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PRIVATE STRATEGIES, PUBLIC POLICIES & FOOD SYSTEM PERFORMANCE

TOWARD A MORE COMPREHENSIVE
THEORY OF FOOD LABELING

BY

DANIEL I. PADBERG and JULIE A. CASWELL*

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May, 1990

WORKING PAPER SERIES

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TOWARD A MORE COMPREHENSIVE THEORY OF FOOD LABELING

Consensus seems to be emerging that a general update of food product labeling is needed. Our formal policy has changed little since 1975 when nutritional labeling was implemented. While label format itself is little changed, there was extensive Food and Drug Administration (FDA) sanctioned experimentation with label claims related to health and nutrition in the mid- to late 1980s. FDA hearings on a broad set of food labeling issues in late 1989 (Federal Register, 8 August 1989 and 20 September 1989; FDA Background/Issues Papers, 1989) and a new rule on health claims proposed in early 1990 indicate that the era of experimentation is ending and a comprehensive update of labeling is at hand.

Any update of labeling regulations will be based on considerable gains in our knowledge of nutrition, diet related illness, and food safety. It is also likely to recognize demands for improved information on residues in food and, perhaps, on growing practices (e.g., definition of the words organic or low pesticide use). It must also recognize the increased ability of food processors to design products to meet particular health profiles, often with use of new "non-traditional" ingredients. Updated food labels should provide consumers with the best available information and appropriate warnings.

Before we rush out to put ever more technical and complete information on product labels, however, it is useful to reconsider what role labels have in the broader fabric of consumer behavior, product information, and food manufacturer competitive strategies. What should we expect of food labels? Our instinctive reaction is to see the label primarily, or even solely, as an item of "consumer information" (Sullivan). That is a primitive and undeveloped theory of food labeling. It is insensitive to modern consumer behavior and the complex roles the media, the health professions and competition between food manufacturers play in shaping that behavior. Our purpose in this paper is to make progress in seeing food labeling policy decisions in the broader context of consumer behavior, food advertising, public information about food and nutrition and regulatory initiatives concerning nutrition and food safety. We describe these roles after first discussing the use of labels as a direct shopping aid.

Labels as Direct Shopping Aids--The Limits of Consumer Sovereignty

In their role as shopping aids, food labels add to the consumer's information base and help guide buying decisions. By increasing information, labels may make markets work more efficiently. The market, in turn, regulates competition among sellers, awarding success to the one with the best (most preferred) products. In this context, the label becomes the instrument of the consumer's sovereignty.

Modern behavior and market conditions bring stress and distortion to this idealized set of interactions. The consumer is often harried and hurried. The simple logistics of grocery shopping limit the potential for significant use of label information in making

purchase decisions. Making selections from the usual offering of over 15,000 products in the supermarket based on label information, dietary needs, and/or matches to a handful of coupons is complex.

Limits on the information processing abilities of consumers in the supermarket setting stem from several related sources. First, periodic surveys made by the Point-of-Purchase Advertising Institute indicate that a large proportion of final purchase decisions are made in-store (Food Institute Report, 1987). Data show that only about one-third of purchases are specifically planned before the consumer enters the store. Second, the average consumer makes one major shopping trip per week spending around an hour in the store (Meloy, McLaughlin, and Kramer, 1988; American Demographics, 1988). Thus a large number of purchase decisions must be made in a limited period of time. Research on grocery shopping behavior indicates that the quality of decision-making deteriorates when the shopper is under time pressure (Park, Iyer, and Smith, 1989). Third, other survey data suggest that consumers dislike grocery shopping (American Demographics, 1988). These factors combine to limit many consumers' use of labels as shopping aids.

The impact of food labels on purchase decisions is also circumscribed by the fact that labels are only one element in a broader set of product information available to consumers. Advertising is another major source of such information. Of the nation's ten largest advertisers in 1988, six are major sellers of food products (Advertising Age, 1988). The largest spent over \$4 million per day in advertising presumably to influence consumer choice, while the smallest spent almost \$2 million per day. It is estimated that a third of the \$3.6 billion in food advertising per year now carries some kind of health claim (Hilts, New York Times, 2 February 1990).

