
Choosing Foods For Health

Q&A

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Tom Tomich: Bob Knight mentioned community and the food movement, and just a week ago in the *New York Review of Books*—not *Western Orchardist* or *California Agriculture*, this was the *New York Review of Books*—there was an interesting piece titled “The Food Movement Rising” about agriculture, food, nutrition and health. No points for guessing the author’s name. He’s from the school of journalism just down the road, at our sister campus, UC Berkeley. It’s Michael Pollan. To set up the discussion, I want to share a quote from that piece and then turn to our panelists for their impressions and then also get your comments and impressions and questions for the panelists. I urge you to look at the whole article because there’s actually quite a bit of nuance to this quote that I won’t do justice to: “The healthcare crisis probably cannot be addressed without addressing the catastrophe of the American diet, and that diet is the direct, even if unintended, result of the way that our agriculture and food industry has been organized.” He’s talking about just the United States; this isn’t a global perspective. Now, I want the panelists to step back, to use this observation. My questions to each of you are: “Do you see the emergence of a food movement?” and, if so, “What is the role of science and specifically food science *vis-à-vis* that movement?” And if you want to take it even further, “What would be the implications of the food movement for biotechnology? How do you see those aligning? Misaligning? Partially aligning?” Who would like to go first? Bob is stepping up. You already referred to the food movement, so how do you see the relationship between that movement on the demand side and science on the supply side?

Robert Knight: Certainly there’s the local food movement—having survived as a farmer on the basis of that local food movement for about the last 30 years. Yeah, there is a local food movement, but is there a role for science and technology in that food movement? There is so much of a role for science and technology just for agriculture. And the local food movement is a small segment of agriculture, but it is a valid segment. So, definitely there is a role for science and technology.

Tomich: Do you see potential alignment, or not so much, between the functional-foods biotechnology we are talking about and the kinds of preferences that that food movement represents?

Knight: In my particular instance what people really connect to is being able to see the farm, have visibility into it, know they have transparent access to it, know that it is local. Whether the product is historical like the orange or some other product that is new and wonderful through food technology, doesn't matter so much, as long as they know who is growing it and where it is and that it's part of the community.

Tomich: Thanks. Lauren do you want to have a go at all or part of that?

Lauren Shimek: I think that there's a food movement beyond just the local food movement, for two reasons: one is because we go across the country and we talk to a lot of consumers in various regions across income levels and we hear a lot of the same things. People have similar concerns. They have new definitions of healthy. They are looking at food in new ways, more critical ways. At the consumer level there is a heightened awareness. But also, there's an interesting movement going on right now at the system level relevant to the quote—looking at the healthcare system, looking at the agriculture system, the industry and looking at the government—Michelle Obama's comments on obesity and food for example, and the symbolic garden at the White House. There's Jamie Oliver, and The Child and Nutrition Bill may funnel more money to school lunches. There's a lot of dialog. Discussion is coming up from the bottom and coming down from the top, which is key. As a food scientist, I think there is absolutely a role for science in this movement. I see food scientists as problem solvers. We've had amazing challenges in our history, when food wasn't abundant and choice was limited. Food science met those challenges, maybe in some cases too well. Now we have abundance of food, and we have an obesity crisis. We have a lot of choice in the marketplace. I'd love to see the food-science community rise to this new challenge and put that same energy and excitement and knowledge to solving those new problems. But, it's about acknowledging what's going on now and how it's different from what was going on 10, 20, 30, 50 years ago.

Charlotte Biltekoff: I'll echo what the other panelists said, and yes there is a food movement. I think we can all see it from the food network, to whole foods, to my field, to food study. There is a growing interest in food and there's politics around looking for change around food and alternative food systems. But, I think it is increasingly difficult to talk about American culture and the population in unified terms. If we think about the changes just in, say, television from the three networks to the hundreds of channels available on cable—we are an increasingly niche-fragmented society and it is important to keep in mind that various interests are pulling us in many different directions. Living in Berkeley leads me to see the world through a certain lens and think that a food revolution is everywhere, when in fact it's really not. We have a very diverse and fragmented food culture that is likely to become increasingly so. But, to address the question of science

