

## Session III: Food Security Measurement Applications

### Food Insecurity Findings From the 1997 Child Development Supplement to the Panel Study of Income Dynamics

Lori Reid

I have become interested in child well-being because human capital affects labor market outcomes. Factors that create differences in adults may start among children. My project examines the effect of food insecurity on some aspects of child well-being. I look at indicators of child health, school achievement, and behavior problems in school.

As many people have already mentioned today, health may be an important outcome from experiences with food insecurity. I am also interested in consequences that may occur for the schooling experiences of children. Child health problems may have consequences for school achievement, and there may be some other mechanisms in between. In particular, even if children are not experiencing health problems, if they are experiencing the sensation of hunger in school, they may be distracted from learning and learn less. In addition, the stress that occurs within families experiencing food insecurity may have an effect on a child's ability to learn in school as well. These are some effects or consequences we might see as a result of food insecurity.

I cannot tell you much about those outcomes today since the data I am using were assembled in just the past couple of weeks. Instead, I am going to give very preliminary results focusing on the first part of this model.

I am using the 1997 Child Development Supplement to the Panel Study of Income Dynamics. It is a nationally representative sample of children ages zero to 12 and their households. The Child Development Supplement includes age-rated assessments of the cognitive, behavioral, and health status of just under 3,600

children. The Child Development Supplement included the 18 items on the CPS. I used these items to construct the food security scale, and then also the food security status measure.

I also use the 1994 through 1996 survey waves of the Panel Study of Income Dynamics itself to provide background information on children's families. I can get information on the family income, family structure, parental education, and other background variables.

The prevalence of food insecurity among children zero to 12 years old in the sample is quite close to the figure presented for households in general for 1995: just a little over 12 percent of all children zero to 12 years of age live in households that experience some level of food insecurity. About 3 percent of children experience a more severe level of food insecurity.

White/non-Hispanic children experience the lowest levels of food insecurity, about 6.5 percent, while Native American and Hispanic children experience the highest levels with about 36 percent of Native American children and about 28 percent of Hispanic children experiencing some level of food insecurity. About 22.5 percent of Asian or Pacific Islander children experience some level of food insecurity, compared with about 15 percent of African American children.

Next, I introduce a simple division of households into those at or below the poverty line versus those above the poverty line. So what we see here is a very strong relationship between poverty status in 1997 and household food insecurity. About 27 percent of children in households at or below the poverty line experience some level of food insecurity, compared with just under 9 percent of children in households above the poverty line. Although there is a strong correlation here, it is not a one-to-one correlation. This suggests that knowing the poverty status of children will not help us identify with a great degree of accuracy which children are likely to experience food

insecurity. If we were to use measures of income or poverty status, we would miss some food insecure among those who are not below the poverty line. This supports the notion that it is much better to have direct indicators of material hardship such as food insecurity as opposed to relying on indicators of income or poverty.

Next, I look at a very preliminary model of what factors are important in explaining why some children experience food insecurity. I am using a measure of wealth in 1994 because that is the latest measure available on the PSID. Family structure variables measure the percentage of a child's life spent in various types of family structures, for example, a two-parent family, a never-married father, never-married mother, *et cetera*. I wish to see whether any of these factors are an important influence on determining a child's level of severity of food insecurity over and above the effect of the income measure. Homeownership has an effect, as does mother's education. Children who spend greater proportions of their life in any kind of single-female household experience greater levels of food insecurity.

Some important factors are missing here, such as regional difference in prices of food and housing and other such things. I plan to add them later. Other factors include transportation issues or other sorts of financial constraints.

To sum up this preliminary work, using results from a nationally representative sample of children lends support to the idea that it is important to measure and analyze food insecurity directly rather than indirectly through measures of income and poverty, which supports a theme of this conference.

## Discussion

### Cheryl Wehler

The proposed research sounds promising, and I look forward to hearing more about your analyses, especially the multivariate analyses of predictors and consequences of food insecurity.

