, skinless chicken breasts, and photographed. Chicken was chosen to ensure reliability of the study because it is a uniform product with little to no differences of product characteristics that are able to be visually detected. In addition, chicken is a product
consumers choose primarily based on color with no consideration for marbling or other visual quality cues (Becker, Benner, & Glitsch, 2000). Chicken ranks number one in total meat consumption in the United States (USDA Economic Research Service, 2007). Demerritt (2004) found that organic poultry is a gateway organic food and an important frontline product for the organic industry (as cited in Oberholtzer, Greene, & Lopez, 2005). Because of the standardization of this product, chicken is ideal for experimental purposes to ensure participants are making their decision based on the claim and not on physical quality characteristics. Results from this study are transferable to other meat products with more distinguishing characteristics, like beef or lamb. The same package of chicken was used for both treatment conditions to control for any quality differences. Price, cut, weight, and brand were also held consistent between the conditions.

The ballot initiative regarding animal welfare used the same language from California’s Proposition 2 that passed in November 2008. The same language has been consistently used by HSUS in states like Illinois, Ohio, Michigan, Arizona, and Florida as it either attempts or successfully proposes to ban certain animal confinement practices (HSUS, 2009). It read:

Calves raised for veal, egg-laying hens, and pregnant pigs can be confined only in ways that allow these animals to lie down, stand up, fully extend their limbs, and turn around freely. Under the measure, any person who violates this law would be guilty of a misdemeanor, punishable by a fine of up to $1,000 and/or imprisonment in county jail for up to six months. (Prop 2: Standards for confining farm animals, 2008)

**Dependent Variables**

**Attitudinal Measures**

After viewing the product with claims and product without claims simultaneously, subjects’ attitudes toward each product were measured. The scale developed by Batra
and Ahtola (1991) measures the hedonic and utilitarian sources of consumer attitudes using eight semantic-differential questions. The scale reliabilities exceeded a Chonbach’s alpha of .89 (Crowley, Spangenberg, & Hughes, 1992). The utilitarian components were measured using Batra and Ahtola’s (1991) scale by the five-point semantic differential items of useful/useless, valuable/worthless, beneficial/harmful, and wise/foolish. The hedonic component was measured by the items pleasant/unpleasant, nice/awful, agreeable/disagreeable, and happy/sad. Overall attitudes were measured by using items of good/bad, positive/negative, like/dislike, and favorable/unfavorable. Again, all of these items were measured on a five-point semantic differential scale (see Table 3-4).

Voting Behavior

After completing the attitudinal measures, subjects’ voting intention was assessed to test H4. To measure voting intention, a ballot was presented with the following proposition:

On the next ballot in your state, the following initiative regarding the confinement of livestock is being proposed:

Calves raised for veal, egg-laying hens, and pregnant pigs can be confined only in ways that allow these animals to lie down, stand up, fully extend their limbs, and turn around freely. Under the measure, any person who violates this law would be guilty of a misdemeanor, punishable by a fine of up to $1,000 and/or imprisonment in county jail for up to six months.

How do you plan to vote?

☐ Yes
☐ No

Attribute Variables

To improve the generalizability of the findings, several attribute variables were included in the measures. Providing data about the sample characteristics can aid in
external validity conclusions because readers can determine how similar other populations of consideration may be to the sample used in this study (Ary, Jacobs, & Razavieh, 2002). These variables included chronic regulatory focus, age, gender, organic food purchasing behavior, attention to meat labeling claims, and personal/family ties to agriculture.

**Instrumentation**

The instrumentation for this study was implemented using an online questionnaire tool. Experiments administered online offer several advantages including higher statistical power from larger sample sizes, savings in time, resources, space, and manpower, reduction of experimenter bias, and ease of access for the subjects (Reips, 2000). This study followed recommendations from Reips (2000) for conducting experiments online, which included extensive pretesting, using the subjects' first name in contacts with them, and sending several reminders. The online questionnaire tool provided the ability to collect the data completely electronically using photos to represent the treatment and e-mail to administer it. Selection bias was not a concern in this study because most college students are comfortable using the Web and tend to be early adopters of new Internet technologies (Jones, Johnson-Yale, Millermaier, & Seoane-Perez, 2009).

**Instrument Content**

Three different online questionnaires were created, one for each treatment group. The only differences between all three questionnaires were the images of chicken packages with different labeling claims. One of the manipulation check questions was different between the two treatment groups and the control. The treatment groups were asked which product was better for animal welfare and the environment, while the
control group was asked which product offered more information. Subjects responded to 65 questions in total. The instrument (Appendix C) was developed as a series of pages to minimize scrolling and was comprised of the following elements:

Page 1 included the informed consent.

Page 2 included the prompt to type in their unique participant identification number, which was used to avoid collecting names in the data set but still be able to provide the students the extra credit incentive.

Page 3 included a checkbox question for the subject to indicate what courses they were enrolled in. This was to ensure that students enrolled in more than one of the courses included in the sample received the extra credit and only took the survey once.

Page 4 was a transition page briefly explaining the first set of questions that would be asked.

Page 5 included seven items from the RFQ that had the same response items.

Page 6 included the last two items from the RFQ that had the same response items.

Page 7 was a transition page briefly explaining the second set of questions that would be asked.

Page 8 displayed the two photos of the packages of chicken and asked whether they could view the images. This was done to ensure the subject’s Internet browser was displaying the images. If they answered “no,” the survey tool automatically skipped the treatment pages and questions and took them to the demographics questions to prevent subjects from answering the questions without the ability to view the treatment.

Page 9 displayed the two photos again, this time with the 16 semantic-differential questions that make up the attitudinal index to measure subjects’ attitudes toward the product with the claims. The question was “I feel that Product A is…”

Page 10 displayed the two photos again, with the attitudinal index to measure subjects’ attitudes toward the product without the claims. The question was “I feel that Product B is…”

Page 11 was a transition page briefly explaining the next screen would contain a potential state law regarding the confinement of livestock to vote on.

Page 12 stated “On the next ballot in your state, the following initiative regarding the confinement of livestock is being proposed.” Following that text, was the language
from the California Proposition 2 that appeared on the state ballot in 2008. They were then asked, “How do you plan to vote?”

Page 13 was a transition page explaining the next set of questions would be about demographics and grocery shopping decisions.

Page 14 included four demographic questions to assess age, gender, community of origin, and connections with livestock production.

Page 15 asked “Approximately how often do you eat meat (including all meals and snacks) in a typical week?”

Page 16 included two questions to assess political party affiliation and views.

Page 17 asked whether they currently shopped for groceries for themselves or household. If the subject indicated “no,” it sent them to page 18. If they indicated “yes,” it sent them to page 19.

Page 18 was only seen if the subject indicated they did not do the grocery shopping. This page asked if they helped make the decisions about the food that would be bought. If they indicated “yes,” it sent them to page 19. If they indicated “no,” it skipped them to page 21.

Page 19 included five yes/no questions regarding their attention to organic and production labeling on poultry or meat products.

Page 20 included five questions to assess how often they purchased organic and credence-labeled products.

Page 21 was a transition page explaining the final set of questions would be related to their experience taking the survey.

Page 22 included one manipulation check question to see if they noticed the difference in the labeling between the two products.

Page 23 included one manipulation check question to see if they noticed one was intended to be labeled as better for the environment and animal welfare.

Page 24 was the thank you and debriefing page explaining the purpose of the study and that the voting situation was only hypothetical.

**Pilot Test**

The procedure was pilot tested with 30 undergraduate students. After the pilot subjects completed the experimental procedure, they were asked a series of qualitative questions to determine fatigue, technical, and understanding issues. Using SPSS® 16.0
for Windows™, item analysis statistics were run to determine the construct validity of each of the scales measuring concepts of interest. In the social sciences, a reliability coefficient of .70 or larger indicates an index is adequate (Traub, 1994). This data analysis indicated one necessary change to the instrument before final distribution.

The 16-item attitudinal scale had an alpha reliability of .97 overall, with a reliability of .97 on the 12-item index developed by Batra and Ahtola (1991) subscale and .88 on the 4-item researcher developed subscale. DeVellis (2003) states that, ideally, the Chronbach alpha coefficient of a scale should be above .7; therefore, all items were kept in this scale. The 11-item regulatory focus questionnaire contains two subscales: a 5-item prevention scale and a 6-item promotion scale. The prevention scale had an alpha reliability of .77, while the promotion scale had an alpha reliability of .67. Removing the item “I have found very few hobbies or activities in my life that capture my interest or motivate me to put effort in them” was deleted, resulting in a final reliability of .72 for the promotion index.

**Procedure**

Subjects (N= 740) were randomly assigned (with the use of a random number generator) to either the nonloss-framed claims condition, the gain-framed claims condition, or the control claims condition to test the hypotheses. The claims and treatment conditions are shown in Table 3-5. In the gain frame and nonloss frame conditions, subjects simultaneously viewed a package of chicken with two production claims (animal welfare and environmental impact), cut, weight, and price on the label and a package of chicken with only cut, weight, and price on the label (referred to hereafter as the product without production claims). In the control condition, subjects
simultaneously viewed a product without production claims and a product with general product claims (boneless and skinless, and chicken breasts).

Subjects were verbally given a pre-notice from their course instructor two to three days before the initial contact e-mail with directions and the link were sent out (see Appendix A). The first contact was sent to students as a personalized e-mail (Dear [First name]) to better establish a connection with the subjects (Reips, 2000) with a brief explanation of the survey, their unique participant identification number, and a unique link matched with their randomly assigned treatment group (see Appendix B). Subjects had 10 days to complete the questionnaire. Three reminder e-mails were sent to subjects who had not yet responded: the first was sent four days after the first contact, the second three days after that, and the third was sent the morning of the final day (see Appendices B-1 and B-2).

Data Analysis

Data analysis for this study was completed using SPSS® 16.0 for Windows™ PC. Cronbach’s coefficient alpha was used as an internal-consistency measure of reliability. This measure is used with Likert type questions when a score can take on a range of values (Ary et al., 2002). One-way ANOVAs and t-tests were used to address the first three hypotheses and a Chi square test for independence was used to address the fourth hypothesis.
### Table 3-1. Incomplete factorial research design

<table>
<thead>
<tr>
<th>R</th>
<th>$X_{A1B1}$</th>
<th>$O_1$, $O_2$, $O_3$</th>
</tr>
</thead>
<tbody>
<tr>
<td>R</td>
<td>$X_{A1B2}$</td>
<td>$O_1$, $O_2$, $O_3$</td>
</tr>
<tr>
<td>R</td>
<td>$X_{A2B3}$</td>
<td>$O_1$, $O_2$, $O_3$</td>
</tr>
</tbody>
</table>

### Table 3-2. Regulatory focus questionnaire (Higgins et al., 2001)

<table>
<thead>
<tr>
<th>Question</th>
<th>Never</th>
<th>Seldom</th>
<th>Sometimes</th>
<th>Often</th>
<th>Very often</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compared to most people, are you typically unable to get what you want out of life?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Growing up, would you ever “cross the line” by doing things your parents would not tolerate?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>How often have you accomplished things that got you “psyched” to work even harder?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Did you get on your parents’ nerves often when you were growing up?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>How often did you obey rules and regulations that were established by your parents?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Growing up, did you ever act in ways that your parents thought were objectionable?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Do you often do well at different things that you try?</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>Not being careful enough has gotten me into trouble at times.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>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.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I feel like I have made progress toward being successful in my life.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
<tr>
<td>I have found very few hobbies or activities that capture my interest or motivate me to put effort into them.</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
</tr>
</tbody>
</table>
Table 3-3. Results of nominal group assessment

