Consumers’ Processing of Organic, Natural, and Standard Labeling

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Abstract

The market for and availability of organic products has expanded drastically in the last decade. Organic products may have a symbolic value on which personality traits can be projected (Grubb & Grathwohl, 1967). Natural products may intend to invoke the same projections often reserved for organic products in order to achieve the same willingness to pay for these products as organic. Participants rated organic products significantly higher than standard products in quality, environmental friendliness, and healthfulness. Participants, however, were unwilling to price organic products significantly higher than standard products. Results also show a relationship between low and high idealism and price willing to pay for the natural and organic products.
The organic market is increasingly growing. Between 1992 and 1997 the USDA estimated the certified organic cropland had doubled to 1.3 million acres (Dimitri & Greene, 2000). Producers have been motivated to meet the increasing demand of organic agricultural and food products in the United States since the 1990’s (Dimitri & Greene, 2000). In 1991 and 1995 conventional retailers sold organic products, but only 7 percent of all organic sales were contributed by these mainstream or dominantly trending retailers (Dimitri & Greene, 2000). However, a mere five years later in 2000, 49 percent of all organic sales were supplied through conventional retailers, rather than through niche suppliers like organic co-ops, this considerable response to rising mainstream demand displays the growing popularity and normalization of organic foods (Dimitri & Greene, 2000).

The top selling organic food is fresh produce with breads, grains, and packaged foods following close behind (Dimitri & Greene, 2000). Fresh produce sections are not brand battlegrounds since it is impractical to carry multiple supplier’s of highly perishable produce. Packaged organic foods have to compete in a different arena than organic produce. These packaged organic products are stocked side by side with other packaged goods of various brands, thus, creating an equal competition between all products.

Imagine walking down the aisle of your local grocer. As you travel throughout the store there are various products attempting to receive enough attention to persuade the consumer to purchase the product. Most products distinguish themselves with different shapes, sizes, and color schemes. As they may exhibit labels informing the consumer of its positive food quality due to the
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process of making it, whether it be organic, natural, or standardized aspects of the food as well as its supporting company. Visual (e.g. color scheme) and verbal (written communication) elements of packaging have a major influence on a consumer’s decision of choosing a product (Kuvykaite, Dovaliene, & Navickiene, 2009). Due to these verbal and visual elements on packaging the perception of different categories or classes of food products have been formed within the market.

We have identified three classes of food processing that create three broad categories of packaged foods: organic packaged products, food with claims of naturalness on its packaging, and standard packaged products. Organic foods are those that meet the USDA standards for organic and bear the label of organic. Organic processed foods meet all criteria for natural foods but the ingredients used to make them are organic. In order to be considered organic by the USDA, processed products can contain no more than 5% of a limited number of allowable ingredients in the final product (USDA, 2012). Organic ingredients are “produced without excluded methods (e.g. genetic engineering), ionizing radiation, or sewage sludge; produced per the National List of Allowed and Prohibited Substances” which can be found in Title 7, part 205.105 of the federal code (e.g. the application of fertilizer must improve or maintain soil quality); and overseen by a USDA National Organic Program-authorization certifying agent, following all USDA organic regulation (USDA, 2012). The USDA Organic label is a form of Eco Labeling. Eco labeling identifies environmentally friendly products based on an informal environmental-impact assessment of the product compared to other products in the same category (Loureiro & McCluskey, 2000).

Considering the regulations required for organic products, in the current study the sampled products merely needed the USDA organically approved symbol to fall in the organic condition.

Natural foods tend to be minimally processed, and contain no synthetic additives; growth hormones; antibiotics; hydrogenated oils; stabilizers; and emulsifiers. With an exception in meat and poultry, these natural labeled foods are not subject to the government’s discretion beyond
regulations and health codes which apply to all foods (FMI, 2012). They do not bear the USDA organic label or fully meet the standard of organic products. The standards that they must adhere to concern only the ingredients that go into them, such as not including preservatives, but not of where the ingredients came from or how they were produced.

Standard foods, as they shall be referred to throughout this research, are foods that are neither organic nor natural. These products make no special claims about the sourcing of their ingredients, the nature of their manufacturing, or the health benefits of their product.

