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Ahmet Ekici, Bilkent University

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ABSTRACT
Biotechnology is considered to be one of the most influential revolutions, one far greater in its potential societal consequences than the computer, electronic or atomic revolutions. As with most revolutions, the public’s view on the risks and benefits of the technology is divided. However, most scholars agree that public trust in social institutions and in the food system would be a central issue to understanding public attitudes toward the risks and benefits of food biotechnologies. To date, the nature of such trust has received little systematic empirical attention. This study provides a detailed look at consumer trust and distrust in social institutions and in food safety system. Theoretical significance and practical (public policy) implications of the findings are also discussed.

INTRODUCTION
The broad objective of the study is to investigate consumers’ trust and distrust in the food system with respect to food safety and food biotechnologies (a.k.a. Genetically Modified Foods). Trust in the food system is considered to be a central issue for biotechnology debate; however, we do not know the nature and components of this trust and how it affects consumers’ view of the food safety. Further, studies to date (both in food and other contexts) have investigated consumers’ views on one institution at a time and in isolation. For example, some studies focus only on one institution such as a regulatory agency (e.g. Lazarus 1991; McGarity 1986) or universities (e.g. Rampton and Stauber 2001). Others studied a number of institutions (e.g. government, military, schools) in the same study and basically reported the degree of public trust in these institutions. No specific attempt was made to understand consumer perceptions of the interplays among various institutions that form the system. In other words, past research provides a detailed account of trust for one or more institutions (e.g. how trust in these institutions has changed over time) but does not explain, for example, how consumers’ trust and distrust in various institutions may interact with each other and collectively contribute to beliefs about the trustworthiness of the “system.” As a result, we do not know how individuals’ positive and negative views and expectations of various components of a food system interact within the system to result in an overall view of the system. These knowledge gaps inhibit a complete understanding of the consumers’ view of the food system with respect to biotechnology. This, in turn, may hamper any communication efforts for healthy public debate and resulting public policies.

Social scientists have argued that Americans’ trust in social institutions has deteriorated over the last a few decades. More specifically, studies have reported that most Americans do not trust the government and governmental agencies (Epstein 1998), manufacturers and other big businesses (Bernstein 2000), universities (Rampton and Stauber 2001), science and scientists (Maddox 1995), etc. At the same time, it has been the common view among the authors in the popular press (e.g. Kilman 1999), and in the academic community (e.g. Hohon 1998; Mokhiber and Weissman 1999) that when it comes to views of biotechnology in general and genetically modified foods (GMF) in particular, most Americans are not concerned (i.e. they feel safe) about the food they purchase because they tend to trust their food supply (system). These views, however, may suggest a contradiction because as mentioned above, Americans, over the last a few decades, have become distrustful of various institutions including the government, manufacturers, media, etc. It appears that the issue of what American consumers’ trust/distrust in the food supply (safety) system really means is not clear and perhaps underexamined. As a result, this study aims to answer questions such as can the food system be trusted, what does that trust/distrust mean, and how is that trust/distrust related to the components of the system. More specifically, the study asks is it possible that while individual components of a system (e.g. government, manufacturers, scientific community within the food system) cannot be trusted, the system as a whole can be? Is it possible that consumers feel their food is safe while they are suspicious about various actions of regulatory agencies, manufacturers, and scientists?

REVIEW OF RELEVANT LITERATURE AND OBJECTIVE OF THE STUDY
Most studies on institutional and system trust have been carried out in sociology and political sciences. These studies have focused on citizen views of such institutions as media (e.g. Sperling 1997), big corporations (Bernstein 2000), science (e.g. Maddox 1995) and the government and governmental agencies (e.g. Rose and Mishler 1997). A Common characteristic of these studies is that they mostly report trust in a particular target (e.g. politicians or media) instead of taking a broader approach to study public trust and distrust. In order to understand consumer trust in the food system, one should investigate consumers’ views of various institutions in the food system through a holistic approach. However, most research conducted with regard to institutional trust has either dealt with views of a particular institution (e.g. Abbott and Dalton 1999; Lazarus 1991; McGarity 1986; Renn and Levine 1991) or dealt with multiple institutions (in isolation) with no specific attempt to understand citizens’ perceptions of the interactions between institutions (see Rose and Mishler 1997; World Values Survey 1984, 1993). Even though these studies provide in-depth understanding of the views about one particular institution, they fail to account for the complexities and the challenges that are associated with social systems.

Other studies have examined citizen views of various institutions within a country (e.g. Rose et al. 1997; World Values Survey 1984, 1993). The main objective in these studies was to monitor the changes in public confidence in various public and private institutions (e.g. police, legal system, armed forces, parliament, civil service, the church, major companies, and press). They provided detailed understanding about the impact of these changes on the overall performance of the studied countries. However, these studies reveal little information regarding how individuals’ views of various institutions interact and/or how such interactions determine individuals’ overall views of a particular system (such as the food system). Institutional trust studies (when they deal with individuals’ views of various institutions in a system in a holistic manner) have the potential to provide detailed understanding of policy problems and their potential solutions. Through a holistic approach, one can look at individuals’ views of various institutions and institutional interactions in complex systems of the society (e.g. the food system) and understand how trust and distrust are distributed and managed among these various institutions within the system.