<table>
<thead>
<tr>
<th>Claim</th>
<th>Claim Type</th>
<th>Health</th>
<th>Environment</th>
<th>Animal</th>
<th>Unclear</th>
<th>Nonloss</th>
<th>Gain</th>
<th>Unclear</th>
</tr>
</thead>
<tbody>
<tr>
<td>Earth friendly</td>
<td></td>
<td>0</td>
<td>66*</td>
<td>0</td>
<td>0</td>
<td>22</td>
<td>39</td>
<td>5</td>
</tr>
<tr>
<td>Raised without antibiotics</td>
<td></td>
<td>35</td>
<td>2</td>
<td>19</td>
<td>12</td>
<td>43</td>
<td>21</td>
<td>2</td>
</tr>
<tr>
<td>Great care</td>
<td></td>
<td>19</td>
<td>2</td>
<td>31</td>
<td>14</td>
<td>10</td>
<td>32</td>
<td>4</td>
</tr>
<tr>
<td>Family farmers in harmony with nature</td>
<td></td>
<td>6</td>
<td>44</td>
<td>14</td>
<td>2</td>
<td>25</td>
<td>38</td>
<td>5</td>
</tr>
<tr>
<td>Good for you</td>
<td>66*</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>3</td>
<td>62*</td>
<td>1</td>
</tr>
<tr>
<td>Minimally processed</td>
<td>52*</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>19</td>
<td>46*</td>
<td>1</td>
</tr>
<tr>
<td>Lean</td>
<td>61*</td>
<td>0</td>
<td>4</td>
<td>1</td>
<td>15</td>
<td>48*</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>Eco-friendly</td>
<td>0</td>
<td>66*</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>19</td>
<td>46*</td>
<td>1</td>
</tr>
<tr>
<td>Fed vegetarian diet</td>
<td>21</td>
<td>1</td>
<td>35</td>
<td>9</td>
<td>24</td>
<td>38</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>No hormones administered</td>
<td>26</td>
<td>11</td>
<td>25</td>
<td>13</td>
<td>41</td>
<td>23</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>No artificial ingredients</td>
<td>65*</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>1</td>
<td>48*</td>
<td>18</td>
<td>0</td>
</tr>
<tr>
<td>Good for the environment</td>
<td>0</td>
<td>66*</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>9</td>
<td>57*</td>
<td>0</td>
</tr>
<tr>
<td>No animal or poultry products in feed</td>
<td>17</td>
<td>1</td>
<td>41</td>
<td>7</td>
<td>47*</td>
<td>17</td>
<td>2</td>
<td>2</td>
</tr>
<tr>
<td>No cows injected w/ rgbh</td>
<td>20</td>
<td>0</td>
<td>38</td>
<td>8</td>
<td>46*</td>
<td>19</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>No environmental contamination</td>
<td>6</td>
<td>57*</td>
<td>0</td>
<td>3</td>
<td>44</td>
<td>19</td>
<td>3</td>
<td>3</td>
</tr>
<tr>
<td>No negative environmental impacts</td>
<td>0</td>
<td>66*</td>
<td>0</td>
<td>0</td>
<td>0</td>
<td>48*</td>
<td>19</td>
<td>0</td>
</tr>
<tr>
<td>Raised to reduce environmental impacts</td>
<td>1</td>
<td>61*</td>
<td>1</td>
<td>3</td>
<td>15</td>
<td>51*</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>No antibiotics</td>
<td>41</td>
<td>1</td>
<td>15</td>
<td>9</td>
<td>52*</td>
<td>14</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>No antibiotics administered</td>
<td>33</td>
<td>0</td>
<td>21</td>
<td>11</td>
<td>52*</td>
<td>13</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Produced without antibiotics, synthetic hormones, or pesticides</td>
<td>37</td>
<td>3</td>
<td>9</td>
<td>17</td>
<td>32</td>
<td>22</td>
<td>12</td>
<td>12</td>
</tr>
<tr>
<td>No hormones</td>
<td>30</td>
<td>0</td>
<td>15</td>
<td>20</td>
<td>37</td>
<td>14</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Raised without hormones</td>
<td>23</td>
<td>0</td>
<td>29</td>
<td>12</td>
<td>37</td>
<td>28</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>Cage-free</td>
<td>2</td>
<td>0</td>
<td>64*</td>
<td>0</td>
<td>22</td>
<td>44</td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td>No growth stimulants</td>
<td>26</td>
<td>0</td>
<td>24</td>
<td>13</td>
<td>50*</td>
<td>15</td>
<td>1</td>
<td>1</td>
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Table 3-3. Continued

<table>
<thead>
<tr>
<th>Claim</th>
<th>Claim Type</th>
<th>Frame</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Health</td>
<td>Environment</td>
</tr>
<tr>
<td>No preservatives</td>
<td>62*</td>
<td>1</td>
</tr>
<tr>
<td>No fillers</td>
<td>53*</td>
<td>0</td>
</tr>
<tr>
<td>No steroids</td>
<td>35</td>
<td>0</td>
</tr>
<tr>
<td>Meets humane society</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>standards</td>
<td></td>
<td></td>
</tr>
<tr>
<td>No chemical medicines</td>
<td>27</td>
<td>1</td>
</tr>
<tr>
<td>Humanely raised</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>No nitrates</td>
<td>41</td>
<td>17</td>
</tr>
<tr>
<td>No sodium</td>
<td>65*</td>
<td>0</td>
</tr>
<tr>
<td>Free to roam</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td><em>No cages (n= 46)</em></td>
<td>1</td>
<td>1</td>
</tr>
<tr>
<td><em>No fat (n= 23)</em></td>
<td>23*</td>
<td>0</td>
</tr>
</tbody>
</table>

Note: Labels in italics were added later and only tested with online survey. * Chi-square analysis $p < .05$.

Table 3-4. Hedonic/utilitarian sources of attitude scale (Batra & Ahtola, 1991) and researcher-developed measures

<table>
<thead>
<tr>
<th>I feel that the product is...</th>
<th>1</th>
<th>2</th>
<th>3</th>
<th>4</th>
<th>5</th>
<th>Useful</th>
</tr>
</thead>
<tbody>
<tr>
<td>Useless</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Valuable</td>
</tr>
<tr>
<td>Worthless</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Beneficial</td>
</tr>
<tr>
<td>Harmful</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Wise</td>
</tr>
<tr>
<td>Foolish</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Pleasant</td>
</tr>
<tr>
<td>Unpleasant</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Nice</td>
</tr>
<tr>
<td>Awful</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Agreeable</td>
</tr>
<tr>
<td>Disagreeable</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Happy</td>
</tr>
<tr>
<td>Sad</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Good</td>
</tr>
<tr>
<td>Bad</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Positive</td>
</tr>
<tr>
<td>Negative</td>
<td>1</td>
<td>2</td>
<td>3</td>
<td>4</td>
<td>5</td>
<td>Like</td>
</tr>
</tbody>
</table>

84
Table 3-4. Continued

<table>
<thead>
<tr>
<th>Claim Type</th>
<th>Nonloss Frame Condition</th>
<th>Gain Frame Condition</th>
<th>Control Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Unfavorable</td>
<td>1 2 3 4 5</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Unhealthy</td>
<td>1 2 3 4 5</td>
<td></td>
<td>Healthy</td>
</tr>
<tr>
<td>Unsafe to eat when cooked</td>
<td>1 2 3 4 5</td>
<td>Safe to eat when cooked</td>
<td></td>
</tr>
<tr>
<td>From an animal treated inhumanely</td>
<td>1 2 3 4 5</td>
<td>From an animal treated humanely</td>
<td></td>
</tr>
<tr>
<td>Bad for the environment</td>
<td>1 2 3 4 5</td>
<td>Good for the environment</td>
<td></td>
</tr>
</tbody>
</table>

Note: Italicized text indicates researcher-developed item.

Table 3-5. Experiment treatment groups

<table>
<thead>
<tr>
<th>Claim Type</th>
<th>Nonloss Frame Condition</th>
<th>Gain Frame Condition</th>
<th>Control Condition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental Impact</td>
<td>No negative environmental impacts</td>
<td>Good for the environment</td>
<td>X</td>
</tr>
<tr>
<td>Animal Welfare</td>
<td>No cages</td>
<td>Free to roam</td>
<td></td>
</tr>
<tr>
<td>Control</td>
<td>X</td>
<td>X</td>
<td>Boneless and skinless Chicken breasts</td>
</tr>
</tbody>
</table>
Figure 3-1. Operational framework for the current study
CHAPTER 4
RESULTS

With loss aversion and regulatory focus theory as the theoretical framework, the objectives of this study were to determine the effects of differently framed labeling claims on consumers' attitudes toward the product with production claims, the conventional product, and voting intention. The treatment and assessments were delivered online through the use of an online questionnaire tool to college students in four different large university courses. The three independent variables were the presence/absence of production labeling claims, claim frame (nonloss or gain), and regulatory focus (promotion, prevention). The two dependent variables were attitudes toward the product and voting intention on an animal welfare ballot initiative.

This chapter provides an analysis of the data beginning with sample demographics, followed by analysis of the variables of interest. Next is a discussion of the scale reliabilities used to develop the indexes that measure the independent and dependent variables, followed by an overview of manipulation checks. The chapter concludes with a discussion of the tests of hypotheses used in the study.

Descriptive Analysis

Using an online survey tool for development and administration, the 65-item questionnaire was administered to 740 college students from four different large university courses. The overall response rate was 89.2% (n= 660).

Demographics

The demographic characteristics included in the instrument were: age, gender, political party affiliation, political views, rural-urban background, connection with the livestock industry, meat consumption frequency, and attention to and purchase
frequency of meat and/or poultry with five types of production labeling claims. Subjects
who did not grocery shop for themselves or their household, nor help make the food
purchasing decisions skipped the questions about attention to and purchase frequency
of meat and/or poultry products with production labeling claims.

Descriptive analysis indicated 459 of subjects were female (69.5%) and 201 were
male (30.5%). The undergraduate student population from which the sample was
chosen contains more females (55%) than males (45%) (University of Florida Office of
Institutional Planning and Research, 2009). The age range of the respondents was 18
to 33 years old, with a mean of 21 years old (SD= 1.69). The majority of subjects
described the community in which they grew up in as a subdivision in a city or town (n= 491, 74.4%),
followed by rural, not a farm (n= 98, 14.8%), downtown in a city or town
(n= 47, 7.1%), and farm (n= 23, 3.5%). Most subjects indicated that neither they nor
their immediate family work in livestock production (n= 563, 85.3%).

Subjects’ political party affiliation was fairly evenly distributed among the response
items with most identifying themselves as Independent-leaning Democrat (n= 105,
15.9%), followed by Democrat (n= 97, 14.7 %), and Republican (n= 85, 12.9%). When
the response items were collapsed, 265 were Democrat (40.2%), 228 were Republican
(34.5%), and 78 were Independent (11.8%). Subjects’ political views leaned slightly
more toward Liberal than Conservative. Most indicated they were somewhat Liberal (n= 116, 17.6%),
followed closely by Liberal (n= 115, 17.4%), while 90 considered
themselves somewhat Conservative (13.6%) and 98 Conservative (14.8%). When the
response items were collapsed, 277 were Liberal (42.0%), 222 were Conservative
(33.6%), and 107 were neither (16.2%).
The majority of subjects consumed meat on a regular basis with most eating it 4–7 times per week (n= 258, 39.1%) and 8–14 times per week (n= 216, 32.7%). Only 27 (4.1%) indicated that they never eat meat, and 14 (2.1%) indicated they eat it less than once per week (see Figure 4-1).

**Attention to and Purchase Frequency of Meat/Poultry with Production Claims**

Before assessing attention to and purchase frequency of meat and poultry products with production labeling claims, subjects were asked if they do the grocery shopping or help make the decisions for food purchases. The majority of subjects (n= 601, 91.1%) do the grocery shopping for themselves or their household and 41 (6.2%) help make the decisions as to what food to purchase. Only 17 (2.6%) indicated they do not purchase nor help make the decisions; therefore, they automatically skipped over the production label attention and purchase frequency questions.

Subjects were asked whether they pay attention to five different types of production labeling claims: 1) organic labels, 2) labels that address the way the animal was raised, 3) labels that say “no hormones,” 4) labels that say “no antibiotics,” and 5) labels that suggest the product is better for the environment (“green”). The sample was fairly evenly split (with the exception of claims addressing the way the animal was raised) between “yes” and “no,” with slightly more indicating “no” on all five of the labeling claim types. Table 4-1 displays the results in entirety.