As mentioned prior USDA organic labels are eco-labels, generally the purpose of these labels is to signal to consumers that a product has met predetermined standards which supposedly are beneficial to the environment, this in turn would put a pressure on producers to make products that meet those standards in order to cash in on the price premium associated with the label. The ecolabel obtains a broad range of environmental impacts (Truffer et al, 2001). The thought is that if the consumer sees the eco-label, the knowledge that the company is actively eco-friendly will lead to a higher willingness to buy a product with a higher price (Loureiro et al, 2002). Both of these factors drive the incentive to produce organic goods as both higher sales and higher prices can increase profits or at least offset the costs of more labor intensive farming techniques. The heightened willingness to pay is known as the price premium, which refers to the amount of additional cost a consumer will assume in order to purchase a product, in this case eco-labeled products. This, rather than a simple choice to buy, can be a better measure for researchers because it discovers the price level at which the decision to buy a certain product will occur.

The fact that all organic products are natural has led to a consumer heuristic, equating natural and organic labels (Thøgersen, Jørgensen, & Sandager, 2012). The constant linking of the two can begin to work in the opposite direction and lead to an assumption that natural products are organic. This fact may be leading to a loss of the premium that USDA organic labels used to
command. This has led to a growing number of products that are natural but which do not meet USDA Organic standards. The reason natural may have a similar premium to USDA Organic is because of the strong associations that organic, and the idea of buying organic, has to being natural. Verhoog, Matze, Bueren, & Baars (2003) concluded when naturalness refers to having ecological principles, respect for the integrity of life, and not using chemicals, the idea of ‘naturalness’ can be used to characterize organic agriculture and distinguish it from conventional agriculture. In this research we explore the possible equivalence of premiums for products that make unsubstantiated natural claims and those that meet USDA Organic standards.

With all these characteristics the consumer is provided with some choices to make. We are interested in which categories of products (organic, natural, or standard) influence a consumer’s willingness to pay. Willingness to pay is the mean price participants report they are willing to pay for a product. A premium is seen when that mean price exceeds the price of the standard product in the category (Loureiro & McCluskey, 2000). We are also interested to learn if certain personality variables affect the difference in price premiums among the various product categories.

As discussed previously, a product could be preferred due to its labels and implications. The display of a product’s organic or natural aspects compared to a standard package may appeal to different consumers differently. This leads to the contemplation of personal characteristics having an influence on decision making. Grubb and Grathwohl (1967) created a theoretical approach to market behavior encouraging more research on the interaction between personal characteristics and decision making. Particularly within ones self-concept and symbolism. An individual’s self-concept refers to how someone thinks about or perceives oneself (Mcleod, 2008). As symbolism, in this context, refers to how their purchase represents them in the grand scheme of things (e.g. buying Under Armour pollos to feel like an athlete or wearing Carhartts to feel like a farmer). Thus, indicating an individual’s personality and self-image through the products he would choose. They
believed the products held a certain symbolic message which contributes to an individual’s self-concept. Grubb and Grathwohl (1967) stress the role of an individual’s image of himself as a motivator of human behavior in the marketplace in their hypothesis. It is indicated that basic research is needed to verify what products have symbolic value and how this value is related to the consumer’s self-concepts.

Although this observation implies a relationship between market behavior and personality there is other research which displays a weak relationship between these two variables. Harold H. Kassarjian (1971) wrote a review of the many theories and research conducted on Personality and Consumer Behavior. Through his research he found that a few studies indicate a strong relationship, as well as a few indicating no relationship between personality and consumer behavior. While some studies indicate that if correlations do exist they are too weak leaving the relationship between personality and consumer behavior to be questionable and possibly meaningless.