Your preliminary findings on predictors are for the most part expected. I was initially concerned that we did not see a correlation with income. But it was not a step-wise regression. There were many other variables that co-vary with income and so you lost the significance. These results are similar to what we have seen in other data sets.

As we heard this morning, a child measure is being developed. It may be available when you conduct your analyses on the consequences of food security on the cognitive, behavioral, and health status of children. I encourage you to use that measure of children's hunger in addition to the household hunger measure.

It may also be useful to create a type of children-to-adult ratio variable, given your preliminary results on household size and percentage of life spent in a female-headed household.

I do have a few concerns about Lori's work and my own work. When we use a 12-month measure of hunger and we are studying the health and behavioral consequences of hunger, we have almost no way yet to know whether a child has been hungry 70 days out of the last year or 1 day out of the last year. And then we try to ascribe the consequences in terms of their negative health outcomes or their developmental outcomes partially to this need deprivation. In my work, I am trying to think about the mediating versus the moderating role of hunger in terms of health status, school achievement, and development.

My colleagues, John Buckner and Ellen Bessick, had a model in which they were thinking that homelessness, another basic need, was a predictor of poor health and behavioral health outcomes. One of the things that we found in that data set was that it was not as important as mothers' distress level. If we used measures of mom's anxiety and depression, we actually understood children's behavioral health, current behavioral health consequences better.

Parenting practices, the child's history of physical abuse, life stressors such as foster care place-

ment, and a death of a close friend or relative were better predictors of the child's behavioral health than was homelessness. I caution us when we consider behavioral or health outcomes of

food insecurity that we do not overstate our ability to make that connection. I am not convinced that we measure the severity of children's hunger.

## **Assessment of Food Insecurity Among Asians and Pacific Islanders**

**Joda P. Derrickson**

This work was conducted jointly with Jennifer E. Anderson and Anne G. Fisher. We are indebted to Dr. Gary Bickel for support and assistance in designing this project.

The underlying purpose of our work has been to determine whether the instrument used to assess household food security in the United States, the Core Food Security Module (CFSM), is a reliable and valid instrument to use in Hawaii, where at least 50 percent of the population is of Asian or Pacific Islander descent. This presentation focuses on our preliminary findings as of February 1999. All our data were collected in Hawaii. The question "Which ethnic group do you identify with most?" was used to assess ethnicity in each study. The ethnic groups of focus were Caucasians, Hawaiians and part-Hawaiians, Filipinos, and Samoans from American Samoa.

Sixty-one charitable food recipients completed a total of nine focus groups, with at least two focus groups within each ethnic group under study. Responses confirmed the operational framework or conceptual basis of the CFSM for each ethnic group studied. Question 4, "We couldn't afford to eat balanced meals," posed problems. Respondents predominantly described a balanced meal as one with meat, starch, and vegetables—but not fruit and not dairy products.

The publication *Household Food Insecurity in the United States: Guide to Implementing the Core Food Security Module*<sup>8</sup> was used to guide data collection. For stability testing, a convenience sample of 77 charitable food recipients was chosen. Sixty-one, that is, 79 percent, completed the survey again over the phone 10 to 14 days later. For scale assessment, a total sample size of

<sup>8</sup>Price, Cristofer, William L. Hamilton, and John T. Cook. *Household Food Insecurity in the United States: Guide to Implementing the Core Food Security Module*. U.S. Department of Agriculture, Food and Consumer Service (currently the Food and Nutrition Service), Office of Analysis and Evaluation. Alexandria, VA. 1997.

1,664, that included a population sample and samples of food pantry recipients was chosen. Data from 362 respondents who responded affirmatively to one or more indicators were available for the CFSM scale measure assessment. Fifty-five percent were of Asian or Pacific Islander descent. Scale validation was confirmed through item calibration and goodness of fit statistics, using the FACETS Rasch computer program.