When asked how often they purchase meat or poultry products with these five production labeling claims, most indicated they purchase them never or less than once a month. The means were all less than 2, with the way the animal was raised having the lowest purchase frequency ($M= 1.13$, $SD= 1.44$) and no hormones having the highest purchase frequency ($M= 1.55$, $SD= 1.71$). See Table 4-2 for the complete results.
Scale Reliabilities

Within the loss aversion and regulatory focus framework, three scales were used in this study to measure independent and dependent variables. The regulatory focus questionnaire contained two scales: one to assess promotion focus and the other to assess prevention focus. This was an independent variable in the study. Attitude, a dependent variable, was measured using a scale containing 16 items, which consisted of two subscales.

Regulatory Focus Scales

Regulatory focus was measured using a questionnaire developed by Higgins et al. (2001). The total questionnaire contained 11-items, five prevention items and six promotion items. They are considered two separate scales. In the pilot study, one of the promotion items was eliminated to improve the reliability alpha, thereby making the scale consist of five items. Subjects indicated their responses using a 5-point Likert scale. Each scales’ total score could be 25 at the strongest regulatory focus down to five at the weakest regulatory focus.

The promotion scale had a range of standard deviations from .82 to .93, demonstrating a minimal amount of variance in the data. The corrected item-total correlations on the prevention scale ranged from .43 to .67 (Table 4-3). The alpha reliability coefficient for the entire index was $\alpha = .79$ and would not be improved by removing any item. DeVellis (2003) states that, ideally, the Chronbach alpha coefficient of a scale should be above .7. The grand mean for the promotion scale was 17.88 ($SD = 3.22$).

The prevention scale had a range of standard deviations from .70 to 1.12 demonstrating some variance in the data. The correction item-total correlations on the
prevention scale ranged from .43 to .67 (Table 4-4). The alpha reliability coefficient for the entire index was $\alpha = .68$ and could not be improved by removing any item. This is slightly lower than what DeVellis (2003) recommends, and is therefore, a limitation of the study. The grand mean for the prevention scale was 19.48 ($SD = 2.73$).

**Attitude Scales**

Attitude was treated as one dependent variable that included product-specific attitude and general attitude because the overall reliability of the scale was strong. The total attitude scale with all 16 items had standard deviations ranging from .94 to 1.15 on attitude toward the product without claims and .85 to 1.09 on attitude toward the product with the claims. The alpha reliability coefficient for the entire index was $\alpha = .96$ on attitude toward product without the claims and $\alpha = .96$ on attitude toward product with the claims. Neither would be significantly improved by removing any item (Table 4-5).

**Descriptive Analysis of Variables of Interest**

**Regulatory Focus**

Subjects’ regulatory focus was measured using Higgins et al. (2001) Regulatory Focus Questionnaire. One item (question 11) from this index was deleted based on the scale reliabilities in the pilot testing data. This questionnaire contains two scales: one to assess promotion focus and the other to assess prevention focus. The lowest score on each scale was seven and the highest was 25. The mean promotion score was 19.48 ($SD = 2.73$) and the mean prevention score was 17.88 ($SD = 3.22$), indicating that this sample tended to be more promotion focused. Table 4-6 shows the results for each item.
Attitude Toward Product

The attitude score ranged from 1 (most negative) to 3 (neutral) to 5 (most positive). The grand mean on attitude toward the products without the claims was 3.53 ($SD= .84$). The grand mean attitude toward the products with the claims was higher ($M= 4.04$, $SD= .74$). Overall, attitude toward the product with the claims was more positive than attitude toward the product without the claims. Table 4-7 displays the results for each item, and Table 4-8 displays the results for attitude between treatment groups.

Voting Intention

Voting intention was measured using a one-item measure. Subjects were asked how they would vote on an animal confinement law in their state. The language of the proposed initiative was the same that appeared on California’s 2008 ballot for Proposition 2. The question was posed as follows:

**On the next ballot in your state, the following initiative regarding the confinement of livestock is being proposed:**

Calves raised for veal, egg-laying hens, and pregnant pigs can be confined only in ways that allow these animals to lie down, stand up, fully extend their limbs, and turn around freely. Under the measure, any person who violates this law would be guilty of a misdemeanor, punishable by a fine of up to $1,000 and/or imprisonment in county jail for up to six months.

**How do you plan to vote?**

- □ Yes
- □ No

Subjects were not provided any additional information. Most subjects indicated they plan to vote “yes” for this law (n= 510, 77.3%), while only 150 (22.7%) indicated “no.”

Manipulation Checks

To evaluate the labeling claim stimuli used in the treatment, two manipulation checks were conducted. The labels for the two products in each condition were
designed identically, with the exception of the presence of the claims. The first manipulation check was designed to determine if subjects noticed the difference between the labels on the packages of chicken. In the gain-frame condition, 97.5% (n=196) noticed the differences between the two labels. In the nonloss-frame condition, 98.3% (n=227) noticed the differences. In the control condition, 93.4% (n=197) noticed the differences. A one-way between-groups analysis of variance with the Welch correction showed that the differences between the groups was not significant \( F (2, 660) = 2.17, p = .12. \)

The second manipulation check was designed to determine if subjects recognized that the product with the claims was better for animal welfare and the environment. In the control condition, subjects were instead asked which product contained more information. In the nonloss-frame condition, 98.3% (n=232) identified the product with claims as better for animal welfare and the environment. In the gain-condition, 96.6% (n=201) identified the product with claims as better for animal welfare and the environment. In the control condition, a different question was asked since general product claims were used. In this condition, 96.3% (n=208) identified the product with the claims as the one containing more information. A one-way between-groups analysis of variance with the Welch correction showed that the differences between the groups was not significant \( F (2, 640) = 1.13, p = .33. \)

**Tests of Hypotheses**

To determine if the theoretical covariate was influencing the dependent variables, the relationships between the regulatory focus scores (promotion, prevention) and attitude toward the products were investigated using Pearson product-moment correlation. Preliminary analyses were performed to ensure no violation of the
assumptions of normality, linearity, and homoscedasticity. There was a small positive correlation between promotion score and attitude, \( r = .08, n = 660, p = .04 \), with a greater promotion focus associated with a more positive attitude. There were no significant correlations between prevention score and attitude. Because the promotion score only helps explain .64% of the variance in subjects’ scores on the attitude scale, the promotion focus effect was considered negligible. A correlation coefficient less than .09 means there is no relationship between the variables (Cohen, 1988). Subsequently, both covariates (promotion score, prevention score) were removed from the data analysis of the hypotheses.

**H1:** When controlling for regulatory focus, subjects exposed to nonloss-framed claims will have more positive attitudes toward the product with production claims than those exposed to gain-framed labeling claims or neutral general product claims.

The covariates for regulatory focus were not included in the analysis because Pearson product-moment correlations revealed no relationship between the covariates and the dependent variables. A one-way between-groups analysis of variance was conducted to compare the different labeling claim framing effects on attitudes toward the product with the claims. The independent variable was the frame of the claim (nonloss, gain, neutral), and the dependent variable was attitude toward the product with the claims. Preliminary assumption testing showed no serious violations noted.

There was a significant effect of labeling claim frame on attitudes toward the product with production claims, \( F (2, 657) = 16.87, p < .001 \) (see Table 4-9).

Planned contrasts revealed that subjects exposed to gain-framed claims had more positive attitudes toward the product with the claims than those exposed to neutral product claims \( t(657) = -5.26, p < .001 \), and those exposed to nonloss-framed claims
had more positive attitudes in comparison to the control group as well $t(657) = -4.79, p < .001$. The difference between gain and nonloss labeling claim frames, however, was not significant $t(657) = -.64, p = .52$ (2-tailed) (see Table 4-10 and Figure 4-2).

**H2:** When controlling for regulatory focus, subjects exposed to nonloss-framed claims will have less positive attitudes toward the product without production claims than those exposed to gain-framed labeling claims or neutral general product claims.

The theoretical covariate of regulatory focus was not included in this analysis either. A one-way between-groups analysis of variance was conducted to compare the different labeling claim framing effects on attitudes toward the product without the claims. The independent variable was the frame of the claim (nonloss, gain, neutral), and the dependent variable was attitude toward the product without the claims. Preliminary assumption testing was conducted with no serious violations noted.

There was a significant effect of labeling claim frame on attitudes toward the product without production claims, $F(2, 657) = 6.41, p = .002$ (see Table 4-11).

Planned contrasts revealed that subjects exposed to gain-framed claims had less positive attitudes toward the product without the claims than those exposed to neutral product claims $t(657) = 2.12, p = .035$, and those exposed to nonloss-framed claims had less positive attitudes in comparison to the control group as well $t(657) = 3.56, p < .001$. The difference between gain and nonloss labeling claim frames, however, was not significant $t(657) = -.1.37, p = .17$ (2-tailed) (see Table 4-12 and Figure 4-3).

**H3:** Subjects exposed simultaneously to a food product with production claims and a product without such claims will have less positive attitudes toward the product without the claims than those who do not see a food product with production claims.

While the data analyses for H1 and H2 offered insight into this hypothesis, a specific analysis was conducted to offer a complete picture. The treatment groups (nonloss, gain, control) were recoded into a new independent variable that grouped
together subjects in the nonloss and gain conditions because they were the groups that saw the production labeling claims, whereas the control group saw general product claims (boneless and skinless, chicken breasts). An independent samples t-test was conducted to compare the presence of the production claims effects on attitudes toward the product without the claims. The independent variable was the presence of the production claims (present, absent), and the dependent variable was attitude toward the product without claims. Preliminary assumption testing was conducted with no serious violations noted.

The independent samples t-test showed a significant difference between the two groups $t(658) = -.3.31, p = .001$ (2-tailed). An inspection of the mean scores indicated that subjects’ exposed to the production labeling claims had less positive attitudes toward the product without claims than those who were not (see Table 4-13 and Figure 4-4).

**H4:** Subjects exposed to a food product with production claims will be more likely to have intentions to vote “yes” for an animal welfare ballot initiative than those who do not see a food product with production claims.

A Chi-square test for independence indicated no significant association between subjects’ exposure to production labeling claims and voting decision on the animal welfare ballot initiative. The majority of subjects voted yes ($n = 510, 77.3\%$).

**Post Hoc Analyses**

Several post hoc analyses were conducted to explore other relationships among the variables collected in this study that were not included in the hypotheses. These analyses provide a more complete picture of other variables that influence the dependent variables in this study.
Attention To and Purchase of Products With Production Claims

Subjects were asked 1) whether they pay attention to, and 2) how often they purchase products with five different types of production labeling claims on meat and/or poultry when grocery shopping: 1) organic labels, 2) labels that address the way the animal was raised, 3) labels that say “no hormones,” 4) labels that say “no antibiotics,” and 5) labels that suggest the product is better for the environment (“green”). These items were re-coded into a single variable for attention (Chronbach alpha coefficient of .86) and a single variable for purchase frequency (Chronbach alpha coefficient of .89). The relationship between these grocery shopping behaviors (attention and purchase frequency) and attitudes toward the products was investigated using Pearson product-moment correlation coefficient. The analyses revealed three key findings (see Tables 4-14 and 4-15 for all results). The first is that attention to production claims had a strong, positive correlation with purchase frequency of these products, \( r = .58, p < .001 \). The second is that attention \( (r= -.28, p < .001) \) and purchase frequency \( (r= -.21, p < .001) \) both had small, negative correlations with attitude toward the product without production claims (see Table 4-15). The more production claims subjects’ indicated they pay attention to and the more frequently they purchase products with these claims, the less positive their attitudes were toward the product without production claims.

