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New Economic Approaches to Consumer Welfare and Nutrition
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New Economic Approaches to Consumer Welfare and Nutrition

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The Welfare of Food Consumers and the Dimensionality of the Food Shopping Task

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It is a pleasure to read and respond to the papers by Morganosky and Cude and by Henson and Traill. Unashamedly, I admit that this pleasure is derived in part from the fact that their research reinforces one of my longest-held biases: the price-quantity calculus of consumption analysis is a pallid representation of the complex consumer behavior in food shopping. To the extent that consumer welfare is computed solely on price and income elasticities or expenditure functions, it is incompletely calculated. Both sets of authors apologize for the implicit limitations of their research into the disentanglement of this complex behavior, but the apologies are unwarranted. In both cases, the authors offer important insights based upon empirical research. I'll make a few comments about these insights in general, then return to the papers singly.

Both papers address the dimensionality of food purchase behavior, though in different ways. Morganosky and Cude examine the role of retail outlet choice plays in the shopping task. Their research points to the fact that the proliferation of outlets increases the choice set along this dimension of the shopping task. This is obvious, of course. What has been less obvious is that there is a complex set of shopping task dimensions that cause consumers to choose multiple outlets across time and products. Add this dimensionality of retail choice to the dimensionality of product characteristics identified by Henson and Traill and one has a truly complex model of food purchase behavior. Their paper identifies several constructs that relate to extrinsic characteristics of food products that are themselves multidimensional.

Let's consider a simple taxonomy of the dimensions of the food purchasing task. There are the normal intrinsic characteristics that result from the biochemical and physical attributes of a product: nutritive and organoleptic characteristics, convenience. Then there are extrinsic characteristics of individual products that are borne by advertising messages and other marketing mix variables. Add to this the characteristics of the retail outlet, including product mix, service, queue length, and status. There are other characteristics inherent in the constructs of Henson and Traill that are independent of the individual product and retail outlet: ethical issues, safety, and origin. Over time the consumer purchases this complex mix of characteristics in a complex confluence of product choice, manufacturer choice, retailer choice, and impersonal information sources. For any given purchase task, there is some set of personal preferences and time-specific constraints that overlay the choice set. That is, why does a rational consumer buy a gallon of milk and 10 gallons of gasoline from the convenience store on Monday and the same items from the supercenter on Wednesday?

Both papers relate the dimensions of food purchasing to information held or perceived by the consumer. It is clear that the consumer prefers choice and that the existence of choice relates directly to higher welfare for consumers. The dimensionality of the shopping task implies a profound information-processing task, particularly if we believe in the fiction of the rational model of choice. We need more work like

that of Morganosky and Cude that identifies the way consumers combine retail outlet choice with the market basket choice. We need more work like that of Henson and Traill that seeks to understand the underlying complex constructs that drive the multiplicity of individual preference variables for consumers.

Morganosky and Cude's two-step approach to understanding multiple-outlet patronage was instructive. By using focus groups to delve more deeply into the behavior identified in the telephone survey, they were able to do a more fine-grained analysis of the motivations for cross-patronage than could be accomplished with a closed-ended survey instrument. The section of their paper that presents the results of the focus groups uses a presentation technique that intrigues me: narrative. That is, they use the directly elicited data, verbal accounts, in the presentation of results. This is an uncommon practice in consumption economics and agricultural economics literatures. Our profession has a deep mistrust of qualitative data and our analytical tools don't massage them well at all. I would make two observations here. First, in analyzing complex behaviors it is necessary to elicit complex data to obtain the nuances of decisions and preferences that cannot be completely revealed by direct observation, experimentation, or scanner data. Second, it is incumbent on researchers that elicit complex responses through focus groups, unstructured surveys, and similar techniques to help those of us looking over their shoulders to sort through this information. The tools and techniques of textual analysis help in this by taking transcripts of verbal accounts and categorizing them in hierarchical and taxonomic systems according to the behavioral constructs that they reflect. I would hope that Morganosky and Cude would consider this family of analytical techniques to augment the use of narrative accounts in presenting these data.

I was pleased to see that their literature review dealt with cost. The way consumers reckon search cost, travel cost, and product cost (price) is clearly more complex than the simple models used to date suggest. This particular element of the patronage decision needs more attention, since it is inextricably tied to the welfare consequences of choice.

I would also like to see replication and extension of their study of electronic shopping. I want to know how the dimensionality of the shopping task is managed in this particular search process. As a practicing, premeditated melon-thumper and turkey-hefter, I agree with one of the narrative accounts that places on-line shopping in the same category as sliced bread. Like most sliced bread, the internet shopping task is bland, boring, and devoid of sensual input. Putting aside my curmudgeonly attitude, I am intrigued to find out (1) what products are optimally suited to this retail outlet choice, (2) how this patronage choice fits into the portfolio of cross-patronage, and (3) what the source and size of the welfare benefit is that accrues to patrons. Morganosky and Cude have some interesting preliminary results on the dimensions of convenience and time saving, and on the welfare benefits to the disabled or shut-in. I was also heartened by the use of the Internet by survey respondents who stayed home rather than inflicting their ill-behaved children on me and other innocent by-standers. Obviously, there are non-use benefits that increase the welfare of curmudgeonly melon-thumpers.

I'd like to turn now to the paper by Henson and Traill. I will use this paper in my graduate course as an example of behavioral research that is designed and executed with care. The paper is very clear on the steps used in choosing variables and latent variables or constructs, in designing and testing the survey instrument, and in the statistical analysis. They anticipated all my questions about reliability testing, the use of inversion of a subset of the attitudinal statements in the instrument, and testing for nonresponse bias. In footnote 13, they even addressed the need to translate the instrument from arcane, stilted British English into modern English for the survey in Boston. They also posed the question about the efficacy of invoking

the name of the name of the USDA to motivate survey response. Very astute.

The section on validity testing is exceptionally complete and instructive. It sets the stage for the discussion of the comparison of the welfare scales between the US and the UK. Given the level of validity of the constructs, it led to the surprising (to me) outcome of the concordance of welfare scores between the US and the UK. Statistically significant differences appeared in only 4 constructs, three of which implied lower food system performance in the UK. I agree with the authors that alternative variables should be tested against the set of constructs, so that we may test the stability of these differences.

Further, the eventual goal of a single-valued welfare scale requires weights for the constructs. Concordance between the US and the UK was again high, but as the authors state, the weighting was derived from single questions and there needs to be some replication with multi-valued weighting schemes.

Henson and Traill state that this is an exploratory study. OK. However, I think that the research design is strong enough that the number of replications needed to codify the technique will need be small. The extensions needed to assess content validity can easily be accomplished within a few replicates of the study, by switching subsets of the variables related to the constructs. I'd hope that researchers associated with the Food and Agricultural Marketing Consortium could organize the replications in a coordinated manner.

A final item of speculation remains on my part. I agree with the use of summated scaling to develop the single-valued welfare measure in this paper. However, with a larger sample size would we be able to exploit structured equation modelling, an extension of confirmatory factor analysis, to build the welfare measure? This technique gives us information about the covariance structure among latent variables, about which variables can be thrown out of the index without losing information, and about the sensitivity of latent variables to alternative sets of variables. I don't know the answer to this question. Perhaps the group can figure it out over lunch.

Thanks again to the four authors for two stimulating papers and to the participants in the conference for your kind attention.