Overall, the Hawaii data exhibited a similar scale when compared with the 1995 USDA CFSM data.<sup>9</sup> Most importantly, the Hawaii and USDA scales had significant gaps in food indicators used to differentiate the food secure from the food insecure.

Goodness-of-fit of each indicator was assessed. We found that questions 8 and 8a "adults cut the size or skip meals/often" were redundant, and that question 4, "unable to eat balanced meals," and question 2, "worried food would run out," did not fit well. Similar item fits were noted in USDA's original work.<sup>10</sup>

The overall rate of item misfit for all measurable responses was 4.1 percent, less than 5 percent, which is commonly found acceptable. However, in question 4 "balanced meals" had a 6.7-percent misfit.

Seventeen respondents, that is, 4.7 percent, were misfits. Each had two or more responses that were quite different than expected. Although there were no apparent differences in fit by site of the sample or by household type, 5 of the 17 misfitting persons were Samoan.

<sup>9</sup>Hamilton, William L., John T. Cook, William W. Thompson, Lawrence F. Buron, Edward A. Frongillo, Jr., Christine M. Olson, and Cheryl A. Wehler. *Household Food Security in the United States in 1995: Technical Report of the Food Security Measurement Project*. U.S. Department of Agriculture, Food and Consumer Service (currently the Food and Nutrition Service), Office of Analysis and Evaluation. Alexandria, VA. 1997. p. 42.

<sup>10</sup>Hamilton, William L., John T. Cook, William W. Thompson, Lawrence F. Buron, Edward A. Frongillo, Jr., Christine M. Olson, and Cheryl A. Wehler. *Household Food Security in the United States in 1995: Technical Report of the Food Security Measurement Project*. U.S. Department of Agriculture, Food and Consumer Service (currently the Food and Nutrition Service), Office of Analysis and Evaluation. Alexandria, VA. 1997. p. 21.

USDA researchers interested in measurement of hunger among individuals developed the Individual-Level Core Food Security Module (ICFSM) (see next page). It consists of the original 18 CFSM questions, 10 questions asked to assess the extent of hunger among the individual respondent or an individual child; and 3 additional “follow-up” questions asked in an attempt to improve the scale, that is, questions 9a, 10a, and 14a. Despite a total sample size of over 1,600, item fit of the ICFSM items could not be adequately assessed. Interviewers found these new questions to be threatening and demeaning to the respondents, particularly the whole series of questions about hunger among children. Completion of the entire instrument took up to 15 minutes and emotionally drained interviewers. We also found that questions 9a, 10a, and 14a, asked in an attempt to improve the scale, had item calibrations similar to current indicators, and therefore did not assist in filling the gaps in the scale.

The CFSM and ICFSM appear reasonably stable over time. Correlations between items over time were all statistically significant or approached significance ( $p = 0.05$ ) except for items with an inadequate number of responses. The correlation coefficient between scale measures over time was 0.75.

According to the CFSM categorical measure, three or more affirmative responses are required for classification as food insecure. We found what appeared to be a consistent categorization over time ( $X^2$ ,  $F = 68.6$ ,  $p = 0.006$ ). Each time, about a quarter of the sample was defined as food secure (25 and 26 percent). However, of the 27 households classified as food insecure at time one, only 16, in other words, 59 percent, were consistently classified as food insecure at time two.

We found that the set of six questions suggested by NCHS experts—questions 3, 4, 8, 8a, 9, and 10—did not meet Rasch criteria for a scale; questions 3 and 4 did not fit well, while questions 8 and 8a were redundant. We found an alternative six-question scale consisting of question 3, “food bought didn’t last”; question 4, “balanced

meals”; question 9, “respondent ate less than should”; question 10, “respondent hungry”; question 12, “adults did not eat for a whole day”; and question 14, “children hungry” to fit much better with our data. The correlation coefficient between this revised 6-question scale measure and CFSM 18-question scale measure was 0.87.