Community Upbringing and Livestock Background

Subjects’ identified themselves as growing up in a: subdivision in a city or town \( (n= 491, 74.4\%) \), rural area, not a farm \( (n= 98, 14.8\%) \), downtown area in a city or town \( (n= 47, 7.1\%) \), and farm \( (n= 23, 3.5\%) \). Table 4-16 displays the descriptive statistics for community upbringing and attitude toward the products. Examining the attitudinal means between the two products, it appears that those who identified themselves as
growing up on a farm or in a rural area had more positive attitudes toward both products than those from a subdivision or urban area.

Means for attitudes toward the products were compared using one-way ANOVAs to determine if there were any differences based on their self-identified community upbringing. There was no significant difference between the groups on attitudes toward the product with the claims, $F(3, 654) = 1.10, p = .35$. There was a significant difference between the groups on attitudes toward the product without the claims (Table 4-17).

Despite reaching statistical significance, the actual difference in mean scores between groups was quite small given an effect size of .02. Post hoc comparisons using the Bonferroni correction indicated that the mean score for those who grew up in a rural area, not a farm ($M = 3.76, SD = .83$) had significantly more positive attitudes than those who grew up in a subdivision ($M = 3.49, SD = .83$), or an urban (“downtown”) area ($M = 3.34, SD = .82$). Table 4-18 displays the results of the post hoc comparisons.

An analysis of variance was conducted to determine if having a personal or family background in livestock production affected attitudes toward the product. There was no significant effect of planning to or having a background in livestock production on attitudes toward the product with the claims $F(3, 653) = 1.39, p = .25$ or attitudes toward the product without the claims $F(3, 653) = 2.29, p = .08$.

Political Affiliation and Voting Intention

As mentioned earlier in the chapter, subjects indicated their political party affiliation and political viewpoint. With respect to political party identification, 265 indicated themselves as Democrat (40.2%), 228 Republican (34.5%), and 78 Independent (11.8%). For political viewpoint, 277 considered themselves Liberal (42.0%), 222 Conservative (33.6%), and 107 were neither (16.2%). A Chi-square test for
independence did not show any association between political party or viewpoint and voting intention on the animal welfare ballot.

**Other Non-Significant Relationships**

Several other relationships were investigated using either Pearson product-moment correlations, Chi-square tests for independence, and ANOVAs depending on the type of variables. No statistically significant relationships were found between age and regulatory focus, political affiliations and regulatory focus, gender and regulatory focus, age and attitudes toward the products, gender and attitudes, or course and attitudes.
Table 4-1. Attention to selected production labeling claims on meat/poultry

<table>
<thead>
<tr>
<th>Type of Labeling Claim</th>
<th>Yes n</th>
<th>%</th>
<th>No n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organic</td>
<td>306</td>
<td>47.6</td>
<td>337</td>
<td>52.4</td>
</tr>
<tr>
<td>Way animal was raised</td>
<td>226</td>
<td>35.1</td>
<td>417</td>
<td>64.9</td>
</tr>
<tr>
<td>No hormones</td>
<td>319</td>
<td>49.6</td>
<td>324</td>
<td>50.4</td>
</tr>
<tr>
<td>No antibiotics</td>
<td>285</td>
<td>44.4</td>
<td>357</td>
<td>55.6</td>
</tr>
<tr>
<td>Better for environment</td>
<td>283</td>
<td>44.1</td>
<td>359</td>
<td>55.9</td>
</tr>
</tbody>
</table>

Table 4-2. Purchase frequency of meat/poultry with select production labeling claims

<table>
<thead>
<tr>
<th>Type of Labeling Claim</th>
<th>n</th>
<th>M</th>
<th>SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Organic</td>
<td>640</td>
<td>1.21</td>
<td>1.45</td>
</tr>
<tr>
<td>Way animal was raised</td>
<td>641</td>
<td>1.13</td>
<td>1.44</td>
</tr>
<tr>
<td>No hormones</td>
<td>642</td>
<td>1.55</td>
<td>1.71</td>
</tr>
<tr>
<td>No antibiotics</td>
<td>638</td>
<td>1.42</td>
<td>1.66</td>
</tr>
<tr>
<td>Better for environment</td>
<td>642</td>
<td>1.21</td>
<td>1.42</td>
</tr>
</tbody>
</table>

Note: Scores based on Likert scale with 0= never, 1= less than once a month, 2= once a month, 3= twice a month, 4= weekly, 5= every time.

Table 4-3. Promotion focus scale inter-item consistency statistics

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>Corrected Item-Total Correlation</th>
<th>Alpha if Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF2</td>
<td>3.51</td>
<td>.92</td>
<td>.67</td>
<td>.72</td>
</tr>
<tr>
<td>RF4</td>
<td>3.34</td>
<td>.93</td>
<td>.58</td>
<td>.75</td>
</tr>
<tr>
<td>RF5</td>
<td>4.13</td>
<td>.82</td>
<td>.55</td>
<td>.76</td>
</tr>
<tr>
<td>RF6</td>
<td>3.53</td>
<td>.85</td>
<td>.63</td>
<td>.73</td>
</tr>
<tr>
<td>RF8</td>
<td>3.37</td>
<td>.84</td>
<td>.43</td>
<td>.79</td>
</tr>
</tbody>
</table>

Table 4-4. Prevention focus scale inter-item consistency statistics

<table>
<thead>
<tr>
<th></th>
<th>M</th>
<th>SD</th>
<th>Corrected Item-Total Correlation</th>
<th>Alpha if Item Deleted</th>
</tr>
</thead>
<tbody>
<tr>
<td>RF1</td>
<td>3.73</td>
<td>.72</td>
<td>.44</td>
<td>.64</td>
</tr>
<tr>
<td>RF3</td>
<td>3.83</td>
<td>.76</td>
<td>.40</td>
<td>.65</td>
</tr>
<tr>
<td>RF7</td>
<td>3.91</td>
<td>.75</td>
<td>.40</td>
<td>.65</td>
</tr>
<tr>
<td>RF9</td>
<td>3.58</td>
<td>1.12</td>
<td>.49</td>
<td>.62</td>
</tr>
<tr>
<td>RF10</td>
<td>4.43</td>
<td>.70</td>
<td>.53</td>
<td>.60</td>
</tr>
</tbody>
</table>
Table 4-5. Total attitude scale inter-item consistency statistics

<table>
<thead>
<tr>
<th></th>
<th>Product Without Claims</th>
<th>Product With Claims</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>$M$</td>
<td>$SD$</td>
<td>Corrected Item-Tot Correlation</td>
</tr>
<tr>
<td>Useless: Useful</td>
<td>3.98</td>
<td>.98</td>
<td>.70</td>
</tr>
<tr>
<td>Worthless: Valuable</td>
<td>3.86</td>
<td>.97</td>
<td>.75</td>
</tr>
<tr>
<td>Harmful: Beneficial</td>
<td>3.62</td>
<td>1.08</td>
<td>.84</td>
</tr>
<tr>
<td>Foolish: Wise</td>
<td>3.42</td>
<td>.94</td>
<td>.79</td>
</tr>
<tr>
<td>Unpleasant: Pleasant</td>
<td>3.49</td>
<td>1.04</td>
<td>.84</td>
</tr>
<tr>
<td>Awful: Nice</td>
<td>3.49</td>
<td>.96</td>
<td>.87</td>
</tr>
<tr>
<td>Disagreeable: Agreeable</td>
<td>3.54</td>
<td>.99</td>
<td>.85</td>
</tr>
<tr>
<td>Sad: Happy</td>
<td>3.23</td>
<td>.99</td>
<td>.79</td>
</tr>
<tr>
<td>Bad: Good</td>
<td>3.53</td>
<td>1.08</td>
<td>.88</td>
</tr>
<tr>
<td>Negative: Positive</td>
<td>3.41</td>
<td>1.05</td>
<td>.87</td>
</tr>
<tr>
<td>Dislike: Like</td>
<td>3.57</td>
<td>1.13</td>
<td>.86</td>
</tr>
<tr>
<td>Unfavorable: Favorable</td>
<td>3.42</td>
<td>1.15</td>
<td>.85</td>
</tr>
<tr>
<td>Unhealthy: Healthy*</td>
<td>3.70</td>
<td>1.09</td>
<td>.78</td>
</tr>
<tr>
<td>Unsafe to eat when cooked: Safe to eat when cooked*</td>
<td>4.25</td>
<td>.97</td>
<td>.51</td>
</tr>
<tr>
<td>From an animal treated inhumanely: From an animal treated humanely*</td>
<td>2.92</td>
<td>1.15</td>
<td>.60</td>
</tr>
<tr>
<td>Bad for the environment: Good for the environment*</td>
<td>3.08</td>
<td>1.04</td>
<td>.66</td>
</tr>
</tbody>
</table>

Note: Scores based on semantic differential scale from 1= useless to 5= useful.
*Researcher-developed item.

Table 4-6. Regulatory focus questionnaire descriptive statistics

<table>
<thead>
<tr>
<th></th>
<th>$n$</th>
<th>$M$</th>
<th>$SD$</th>
</tr>
</thead>
<tbody>
<tr>
<td>Compared to most people, are you typically unable to get what you want out of life? (promotion item)*</td>
<td>660</td>
<td>3.73</td>
<td>.72</td>
</tr>
<tr>
<td>Growing up, would you ever “cross the line” by doing things your parents would not tolerate? (prevention item)*</td>
<td>660</td>
<td>3.51</td>
<td>.92</td>
</tr>
<tr>
<td>S. No.</td>
<td>Question</td>
<td>n</td>
<td>M</td>
</tr>
<tr>
<td>-------</td>
<td>---------------------------------------------------------------------------</td>
<td>-----</td>
<td>---------</td>
</tr>
<tr>
<td>1</td>
<td>How often have you accomplished things that got you “psyched” to work even harder? (promotion item)</td>
<td>660</td>
<td>3.83</td>
</tr>
<tr>
<td>2</td>
<td>Did you get on your parents’ nerves often when you were growing up? (prevention item)*</td>
<td>660</td>
<td>3.34</td>
</tr>
<tr>
<td>3</td>
<td>How often did you obey rules and regulations that were established by your parents? (prevention item)</td>
<td>660</td>
<td>4.13</td>
</tr>
<tr>
<td>4</td>
<td>Growing up, did you ever act in ways that your parents thought were objectionable? (prevention item)</td>
<td>660</td>
<td>3.53</td>
</tr>
<tr>
<td>5</td>
<td>Do you often do well at different things that you try? (promotion item)</td>
<td>660</td>
<td>3.91</td>
</tr>
<tr>
<td>6</td>
<td>Not being careful enough has gotten me into trouble at times. (prevention item)*</td>
<td>660</td>
<td>3.37</td>
</tr>
<tr>
<td>7</td>
<td>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. (promotion item)*</td>
<td>660</td>
<td>3.58</td>
</tr>
<tr>
<td>8</td>
<td>I feel like I have made progress toward being successful in my life. (promotion item)</td>
<td>660</td>
<td>4.43</td>
</tr>
</tbody>
</table>

Note: Scores based on Likert scale of 1= never to 5= very often or 1= certainly false to 5= certainly true. *Item was reverse coded

Table 4-7. Attitude toward product (product specific* + general attitude)

<table>
<thead>
<tr>
<th></th>
<th>Attitude Toward Product Without Claims</th>
<th>Attitude Toward Product With Claims</th>
</tr>
</thead>
<tbody>
<tr>
<td>n</td>
<td>M</td>
<td>SD</td>
</tr>
<tr>
<td>Useless:Useful</td>
<td>660</td>
<td>3.98</td>
</tr>
<tr>
<td>Worthless:Valuable</td>
<td>660</td>
<td>3.86</td>
</tr>
<tr>
<td>Harmful:Beneficial</td>
<td>660</td>
<td>3.62</td>
</tr>
<tr>
<td>Foolish:Wise</td>
<td>660</td>
<td>3.42</td>
</tr>
<tr>
<td>Unpleasant:Pleasant</td>
<td>660</td>
<td>3.49</td>
</tr>
<tr>
<td>Awful:Nice</td>
<td>660</td>
<td>3.49</td>
</tr>
<tr>
<td>Disagreeable:Agreeable</td>
<td>660</td>
<td>3.54</td>
</tr>
<tr>
<td>Sad:Happy</td>
<td>660</td>
<td>3.23</td>
</tr>
<tr>
<td>Bad:Good</td>
<td>660</td>
<td>3.53</td>
</tr>
<tr>
<td>Negative:Positive</td>
<td>660</td>
<td>3.41</td>
</tr>
<tr>
<td>Dislike:Like</td>
<td>660</td>
<td>3.57</td>
</tr>
<tr>
<td>Unfavorable:Favorable</td>
<td>660</td>
<td>3.42</td>
</tr>
<tr>
<td>Unhealthy:Healthy</td>
<td>660</td>
<td>3.70</td>
</tr>
<tr>
<td>Unsafe to eat when cooked:</td>
<td>660</td>
<td>4.25</td>
</tr>
<tr>
<td>Safe to eat when cooked*</td>
<td>660</td>
<td></td>
</tr>
</tbody>
</table>
Table 4-7. Continued

<table>
<thead>
<tr>
<th></th>
<th>Attitude Toward Product Without Claims</th>
<th>Attitude Toward Product With Claims</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( n )</td>
<td>( M )</td>
</tr>
<tr>
<td>From an animal treated</td>
<td>660</td>
<td>2.92</td>
</tr>
<tr>
<td>inhumanely: From an animal</td>
<td></td>
<td></td>
</tr>
<tr>
<td>treated humanely*</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Bad for the environment:</td>
<td>660</td>
<td>3.08</td>
</tr>
<tr>
<td>Good for the environment</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Scores based on semantic differential scale from 1= useless to 5= useful. *Researcher-developed item to measure product-specific attitude.