Consumers also receive diet and health guidelines from the medical profession, governmental bodies, and health and consumer advocacy groups. These guidelines and recent research results are prominently reported by the news media. Some information about health and food safety is at a level of technical complexity that is generally inaccessible to consumers. As the current controversy over oat bran illustrates, conflicting information may reach the consumer from these diverse sources of product information.

In this context, it is not enough to see labels simply as consumer information. This is not to detract from the recognized value of food labels as consumer information. There are many consumers (e.g., allergy sufferers who use ingredient labels and those who are on special diets or who are particularly health conscious) who make frequent use of food labels for purchase decisions. Others make occasional use of food labels and there is little doubt that such information is helpful.

Nor is the purpose of this paper to lament a loss of consumer sovereignty. There are many consumer products with complex technical properties. Being fully "informed" on consumer purchases, if not impossible, would certainly be an inferior lifestyle. The purpose here is to broaden our concept of product labels in the modern marketing environment.

There are important "third party" roles for labels that must be explored.

Third Party Roles of Food Labels in the Modern Marketing Environment

The classic theory of competitive markets features an equilibrating mechanism which relates the economics of production with the economics of consumption. The production side is represented by a rather heroic character, the entrepreneur, who perceives transactions possibilities in markets for inputs and products. It is striking how similar is the representation of the consumption side of the market. This may have fit well in less developed economies where much processing activity was conducted in the household and purchases were not usually "personal" items but rather producer goods. The classic model posits a symmetry of size and power on the producer and consumer sides of the market.

The emergence of sizeable firms gave the producer's side of the market a position of strength vis-a-vis consumers. But the influence that overwhelmingly unbalanced the seller's and the buyer's sides of the market was technology. While we devote years of education and much support equipment to our roles as producers, we scarcely bother to invest anything in our roles as consumers. Yet, our theory of consumer behavior sends an unarmed David up against a high-tech Goliath every day--always expecting a miracle.

Of course, the food economy like the general economy contains a wide array of "balance" situations between sellers and buyers. The farmer with a roadside stand selling produce to a neighbor seems to have convincing symmetry. While these conditions exist, they do not often generate food labeling controversy. The "piece de resistance" of food labeling is not roadside stand produce but frozen pizza (U.S. General Accounting Office, 1988).

Labeling issues are most important in situations in which the traditional competitive market centered theory serves least well. This situation is one where 1) there is a relatively technically complex product, 2) its nutritional and food safety attributes are obscured by significant processing or combining of ingredients, 3) advertising is important in establishing and maintaining product value, and 4) convenience, packaging, and style are important to the product's image. These are typically markets in which competition among sellers is expressed in use of advertising and new product introductions rather than in price rivalry (Connor et al., 1985, Chs. 3 and 5).

In these markets, the seller influences the buyer. Sellers are also often large enough to influence their markets as a whole. This is clearly a "second best" situation where government intervention, in the form of labeling regulation, to make the market conform more narrowly to the competitive model (by making information more nearly perfect) may or may not yield improvements in welfare. Label reform should take a broader approach considering the entire pattern of interactive relationships between sellers, distributors, advertisers, consumers, and regulators rather than just the buyer-seller interface at the retail store level (Padberg, 1977).

In the narrow approach, labels are designed for consumer information. In the broader approach, they are designed with a view to their impact on the functioning of the food marketing system. An example will illustrate the difference this makes. The Center for Science in the Public Interest (CSPI) recently proposed a reform of food labels that would combine a revamped nutrition information panel with a system of stoplights (red, yellow, and green) on the product's principal display panel (Schmidt, 1989). The stoplights would give consumers a quick summary of whether the product has a desirable profile of fat, sodium, and fiber content.