on a slightly different level, some of my colleagues—my colleague, Warren Belasco in particular—has recognized two alternative futures for food. He has studied the history of the future of food and shown that, historically, we have talked about the future of food in dichotomist terms. We have talked about a technological fix that involves solving the problems through science and technology and an alternative anthropological fix, where we change our values, we change our culture and how we live in order to solve the problem by, say, using fewer resources, eating more simply, that kind of thing. But the likely scenario is that we meet somewhere in the middle. And, as Belasco says, it may be that the solutions to our problems in food and health will come from technology, but they will have to look very much like somebody's grandmother made them. A real or imagined grandmother, right? I think there will have to be some kind of meeting in the middle where these values—the technological fix and the anthropological fix—find a complementary solution.

Tomich: Thank you all. I want to open it now for audience questions and comments on choosing foods for health.

Robert Wager (Vancouver Island University): Bob, I am very impressed with what you are doing. I had never heard of this before and it's fabulous. However my questions are more to the other people on the panel. When I grew up in the 1960s and '70s, marketing was really about sexy, or new, or new and improved, and today it has moved toward fear sales marketing. About 10 years ago there was a *Nature* editorial that said scientists no longer have the luxury of staying in their labs and communicating only with their peers. Society needs scientists to speak up. I believe that's very true, and, keeping in mind the saying that the public must know that you care before they will ever care what you know, what is your advice to the scientists here?

Shimek: It's an interesting question in terms of the dialog between the scientific community and consumers and the role of the media. Also interesting is the comment that scientists should show that they care. In the human-centered design process, empathy and mutual respect are important. My message to the scientific community would be to think broadly about the implications of what you are working on. As a scientist myself, there were times in my life when I made scientific decisions and didn't necessarily think about their impact on products going into the marketplace, how they might shape that landscape. As a scientist, what seem like small decisions may add up across the community, and the things that I put into products that went onto supermarket shelves may actually have changed the landscape. I encourage you to think about that bigger picture, to step back from the moment of the technology or the ingredient and think about potential impact on consumers and the landscape as a whole.

Biltekoff: Understanding the context within which consumers choose foods is important to gaining a sense of empathy for the number of choices that people are making, the amount of variety they face and the uncertainty that results from conflicting informa-

tion about what is good to eat. The ethos of caring and connecting through empathy with consumers is a way to reassure people in a very uncertain marketplace and to take seriously their anxiety over food choices even if those concerns seem irrational from a scientific perspective.

Knighr: It's hard to imagine a lunch lady in a cafeteria getting excited about delivering a chicken nugget with some extra functional-food additive. This isn't just a scientific issue, although scientists have a role in delivering new developments and how they are couched.

Tomich: Our land-grant history—many of us are from public universities—goes back to a nineteenth-century notion that it's not just about science, but it's about responsive science that actually listens to the needs of our population. What's different now is that most of the population, the vast majority, are not directly involved in agricultural production so that listening and engagement is now an infinitely more complicated process. But I think we can get really good at it.

Amanda Martin (University of Minnesota): I'm with the *Student Voice* program. When I go to the store I try to get the most calories for my dollar. With VitaMuffins and other 100-calorie packs, we are spending more money to get fewer calories. Are functional foods suitable only for a certain demographic or are they applicable to all socioeconomic strata?

Shimek: You bring up an interesting point about cost, and that your need may be different from that of someone who is struggling to obtain an abundance of food and calories. Cost is a huge driver for why people make their food decisions. In terms of the application of functional foods, I think that people here would agree that they span many demographics. However, it is more interesting to think about the specific needs of the groups you are discussing and how we tailor healthy food choices to meet those people's needs and address those drivers. Cost is a hugely debated issue when it comes to healthy foods.

Biltekoff: Some critics raise the question of whether or not it is ethical to commodify healthfulness, and, if healthy food and health in general are a public good, is it ethical to invest so much in commodities—as a way of providing health—resulting in added value and added cost.