Table 4-8. Attitude toward product grand means among treatment groups

<table>
<thead>
<tr>
<th>Treatment Group</th>
<th>Attitude Toward Product Without Claims</th>
<th>Attitude Toward Product With Claims</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>( n )</td>
<td>( M )</td>
</tr>
<tr>
<td>Gain Frame</td>
<td>208</td>
<td>3.51</td>
</tr>
<tr>
<td>Nonloss Frame</td>
<td>236</td>
<td>3.41</td>
</tr>
<tr>
<td>Control</td>
<td>216</td>
<td>3.68</td>
</tr>
<tr>
<td>Total</td>
<td>660</td>
<td>3.53</td>
</tr>
</tbody>
</table>

Note: Scores ranged from 1 (most negative) to 3 (neutral) to 5 (most positive).

Table 4-9. Effects of labeling claim frame on attitudes toward product with claims

<table>
<thead>
<tr>
<th>Source</th>
<th>( SS )</th>
<th>( df )</th>
<th>( MS )</th>
<th>( F )</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Claim Frame</td>
<td>17.49</td>
<td>2</td>
<td>8.75</td>
<td>16.87</td>
<td>.000</td>
</tr>
<tr>
<td>Error</td>
<td>340.53</td>
<td>657</td>
<td>.518</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>358.02</td>
<td>659</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4-10. Planned comparisons t-test for differences between treatment groups on attitude toward product with claims

<table>
<thead>
<tr>
<th></th>
<th>( n )</th>
<th>( M )</th>
<th>( SD )</th>
<th>( t )</th>
<th>( df )</th>
<th>( p )</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gain Framed Production Claims</td>
<td>236</td>
<td>4.17</td>
<td>0.67</td>
<td>-5.26</td>
<td>657</td>
<td>.000</td>
</tr>
<tr>
<td>Neutral Framed Product Claims (Control)</td>
<td>216</td>
<td>3.80</td>
<td>0.81</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonloss Framed Production Claims</td>
<td>236</td>
<td>4.13</td>
<td>0.68</td>
<td>-4.79</td>
<td>657</td>
<td>.000</td>
</tr>
<tr>
<td>Neutral Framed Product Claims (Control)</td>
<td>216</td>
<td>3.80</td>
<td>0.81</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gain Framed Production Claims</td>
<td>236</td>
<td>4.17</td>
<td>0.67</td>
<td>-.64</td>
<td>657</td>
<td>.52</td>
</tr>
<tr>
<td>Nonloss Framed Production Claims</td>
<td>236</td>
<td>4.13</td>
<td>0.68</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
Table 4-11. Effects of labeling claim frame on attitudes toward product with claims

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Claim Frame</td>
<td>9.86</td>
<td>2</td>
<td>4.43</td>
<td>6.41</td>
<td>.002</td>
</tr>
<tr>
<td>Error</td>
<td>453.90</td>
<td>657</td>
<td>.691</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>462.76</td>
<td>659</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Table 4-12. Planned comparisons t-test for differences between treatment groups on attitude toward product without claims

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gain Framed Production Claims</td>
<td>236</td>
<td>3.51</td>
<td>0.81</td>
<td>2.12</td>
<td>657</td>
<td>.035</td>
</tr>
<tr>
<td>Neutral Framed Product Claims (Control)</td>
<td>216</td>
<td>3.68</td>
<td>0.81</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Nonloss Framed Production Claims</td>
<td>236</td>
<td>3.41</td>
<td>0.87</td>
<td>3.56</td>
<td>657</td>
<td>.000</td>
</tr>
<tr>
<td>Neutral Framed Product Claims (Control)</td>
<td>216</td>
<td>3.68</td>
<td>0.81</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gain Framed Production Claims</td>
<td>236</td>
<td>3.51</td>
<td>0.81</td>
<td>-1.37</td>
<td>657</td>
<td>.17</td>
</tr>
<tr>
<td>Nonloss Framed Production Claims</td>
<td>236</td>
<td>3.41</td>
<td>0.87</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Scores ranged from 1 (most negative) to 3 (neutral) to 5 (most positive).

Table 4-13. Independent samples t-test for differences between subjects exposed to production claims and subjects exposed to general product claims

<table>
<thead>
<tr>
<th></th>
<th>n</th>
<th>M</th>
<th>SD</th>
<th>t</th>
<th>df</th>
<th>p</th>
</tr>
</thead>
<tbody>
<tr>
<td>Production Claims Absent</td>
<td>216</td>
<td>3.68</td>
<td>0.81</td>
<td>-3.31</td>
<td>658</td>
<td>.001</td>
</tr>
<tr>
<td>Production Claims Present</td>
<td>444</td>
<td>3.46</td>
<td>0.84</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Note: Scores ranged from 1 (most negative) to 3 (neutral) to 5 (most positive).

Table 4-14. Pearson product moment correlations between grocery shopping behavior and attitude toward product with production claims

<table>
<thead>
<tr>
<th></th>
<th>Attitude toward product with production claims</th>
<th>Attention to production claims in grocery store</th>
<th>Purchase frequency of products with production claims</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude toward product with production claims</td>
<td>1</td>
<td>-.08</td>
<td>.002</td>
</tr>
<tr>
<td>Attention to production claims in grocery store</td>
<td>N= 629</td>
<td>1</td>
<td>.59**</td>
</tr>
<tr>
<td>Purchase frequency of products with production claims</td>
<td>N= 629</td>
<td>N= 629</td>
<td>1</td>
</tr>
</tbody>
</table>
### Table 4-15. Pearson product moment correlations between grocery shopping behavior and attitude toward product without production claims

<table>
<thead>
<tr>
<th></th>
<th>Attitude toward product without production claims</th>
<th>Attention to production claims in grocery store</th>
<th>Purchase frequency of products with production claims</th>
</tr>
</thead>
<tbody>
<tr>
<td>Attitude toward product without production claims</td>
<td>1</td>
<td>-22**</td>
<td>-17**</td>
</tr>
<tr>
<td>Attention to production claims in grocery store</td>
<td>629</td>
<td>1</td>
<td>59**</td>
</tr>
<tr>
<td>Purchase frequency of products with production claims</td>
<td>629</td>
<td>629</td>
<td>1</td>
</tr>
</tbody>
</table>

** p < .001 (2-tailed).

### Table 4-16. Mean attitude toward products between community upbringing

<table>
<thead>
<tr>
<th>Attitude Toward Product With Claims</th>
<th>Attitude Toward Product Without Claims</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>n</td>
</tr>
<tr>
<td>Farm</td>
<td>23</td>
</tr>
<tr>
<td>Rural, Not a Farm</td>
<td>98</td>
</tr>
<tr>
<td>Subdivision in Town or City</td>
<td>491</td>
</tr>
<tr>
<td>Downtown in Town or City</td>
<td>47</td>
</tr>
</tbody>
</table>

### Table 4-17. Effects of community upbringing on attitude toward product without claims

<table>
<thead>
<tr>
<th>Source</th>
<th>SS</th>
<th>df</th>
<th>MS</th>
<th>F</th>
<th>p</th>
<th>η²</th>
</tr>
</thead>
<tbody>
<tr>
<td>Label Presence</td>
<td>7.63</td>
<td>1</td>
<td>7.63</td>
<td>11.22</td>
<td>.001</td>
<td>.017</td>
</tr>
<tr>
<td>Community Upbringing</td>
<td>9.94</td>
<td>3</td>
<td>3.31</td>
<td>4.87</td>
<td>.002</td>
<td>.022</td>
</tr>
<tr>
<td>Error</td>
<td>445.04</td>
<td>654</td>
<td>.68</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>8682.90</td>
<td>659</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

### Table 4-18. Post hoc comparisons between community upbringing

<table>
<thead>
<tr>
<th>Comparisons</th>
<th>Mean Attitude Difference</th>
<th>SE</th>
<th>p</th>
<th>Lower Bound</th>
<th>95% CI</th>
<th>Upper Bound</th>
</tr>
</thead>
<tbody>
<tr>
<td>Farm vs. Rural</td>
<td>.095</td>
<td>.191</td>
<td>1.0</td>
<td>-411</td>
<td>.600</td>
<td></td>
</tr>
<tr>
<td>Rural vs. Subdivision</td>
<td>.274*</td>
<td>.091</td>
<td>.017</td>
<td>.032</td>
<td>.516</td>
<td></td>
</tr>
<tr>
<td>Subdivision vs. Urban</td>
<td>.128</td>
<td>.126</td>
<td>1.0</td>
<td>-206</td>
<td>.461</td>
<td></td>
</tr>
<tr>
<td>Urban vs. Farm</td>
<td>-.496</td>
<td>.210</td>
<td>.11</td>
<td>-1.052</td>
<td>.059</td>
<td></td>
</tr>
<tr>
<td>Rural vs. Urban</td>
<td>.402*</td>
<td>.146</td>
<td>.037</td>
<td>.014</td>
<td>.789</td>
<td></td>
</tr>
<tr>
<td>Farm vs. Subdivision</td>
<td>.369</td>
<td>.176</td>
<td>.220</td>
<td>-.097</td>
<td>.834</td>
<td></td>
</tr>
</tbody>
</table>

Note: p-values reflect Bonferroni adjustment for multiple comparisons
Figure 4-1. Subjects' weekly meat consumption
Figure 4-2. Means between the attitudes toward product with claims in each treatment group. Total attitude includes product-specific and general attitude.
Figure 4-3. Means between the attitudes toward product without claims in each treatment group.
Figure 4-4. Means between the attitudes toward product without claims in each treatment group.
CHAPTER 5
CONCLUSION

Overview

This study addressed two gaps found in the literature. The first one being whether consumers’ beliefs about conventionally produced food products are affected by production labeling claims and whether this on-package marketing can also affect intent to support an animal welfare ballot initiative. The second gap was to test the predictions of loss aversion and regulatory focus theories using a qualitative means of presenting equivalent gains and nonlosses in the context of labeling claims on meat. The purpose of this study was to compare the persuasive effects of gain- and nonloss-framed labeling claims. With loss aversion and regulatory focus theory as the theoretical framework, the objectives of this study were to determine the effects of differently framed labeling claims on consumers’ attitudes toward the product with production claims, the conventional product, and voting intention.