Based on these points, in summary, the specific objectives of this study are to study consumer trust and distrust the food system, to understand the impact of the interactions between social institu-
TABLE 1

Trust, Distrust, and Beliefs About Food Safety

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<td>Larry</td>
<td>George</td>
<td>Barbara</td>
<td>Amanda</td>
<td>Nina</td>
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<td>Pam</td>
<td>Susan</td>
<td>Tyson</td>
<td>Dorothy</td>
<td>Willie</td>
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METHODOLOGY AND METHODS

The research design used in this study is an adoptive and emergent one. In other words, the design unfolds as fieldwork unfolds and the emergent nature of the design affects decisions regarding sampling, data collection and analysis. Our design involved a two-stage data collection process. The first stage involved seven depth-interviews with consumers in a Midwestern state on their knowledge, beliefs and attitudes toward issues surrounding GMF. For the first study conducted in 2000, we sampled relatively educated consumers because at this time both academic and popular press noted consumers’ awareness of GMF was very limited (Kilman 1999). By 2002 consumer awareness of GMF had increased from 12% in 2000 to over 70% largely due to the Starlink®- corn fiasco and debates on stem-cell research. Therefore, our emergent theoretical perspective on factors that influence beliefs and behaviors related to GMF drove sampling decisions for the second stage. We sought to include informants with diverse orientations to GMF based around underlying differences in family stage, health concerns, social and political beliefs. The second stage involved 10 depth interviews focused on uncovering consumers’ trust in the quality and safety of their food and whether and how that is related to GMF and institutions they identify as playing a role in food safety.

Data analysis was a process of gradual induction. Analysis of textual data proceeded through two distinct stages of iteration: intra-text and inter-text (Arnold and Fischer 1994; Thompson 1997). Intra-text analysis asks a set of questions to identify the codes and categories of the findings. Once codes and categories have been identified, the researcher uses inter-textual analysis to look for patterns of relationships within different interviews (Thompson 1997). Thus, intra-text analysis addresses the extent to which general themes are shared by different respondents, and patterns of difference.

FINDINGS

Our findings are intended to illustrate the range of beliefs and behaviors associated with food safety in general and GMF in particular among U.S. Midwestern consumers. Thus, our intent is not to generalize to the American public. Table 1 provides a summary of the types of informants who rely (or not) trust and distrust for food safety. As can be seen in Table 1, many informants look at a “system” for food safety. Some of them (two columns on the right) trust the system, and some of them (first column on the left) distrust the system. However, as can be seen in Table 1, not all of the informants rely on a “system” to ensure the safety of the food. For some informants, trust in one institution (e.g. the watchdog or a high authority) can be sufficient to feel safe about the food. Similarly, for some respondents, distrust in one institution would be sufficient to feel unsafe about the food supply. In addition, some informants do not rely on trust/distrust when they think about food safety. They have other ways to ensure the safety of the food they eat. The reminder of this section will discuss various types of consumers summarized in Table 1.

Column 1: Distrust-Reinforcing Properties of the Food System
(Perceived Negative Synergetic Interactions between Social Institutions)

Analysis of the data suggests that there are mainly two types of interactions that are perceived to be distrust reinforcing. Among the six social institutions that are most commonly recognized by the informants, only three institutions are mentioned to have negative (distrust-reinforcing) interactions: the government, the scientific community, and the food industry, the industry being in the center of all the negative synergies identified in the study. It is also observed that rhetoric used by the informants changes when they
speak about a negative interaction that involves the industry. The words such as “big business” and “lobbyists” are used very often to describe the industry.

A distrust building interaction between the scientific community and industry comes from the belief that scientists are increasingly being hired and funded by “big business. This, in turn, concerns Pam, a housewife, and mother of two, whose husband is a scientist/researcher in a state university. She knows through her husband how researchers in universities are increasing relying on the industry-backed “soft money” and that (as she indicates in below lengthy excerpt) concerns her as far as the safety of the food supply goes.

You know, I see…research, um…from, uh…major universities, um…research…I’d say…funded by major companies, but you’d kind of have to be careful about, well it’s, uh…especially the research that is, um…preformed by specific companies for their own good. I think that some of those could be skewed. Um…so, you know, you kind of have to keep your eye on things, but you know, I’m somewhat concerned about the, um…current trend of, um…big business and um…uh…commodity boards. Um…these groups funding research at the Universities rather than the scientists at the University getting funding from the University for pure research. Because, again, I think that uh…that limits, um…the objectivity of the researchers, um…getting money from people who are in the various industries, um…also can limit what research is done. Um…so if a scientist has a great idea for…for research that might end up harming some particular industry depending on how the research comes out. Um…what’s to say he’s able to get, uh…will be able to get a particular commodity board or um…company to provide funding for him to do that, uh…if there’s a possibility that it could harm their, um…productivity. That just isn’t happening much any more.