However, there is evidence displaying a significant relationship between personality and consumer behavior toward organic versus standardized products when ethics are taken into consideration. Guido, Prete, Peluso, Maloumby-Baka, and Buffa (2010) conducted a study which examined consumers’ intentions of purchasing organic food products and the role of ethical dimensions and product personality. They found that moral norms (such as, personal beliefs considering right or wrong doings) can be deemed the main motivator of purchasing intention. This, in turn, is affected by product personality traits, such as its naturalness or authenticity. Applying this research to our study is necessary to present that when considering organic versus industrialized products (which relates to differing manufacturers changing the products personality or symbolic value from Grubb and Grathwohl’s theory) individual personality traits should indicate a relationship with consumer behavior.
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An individual’s level of Idealism is significant within the realm of consumer behavior because this aspect of the self deals with principles, purposes, and goals. Highly idealistic people believe that desired consequences can be brought about through the ‘right’ actions (Schlenker & Forsyth, 1977). Highly idealistic people feel that their actions make a difference. Conversely, people with low levels of idealism believe that desired and undesired consequences come as a mixed bag (Schlenker & Forsyth, 1977). No one knows why something happens, it is all random.

The variance between consumer personality and the personality of the three categories of products is the key characteristic we are wanting to explore within the aspects of personality in our study. If the symbolic value varies due to its labeling/packaging indicating if the product is USDA organically approved, natural, or standardly manufactured these personality traits of the product should impact the consumer. Due to the consumer’s personality traits he may care more or less about where his food comes from, how it is packaged, its healthfulness, or its long term effects. The personality of an individual can affect his choice of a product.

This research will assist in finding aspects of consumer choosing of organic, natural, and standard products according to individual characteristics. Thus possibly, helping find what factors drive a consumer to prefer specific products from the long perplexing aisles of various packaging, color schemes, and informative labels. Through this study we expect to find that on the whole participants will exhibit an equally higher price willing to pay for products in the natural and organic categories than the standard products. We also expect the premiums on natural and organic products to interact with the demographics of participants, such as liberalism correlating to a higher price willing to pay for certified organic products than for natural. We predict that people who are more open and conscientious within their personality will be willing to pay more for organic/natural over standardized packaged products. Also we predict that more health conscious
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individuals will not differ from the general population and will have similar price premiums on organic and standard products.

**Method**

**Participants**

There were 169 participants in the study who completed the survey. Of these, 70 were male and 99 were female. Participant ages ranged from 15 to 64. The mean age was 25.9 and the median was 22. The median educational level of participants ranged from a high school education and some college experience. The median yearly income bracket of participants fell within $25,000 to $50,000.

**Equipment**

The equipment required for the experiment included a Digital SLR Camera, which is a digital camera with a detachable lens, and manual controls on image quality, light sensitivity, white balance, shutter speed, focus, and aperture; studio lights, white sheet backdrop, and the photography room in the Center of Fine Arts at Hanover College.

**Stimuli**

The stimuli participants were presented with were photos of three products. These three products were from different companies but all represented the same product category (organic, natural, or standard). In order to standardize each photo, it was necessary to purchase the products selected for stimuli to prevent any confounding variables within the photograph itself. These photos were taken of all the products in the same room with all the same settings of lighting, image quality, and backdrop to eliminate variance between the photos themselves. The only difference between each photo that we implemented was the individual product itself.
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<table>
<thead>
<tr>
<th></th>
<th>Standard</th>
<th>Natural</th>
<th>Organic</th>
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<tbody>
<tr>
<td><strong>Smuckers</strong></td>
<td>Concord Grape Jelly</td>
<td>Simply Fruit Concord Grape Jelly</td>
<td>XX(replaced with Nature’s Path granola bars)XX</td>
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<tr>
<td><strong>Aunt Millie’s</strong></td>
<td>100% Whole Wheat Bread</td>
<td>100% Natural Whole Wheat Bread</td>
<td>100% Organic Whole Wheat Bread</td>
</tr>
<tr>
<td><strong>R. W. Knudsen</strong></td>
<td>Just Blueberry</td>
<td>Papaya Nectar</td>
<td>Black Currant Nectar</td>
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</table>
Table 1. Manufacturers and corresponding products used for study.
Figure 1 The photos used for the products in the standard condition.
Figure 2 The photos used for the products in the natural condition.