Two types production labeling claims were constructed (gain and nonloss) to market a package of boneless, skinless chicken breasts as being good for animal welfare and the environment. Originally, health claims were also intended to be used, but extensive pretesting warranted eliminating them from the study. A convenience sample of college students were randomly assigned to receive one of three sets of labeling claims: nonloss-framed claims on animal welfare and environmental impact, gain-framed claims on animal welfare and environmental impact, or general/neutral claims related to the cut of meat. To determine the effects of the treatments, attitudes toward the product with the claims, attitudes toward the product without the claims, and the decision on a hypothetical voting scenario were measured.
Chapter 4 discussed data analyses and results from 660 subjects. The mean age was 21 years old and the sample was primarily female. Most subjects' considered themselves from suburban areas and did not have a livestock production background nor planned to in the near future. The subjects tended to be more Democrat and Liberal in their political viewpoint than Republican and Conservative or Independent and neither Liberal nor Conservative. Most subjects' indicated that they consume meat on a daily to twice daily basis and are the primary grocery shopper for themselves or household. Less than half of the subjects pay attention to five types of production labeling claims and most do not purchase products with these claims or only every so often (less than once per month). They pay the most attention to hormone labeling and the least to claims about how the animal was raised. This chapter presents the key findings, discussion/implications, limitations, recommendations, and conclusions.

**Key Findings**

Descriptive analysis of the data found that subjects were generally more promotion focused than prevention focused; however, having a prevention focus did not influence attitudes toward the product with or the one without the claims, and a promotion focus accounted for a negligible amount (<1%) of the variance in those attitudes.

A total of four hypotheses were tested in the present study. Based on the theories of loss aversion, framing effects, and regulatory focus, the first hypothesis predicted that when controlling for regulatory focus, subjects exposed to nonloss-framed claims will have more positive attitudes toward the product with production claims than those exposed to gain-framed labeling claims or control group claims. This hypothesis was partially supported. Regulatory focus (prevention, promotion) did not influence attitudes toward the product with the claims so it was not included as a covariate in the analysis.
The gain- and nonloss-framed production labeling claims did not lead to significantly different attitudes toward the product with the claims. Subjects in both treatment conditions had positive attitudes toward the product with the claims that were, in fact, nearly the same whether they were exposed to nonloss or gain claims. Subjects exposed to gain or nonloss claims had more positive attitudes towards the product with the claims than those exposed to neutral, general product claims, but this was more likely an effect of the treatment conditions’ use of production claims than the frames themselves.

The second hypothesis predicted that when controlling for regulatory focus, subjects exposed to nonloss-framed claims will have less positive attitudes toward the product without production claims than those exposed to gain-framed labeling claims or control group claims. This hypothesis was partially supported. Subjects exposed to gain claims did not differ from those exposed to nonloss claims in their attitudes toward the product without the claims. Subjects exposed to gain or nonloss claims had less positive attitudes towards the product without the claims than those exposed to neutral, general product claims. Again, this was likely because of the production claims subjects were exposed to in the treatment conditions rather than the framing.

The third hypothesis stated that subjects exposed to a food product with production claims and a product without such claims will have less positive attitudes toward the product without the claims than those who do not see a food product with production claims. This hypothesis was supported. The analyses for H1 and H2 suggested this would be the case, but a direct analysis was conducted to confirm it. An independent samples t-test revealed a significant effect of exposure to the production
labeling claims on attitudes toward the product without the claims. Subjects exposed to production claims had less positive attitudes toward the product without the claims, whereas those who were not exposed to production claims had a more positive attitude toward the product without the claims.

The fourth and final hypothesis predicted that subjects exposed to a food product with production claims will be more likely to vote “yes” for an animal welfare ballot initiative than those who do not see a food product with production claims. This hypothesis was not supported. The majority of the subjects voted yes for the animal welfare ballot initiative.

Implications

The results of this study offer several theoretical implications for loss aversion, framing effects, and regulatory focus theories. The theoretical implications are followed by an explanation of the practical implications based on the effects production claim labeling had on attitudes toward the product without those claims and voting intentions on an animal welfare ballot initiative.

Theoretical

Researchers agree that the way information is framed can influence consumers’ judgment and decision about products (see Levin et al., 1998; Rabin, 1998; Boettecher, 2004). Previous loss aversion research consistently showed that people have stronger reactions to information presented as potential losses/nonlosses in comparison to equivalent potential gains/nongains (Kahneman & Tversky, 1979; Tversky & Kahneman, 1981; Boettcher, 2004; McDermott, 2004). Conversely, a few other studies suggested that gains garner a stronger reaction than nonlosses (Idson et al., 2000; Liberman et al., 2005).
The present study did not find loss/gain asymmetry in support of either prediction. Whether subjects were exposed to gain-framed production labeling claims or nonloss claims did not matter; their attitudes toward the products were affected similarly. This could be because the application of the message/information was directly connected with an ordinary market good: food. Horowitz and McConnell (2002) found that the more a good is like an “ordinary market good” then the lower is the degree of gain/loss asymmetry. The production claims themselves, however, were less about the product itself and more about the implications for environmental impact and animal welfare as a result of producing that product. The environment and animal welfare are non-market goods and cannot be directly experienced by the consumer; that is the nature of credence attributes (Darbi & Karni, 1973). Perhaps the predictions of loss aversion would hold when testing the production labeling claims in the absence of the food product. While that would be a clearer test of the prediction, it is less representative of the reality of how these production claims are frequently encountered by consumers. Also, since attitudes toward the product (rather than the claims) were measured, the utilitarian value inherit in the chicken may be confounding the framing effect. This is commonly the case in advertising and marketing research; the basis of the field of advertising is that the information provided with and/or about the product affects consumer judgment of the product (Young, 2008).

Another reason could be that the information (the production labeling claims) in this study was presented in a qualitative manner rather than the typical quantitative manner used in many previous studies supporting loss aversion (Kahneman & Tversky, 1979; Tversky & Kahneman, 1981; Levin et al., 1998; Boettcher, 2004; McDermott,
2004) and in those supporting regulatory focus theory (Idson et al., 2000; Liberman et al., 2005). These studies did not always use numbers, but some used examples that could be quantified (i.e., reducing cholesterol in Levin et al., 2001). Holistic environmental impact and animal welfare are difficult to quantify objectively (Broom, 1991; Stolze, Piorr, Häring, & Dabbert, 2000), or, at best, would be difficult for the average consumer to fully interpret (Bateman, Dent, Peters, Slovic, & Starmer, 2007). Consumers rely on food production certification agencies (government and third-party) to make the interpretations and provide them a trustworthy generalization of the meanings of good animal welfare and environmental impact (Caswell & Mojduszka 1996; Golan et al., 2001; Auriol & Schilizzi 2003). Also, framing information as gains and nonlosses primarily affects the reference point people use to make judgments and decisions (Heath et al., 1999). Soman (2004) explained that values are coded as gains and losses relative to a reference point, meaning a decision is reference dependant. Presenting information about a product in a qualitative manner might cause consumers to automatically adjust their reference point because numerical values are not available to encode the message as a gain or a nonloss. Therefore, qualitatively created frames (i.e., no negative environmental impacts vs. good for the environment) may not communicate the intended reference point strongly enough, but are, therefore, equally persuasive on attitudes. Bateman, Day, Jones, and Jude (2009) suggested that an individual is able to interpret that one numeric value is larger than another without necessarily understanding its meaning, thereby leading to the reliance on heuristics and biases to form judgment. This study attempted to frame nonlosses and gains equivalently, but qualitatively. The results suggest that in the absence of numbers or
quantifiable information, the biases of loss aversion and framing effects are minimized. The message may need to include terms that more strongly suggest a reference point, such as “reduce environmental impact” or “improve environmental impact,” to induce the biases.

Regulatory focus (prevention, promotion) also did not explain much of the variance in attitudinal response. This could be for the same reasons as explained earlier with respect to loss aversion and framing effects; however, regulatory focus studies are more likely to use what researchers call “prevention and promotion messages” that do not involve quantifiable information and are usually not equivalent (see Aaker & Lee, 2001; Wang & Lee, 2006; Florack & Scarabis, 2006; Zhao & Pechmann, 2007). According to regulatory focus theory, subjects’ with a high promotion (prevention) focus score should have been more sensitive to the presence of gains (nonlosses), meaning they should have had a stronger attitudinal response to the labeling claim frame that fit their regulatory focus. Previous research has found that negative (loss) frames are more persuasive with prevention-focused individuals than positive (nonloss) frames, and that positive (gain) frames are more persuasive than negative (nongain) frames with promotion-focused individuals (Zhao & Pechmann, 2007). This may explain why a very small correlation existed between promotion-focus and attitudes but not between prevention focus and attitudes. Many regulatory focus researchers advise marketers to create and frame messages that are in line with audiences’ regulatory focus for effective persuasion (Aaker & Lee, 2001; Wang & Lee, 2006; Florack & Scarabis, 2006; Zhao & Pechmann, 2007). This study implies that a simplistic message, such as a few words in a labeling claim, may not be strong enough to elicit the regulatory fit effect. It may take
additional priming of a regulatory focus to fully induce it (Freitas & Higgins, 2002; Florack & Scarabis, 2006) or a more precise manipulation of message wording (e.g., avoid environmental damage, achieve positive environmental impacts).

**Practical**

The theoretical hypotheses testing showed that production claims framed as gains or nonlosses produced similar positive attitudinal effects on the credence attribute product with the production claims. Gain-framed claims produced slightly (but not statistically significant) more positive attitudes toward the product with the claims, but slightly less negative attitudes toward the product without the claims. Marketers of credence attribute food products could potentially encourage purchase by placing products with gain-framed claims in their own section of the grocery store (away from the conventional products without the claims) and those with nonloss-framed claims next to the conventional items. However, additional research adding price variation as an additional independent variable would need to be considered because this study held price consistent across both product types.

When examining the attitudinal effects of production labeling claims, subjects’ exposed to those claims had less positive attitudes toward the product without the claims than those exposed to general product claims. The product without the claims was meant to represent the conventional commodity product to determine how the marketing of credence attribute products affects people’s attitudes toward the conventional product. The results did not show that exposure to production claims produces negative attitudes toward conventional products but it did produce markedly less positive attitudes. The results show that consumers view the conventional product inferior to the credence attribute product on the aspects of safety, healthiness, humane
animal treatment, and environmental-friendliness, as well as on more general aspects. Thus, the production claims are a source of information reducing consumers’ positive attitudes toward those aspects of conventional agriculture production and its food products. Previous work suggested this may be the case (Klonsky & Tourte, 1998), but this study shows that it is. The claims could serve as a prompt, causing consumers to recall negative information from the news media and mass media (Craven & Johnson, 1999). It is unclear how much of consumers’ beliefs and subsequent attitudes can be accounted for by various communication channels (i.e., advertisements, labels, media, websites, social media, etc.). For example, would the majority of consumers know (or be concerned about) antibiotic and hormone use or confinement in livestock production if they weren’t inundated with more expensive products claiming to be absent of those inputs? This study shows that the production claims are a source of information that produces inferior attitudes toward conventional products without such claims.

The exposure to production labeling claims and subsequent attitudes produced, however, did not translate into voting intention on an animal welfare ballot initiative. Subjects overwhelmingly supported this law. The reason no treatment effects were seen could be due to several reasons. First, political decision making information that affects decisions typically comes in forms of communication (i.e., TV ads, websites, news and editorials, etc.). This study intended to determine if food labels could be a source of communication affecting political decision making, but did not find that to be the case. Another reason could be that the measure was a one-item, dichotomous measure of behavioral intent. Multiple item measurement with a wider scale would better capture the variance that naturally exists in complex decision making.
Interestingly, the subjects indicated they pay the least amount of attention to animal welfare claims and purchase food with such claims the least in comparison to four other types of claims (no hormones, no antibiotics, organic, and environmentally friendly). This food shopping characteristic is similar to studies surveying general adult consumer populations (Verbeke & Viaene, 1999; Yiridoe et al., 2005; Hughner, McDonagh, Prothero, Shultz, & Stanton, 2007). The data shows, on the other hand, that they are willing to support legislation that would make it required of all livestock producers to provide their livestock more space in confinement, which is an animal welfare consideration. While subjects were willing to support a government policy, they are not willing to “put their money where their mouth is.” When evaluating a potential risk, decision-making research has shown people must be paid more to accept a risk than they are willing to pay to avoid that risk (Thaler, 1980; Horowitz & McConnell, 2002). While this concept is not entirely related to the findings, it suggests that people are generally willing to pay less to avoid a risk, and supporting this legislation costs no money (at least immediately) to avoid the risk completely. These subjects’ were not provided any additional information about the consequences of passing such a law. When this particular law was passed in California, 63.5% of the voters supported it. This study shows that, without education and persuasive communication efforts, that number could be much higher with young adults.