And, uh…I think that can very much color the research that is done. And that’s definitely a concern…in terms of the safety… I think that…that’s a biggie. And, I think that…and I think I’m very much a minority about this. I think most people don’t really care what funding the research is coming from.

The next excerpt is from an interview with Kyle. He describes a more complex interaction that involves the government, food industry, and the scientific community and creates concerns in his perception of the safety of food. Even though there are regulations in places, he believes these food-related regulations are at times set by “listening to the industry lobbyists” instead of listening to scientists. He sees such interactions between government agencies and industry as a part of the current economic and political system that “intellectually pisses him off.”

I don’t think the industry is…is…is purposely violating regulations and I… I don’t think that the regulations aren’t being followed. I think the…in…some cases the regulations just aren’t strong enough. And, um …regulations aren’t strict enough and part of the problem stems from the system in terms of how the regulations are…are established in the first place. You know…such as the…the use of hormones and anti-biotics. That’s really a…a scientific and…and…policy question. But, the science is out there that…uh…that says that the hormones and the anti-biotics are a long term problem for humans. That it’s a policy problem. So, in terms of who sets the…establishes the regulations…um…they are not establishing permanent regulations…in terms of how much anti-biotics can be used or where even anti-biotics can be used. They’re not listening, uh…to…to the scientists or…or reading the scientific information that says, yes, anti-biotics fed to cattle will wind up in our system and can be a problem…The industry that raises the cattle is a big industry and they…and they do have tremendous lobbying power. So, it…really it’s not economics, it’s politics. They have tremendous lobbying power and…they…ironically, it’s the industry that’s being regulated, but the industry in part establishes the regulations…When I think about how the system works…you know…it…uh…I’m upset by it. On a day in and day out basis it…it doesn’t disturb me. I…on an intellectual basis it pisses me off. But, then that’s the way the system works in terms of regulation of…the…of…how regulations are…are set up for…for…how other things…whether it be cars or… uh…pollution levels or…uh medicine. The… the regulations…regulation process is intended to protect us, but on the other hand it’s compromised by…what the pressures that those particular industries apply on the regulators.

It appears that lobbying attempts of the food industry (though they are legal) have created enough disturbances among some of the informants to make them distrust the food safety system. Kyle and other respondents who are described in this section expect some components of the system (particularly government and the food industry) to act in a responsible manner. As recently noted by Nestle (2002) “Our…system must balance the rights of individuals and groups against the rights of society as a whole, and it requires elected officials to listen to groups demanding self interested actions. What concerns us… is the differential ability of food companies to obtain laws and rules that act in their favor at the expense of public health” (p. 96).

Column 2: Distrust A Particular Institution

This section deals with respondents who believe that the food supply (through conventional food system) is unsafe largely due to their perception that one major component of the system is incompetent to ensure the safety of the food. In most cases, government (regulatory agencies, politicians) is considered to be the source of their distrust in the food supply. Respondents usually make reference to the political and economic system as the source of their distrust. One important observation about these informants is that, in the presence of such distrust, the informants assume more responsibility (take more control) over their food supply and use strategies such as buying from co-ops, organic food stores, and growing their own produce and some dairy products.

Larry, an organic food consumer-informant, who is also a vegetarian, shows a great deal of suspicion when it comes to his feelings toward the conventional food system. Even though he thinks that most foods are safe to eat (to the extent that they won’t kill people), he feels entering a grocery store is like entering a lottery and buying food in grocery stores can be very risky. He is particularly suspicious about meat products. Though he is a vegetarian he thinks those who buy meat in groceries are “guinea pigs” or test animals.

I think…I think it’s (the food) primarily, mostly safe. In terms that it’s not going to make you die or give you a horrible illness, but, um…when you walk into the grocery store one of my gut feelings is that I’m entering a lottery. Um…kind of a…gambling situation because…especially if you buy meat in a grocery store…I mean what… you always hear about these stories where a certain amount of meat gets recalled…because it was tainted with something. Or, there’s an illness on certain foods
and they had to pull it off the shelves...nobody really else buys it. But, if you're the person that bought or if you're the person...the first one, or one of many that...uh...is the...the...guinea pig...or the test animal to...to start that process of saying there's a problem with this meat. It needs to get recalled. You know, so, you could be the one.

Susan shares the Larry's view in that she sees government policies and their consequences as the main source of her concern for the safety of food supply. She believes that government has let food production and processing businesses to get so big that the government can not control these businesses effectively anymore. She believes that once a powerful watchdog has become weak, it cannot oversee these big operations anymore. As a result, it does not matter for her if government (USDA) tries to assure her about the food safety. She, therefore, elects to take more responsibility in making sure about the safety of her food.