Figure 3 The photos used for the products in the organic condition.
Measures

To measure participants’ judgments about dimensions of the products, such as how healthy they believe the product is or how much it costs, there was one short free response to the question “The average cost of ___ is $___, for this product I would be willing to pay: ______.” The question either stated our estimates of grape jelly at $3, whole wheat bread at $2.50, and lastly fruit juice at $5.50 according to the image that was being displayed. Product dimensions other than cost were measured by asking participants to rate their agreement with a statement on a 7 point likert scale (1 being strongly disagree and 7 strongly agree). These statements included “this product is a quality product”, “this product is friendly to the environment”, “this product is healthy”, and “the company that makes this product is ethical”.

To measure Big Five personality traits we used the ten item personality scale by Gosling, Rentfrow, and Swann (2003) it includes ten statements, each beginning with “I see myself as...” and ending with two adjectives or adjectival phrases. Participants responded on a 7 point likert scale from 1, Disagree strongly, to 7, agree strongly. Each point on the likert scale had an anchor. To measure the individual’s idealism we used a modified version of the Ethical Positions Scale developed by Forsyth (1980). The EPS asks participants to respond to 20 ethic based statements written in the first person. Half of the statements contribute to an idealism score, and the others contribute to a score of relativism. Our study only used the statements pertaining to idealism. Participants responded to statements by rating their level of agreement with the statements on a 9 point likert scale from 1, completely disagree, to 9, completely agree.

Procedure

The participant received an informed consent expressing the general purpose of the study, to assess consumer beliefs about products. Once he or she agreed to continue the participant began
the survey. They were presented with a photo of a product from one of the three product categories being studied: standard, natural, or organic. This mixed subjects design was chosen to avoid hypothesis detection on the part of participants. Considering the small number of products participants could have readily detected that there was a comparison being made between organic and standard foods and adjust their answers accordingly. Below the photo of the product were questions concerning what they assume about an aspect of the product inside the packaging. As mentioned previously, these questions included a free response to price willing to pay for product and likert scale responses about the product’s quality, environmentally friendliness, healthiness, and the producing company’s ethicalness. All five of the questions appeared below the photo of the product. Upon completing all questions for the first product the same series of questions were presented below a second, and then for a third product. Participants were randomly assigned to view only one of the three product categories. All three products presented to the participants were in the category to which the participant was assigned.

On a new page, after evaluating the three products participants were asked to complete a short Ten-Item personality inventory which measures big five personality traits (Gosling et al., 2003). On the next page, the Ethics Position Questionnaire (Forsyth, 1980) was to be completed to assess levels of idealism. Following that participants completed a page of their own information including standard demographics, political leanings, and where they most frequently shop. Participants were finally debriefed and reassured of anonymity with completion of the survey.

Results

The data was analyzed using a two way anova. For the main focus of the study, the interaction between the organic, natural, and standard product categories and the price participants were willing to pay (PWP), the two-way anova (table 2) yielded no significant results. There were significant main effects of product categories on the product dimensions of quality,
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environmental friendliness, and healthfulness. Each of these main effects were the result of the means of the organic rating being higher than the means of the natural, and the natural higher than the standard; on the quality, environmental friendliness, and healthfulness dimensions (figure 4). However, there was no significant main effect of product category on ratings of the ethicalness of the company that produced the products. A three way ANOVA on the dependent variable of price willing to pay (PWP), with the factors of product class, product, and a median split (high/low) of our idealism scale, revealed a significant interaction between idealism (Cranbach's Alpha .892) and price willing to pay.

Table 2

<table>
<thead>
<tr>
<th>Source</th>
<th>df</th>
<th>F</th>
<th>Sig.</th>
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<td>1.935</td>
<td>p &gt; .05</td>
</tr>
<tr>
<td>Quality and Product Class</td>
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<td>6.345</td>
<td>p &lt; .005</td>
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<tr>
<td>Environmental Friendliness and Product Class</td>
<td>2, 159</td>
<td>10.917</td>
<td>p &lt; .000</td>
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<tr>
<td>Healthfulness and Product Class</td>
<td>2, 162</td>
<td>4.146</td>
<td>p &lt; .05</td>
</tr>
<tr>
<td>Ethicalness of Company and Product Class</td>
<td>2, 160</td>
<td>1.92</td>
<td>p &gt; .05</td>
</tr>
<tr>
<td>Idealism (Hi/Lo) and Product Class</td>
<td>2, 151</td>
<td>4</td>
<td>p &lt; .05</td>
</tr>
</tbody>
</table>
Discussion