In summary, our preliminary findings suggest that: (1) the CFSM is a valid and stable instrument for use among Asian and Pacific Islanders in Hawaii, except possibly with American Samoans, with whom additional research is needed; (2) the question pertaining to consumption of balanced meals is not well understood in Hawaii; (3) use of the 6-item food insecurity scale did not fit data from Hawaii; and (4) the ICFSM may place an unfair burden on respondents and interviewers.

These findings lead us to recommend that: (1) prior to any conclusions regarding the robustness of the CFSM, research should be conducted with other ethnic groups; (2) additional food insecurity indicators should be tested to fill gaps found in the item calibration of indicators and to more accurately and consistently classify the food secure from the food insecure; (3) the individual-level indicators should not be added to the CFSM; (4) wording of the “balanced meal questions” should be revised; and (5) the CFSM measure and NCHS subset of six indicators should be reassessed.

## Discussion

### Donald Rose

I congratulate Joda Derrickson on her presentation. I think since the last food security conference, Dave Smallwood and I and others at ERS have wondered how some of these questions would fare among different ethnic groups. A number of the questions on the survey instrument originated from research done among the rural white population in upstate New York. There was the question of how they would do in a population of urban African Americans, or Latinos, or Asians and Pacific Islanders. I think Joda has answered that latter question.

## Individual-Level Core Food Security Module (CFSM, individual and additional items)

Indicator type	Essence of Indicators: In the last 12 months. (Question)...because there wasn't enough money for food/couldn't afford it?
CFSM	2. Worried about whether food would run out, etc. <sup>a, b</sup>
CFSM	3. The food we bought just didn't last and we didn't have money to get more. <sup>b</sup>
CFSM	4. We couldn't afford to eat balanced meals. <sup>b</sup>
CFSM	5. We relied on only a few kinds of low-cost foods to feed our children. <sup>b</sup>
CFSM	6. We couldn't feed our children a balanced meal. <sup>b</sup>
CFSM	7. Children were not eating enough because couldn't afford enough food. <sup>b</sup>
CFSM	8. Any adult in household ever cut the size of meal or skip meals? <sup>c</sup>
CFSM	8a. How often? <sup>d</sup>
Individual	8I. Did you ever cut size of your meals or skip meals? <sup>c</sup>
Individual	8Ia. How often? <sup>d</sup>
CFSM	9. Did you ever eat less than you felt you should? <sup>c</sup>
Additional	9a. How often? <sup>d</sup>
CFSM	10. Were you ever hungry but didn't eat? <sup>c</sup>
Additional	10a. How often? <sup>d</sup>
CFSM	11. Did you lose weight? <sup>c</sup>
CFSM	12. Any adult ever not eat for a whole day? <sup>c</sup>
CFSM	12a. How often? <sup>d</sup>
Individual	12I. Did you ever not eat for a whole day? <sup>c</sup>
Individual	12Ia. How often? <sup>d</sup>
CFSM	13. Did you ever cut the size of any of your children's meals? <sup>c</sup>
Individual	13I. For child with most recent birthday. Did you ever have to cut the size of this child's meals? <sup>d</sup>
CFSM	14. Were the children ever hungry, but you could not afford more food? <sup>c</sup>
Additional	14a. How often? <sup>d</sup>
Individual	14I. For child with most recent birthday was he/she ever hungry? <sup>c</sup>
Individual	14Ia. How often? <sup>d</sup>
CFSM	15. Did your children ever skip meals? <sup>c</sup>
CFSM	15a. How often? Three or more months. <sup>d</sup>
Individual	15I. For child with most recent birthday did he/she ever skip meals? <sup>c</sup>
Individual	15Ia. How often? <sup>d</sup>
CFSM	16. Did any child ever not eat for a whole day? <sup>c</sup>
Individual	16I. For child with most recent birthday, did he/she ever not eat for a whole day? <sup>c</sup>