Suppose the label reformer adopted the system of stoplights without the supplementary nutrition information panel. It could be argued that such a system would serve well the goal of improving the usefulness of the label as a direct shopping aid, particularly in providing information that is easy to use and understand. But the very summary nature of the stoplight system would limit its impact on manufacturers' incentives to produce healthier products. It would be comparable to changing the federal government's system of mileage ratings for automobiles from exact miles per gallon to "less than 20", "20 to 40", and "40 and over" miles per gallon. The competitive reaction would be only around the change between categories rather than throughout the entire range.

Label reform should relate to the broad array of purposes labels serve rather than solely to their role as consumer point-of-purchase information. The additional, or third party, roles of food labels are as a definition of public values, a forum for expert consensus, a significant influence over product design, a franchise to advertise, an assurance of public surveillance, and a format for nutrition and food safety education.

A Definition of Public Values

The choice of information to include on a label and the emphasis placed on it by format design signal to consumers, distributors, and manufacturers which of the product's nutritional and safety attributes are important. In turn, the public and industry will impute from the label that the category of information included is important and that the values make a difference. The prominence of this signaling role varies among food products.

Traditionally, food product labels have been least important and least used on staple foods. Frozen vegetables, for example, have involved fewer nutritional and food safety issues and concerns than some of the more processed and formulated foods. They are not complex products and their placement in the context of food groups as stressed by nutrition education is well understood by most consumers. In addition, relatively little advertising is involved in the consumer's efforts to understand this product. By contrast, highly processed or formulated foods, like snacks or prepared entrees, are less classifiable by staple origin or by experience. These are also the products that are most heavily advertised. They represent the most convenient way to eat and are becoming a larger part of our collective diet. It is here that food labels play a more important signaling role, particularly for diet-conscious consumers.

Parallels can be drawn to other consumer products. Label requirements for automobiles and cigarettes contain objective measurements of attributes seen to have importance to the public, such as price information and miles per gallon for cars and nicotine and tar for cigarettes. In revamping food labels, crucial decisions on relative emphasis must be made with an eye to the signal such decisions will transmit to consumers and industry. This is the heart of label reform and is where consensus must be found before more technical issues, such as use of pie versus bar graphs, are tackled.

A Forum for Expert Consensus

The battle over nutrition, diet-related disease, and food safety is fought on behalf of the consumer, but the "average" consumer is rarely even a minor combatant. The engagement occurs between experts from the health profession (including those in government agencies), industry, and consumer and health advocacy groups. The Food and Drug Administration and the United States Department of Agriculture are the focal point for these engagements since they will ultimately, in one form, declare winners when final regulations on label reform are issued. Frequently, each party to the decision will claim that its actions and positions are a special and valid interpretation of the consumer's interest. Rarely are individual consumers well suited to participate in this policy process.

Any label reform crystallizes, for a significant period of time, a set of judgments on what is important in the areas of nutrition, diet-related disease, and food safety. These judgments may or may not ultimately represent a consensus but the process of making them undoubtedly can serve as a forum for building expert consensus. For example, should food labels contain mandatory information on fat composition and cholesterol? The regulator must make this decision knowing that it will have impacts on label format, product formulation, advertising, and consumer's image of particular products. Consumer's purchase patterns may be affected. Label reform triggers the actions of experts on all sides. Regulators must learn to manage these "non-use" results. In many cases, they may be more important than the use consumers make of labels in shopping.

A Significant Influence over Product Design

Once established, labeling regulations have a significant influence over product formulation and reformulation. Food processors may design a product in order to be able to use a defined term, such as "low sodium", on their labels. They may reformulate a product to give better numbers in an important category included on the label, such as fiber. They may also avoid use of particular ingredients so that they will not have to be listed on the label. For example, many cookie and cracker companies have reformulated their products to exclude use of palm oil and lard.

The interesting aspect of this influence over product design is that it can take place even in the absence of widespread use of labels by consumers to make purchase decisions. All that is required is that a segment of the population or their consumer advocates read

labels and use or publicize what they find. This role of food labels should be explicitly recognized in revamping regulations.