From the post hoc analyses that explored the relationships between some of the demographic variables and dependent variables, it is interesting to note the relationship between community upbringing and effects on attitude toward the product without the claims. Those who indicated they grew up in a rural area (not a farm) had more positive
attitudes toward the conventional product than those from subdivisions or urban areas. While no other statistically significant relationships were found, examination of the means across the four groups shows that those from farm and rural communities generally have more positive attitudes towards both products. This relationship and pattern could be because those from a farm or rural community feel a stronger connection with agriculture and its products as a result of knowing farmers in their community, exposure to high school agriculture programs, and/or involvement in 4-H and/or FFA. Rural communities are more likely to have farmers and youth agricultural programs in comparison to suburban and urban communities (Frick, Birckenholz, Gardener, & Matchtmes, 1995).

The other relationship of interest found in the post hoc analyses was the small, negative correlation between attention to production claims and attitude toward the product without claims, and purchase frequency and attitude toward the product without claims. While paying attention to more claims and purchasing these products more frequently does not correlate with having more positive attitudes toward products that carry those claims, these behaviors do reduce their attitudes toward products without such claims. It seems that what potentially encourages attention to and purchase of products with production claims is the devaluation or fear of conventional products.

**Limitations**

While the present study offers several useful theoretical and practical insights, there were some limitations that should be considered. The convenience sample of college students is one of the key limitations, primarily for the practical implications and recommendations. College students are still developing their consumer habits and civic engagement. These may change with further maturity, experience, and when starting a
family. For example, consumers with children are more likely to learn about and purchase organic foods (Hughner et al., 2007). Readers should carefully consider the demographic information before applying conclusions to other populations.

Research consistently shows that consumers purchase and prefer organic and natural meat products for health reasons (AMI & FMI, 2008, Yiridoe et al., 2005; Hughner et al., 2007). While consumers often make connections between environmental impacts and animal welfare and health concerns (Hughner et al., 2007), those elements themselves are not as concerning as chemicals, hormones, and antibiotics, which are primarily health-related (Yiridoe et al., 2005). This study was unable to find a plausible health claim in equivalent gain and nonloss frames related to those elements to test the effects.

The present study used a one-time only exposure to the production labeling claims. Strong attitudes resistant to change require repeated exposure to persuasive messages (Perloff, 2008). Repeated exposure over longer periods of time could reveal a greater influence of the production labeling claims on attitudes. Though, the claims used in this study are those that do exist in reality. Given about half of the subjects in this study at least pay attention to such claims, this was likely not their first exposure to them.

Another limitation of the study was the less-than-ideal reliability of the prevention focus scale. Perhaps the use of another regulatory focus scale (e.g., Lockwood, Jordan, & Kunda, 2002) would prove more reliable.
Recommendations

For Future Research and Theory

From a theoretical perspective, more research needs to be done examining the effects of gains versus nonlosses. This study attempted to further some of the previous research in that area (Idson et al., 2004; Liberman et al., 2005), but perhaps due to the qualitative nature of the frames and the nature of the application (food product), did not find asymmetry in the attitudinal reactions to gains versus nonlosses. Researchers in these theoretical areas should consider future studies that attempt to manipulate gains and nonlosses qualitatively to determine if biases are minimized as a result. The finding that regulatory focus did not influence attitudinal response to gain- or nonloss-framed claims should be supplemented with using regulatory focus priming to determine potential effects of this cognitive style in combination with the use of a more reliable measure for regulatory focus (e.g., Lockwood et al., 2002).

One of the goals of this research was to determine if and how production labeling claims affects attitudes toward the product, and therefore, only assumptions can be made regarding how it affects beliefs and attitudes about agricultural production. A branch of this study would be to determine how this type of labeling affects consumers’ beliefs and attitudes about agricultural production and food safety directly. Furthermore, a national survey of where consumers obtain their information about agriculture production, food, and farming life would be beneficial to agricultural communications researchers, especially as the U.S. population employed in agriculture continues to dwindle. This would help determine the role marketing and advertising, as well as other forms of communication, play in forming beliefs and attitudes.
The present study held several variables consistent to determine the effect of the differently framed production labeling claims on attitudes. Additional manipulations of variables such as product type, price, brand, and other packaging characteristics would be beneficial to marketers and may produce different attitudinal effects. Also, as mentioned in the limitations, further research into production claim labeling should test health claims since that is the primary reason driving consumer perceptions and purchase of such products (AMI & FMI, 2008, Yiridoe et al., 2005; Hughner et al., 2007).

A follow-up study should also include other dependent measures that may be affected by food labeling claims. Behavior, such as willingness to pay and purchase likelihood, would offer additional insight into the effects of food labels. In addition, while attitudes can be a useful measure of food label communication effects, it would be worthwhile to examine other effects such as risk perceptions. In people’s subjective evaluation of risk, nine general properties of activities or technologies emerge: (1) voluntariness of risk, (2) immediacy of effect, (3) knowledge about the risk by the person who are exposed to the potentially-hazardous risk source, (4) knowledge about the risk in science, (5) control over the risk, (6) newness, i.e. are the risks new and novel or old and familiar ones, (7) chronic/ catastrophic, (8) common/dread, i.e. whether people have learned to live with and can think about the risk reasonably and calmly, or is it a risk that people have great dread for, and (9) severity of consequences (Fischoff, Slovic, Lichtenstein, Read, & Combs, 2000). Using those dimensions of risk, a measure of livestock production risk perceptions could be measured. As previously mentioned, a more complex measure of voting intention would also be useful in capturing greater variability in the potential effects of food labeling as communication affecting political
decisions. The manipulations of nonloss and gain messages in these studies should include terms like “reduce” and “improve” to more strongly suggest a reference point that is moved toward or away from to determine if the biases of loss aversion and regulatory focus fit effect are subsequently induced.

**For Practitioners**

In this study, exposure to production labeling claims about animal welfare and environmental impact reduced positive attitudes toward the product without such claims. Specifically, the conventional product was viewed as inferior to the credence attribute product on the aspects of safety, healthiness, humane animal treatment, and environmental-friendliness, as well as on more general aspects. While this is likely viewed as a positive finding for those with a vested interest in alternative agriculture production and products, it is probably concerning to those who believe in the merits of conventional agriculture. The marketing of credence attribute products contributes to the devaluation of products that do not have such claims; however, many products, even those from conventional systems could qualify for many different types of production claims. It is recommended that those within the agricultural industry develop a system to explore the facets of farming operations that may qualify food products for production and/or processing claims, especially those related to health and food safety, animal welfare, and environmental impact. The results of this study also imply that agricultural communicators working on behalf of conventional agriculture need to help rebuild attitudes toward that type of production system and help consumers understand the meanings and implications of various food labels. They also need to assist in communication efforts with opinion leaders, policy makers, and voters on agricultural policy issues. Beyond that, agricultural communicators should help their organizations
and businesses understand and value these attitudes because the controversy over alternative agriculture and conventional agriculture is far from over (see Paarlberg, 2010 and Lappé, 2010).

Government food regulators must consider the effects of food labeling to ensure the policies, standards, and guidelines for such labels are balancing the market for agricultural products and not misleading consumers (Golan et al., 2001). If organic and other credence attribute labeled foods continue to be perceived as the safer and better food choice, the market for conventional foods could potentially suffer. Government regulators must meticulously consider these types labeling claims before approving them and be responsible for communicating their meaning to consumers.

Marketers and advertisers intending to apply the principles of loss aversion, framing effects, and regulatory focus need to carefully consider the limitations of these theories, especially when making general, qualitative claims. Careful development and testing of the framed messages needs to be conducted to ensure the message-frame-audience combinations produce the intended effects.

Conclusions

Using loss aversion and regulatory focus as a theoretical framework, the objectives of this study were to determine the effects of differently framed labeling claims on consumers’ attitudes toward the product with production claims, the conventional product, and voting intention. This study attempted to frame nonlosses and gains equivalently, but qualitatively. The results suggest that in the absence of numbers or quantifiable information, the biases of loss aversion, framing effects, and regulatory focus fit effect are minimized. Advertisers and marketers should carefully consider the
potential limitations of these theories and thoroughly test differently framed messages or claims before intending to leverage the power cognitive heuristics and biases.

The mere exposure to the production labeling claims, no matter how framed, produced equally positive attitudes toward the product; however, their presence also decreased the positive attitudes held toward the product without such claims. These types of food labels are a source of information affecting consumers’ attitudes towards conventional agriculture products and perhaps even the production system. Agricultural communicators should not underestimate the effects that food marketing and advertising can have on consumers’ attitudes toward conventional agriculture and its products, and consider these effects in addition to messages put forth by activist groups and mass media.
APPENDIX A
VERBAL PRE-NOTIFICATION

Whoa, extra credit?!

- 15-minute online survey to gather students’ opinions about food products and labeling
- E-mail from Katie Abrams with link to survey and your unique participant ID will be sent to your GATORLINK e-mail account this Thursday
- Survey expires: Sunday, March 28 at 11:59 p.m.
- Contact Katie with questions/problems: kchodil@ufl.edu

PowerPoint slide used by instructors of courses which contained the sample for the study to announce the upcoming study.
APPENDIX B
FIRST CONTACT E-MAIL SENT TO SUBJECTS

Dear ${m://FirstName},

I am conducting a study about food products and would like to gather your opinions about them through an online survey. Your instructor has agreed to offer you extra credit in ${e://Field/course} for participating in the study. The survey will take approximately 15 minutes of your time.

To take the survey, you will need to know your unique participant ID number, which is ${e://Field/ID}. Please take extra care to type in the correct ID number.

Do NOT delete this e-mail if you think you might want to take the survey later because it contains your unique participant ID number. The subsequent reminder e-mails may not contain this required information.

The survey is online. Click or copy-paste the following link into your Internet browser: ${l://SurveyURL}. The link will only be active until 11:59pm, March 28.

If you have questions or problems accessing the survey, please e-mail me at kchodil@ufl.edu or call 352-392-0502 ext. 238.

Follow this link to the Survey:
${l://SurveyLink?d=Take the Survey}

Or copy and paste the URL below into your internet browser:
${l://SurveyURL}

Thank you,

Katie Abrams
Graduate Assistant
University of Florida
Dear ${m://FirstName},

You are receiving this e-mail because I do not have record of you completing the survey for extra credit in ${e://Field/course} for completing it. You certainly are not obligated to complete the survey; this is simply a reminder message. It will take approximately 15 minutes of your time.

To take the survey, you will need to know your unique participant ID number, which is ${e://Field/ID}. Please take extra care to ensure you type in the correct participant ID number.

Your instructor will have the list of names for extra credit by March 31, so please check with them at that time to ensure you got the points.

The survey is online. Click or copy-paste the following link into your Internet browser: ${l://SurveyURL}. The link will only be active until 11:59pm, Sunday, March 28.

If you have questions or problems accessing the survey, please e-mail me at kchodil@ufl.edu or call 352-392-0502 ext. 238.

Follow this link to the Survey:
${l://SurveyLink?d=Take the Survey}

Or copy and paste the URL below into your internet browser:
${l://SurveyURL}

Thank you,

Katie Abrams
Graduate Assistant
University of Florida
Dear ${m://FirstName},

Today is the final day to take the online survey for extra credit in ${e://Field/course}. The survey will take approximately 15 minutes of your time.