There was a trend found within the rating of the different product classes. The product questions about the quality, environmental friendliness, healthiness of product, and the ethicalness (Cranbach's Alpha .892)
of company had an upward trend from standard to organic products. The organic products were rated highest, natural products were next, followed by standard at the lowest rank. Generally the ratings increased almost linearly from standard to organic but when rating healthfulness organic and natural stood together, well above standard in participants’ ratings on the likert scale. While they were consistently the highest rated, organic products, were unable to gain a significant increase in the price participants were willing to pay for them. The cost of standard, natural and organic was essentially flat, with no upward trend. This seems to suggest that there is a significant third variable that actually controls the price willing to pay.

The third variable our research brought out was within our idealism scale. Just to refresh your memory highly idealistic people believe that desired consequences can be brought about through the “right” actions (Schlenker & Forsyth, 1977). Highly idealistic people feel that their actions make a difference. On the other hand, people with low levels of idealism believe that desired and undesired consequences come as a mixed bag (Schlenker & Forsyth, 1977). No one knows why something happens, it is all random.

Participants who rated highly in idealism had a much lower price willing to pay for natural products. This was the only condition where natural managed to rate lower than standard for a given group. Conversely our participants who rated low in idealism were more likely to rate their price willing to pay for natural products higher than organic products. This clearly shows that each group is responding very differently to the same product and we want to know why. Remembering that High idealism means that actions can affect outcomes in a predictable way we may see that people are actually able to detect the equivocation of the natural product. In the case of our highly idealistic participants they see their action, not paying/paying less for natural products, as effecting a change in company behavior; making them move towards organic products, which they tended to prefer with their hypothetical wallets.
Participants who are on the lower side of the idealism scale feel that their doings and purchasing actions will not necessarily create a desirable or undesirable consequence. They do not feel that their support and money needs to go towards a certain company, or in our case towards organic products. If you would recall, organic and natural products were rated the same in the case of healthiness. Low idealistic people may be willing to pay more for natural products because they believe it is the same level of healthiness for them as organic products. They are concerned with putting healthy food into their own bodies, not the consequences that come from their actions of choosing specific products.

**Future Research**

When creating the current study there was a fear of the curious human mind attempting to 'figure out' the intentions of the study. In order to minimize this possibility a mixed design was a safe way to go, not allowing the participant’s to view a standard, natural, and organic product. As mentioned prior, the participant either viewed all three standard products, all three natural products, or all three organic products. As it was shown, intriguing information was obtained through conducting a study in this manner; though, a within-subjects design would be beneficial to further investigate. Conducting a within-subject designed study allows strong statistical power. Also, consumers are already exposed to all three of our classes of products (standard, natural, and organic) in a natural grocery setting. Viewing single products on a computer at home could possibly add some other complications such as distractions, but there could be another twist from the original study. To emphasize the real grocery experience to its fullest, the participant could be given a multitude of products and force the participant to choose a product. With the mixed design of this study and the statistical power of a within-subject design there could be some interesting correlations or conclusions between the research.
A participant’s familiarity of a product would be helpful to consider within future research as well. Ambler, Braeutigam, Stins, Rose, and Swithinby (2004) found that people tend to choose products that are more familiar to them. This could be due to their parent’s preference of products (including the variance between standard, natural, and organic products) which through the years is now a well-known, valued product to the consumer. Familiarity could also be completely eliminated by creating novel products, which would offer total control over labeling, visual cues, and obtaining the same product for all classes of product as well.

Through the short Big Five that was used in the current study, generally high cronbach’s alphas (Extroversion .791, Agreeableness .59, Conscientiousness .497, Emotional Stability .65, Openness to experience .477) were obtained. Though, an expanded Big Five (larger than ten questions) could be beneficial for more findings within the realm of personality. This might allow more and possibly significant findings within openness to experience, conscientiousness, extraversion, agreeableness, and emotional stability which would be interesting to learn more about in the realm of product selection.
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