The influence of label disclosure on product design is explicitly recognized among many advocates of providing increased information on labels. A case in point is California's Proposition 65. This proposition led to the Safe Drinking Water and Toxic Enforcement Act of 1986 which establishes a duty to warn prior to exposure to certain carcinogens and reproductive toxins. Opponents of the Proposition argue that it is a very cumbersome and ineffective way to inform consumers about potentially risky products or ingredients.¹ Thus these opponents are viewing the warnings primarily as a shopping aid and finding them deficient in this role.

Proponents of Proposition 65, on the other hand, argue that the success of the initiative will not rest on the effectiveness of point-of-purchase product warnings as shopping aids. Rather, they anticipate that manufacturers will reformulate their products to eliminate ingredients that require warnings or stop marketing products with such ingredients (Roe, 1988; Roberts, 1989). Thus in their view, Proposition 65 could be a success without a single warning ever being required at the point-of-purchase for a consumer product. Opponents who focus on the warning as shopping aid may entirely miss this point.

Conscious use of labeling to influence product design requires an awareness of the marketing strategies of food firms and a willingness to work with them. Such an approach might attempt to develop a scoring system which focuses on a limited number of important categories, such as "heart healthy," "variety", and "weight control". Within each category, a comparative scoring system could be developed that awards high scores for product attributes that conform with accepted nutritional guidelines. Some attributes might be elements of more than one category. Fat composition, for example, would affect both the "heart healthy" and "weight control" categories.

Interesting consequences flow from a label policy of this type. If labeling were mandatory for formulated foods and products making nutritional or health claims, different foods would likely be affected in different ways. Some formulated products such as entrees, many of which already have relatively good calorie profiles, might be reformulated to score better in the "heart healthy" category by reducing or modifying fat content. Other products that have good profiles could emphasize this in advertising (see next section).

It is not possible to fully assess the consequences of a labeling arrangement like the one described. However, there is every reason to expect that a system of this kind would result in foods that are formulated to produce the highest score--bringing foods into greater correspondence with the guidelines. It is also likely to result in information in

¹In enforcing Proposition 65, California has initially adopted FDA standards for carcinogens and reproductive toxins in food, drugs, cosmetics, and medical devices. Therefore, the law has not been applied directly to food labeling.

advertisements being set more firmly in the context of accepted nutritional guidelines. These are powerful results. They are worthy of a considerable investment in a new and difficult scoring system.

Our theory of labeling needs extensive testing and development. For example, this rating system would be an expensive initiative to undertake. But, how should the cost be measured? The present system of competition between large food manufacturers is very expensive. It may have the additional disadvantage of moving our food system and the national diet away from the guideline values. Against this alternative, the cost of portraying the guidelines values in a rating system may be justifiable.

There are some serious potential drawbacks to this scoring approach. These have led the Food and Drug Administration and the U.S. Department of Agriculture to discourage private rating or "seal of approval" programs for products meeting particular guidelines. An example of such a system is the American Heart Association's seal of approval for products that meet its guidelines for fats, cholesterol, and sodium.

The source of the major drawback is that what is important to health is the composition of a person's diet as a whole, not the nutritional profile of individual products that make up that diet. FDA and USDA are concerned that rating systems will obscure this fact contributing to a miseducation of consumers about links between nutrition and health (Lipman, 22 January 1990; Lipman, 25 January 1990). They, and others, are also concerned that some products will receive approval seals because they have better profiles than others in their class, even though the class itself is not particularly healthy. For example, margarine might merit a seal when compared to butter but consumption of fats should not be encouraged. If label reform embraces influencing product design, then issues of this sort that link labels with nutrition education will have to be resolved.

A Franchise to Advertise

Food labels and advertising are closely linked based on both regulations and firm strategy. Food label regulations establish parameters within which advertisers must operate, thus, in effect, creating a franchise to advertise. For example, the nutritional labeling program implemented in 1975 is voluntary except when a product is labeled or advertised with any nutritional claim or information. In these latter cases, nutritional labeling is mandatory. While modest in its reach, the policy has a straightforward and appealing logic. Where claims are made, the manufacturer must provide nutritional information in a standardized format, which allows consumers to directly evaluate the claim. The standard format also allows comparison between products with nutritional labeling.