Notes:

a. USDA, 1998. The four-part food insufficiency question, which was item number 1, is not part of the CFSM, but is the first question used for screening households: Which of these statements best describes the food eaten in your household in the last 12 months, that is, since July 1997? (1) We always have enough and the kinds of foods we wanted; (2) We have enough to eat but not always the kinds of foods wanted; (3) Sometimes we don't have enough to eat; or (4) Often we don't have enough.

b. Affirmative responses are "often true" or "sometimes true," a negative response is "never true."

c. An affirmative response was "yes."

d. An affirmative response was "almost every month" or "some months but not every month." A negative response was "in only 1 or 2 months."

Nonetheless, it would be interesting to see more detail on the samples used in the study. What percentage of each ethnic group comprised those samples? I would like to see more on the focus groups. How were they conducted? How did respondents view hunger and food insecurity in their own words? That sort of qualitative information, I think, is invaluable, and it is the kind of thing that we cannot get in office buildings in Washington. Another possible research topic is to compare what was found in your work with the Asian and Pacific Islander population to the CPS data set. Now, you mentioned that there was only 2 percent, but perhaps you could pool the '95, '96, and '97 surveys.

Joda recommended that we eliminate individual-level questions. In part because of the burden on respondents and interviewers, I think that is really important. Besides the burden on respondents, it could jeopardize the whole rest of the information that we gather on the household measure.

I am not against individual-level measures. I think it might make more sense to put individual-level questions on a nutrition and health survey in which the unit of analysis is the individual. I think that it would not be a good idea to add individual-level questions to the food security module on the CPS. I think CPS has histori-

cally provided information on economic conditions and labor force participation, and that by keeping it at a household level, we continue that economic focus.

Joda also mentioned a number of other changes, such as changing the balanced food question and changing the algorithms. As we see this research blossom, we are going to see a number of suggestions about how to improve our measurement technology. There is a tension between making improvements in this technology and losing the ability to monitor change over time, which was the initial purpose of this whole endeavor.

I would suggest that we have a balanced approach. Perhaps we use the same measurement tool and analysis techniques for a while, as we gather more information on how to improve the technology. Then at some point maybe 3, 5, or 10 years down the road, people can make a judgment call and we can institute a number of those changes at once. Thereafter, we can still get a sense for how things change over time. At the point where we make the changes, we do a bridging study in which we look in depth at how the differences go, one rotation group versus another. That would give us a chance to maintain this focus of being able to monitor changes over time across the two types of measures.

## **Contextual and Dietary Factors Associated With Reported Food Insecurity Among a Sample of Canadian Women Using Food Banks**

**Valerie Tarasuk**

The data and analysis are derived from a larger study of dietary adequacy and food insecurity among a sample of women and families using food banks in metropolitan Toronto. In Canada, the term “food banks” refers to *ad hoc* community-based charitable food assistance programs. They are a hybrid between U.S. models of food banks and food pantries. In Canada, food bank usage is considered to be the primary indicator of food insecurity. We see the use of these programs as part of the problem and not at all a solution, unlike the conceptual framework I heard articulated today.

The study recruited women age 19 to 49 seeking emergency food assistance. To be included, they had to have at least one child under the age of 15 living with them, to have used a food bank at least once in the previous 12 months, and have enough English for oral interviews. Less than 10 percent of eligible women refused to participate. Each participant had three interviews, 95 percent of which were conducted within a 30-day window. At each interview, we conducted a 24-hour dietary intake recall, using standardized methods developed by Health Canada and portion-size models to prompt recalls. At interview 1, we weighed and measured the women. At interview 3, we administered the USDA food security module, which I knew about because I had the good fortune to be at the 1994 conference. I used the full 53 questions of the draft instrument, with some modifications for the Canadian context.