I mean just like the USDA's so-called overview of chicken production, I mean, you're probably aware now, we have to be so careful we cook our chicken thoroughly, you know. Well, if you look at how some of these chicken producers kill chickens, gut them, you know, there's all the waste, there's all the excrement. They dump the carcasses in a tank of water. No wonder we've got bacterial contamination of our chickens (laughing). And there not being cleaned, the exception is we've been buying the "Smart Chicken" which is produced here in Tecumseh, NE....The USDA has a really hard job (now). This is a big country, there's so much stuff coming in that they have to be aware of and concerned about and it's easy for me to be a critic, but um, it's the USDA's fault. They let things get bigger and bigger and out of control. I don't think it would matter any more if the USDA assured me that something was O.K...any more than if the grocery store assured me. Cause...I just don't see how they can do all the things that they're supposed to do.

Column 4: Trust A Particular Institution

This section deals with informants who believe that their food is basically safe because they believe that one component of the food safety system performs its duties sufficiently and (if necessary) would catch the mistakes made by others in the system. Barbara, for example, mentions that she would trust the decisions made by the government agencies if labeling is not offered for GMF products. She believes, if labeling is not mandatory, products must be safe and consumers would not need to know the genetic modifications characteristics of these products. She further believes that even though some aspects of the food system (e.g. the food scientists) do "scary" things, she doesn't feel scared because she is confident that FDA would not allow any dangerous products to be put on the grocery shelves.

Well, I suppose it (labeling of GMF products) would be depending on how concerned you are. A lot of people would be and a lot of people would. I guess I am basically pretty trusting that they are not giving us the things that we shouldn't have. I think we have to use our best judgment and hope. I would not go to the grocery store and buy something that I know it is not safe... I think that, umm, I trust the Food and Drug Administration most of the time (laughs) and I think we have to have faith in what is happening. I know there are things happening in food and science labs, scary things. I try not to worry about whether there are negative things. I think, thanks to FDA, I don't have to (laughs).

Jenny is also a nurse but she is in her early thirties. She takes the statements made by higher authorities very seriously. In fact, she has more confidence in consuming particular food products if, for example, USDA endorses it. She has enough trust in governmental authorities that she feels she doesn't have to worry about listening (trusting) other sources for food safety.

Well, you know, maybe because I worked at the public health and I have worked in health for long time, if the government came out, or the surgeon general came out and USDA came out and say you know people you have been eating this genetically modified food for the past X years and its fine, its healthy, its great for you,” then I would probably be very comfortable with it… I think, you've got to trust something or somebody, you know people at the higher up, you don't have to trust everyone, or even think about it. You know surgeon general or a higher authority comes out and says “it is fine, there is nothing wrong, we have been doing it for the past X years,” then I probably, personally would have more confidence in it.

Column 5: Trust-Reinforcing Properties of the Food System (Perceived Positive Synergetic Interactions between Social Institutions)

In this section, we will discuss the informants’ view of the interactions between some of the social institutions in the food system. Some of these interactions are perceived to be trust-reinforcing in that consumers see them working together in order to provide consumers with safer, higher quality, and more efficient food supply. One of the informants, Amanda, is explaining how she feels safer about the food supply today than in the past due to the interactions between some of the social institutions, namely, science/technology, manufacturing, and the government. For example, she has trust in the “food processing business” because technology has advanced and impacted how they (businesses) are doing their job in treating food products. She also makes reference to government suggesting that due to the technological developments government is better able to ensure the safety of the food supply:

...Our technology is so advanced over the years that, you know, people tend to trust more that they're doing things better than before. You know, things are just getting better. Um...with...

I: When you say trust more to them. Who are they? Can you talk about them?

I think we're taking about businesses as well as government because I’m thinking of, you know, all the companies that are in the food processing business or in the food producing business, um...that, I probably have more trust then just because technology has advanced that, um...you know, that has to be impacted. You know, things have to be. I'm trying to think of what I've seen happen over the years since I was a kid, um...just things that you...are obvious signs that is has advanced and uh...probably for me it's seeing things like, um...what I've, again, I hate to say it, but what you'd watch on the media about, uh...how they're treating foods or how they're working on growing things more effectively or they're working sure our meats are, you know, safer... things like this. I guess I'm...I can't be in all of the places... So, I'm believing and hoping that their technology is true and they have just continued to grow in that area, and government is using these
technologies to check things, keep things under control. That’s my hope.

In other cases, informants see the close relationships between big food manufacturers and the government as trust reinforcing. April perceives big manufacturers’ foods as being safer due to a closer look on their operations by the government. She compares government scrutiny on a big manufacturer versus a small one, and concludes that interaction between big companies and government would make her feel better about the safety of the food offered by these big companies.