To take the survey, you will need to know your unique participant ID number, which is ${e://Field/ID}. Please take extra care to ensure you type in the correct participant ID number.

Your instructor will have the list of names for extra credit by March 31, so please check with them at that time to ensure you got the points.

The survey is online. Click or copy-paste the following link into your Internet browser: ${l://SurveyURL}. The link will only be active until 11:59pm tonight.

If you have questions or problems accessing the survey, please e-mail me at kchodil@ufl.edu or call 352-392-0502 ext. 238.

Follow this link to the Survey:
${l://SurveyLink?d=Take the Survey}

Or copy and paste the URL below into your internet browser:
${l://SurveyURL}

Thank you,

Katie Abrams
Graduate Assistant
University of Florida
APPENDIX E
INSTRUMENT

IRB

Informed Consent
Protocol Title: Food Labeling Claims
Protocol number: 2019-0-152

Please read this consent statement carefully before you decide to participate in this study.

Purpose of the research study: The purpose of this research is to examine college students' attitudes toward food labeling. You will be asked questions about your attitudes and personal experiences about purchasing food.

What you will be asked to do in this study: First, you will answer some questions about your personality. Then, you will be shown food products and provide your opinions about the products you see. You will also be asked to hypothetically vote for a change in state laws. Finally, you will answer some demographic and food preferences questions. You can skip any question you do not wish to answer.

Time required: About 15 minutes

Risks and Benefits: We do not anticipate there will be any risks or direct benefits to you as a consequence of your decision to complete the study.

Compensation: You will receive extra course credit from your instructor.

Confidentiality: Your name will not appear on the questionnaire itself. Your identity will be kept confidential to the extent provided by law. Your instructor will read your name to give you extra credit, but will not receive your name before the final exam. Only the researcher will have access to a file to match your participant ID number and name. Your responses are completely confidential and no reference will be made in any oral or written report that would link you individually to the study. Furthermore, the principal investigator works independently of your instructor.

Voluntary participation: Your participation in this study is completely voluntary.

Right to withdraw from the study: You have the full right to withdraw from the study at anytime without consequence.

Whom to contact if you have questions about the study: Katie Abrams, graduate assistant, Department of Agricultural Education and Communication, University of Florida, address: PO Box 110540, University of Florida, Gainesville, FL, 32611-0540, phone: 352.392.0502 ext. 225 email: kchaddill@ufl.edu or supervisor Dr. Tracy Iran, associate professor, Department of Agricultural Education and Communication, University of Florida, address: PO Box 110540, University of Florida, Gainesville, FL, 32611-0540, phone: 352.392.0502 ext. 225 email: tracyiran@ufl.edu.

Whom to contact if you have questions about a research participant in this study: IRB, Box 112250, University of Florida, Gainesville, FL, 32611-2250; ph 352.392.0433

☐ I have read the procedure described above. I voluntarily agree to participate in the procedure.

☐ I have read the procedure described above. I do NOT agree to participate in the procedure.

[Signature]
Completion: 100%
Q1. Please enter your participant ID number that can be found in the e-mail that contains the link to this survey.

Q2. What class(es) are you taking this survey for? (Select ALL that you are enrolled in. You will get extra credit in each class you are enrolled by taking the survey ONCE.)

- [ ] AEE 3030: Effective Oral Communication
- [ ] AEE 3033: Research and Business Writing
- [ ] JOU 1100: Intro to Journalism
- [ ] MMC 2604: Mass Media and You
11. At any time during this survey, you can use the back-button feature at the bottom of each page to go back to previous questions to review or change your response.

The first set of questions are about your personality. Please read each question and respond thoughtfully.
Q3. Compared to most people, are you typically UNABLE to get what you want out of life?

Never    Seldom    Sometimes    Often    Very Often

Q4. Growing up, how often would you "cross the line" by doing things your parents would not tolerate?

Never    Seldom    Sometimes    Often    Very Often

Q5. How often have you accomplished things that got you "psyched" to work even harder?

Never    Seldom    Sometimes    Often    Very Often

Q6. Did you get on your parents’ nerves often when you were growing up?

Never    Seldom    Sometimes    Often    Very Often

Q7. How often did you obey rules and regulations that were established by your parents?

Never    Seldom    Sometimes    Often    Very Often

Q8. Growing up, did you ever act in ways that your parents thought were objectionable?

Never    Seldom    Sometimes    Often    Very Often

Q9. Do you often do well at different things that you try?

Never    Seldom    Sometimes    Often    Very Often

Q10. Not being careful enough has gotten me into trouble at times.

Never    Seldom    Sometimes    Often    Very Often
Q11. 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.

Certainly False  Somewhat False  Neither True Nor False  Somewhat True  Certainly True

Q12. I feel like I have made progress toward being successful in my life.

Certainly False  Somewhat False  Neither True Nor False  Somewhat True  Certainly True

Q2. On the next screen you will see two photos of food products. You will be asked to examine these products and asked for your opinions about them.
Directions: Carefully examine these two packages and their labels.

Product A

Product B

Q13. Are you able to view the images above?

☐ Yes

☐ No
Gain condition

Directions. Carefully examine these two packages and their labels and answer the questions below the photos.

Q14A. I feel that Product A is...

- Useless
- Worthless
- Harmful
- Foolish
- Unpleasant
- Awful
- Disagreeable
- Sad
- Bad
- Negative
- Dislike
- Unfavorable
- Unhealthy
- Unsafe to eat when cooked
- From an animal treated inhumane
- Bad for the environment

- Useful
- Valuable
- Beneficial
- Wise
- Pleasant
- Nice
- Agreeable
- Happy
- Good
- Positive
- Like
- Favorable
- Healthy
- Safe to eat when cooked
- From an animal treated humanely
- Good for the environment
**Gain condition**

*Directions.* Carefully examine these two packages and their labels and answer the questions below the photos.

**Product A**

**Product B**

---

**Q148. I feel that Product B is...**

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<thead>
<tr>
<th>Feeling</th>
<th>Scale</th>
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<tbody>
<tr>
<td>Useless</td>
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<td>Worthless</td>
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<td>From an animal treated inhumanely</td>
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<tr>
<td>Bad for the environment</td>
<td></td>
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<tr>
<td>Useful</td>
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<td>Valuable</td>
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<td>Beneficial</td>
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<td>Wise</td>
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<td>Pleasant</td>
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<td>Nice</td>
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<td>Agreeable</td>
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<td>Happy</td>
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<td>Like</td>
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<td>Favorable</td>
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<tr>
<td>Healthy</td>
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<tr>
<td>Safe to eat when cooked</td>
<td></td>
</tr>
<tr>
<td>From an animal treated humanely</td>
<td></td>
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<tr>
<td>Good for the environment</td>
<td></td>
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Other Treatment Groups

Nonloss Condition Photos

Control Condition Photos
T3. Thank you for providing your opinions about the two chicken products.

Next, we would like you to read a potential state law regarding the confinement of livestock and indicate whether you would or would not support such a law.

Q15.
On the next ballot in your state, the following initiative regarding the confinement of livestock is being proposed.

Calves raised for veal, egg-laying hens, and pregnant pigs can be confined only in ways that allow these animals to lie down, stand up, fully extend their limbs, and turn around freely. Exceptions made for transportation, rodeos, fairs, 4-H programs, lawful slaughter, research and veterinary purposes. Under the measure, any person who violates this law would be guilty of a misdemeanor, punishable by a fine of up to $1,000 and/or imprisonment in county jail for up to six months.

How do you plan to vote?

☑ Yes
☑ No
T4. Now, we'll ask you some questions about your demographics and grocery shopping choices.

Q6. What year were you born?

Q7. What is your gender?
   - Male
   - Female

Q8. Which of the following categories represents where you lived growing up?
   - A farm in a rural area
   - Rural area, not a farm
   - Subdivision in town or city
   - Downtown area in a city or town

Q9. Do you or anyone in your immediate family work in the livestock production industry?
   - Yes, in the past
   - Yes, currently
   - I or my family plan to within the next 4 years
   - No
Q20. Approximately how often do you eat meat (including all meals and snacks) in a typical week?

- Never
- Less than once per week
- 1 to 3 times per week
- 4 to 7 times per week
- 8 to 14 times per week
- More than 14 times per week
Q21. Generally speaking, would you call yourself a(n):

- Strong Democrat
- Not very strong Democrat
- Independent leaning Democrat
- Independent
- Independent leaning Republican
- Not very strong Republican
- Strong Republican
- Other
- Prefer not to answer

Q22. When it comes to politics, would you describe yourself as:

- Very Liberal
- Liberal
- Somewhat Liberal
- Neither Liberal nor Conservative
- Somewhat Conservative
- Conservative
- Very Conservative
- Prefer not to answer
Q23. Do you currently shop for groceries for yourself or your household?

- Yes
- No

Q23A. Do you help decide what food should be purchased at the grocery store for yourself or your household?

- Yes
- No
Q24. **When grocery shopping, do you pay attention to...**

<table>
<thead>
<tr>
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<th>Yes</th>
<th>No</th>
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</thead>
<tbody>
<tr>
<td>organic labels on meat and chicken?</td>
<td>☐</td>
<td>☐</td>
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<tr>
<td>labels that address the way the animal was raised (i.e., humanely raised, free range, cage-free)?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>labels on meat or chicken that say no hormones?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>labels on meat or chicken that say no antibiotics?</td>
<td>☐</td>
<td>☐</td>
</tr>
<tr>
<td>labels on meat or chicken that suggest it is better for the environment (&quot;green&quot;)?</td>
<td>☐</td>
<td>☐</td>
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</tbody>
</table>
Q26. Approximately how often do you purchase meat or chicken with an organic label?

- Never
- Less than once a month
- Once a month
- Twice a month
- Weekly
- Every time I purchase

Q26. Approximately how often do you purchase meat or chicken with a label that addresses the way the animal was raised (i.e., humanely raised, free range, naturally raised)?

- Never
- Less than once a month
- Once a month
- Twice a month
- Weekly
- Every time I purchase

Q27. Approximately how often do you purchase meat or chicken with a label that says no hormones?

- Never
- Less than once a month
- Once a month
- Twice a month
- Weekly
- Every time I purchase

Q28. Approximately how often do you purchase meat or chicken with a label that says no antibiotics?

- Never
- Less than once a month
- Once a month
- Twice a month
- Weekly
- Every time I purchase

Q29. Approximately how often do you purchase meat or chicken with a label that suggest it is better for the environment ("green")?

- Never
- Less than once a month
- Once a month
- Twice a month
- Weekly
- Every time I purchase
T5. Finally, we’d like to ask you about your experience taking this survey.

Gain condition

Q30. When you were providing your opinions about these two products earlier in the survey, did you notice the difference between the information provided on the labels?

- Yes
- No
- I could not see the images.
Gain condition

Q31. Which of these two products was better for the environment and the animal’s welfare?

☐ Product A
☐ Product B
Q31. Which of these two products contained more information on the label?

- Product A
- Product B
LIST OF REFERENCES


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Levin, I., Schneider, S., & Gaeth, G. (1998). All frames are not created equal: A typology and critical analysis of framing effects. *Organizational behavior and human decision processes, 76*(2), 149-188.


BIOGRAPHICAL SKETCH

Katherine (Katie) Abrams was born and raised for 18 years in Shorewood, IL. She received her B.S. from Purdue University and her M.S. from the University of Florida, both in agricultural communications. Her overarching research goal is to gain an understanding of how people make sense of and participate in debates about agricultural and environmental issues. She often researches in the context of organic and natural foods because it provides an intersection for examining food safety, animal welfare, and environmental attitudes and thought processes. Her communication skills and teaching expertise are in visual communications, Web design and usability, social media, and public relations. In August 2010, Katie will begin her career as a visiting assistant professor at the University of Illinois, Champaign-Urbana in the department of advertising teaching agricultural communications.