We decided to omit, in interview 3, the question about perceived weight loss, an item that turned out to be part of the 18-item scale.

Of the 153 participants, 65 percent were sole-support mothers, about 90 percent had household income less than two-thirds of the Canadian

poverty line, most received social assistance, only 18 were working outside the home, and only one had a full-time job.

The food security status measures used the scaling methods developed by Hamilton and colleagues. With the 12-month scale, 94 percent were food insecure and about 70 percent were classified as food insecure with moderate or severe hunger. With the 30-day scale, about 57 percent were classified as food insecure with moderate or severe hunger.

We did not find relationships between poverty scores and food insecurity, perhaps because so many of the households were poor. I turn next from the question “Who is food insecure?” to “What can we learn from our data about predictors of severity or consequences of severity?”

We asked each participant about strategies for coping with running out of food and lacking money to buy more food. For example, essential goods and services can be foregone as a way to free-up money in times of threatened food deprivation. The empirical results showed that the odds of engaging in any one of these strategies are greater for someone who is also reporting household-level hunger in the 12-month period. These are not coping strategies, but rather indications that women are not coping.

For 105 women, we used an open-ended question to learn about precipitating events that lead to an experience of having little food and no money to buy more. Forty-two percent reported that money simply runs out at the end of the month—an answer that suggests a cyclical phenomenon. A few other people had a total interruption in the receipt of income. Another 24 percent of women said that they had to pay off debts such as accumulated utility bills. The most common unusual expense that depleted their resources for food was the cost of moving house. Most often, relocation followed eviction due to too many delays in rent payments. Another kind of unusual expense related to food deprivation was what I would think of as trivial expenses: the cost of a child’s birthday or the cost of Christmas. For any one of these people, there are times when

essential goods and services are foregone to free-up money for food, and there are times when food is foregone to free-up money for other essential goods and services, precipitating experiences of absolute deprivation.

Dietary intake data collected within a 30-day window were compared with food security status on the 30-day scale. For energy and a number of nutrients, there were systematic intake differences across food security status, and many of those differences are significant. We reran these analyses controlling for energy by expressing nutrient intakes per 1,000 kilo-calories. Any differences evaporated, suggesting that observed differences of nutrient intakes by food security status are likely based on the amounts of food, not differences in food selection.

I ran simple linear regressions to relate energy or selected nutrients to hunger. Here, hunger is a dummy variable that combines those who experience moderate or severe hunger into one group; the other group consists of women who probably were food insecure but who did not report hunger. Other typical economic and socio-cultural independent variables were included in an adjusted model and excluded in an unadjusted model. In the adjusted model, the hunger effect was significant for energy and most nutrients. The coefficients in the unadjusted model differ little from the adjusted model, suggesting that the hunger effect is independent of the other variables in the model.

We also analyzed the ratio of energy intake to the estimated basal metabolic rate (BMR). Using Schofield's equation and data on a woman's age and weight, we calculated the basal metabolic rate. Next, we used work by Goldberg and colleagues who proposed that the expected relationship between usual energy intake and energy expenditure in a normal sedentary adult population should be 1.55. This factor recognizes that energy expenditure is influenced by the basal metabolic rate and physical activity levels. The factor can be adjusted for the number of days of intake data available. The nutrition literature frequently uses the energy-BMR ratio to identify whether there is under-reporting of intake; if you

assume energy balance and if people report intakes lower than what one would estimate, they cannot be telling you the truth because they could not survive on those intakes. I did those calculations using Goldberg's equation, and the minimum expected ratio for this data set would be 1.04. Fifty-five percent of the women had ratios of energy intake, based on their 3-day intake means, that were less than 1.04 of their estimated basal metabolic rate. The odds of being below 1.04 were much higher for women who reported household food insecurity. We are loath to call this evidence of under-reporting given that there are many assumptions in the Goldberg comparison that are particularly problematic when applied to this group.