I sort of think that this is just a perception of mine that bigger the company the more watchdog the government towards that company. Like Oscar Mayer because they produce so much deli meat that FDA or whoever looks at the way they process the meat and whether their employees are wearing gloves all the time, whether what they do when something fall on the floor. I sort of think that those government regulators would be more regulating these big companies than Joe Black on the street who makes turkeys in umm slaughters them and sells to you. He doesn’t have good safety and health regulations because no one enforces that for him.

Column 6: Offsetting Properties of the Food System (Consumers’ Use of Balancing Strategies)

In this section, we explain the informants’ use of “balancing” strategies among various social institutions in the food system to assess the safety of the food they eat. Due to page limitations this section is built around only one of the informants, Nina, who provides a very elaborate picture of strategies she uses to assess food safety. This section begins with reporting her trust in food manufacturers. She trusts the fact that big food manufacturers would provide higher quality and safer products because they have access to higher quality ingredients. Their suppliers (farmers for instance) would want to give the best of their products to these big manufacturers in order to keep their business. Further, she specifically indicates that she trusts the packaging and labeling practices of such big manufacturers due to their long time presence in the marketplace. This, according to her, in turn, generates a sense of competence that leads her to believe that these big manufacturers can be trusted.

Well, I have to say, I might have a brand bias. I mean, I do have a tendency to trust products by companies like Procter and Gamble. I feel that they are in the business long enough that if they are going to package cereal, they know how to do it, they know how to label, and therefore, they are experienced enough to accurately say what the ingredients are. This is for the accuracy of information disclosed. As far as the food quality and safety goes, I have tendency to believe that big big businesses like PG sort of get first bites of the products, that they are more likely to get better grain, the better beans, you know, they might just have better access to umm better products that make up their final product. Whereas a smaller company or generic company might be buying cheaper products. If I am selling beans to PG, and it is very year with great quantities, I would tend to give my better product to PG. So, from the producer position, there might be bias to get better product to PG, so that’s one point... And so, PG’s product will be safer and higher quality.

Even though Nina indicates trust in the big manufacturers such as Proctor and Gamble, she feels that (she is suspicious that) these companies could also do anything (including potentially health damaging food practices) to stay profitable because people running these companies sometimes can be very “greedy.” She believes the greedy managers might not care about the safety and welfare of the consumers as they didn’t care about welfare of their employees at Enron.

I think that on the one hand P&G for example want to support their name and therefore have good quality product. But if they could cleverly inject green dye in green beans and make them look better, umm, and hide it, fool the consumer. And it may not be important for them if that green dye is not good for consumers in the long run. They have to take care their profits first, right (laughing) Look at Enron, right, they…who cares about their employees? So, right, They might not care about consumers? There are people that are very greedy and I guess greed is a…is a very big problem.

When food manufacturers cannot be counted on to bring safe products to consumers, Nina finds comfort in believing that farmers (small or big scale operators) will, to some extent, buffer the bad intentions of greedy food manufacturers. She trusts the farmers to set their priorities in favor of the consumers by “drawing the line at some point” when manufacturers try to push farmers to use potentially unsafe food practices. The source of her trust is the belief that farmers (unlike manufacturers) have a greater attachment to land, and therefore, they care more about the food (and consumers) than manufacturers.

I think, the nice thing about farmers is that, I think they want to increase yield but I think they are less likely, because they are close to the production, this is their product and I think most farmers have some, umm, there is reason why they are in that business, you know, there is some tie to the land, between them and the product they produce. Whatever that tie might be different than going to a factory and producing, you know, car parts. So, I think that for that reason farmers, even those who are in very big business, umm still are going to have a greater alignment to consumer interest than other (food) manufacturers. So, I think the farmers also will protect consumer interest and care about our safety to some extent... the manufacturer might try to push farmer beyond what they want to do, umm, but I think farmers would draw the line at some point.

However, according to Nina, in some cases, farmers are not as reliable in following food safety rules set by authorities as one might think. She doesn’t believe that farmers would “degrade” the quality of the products or jeopardize the safety of the consumers intentionally; however, they may not be willing to follow the recommendations of the government because of financial pressures or convenience reasons. In fact, the farmers wouldn’t voluntarily follow crucial rules (e.g. crop rotation) if there were no enforcement. In this case, the source of her distrust in farmers comes from farmers’ lack of knowledge of safety issues and their unwillingness to follow the rules. In such cases (when farmers cannot be counted on ensuring the safety of the food supply) she relies on the government to “do the testing,” “educate the farmers,” and “enforce all the necessary rules” to protect consumers from any unsafe food. Her parents who have a small farm in the Midwest had to pay over $10,000 in fines the year they didn’t follow crop-rotation rules properly. Since then she says all farmers in the place her parents live follow the rules very carefully. From this first hand experience, she knows and trusts the government to enforce the planting rules on farmers when they are unwilling to do that.
Nina believes that government can ensure the safety of the food supply not only by controlling the farmers’ practices but also setting standards for food/biological scientists who are working for the food industry. As detailed in below excerpt, she believes that scientific community (except some university-research) cannot be completely counted on to bring safe and quality products on the market because their objectives are to increase yields and the profitability of the industry for which they are working for. Through the end of the excerpt she suggests another “layer of scrutiny” that makes her feel better about the safety of the food when she is distrustful of the food-related scientific community; she feels safer in consuming food products that are exported to other countries since the these foods must also pass the safety and quality standards set by these countries.