FDA policy on health claims for foods has had a controlling influence over much food advertising. Prior to 1987, health claims were generally illegal since any such claim would have triggered the FDA to evaluate the product under its very stringent safety and efficacy regulations for drugs. Given this stance, very few firms ventured to make such

claims on labels, and consequently, in their advertising. After 1987 when FDA relaxed its regulation of health claims on labels, advertising of health claims exploded. While advertising is regulated independently on the national level by the Federal Trade Commission, the FDA's label regulations play a key role in setting the parameters for what claims will be considered deceptive.

Through its link to advertising, label regulations affect the entire set of product information available to consumers not just the point-of-purchase information itself. Label reform must manage the role of the food label as a franchise to advertise.

An Assurance of Public Surveillance

Consumers may value the presence of comprehensive labeling independently of the value they place on labels as a direct shopping aid. A study of consumer reaction to the nutritional labeling format implemented in 1975 found that many people liked the existence of the label even though they did not use it (Lenahan et al., 1972). A similar pattern was found in a study of consumer reaction to unit pricing in supermarkets (McCullough & Padberg, 1971).

In the language used by resource economists, food labels have option and existence values separate from their direct use value. The option value stems from the availability of the label should the consumer decide to use it. The existence value can be interpreted, in the case of food labels, as a feeling of assurance on the part of the consumer that someone is watching over the presentation of food products. While difficult to measure, the value of label regulations in terms of generating consumer confidence in the food supply and the reliability of food labels are important. Undoubtedly this assurance value is related to the role of labels in setting public values and influencing product design discussed above. It may be comforting to find evidence that an agency cares and is trying--even if the situation is intrinsically complex as is the relationship between nutrition, diet, and health.

A Format for Nutrition and Food Safety Education

The traditional format for nutrition education has been a classification of foods into four basic groups based largely on their animal or plant origin. Staple foods are relatively easy for the consumer to place in this system. Obviously, it works less well for formulated or fortified foods, combination products such as frozen dinners, and many snack items. These products are often the most difficult for consumers to nutritionally assess because they are complex. They are also the products for which advertising by manufacturers is heaviest.

As complex foods become a larger part of the American diet, the traditional format for nutritional education (and the definition of nutritional values) becomes obsolete. The 1975 nutritional label format provided the beginning of a definition of nutritional values

independent of animal or plant origin. Recent guidelines go much further in this direction and are more complete (National Research Council, 1989). Rewritten label regulations that synthesize these and other sources of guidance need to recognize the role that labels can play in reinforcing other forms of nutrition and safety education at the consumer level. It would be a tremendous advantage if label format (and related advertising) were consistent with educational programs so that together they would give coordinated signals to consumers. Product labels which fall short of this standard exact a cost in educational program ineffectiveness and consumer confusion.

The role of food labels as teaching tools and educational reinforcement is related to their role as a forum for expert consensus. The task of forging a single set of recommendations is formidable but one that must be faced in light of the many roles that labels play in coordinating the food system. While our argument has focused on nutrition education, it applies as well to food safety education. Labels may soon be asked to play a much larger role in informing consumers about potential risks associated with products and proper handling methods. Here, too, we should expect considerable synergism between labels and other educational programs.

Conclusion

The central argument of this paper is that product labels have several important roles that are not related to their use as a shopping aid. These third party or non-use dimensions are important and worthy of separate consideration. They do not subtract from the face value of labels as point-of-purchase consumer information. Rather, they place more emphasis on the importance of label design by explicitly recognizing the label's roles as a definition of public values, a forum for expert consensus, a significant influence over product design, a franchise to advertise, an assurance of public surveillance, and a format for nutrition and food safety education. A redesign of food labels that ignores these functions would result in a system that does not fulfill its potential.

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PRIVATE STRATEGIES, PUBLIC POLICIES & FOOD SYSTEM PERFORMANCE

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