Barbara Schneeman (US Food and Drug Administration): I was intrigued by the comments, particularly from the first two speakers, that “fresh” is linked with healthfulness of a food choice. Even with shipping and handling, food, including processed foods, is often more nutritious because nutrient content has been stabilized. The dietary guidelines point out that fresh as well as processed kinds of foods can help consumers meet the recommendations. From the research that you do in terms of consumer perception, I wonder

if that's a bridgeable gap? Is that connection with fresh so inherent that trying to create the understanding of the role that certain types of processed foods can play is something that consumers would reject? So, that's one thing I would be interested in comments on. And I felt it would be worthwhile commenting on a project that was done many years ago. It was actually initiated by the California Dairy Council and the American Institute of Wine and Food. Julia Child was a major driver in the program, and it was an attempt to bring together culinary experts with nutrition experts for dialog on how we make sure we are moving together. The group eventually developed a motto that "in matters of taste consider health and in matters of health consider taste." I don't know if any activity is still related to that, but it speaks to the fact that tension between culinary and nutritional aspects has been there for a long time. How do we bridge that gap?

Tomich: It's for the foodies on the panel.

Biltekoff: There's a really important role for history in helping people to understand the value of food processing. I said in my talk that I think that the sense of a more wholesome, rural past will always be with us and that nostalgia will always be a competing push against innovation and technology. But, that said, I do think that much of our food culture today is operating around a romantic view of the past. Our job as historians is, of course, to trace historical change to help people understand the kind of contribution that something as simple as, say, industrially produced tortillas, may have had in freeing people up to do things with their lives other than pat tortillas all morning. Food studies is a growing academic field in which we teach things like food history. Having a more realistic view of the history of food and food processing would go a long way.

Shimek: Processed foods are often criticized and under fire and yet there is a renaissance around canning and you can find wonderful boutique jam and jelly places in Berkeley and elsewhere, celebrating the craft of canning, which most of us are probably fairly removed from. So, there really is a role for processing and partly for seasonal reasons. If you are going to completely fresh then certain things are going to be out of season and the purpose of some of those original technologies was to have food throughout the year that would retain nutrients and flavor. So, there is a role there. The other piece, Barbara, you bring up is that with fresh comes the need to cook and prepare the food, yet there is loss of cooking skills and increasing ignorance of basic food preparation. That's part of Jamie Oliver's campaign—teaching people basic cooking skills. I love the idea of everyone eating fresh, but there's the seasonal issue and there's the issue of our food culture and the knowledge that comes with that. An interesting food culture exists in the Bay area. You have a slow-food movement and a fast-food movement on the other side and I believe that a third option exists somewhere in the middle, where it's not about eating all fresh all the time and it's not about eating all processed all the time. It's actually learning from both of those groups that have a point of view and figuring out what's realistic and what's a new possibility in the middle.

Tomich: I was struck in this session by how dichotomist the attributes are: fresh, processed, natural, artificial, tastes great, less filling. It's not the decision process that Carl Keen¹ was talking about when we think about comprehensive assessment of benefits and risks. I don't know how we juggle those.

Audience member: A question for Bob Knight: to what extent do you think that it is possible to bring back the orange groves to California? When you started your talk, I thought, "Okay, this is a great story." But I was looking at it as an agricultural history of the Golden State, but when you finished your talk you said maybe this is not only a sustainable business but also a profitable business. Do you think you are getting close to that on a wider scale? Is this a good example of how to integrate local agriculture in large metropolitan areas with huge numbers of possible consumers like LA and the Bay area?

Knight: Indeed it is a sustainable business. It is a profitable business. But it isn't going to take over California and that's because of real estate values. The growers left in southern California are mostly family growers. It's a lifestyle choice. They have inherited that land. It would be extremely difficult for someone new to move in and buy land and make it a profitable business. The good news is that what's left we have a really good chance of being able to sustain as a jewel in our communities for years to come, but to increase that farm acreage—actually take out parking lots—that's something I don't expect to happen.

Bhimanagouda Patil (Texas A&M University): A significant challenge for plant breeders in this country, particularly western fruit breeders, is the development of fruits or vegetables that taste good. Scientific data indicate that fruits and vegetables that are bitter or tasteless contain higher levels of potentially bioactive compounds. When they are manipulated to make them tasty there is the possibility of losing compounds that are good for health. In a hundred years we might want the old varieties for their health benefits. We developed a very mild onion and we have a mild pepper for American consumers. On the other hand, foreign visitors ask, "Why did you change this very good pepper to a mild one? We need the hot pepper."