I think scientists, too, have competing motives. So some scientists are probably trying to improve the quality of the food. Some scientists are probably trying to improve the quality of our soil. But there are other scientists who are employed by big business umm who might somehow trying to increase yield without concerns about the quality and safety, you know, humanity. And not much attention to quality and safety issues. So, and then for the industry, so if you were working for the cattlemen or the dairyman, you might be trying to produce bigger cows. That might be your objective. How do we get more meat per cow? Umm, therefore, your sole objective might be really narrow. But, again I think there is government regulation that at least caps that in somewhere, you know (laughs), that there’s got to be some standard out there, I assume, there is a standard out there of meat quality, beef quality and safety. Particularly on exports! Umm, because, there is something we haven’t talked about it is that we focus so much about the US government, but foods that are put out there for export, I think that adds all other layer of scrutiny. And probably unfriendly scrutiny. So the Canadians are going to be very critical to some American beef because it is competing with Canadian beef. And the same is true for beef between United States and Europe. You know, the things that forces us, or umm, the structures that protects the beef industry, same structures that Europeans have in placed to protect their own beef industries, and therefore, they are going to be scrutinizing our meat.

Even though one believes that government can offset many of the food safety problems created by farmers, the scientific community, the food industry, the informants’ trust in the government is not endless. In fact Nina, in some areas, distrusts the government agencies’ ability to ensure the safety of consumers. She is very suspicious about government overseeing powerful industries (such as the beef industry). It is noted earlier how she trusts government to make sure farmers are following the rules. She also owns a small store where she (among other things) breaks bulks of cheese and sells. She mentioned during our interview how government officials are checking her scale regularly to make sure she is measuring cheese right. That kind of “attention to detail” makes her trust the government in food safety. However, she also believes that government is not willing to do similar enforcements to powerful industries such as the beef industry. She believes the government is highly affected by these industries’ lobbying efforts and such influences can very well jeopardize the safety of the food for consumers. For example, consumers may be fed with meat that has highly dangerous amounts of steroids in it.

I have to say, that am very suspicious of our government may be with beef industry. I think it is very powerful. Umm, the exportation of things like beef might be area in which there might less scrutiny. You know, because you want to remain competitive internationally, and so yeah, I think that there are some areas I would think that government is not that strict…I think that on the one hand, government is going to make sure that if I buy a package of cheese, that is eight ounces. They try to regulate that. On the other hand, if I buy meat, there might be dangerous amounts of steroids in it because that might enhance business and make American cows competitive with Canadian cows. Umm, yeah there might be steroids in it that makes us all sick but government may not willing to see this.

When government cannot be trusted, the informants still do not feel helpless. In fact, Nina for example believes consumer action groups are potentially “the best insurance” for food safety when big business and even the government cannot be counted on, or as she puts, “get out of wag.” The source of her trust in the consumer groups comes from the belief that these groups do not have competing objectives (but all the other components of the food system, farmers, scientific community, manufacturers, and government have competing objectives) The sole objective of the consumer groups is to “protect consumers” and they perform their job without expecting any funding from the industry.

I think consumer action groups probably are someways the best insurance. I remember in the past some complains about beef sold at McDonald’s. It seems to me that if a high profile place like McDonald’s is selling some problem meat, that you might have consumer actions response for that. Umm, some type of consumer watchdog comes in and breaks in the chain. I think, consumer action is extremely important and they are the mechanism that ensure that neither big business nor big government gets out of wag. So. I think they are very important. And not even being active, but just being latent being present probably puts pressure on chains like McDonald’s, as consumer are coming and purchase goods. I think that they are big pressure. Probably more on business then on government actually. Because I am to some extent distrustful of government, umm, I think that government has competing set of goals. On the one hand consumer protection on the other hand is sale of exports. Whereas, I think consumer protection groups, their entire focus and objective and agenda is to provide consumer protection. So they are less susceptible to competing interests.

