

## Panel Discussion

R. Carol: I was interested in our discussion of flexibility. You could develop one system but I think right now that flexibility is something we really have to talk about in terms of a system. I say this because I think as a person has to service all different kinds of projects with all different kinds of people that the key points of the system are developed. Let me give you an example. Mention was made today about food groups and I think someone said that one of the problems with the food groups was that it was difficult to decide into which group you would put a particular food, i.e. recipes. This could be a problem. For instance, if you decide you want to have a MILK group, where do you put pudding? We could also put it into a SWEET FOOD group because pudding has sugar in it. Flexibility is here in the sense that you can set up any food groups you want. So by definition you will decide what you need. For dentists it is very important to know which foods have sugar so that if that is your primary aim you would set up the food groups in these terms. So I think that the name of the game right now is flexibility.

Comment from audience: I would like to suggest that the Universal Product Code which is being used by the retail food industry be used as a basis for classification.

Comment from audience: I really wonder whether we should have educated or first class guesses fill gaps. Is it the solution? I would much rather leave gaps and try to fill them with gradually increasing knowledge. Guesses cannot be pulled together at the same time and place and be acceptable. I am an outsider to nutrition but am developing a medical data base. There is already an amino acid in seafood data base and other very specialized numerical data bases which are much more limited than what you are trying to develop. You are going to have less confidence in these limited data bases than in those developed which include biological and medical data. What is the point of having all these independent data bases? Why cannot one try to unify them as some people seem to desire? For instance, for all applications in hospital nutrition services, a local data base may be useful. Why cannot one have a joint data base developed, not necessarily in any one place, which includes every data base in existence for any one specific aspect. Then everybody will be able to understand what each

is saying. But I find it rather disturbing that everybody has probably very similar ideas but that we have to bridge these slight differences.

R. Carol: In reaction to your first comment, let me give you an example why I stated that we shouldn't have any holes. For instance someone who is interested in the cholesterol content of foods has eaten turtle eggs. For a cholesterol value you have a blank because you don't have a value for turtle eggs. You then give someone this analysis. You say it is not complete; we've included every single food except turtle eggs. It turns out that turtle eggs are very, very high in cholesterol and this is the one item the person ate a great deal of. You are giving the person completely wrong information. But if you had a panel ahead of time which agreed if other eggs are rich in cholesterol with a consensus opinion, we should put some kind of value in for those turtle eggs. You probably would have given that person a better final answer than had you left it blank.

Comment from audience: I see the point you are making, but I would much rather not do it in a data base frame but as personal advice: "I think that this is so". The moment you put a guess into copied data, you are discrediting the copied data.

Comment from audience: In line with what you were saying earlier today, once you've got something hard-printed by computer, people take it as gospel. If you put it in as a guess, people are going to forget that it is a guess later on. But if it is an asterisk, or other symbol, you're going to always indicate "We think its this".

Comment from audience: One of the points that has come up in past conferences has been about a way of expressing the uncertainty of these kinds of values. I think an answer or guess is to try to develop an appropriate index to provide some guess, as Ruth Carol has suggested and, yet, to reflect the uncertainty and to allow you to extract the certainty part, if you so desire, as long as you have an idea of what the magnitude of the uncertainty is. The computer will allow you to do it several different ways. The technology is certainly there. Again it gets back to what was said about defining requirements and looking at flexibility. For a clinical system for estimation or an index it may not be worth the extra investment to provide sophisticated capabilities for correcting all uncertainties. On the other hand, in a university setting that may be perfectly improper.

Comment from audience: I tend to agree with Ruth Carol. It is quite easy, when you get the information to identify it, whether it is "guessed" information or whether it is a matter of converting information by regression equation which can be done. Then when you process the information,

you put a \* by it to indicate that it is substitute information. If some information comes in later that can take the place of that, you can replace it with hard data. It is very simple to identify this. I think it is productive to process as much information as you can. You can always identify it, pull it out, or handle it any way you like.

- G. Petot: I'd like to close with something that I recall, and it's particularly apropos as to what Ruth had to say about data and information. Reading in Science magazine last Fall sometime, Loius Branscombe, who is Vice President and Chief Scientist at IBM Corporation, made the statement that "data and information and wisdom and knowledge are as different as they can be. But they are interwoven as the molecules of starch, and the bread, and the flour and the asthetic aroma of the croissant that is produced". There you are!