We also examined prevalences of inadequacy, using the probability approach. For the entire sample of 153 women, we adjusted the 3-day intake estimates to get an estimate of the distribution of usual intakes in the sample, using the work of the Iowa State group, adjusting for within-subject variation and one identified sequence effect. We compared the adjusted distributions with estimates of mean and standard deviation for requirements. We worked with the requirement estimates in use at Health Canada. The iron requirement was drawn from FAO/WHO work. We estimated fairly high prevalences of inadequacy for some nutrients, notably iron, vitamin A, folate, and protein. Taken together with our earlier work about the relationship between intake and household security status, we conclude that women's subjective appraisals of their household food security appear to be reflected in the adequacy of their diets, and that women in households reporting very severe levels of food insecurity appear to be at risk of inadequate nutrient intakes. In the short term, such inadequacy may not be a problem, but were the consumption levels reported here to be chronic, there would be reason to be concerned about these people's health.

To repeat the other conclusion, it is worrisome to dismiss a relationship between poverty and food insecurity, even though people do not get the expected relationships between income and household food security status based on these measures.

## **Discussion**

### **Beth Osborne Daponte**

Tarasuk compares the sample's 29 percent of clients who were food insecure with no hunger with those who were hungry. She finds that the hungry are nearly five times more likely to send a child to friend's or relative's for a meal, and three times more likely to give up services such as cable TV to cope with food insecurity. These results mirror what we found in Allegheny County in Pittsburgh, Pennsylvania.

The brief discussion that Valerie provides on the circumstances leading up to food shortages needs to be expanded. I found this material intriguing. Thirty-five percent of her sample attribute the food shortage to unusual expenses, which range from paying for a move to buying birthday presents. In a focus group of food pantry clients in Pittsburgh in 1992, we found that all of the nonelderly clients had medical debts that they were paying and they attributed these debts as the cause of their food pantry use.

How households budget their income and whether they have saved for a rainy day is central to understanding food pantry use and food insecurity.

In the version of the paper I received, Tarasuk asks very explicitly if food insecurity and financial insecurity are synonymous. Is a meticulous characterization of food insecurity the most efficient or effective means to assess financial insecurity?

Income, financial security, and food security are three distinct concepts. Many think that when a household's income is high, there is more room for error to make up for poor budgeting and savings behavior. There are credit markets available. However, apparently wealthy people also end up at food pantries. In my research, I am examining how a food pantry can exist in some very wealthy communities in Connecticut.  
Michelle Budwitz, the Community Relations

Director at the Connecticut Food Bank, said it very succinctly: "When you make a lot you spend a lot." Thus, there is not a lot of room for error, after all, even among people who make a lot.

Food insecurity and use of food pantries are not functions only of absolutely low-income for a household. Indeed, the CPS results that Chris Hamilton presented show that 60 percent of households with incomes less than 50 percent of poverty are food secure.

In my opinion, household budgeting and the ability and willingness of persons in the household to cook from scratch determine whether the household reports itself as food insecure. We need to look at cooking behavior. Where they are shopping? How much time do they spend shopping, especially when grocery stores are closing in low-income neighborhoods? Many factors affect whether a household reports itself as food insecure.

I also think that understanding household budgeting and a household's taste for using outside assistance needs to be the next step on the research agenda.

Valerie's work reminds us that hunger and the community's response to it are international issues. What we see in Canada does not differ from what we see in Pittsburgh. Amartya Sen's work on famine shows hunger to be a function of a household's ability to command the resources necessary to purchase food. Similarly, food insecurity in industrialized countries is a function of managing the resources. Understanding household resource management will become more critical as people go from welfare to work and become ineligible for food stamps—and possibly ineligible for use of the food pantries, depending on the rules of a particular pantry. It will also become more critical as people have less time to prepare food. The resources that hunger researchers need to examine are income, access to inexpensive stores, and the time and skills to cook nutritious meals from scratch.