Column 3: Food Safety beyond Trust and Distrust

So far, it is argued in this paper that consumer beliefs about food safety are closely related to their trust and distrust in various food related institutions. However, not all of the informants rely on trust or distrust in institutions/system to ensure the safety of the food they consume. George, for example, accepts the fact that food cannot be completely made sure to be safe. In other words, neither government, farmers, manufacturers, nor scientists can guarantee the safety of food completely. George’s view does not necessarily mean that he distrusts these institutions that are a part of the food safety system. Instead, he uses a different strategy to minimize the risks posed by potentially harmful food products: he basically tries to serve a varied diet to his family and avoids overconsuming a particular food product. This way, he doesn’t “worry about consuming unsafe food.”
Yeah…yeah…food in general…no, I usually don’t worry about it being…uh…um…being…safe or…or…I don’t…I don’t worry about consuming unsafe food. Let’s put it that way. I mean I…intuitively, I understand that that can happen…and, um…but…I feel that…that I eat such a varied diet and that I serve…we try to serve, you know, our family such a varied diet that they’re not going to overconsume any one particular product which would…uh…if it was tainted that it would effect their health. Obviously, then you know, you can these occasional problems such as Salmonella or E. coli in meats and there, you know, we just try to be as…as careful as we can when we prepare and uh…cook the meats. But, in terms of, um…uh…any kind of packaged food or…or canned or bottled food, I…I…intuitively, I…I know that occasionally there can be problems…uh, but I…I just don’t have that forefront of my mind.

Tyson is another informant for whom trusting/distrusting food system or its components is not a very important consideration for thinking about food safety. In other words, he doesn’t consider trust/distrust as bases for making judgments about food safety; rather, he sees trust as given component of purchasing and consuming food. He believes he has no other choice, but to purchase food that is offered to him in the stores. He relies on his three decades food purchasing experience in making food decisions, he knows that food can be unsafe and “something could be wrong with the food”, but he elects to not to think about it.

That something could be in fact wrong with the food. That something could be in the can or the package…but you do (buy) it anyway. Cause it’s the only choice I have….. I don’t grow my own food and I don’t grow my own cows and I don’t, you know…Hy Vee or Super Saver or I don’t eat. So, basically that’s the system that delivers me all my food and I don’t have a lot of options to it. And so, yeah…I mean even if I am concerned about it, ultimately…being kind of pragmatic, what am I going to do if I don’t want…You go with it and you know within that because that’s the system that delivers my food.

DISCUSSION

In the beginning of this paper we asked: is it possible that while individual components of a system cannot be trusted, the system as a whole can? In other words, is it possible that consumers feel safe about the food they eat while they, according to many studies, distrust various institutions that are responsible for bringing them “safe” food? It appears that consumers use a number of different mental models to reason with the GMF in particular and food safety in general. The findings suggested that one explanation for this question would be the view that consumers recognize a system of food safety with various individual components (social institutions) working in a “system-like” manner to balance the weakness of each other. We framed this type of mental model of consumers as “offsetting properties of the system.” In order words, the data suggest that it is true that consumers may, at times, distrust the activities of various social institutions. However, perhaps more importantly, they see interactions between their trust and distrust in various institutions, for example, trust in farmers in one issue offsets the distrust consumers have for manufacturers. These kinds of balancing strategies, in turn, appear to make the informants feel safer about their food supply. Research in systems suggests that properties of each element of the set have an effect on the properties of the set taken as a whole (Ackoff 1974; Gharajedaghi and Ackoff 1986). Similarly, as suggested in this paper, properties such as consumer trust and distrust in each element (social institution) may affect consumer trust in the food system.

A second consumer model that may explain this question is “trust reinforcing properties of the system.” In a systems view, interactions between the components of the system can create synergies that are greater than the utility of each component (Ackoff 1974). The data suggest that when consumers see positive interactions between the component institutions (e.g. between the government and science and manufacturers) they may have a greater confidence in the food supply system. These perceived interactions create positive synergies and resulting positive attitudes and beliefs toward the food system. We believe that the formation of the system trust through this second (interaction) model can also be considered as a potential problem for public policy researchers. It can be argued that in situations where the respondents trust the system, they may consciously suppress their distrust in various institutions. In such cases, although trust expressed by the informants in the system typically is rational and grounded in some experience it can be misattributed at times, and existing foundations for distrust can be discounted or ignored. In other words, it may be possible to argue that, even though consumers distrust some institutions, they may overgeneralize trust in food system. The rich sociological tradition of research on white color crime points to the role of “overgenerlalized trust” as a necessary precondition for the undermonitoring of trusted employees that leads to possible deception, fraud, and embezzlement (Granovetter 1985; Shapiro 1990).

This case points out the difficulties encountered where broad (generalized) trust or distrust emerges and where countervailing facets that support the contrary view is suppressed. Future research can examine the extent to which misattribution of institutional distrust and overgeneralization of the system trust can explain the difference.

Our study also suggests that a single institution may be sufficient to feel safe about the whole food supply (strong watchdog model). In all of our cases that fit into this model, government appeared to be the “sufficient” watchdog. As suggested in the literature “creating institutions that help secure trustworthiness thus helps to support or induce trust” (Hardin 1996, p.28). Sztompka (1999) notes, for example, that “it is easier to trust business partners to deliver the goods, if there is an enforceable contract signed by them at the public notary’s office; it is easier trust fellow musicians in the orchestra not to botch the tune, because of a towering presence of the ‘maestro’ who will enforce good performance if needed…” There are numerous institutions within the food system and it may be easier to trust them if there is an institution oversees the others. Research has suggested that informants trust the government because the government “enforce rules,” “have sufficient regulations,” “oversees industry,” “enforce recalls,” etc.