Shimek: That again brings up preparation, especially when it comes to vegetables, many of which require cooking. It's pretty easy to wreck a vegetable. We've spent a lot of time with moms and kids and the struggle over vegetables—trying to find ways to make them attractive for children, and preparation is an interesting area to explore. It's not just about the vegetable on its own, but how might we pair it with things that people can relate to that can still be healthy. How might we use those culinary tools, spices and herbs that aren't going to take away from the health quality. Preparation is key, and we are actually experiencing what you are talking about right now with vegetables currently in the marketplace. If people don't know how to prepare it, they shy away from the vegetable in question or may dislike it from having experienced a poorly prepared dish.

¹Pages 17–28.

Biltekoff: What if it's really true that in order to be healthy we have to eat what we don't like? Part of what is at issue here is diversity of taste—what we consider tasty, right? We see some positive trends towards more complex and bolder flavor profiles in the market. That bodes well for increasing acceptance of a variety of intensity levels and profiles as tasty. Bob Knight's program speaks to the question of taste education in a sense—exposing children to a wide array of different tastes. There is some natural aversion to bitterness at certain ages, but I do think there is a role for early education to play in making sure that a diversity of taste is experienced.

Michael Kahn (Washington State University): Yesterday we talked a lot about research and innovation, and the thing that struck me about the example that Lauren gave about the vegetables in the schools was that the teachers responded by bringing in vegetables and educating the kids. Obviously, that was something that might have occurred to them before you did the experiment you did, but they clearly were making the assumption that these children knew about vegetables. Ronald Reagan was right, ketchup is a vegetable. They recognized ketchup, but they don't recognize vegetables. Is this a problem where we know the information we need to deliver? Functionally or non-functionally, a lot of the information goes back to pyramids. It goes back to proteins and vitamins and things like that. We know that, but we are not delivering it very well. This gets back to the comment about niches. A lot of the niches for those children clearly don't include tomatoes.

Biltekoff: We may be delivering these foods into inhospitable contexts, basically. Delivery may not be the right metaphor. As a cultural historian and a cultural critic sometimes it becomes overwhelming because it is impossible to separate the question of why we can't get people to eat right from larger social and political issues. And frankly, one of those is poverty and the massive increase in income disparity that has occurred over the last several decades. Much of what we are talking about here are low-income and highly stressed communities where people are working insane hours trying to keep up with rising real estate costs, costs of medical care and child care, *et cetera*—living in a landscape that is basically inhospitable to healthy food preparation and consumption. We in this room are not going to solve those larger problems, but I do think we have to keep in mind the relationship between the question why can't we get people to eat right and the larger stressors on people's lives that make making the right choices nearly impossible most of the time.

Shimek: There are some other interesting cultural pieces, of which I'm sure Charlotte knows a lot more. When I was in high school, all of the home-economics labs were turned into computer labs. So the home-ec nutrition program disappeared in favor of technology. As we outsource more and more of our food preparation and our cooking, those traditions are being lost. It's interesting to examine the younger generation and important to understand the technology they are exposed to and the value that society now places on time and convenience, very different from even just 10 years ago.

Knight: Looking specifically at schools in the districts that we serve in southern California, as I mentioned, 60 per cent to 80 per cent of the school meals are free or reduced, which means that, in these districts, children are being fed by their schools. They are getting their breakfast at school. They are getting their lunch at school. And schools will even give them backpacks to take home to feed them on weekends, in some cases. And so, schools are incredibly important in urban areas like metropolitan Los Angeles because they are the ones that are determining taste. Many are unaware that they don't cook in schools anymore. They open boxes, they microwave things, but they don't wash dishes. Everything is disposable. And so, when I saw that video², I wasn't surprised at all that those children didn't know what a tomato was because if they are getting all their food from the school, they never see a tomato there. That's why it's important to find a solution to get those fruits and vegetables visible in schools. We are creating those kids' tastes for a lifetime, and *Farm2School* is a good mechanism for that.

²Pages 119–120.