We also have two consumer models in which the informants feel unsafe about the food supply because they distrust the system or one of its components. Similar to the discussion on system trust through perceived positive synergetic interactions, we believe, system distrust through the consumers’ perceptions of negative synergetic interactions is an important public policy problem. Even though some informants (e.g. Pam and Terri) are identified as having distrust in the system, these informants, too, trust some aspects of the social institution in the food system. In situations where the respondents distrust the system, they may summarily dismiss the evidence of possible trustworthiness of some institutions in the system. In this case, although distrust expressed by the informants in the food system (e.g. Pam, Kyle, and Terri) has empirical foundations and is justifiable, this may lead to the summary dismissal or reinterpretation of the evidence of actual
trustworthiness of some specific institutions. From this point, benevolent or altruistic conduct by the target of distrust (specific institutions) may be viewed as further evidence of manipulativeness, an attempt at impression management, and so forth. Importantly, objective evidence of trustworthiness can be misattributed and summarily dismissed, and ultimately, the potential benefits (efficiencies and savings) associated with trust relations can be lost.

Implications for Public Policy Debates on GMF: Some of the broad public policy implications of the study has been offered in the preceding section. Now, we would like to conclude this paper with a few specific implications on GMF policy debates. The main biotechnology debates are over the novelty of modern genetic engineering, debate over pre-release testing, debate over labeling, constitutional debate, and debate over transparency (public information). In addition, there are two fundamental debates that shape the current regulatory regimes on agriculture biotechnology applications: debate over substantial equivalence doctrine and debate over the precautionary principle.1

Perhaps the most important implication for public policy of GMF comes from the finding that, as opposed to the existing views, the relationship between consumer trust/distrust in the food system and their beliefs about the safety of GMF may not be strong. For example, those who trust the system (e.g. Amanda) can strongly demand labeling for GMF for many other reasons such as ecological, moral, and ethical reasons. At the same time, a respondent who distrusts the system (e.g. Pam) would not have health/safety related concerns with GMF.

Our study also suggest the importance of designing public policies by distinguishing between health related and other social, economic, ecological and moral concerns consumers have about GMF. Thus, regulatory agencies should broaden their scope of what is a reasonable regulatory regime for GMF. Our findings suggest there is not a complete failure of trust among the informants as regards regulatory agencies’ dealings with GMF and other food safety issues. This is in contrast to findings in other countries and consistent with previous quantitative results. However, we find consumers favor a precautionary principle rather than a substantial equivalence doctrine as a foundation for regulating GMF, primarily because of non-food safety issues associated with GMF. The substantial equivalence doctrine was adopted by the US, Canada, and Japan following the OECD-Edinburgh Conference. However, currently the US is the only country that still relies on this doctrine to regulate GMF. EU has always been skeptical, and recently both Canada and Japan have decided to reexamine and change their underlying foundation for regulating GMF.

Finally, our study suggested that informants see “industry” as the key player in their perceptions of negative synergetic interactions (distrust reinforcing properties) among the components of the system. At the same time, some informants see government as very important component of their confidence in the food safety system. As a result, we suggest that public education programs (a component of the transparency debate) should be prepared and run by governmental outlets (e.g. NPR or PBS). A relatively successful example of this suggestion was executed about two years ago. “Frontline” and “Nova” combined their efforts to produce Harvest of Fear aired on PBS in the fall of 2000, incidentally during the most intense days of the Starlink®-corn fiasco. According to the critics, the program was “a better presentation of the controversy surrounding biotechnologies” and applauded even by the opponents of the biotechnologies (McCullum 2001).

In addition, more research should be funded by the federal government. As one of our respondents (Pam) suggested, she would have to see more research be done through “independent academicians” who are purely funded by the federal government. Independent academic research sponsored by the federal government is an essential component of a protective regulatory system. Unfortunately, the federal agencies that fund scientific research are not the agencies that need it for regulatory purposes. Of the three agencies with primary responsibilities for regulating GM foods, only USDA has a significant program for supporting academic research, and as Gutterman (2000) argued, the USDA is devoted primarily to developing new applications of biotechnology, not to discovering the adverse health and environmental effects of the products of the new technologies. We believe that, in order to boost consumer trust in the scientific communities, the US Congress, for example, should create a separate program through the EPA to fund research on the potential environmental effects of GM crops and animals. As suggested in this paper, it is possible that such interactions between government and scientific communities (consumer perceptions of positive synergetic interactions) can also boost trust in the system.

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1Detailed information about the biotechnology debates and specific data about the informants’ perspectives on these debates are available upon request.
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