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Salmonella and the Media: A Comparative Analysis of Coverage of the 2008 Salmonella Outbreak in Jalapenos and the 2009 Salmonella Outbreak in Peanut Products

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Abstract

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Keywords

salmonella, media coverage, framing theory

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Introduction/Theoretical Framework

The Food and Drug Administration (FDA) began investigating a possible foodborne illness outbreak in April 2008, after 57 cases of *Salmonella*, had been reported in Texas and New Mexico (U.S. Food and Drug Administration, 2008, June 3). *Salmonella* is a bacteria that naturally occurs in some types of food products, such as meat (including poultry), raw milk and eggs, and fresh produce (Medeiro, Hillers, Kendall, & Mason, 2001; PFSE, 2006). The 2008 outbreak led to 1,440 individuals becoming ill by the end of August in 48 different states and Washington, D.C. (Alonso-Zaldivar, 2008). The government originally believed that tomatoes were the cause of the outbreak, but the FDA stated in late July 2008 that the cause was actually jalapeno and serrano peppers that had been grown in Mexico using water contaminated with *Salmonella*. Despite this statement, the United States tomato industry lost a reported total of \$250 million before the end of the outbreak and blamed the government for being spotlighted during the crisis on what they felt was poor evidence (Alonso-Zaldivar, 2008).

In early 2009, approximately 1,800 peanut products were recalled due to a threat originating from Peanut Corporation of America (PCA) plants. These products, which had been contaminated with *Salmonella* bacteria, caused 654 cases of illness in 44 states, nine of which lead to death (Centers for Disease Control [CDC], 2009). The contamination occurred in peanut paste and peanut butter that had been produced by PCA and then shipped to many outside food production companies throughout the country (FDA'S Investigation, 2009). In the case of *Salmonella* contaminating peanuts, the roasting process kills all bacteria, and no *Salmonella* should be present afterward (National Peanut Board, 2009). FDA investigations into PCA found there were places bacteria were present in the processing facilities which could have contaminated the peanuts after they had been roasted (FDA's Investigation, 2009).

Due to the large scale distribution of the peanut paste and peanut butter products, food production companies recalled many types of products. These ranged from snack items like ice cream, cookies, trail mix and crackers, to other products such as pet treats. Though some of these recalls were precautionary in nature, others were spurred by the fact that those manufacturers had used PCA products. A side effect of the recalls was a drop in jarred peanut butter sales, even though jarred peanut butter had not been affected by the bacteria or any of the recalls. Jarred peanut butter sales dropped by 22%, with the U.S. peanut industry reporting losses of around \$3 billion (L. Kennedy, Texas Peanut Producers Board, personal communication, January 18, 2010).

Outbreaks such as these are a concern for the agriculture industry; when food safety is in the news, food scientists may be at a loss to get their message to the public. Studies have shown that environmental and health activists are quoted in the media five times as often as food scientists (Anderson, 2000). The same study found that reporters and scientists may have problems communicating, as few reporters have extensive training in science and few scientists have training in communicating with reporters in a manner that explains their viewpoints in a simple, clear language. This may lead to reporters getting scientific facts wrong and scientists being nervous or reluctant to speak with reporters in the first place. This can lead to incorrect information and misinforming the viewer or reader.

This can become an issue when considering that food safety stories are often high-profile. Research suggested that every foodborne illness outbreak, major or minor, is reported in the media (Riddle, 2007). The fear of foodborne illness keeps these stories in the media due to the perceived threat from pathogens that cannot be detected by sight or smell. The outbreak of *E.coli* in Spinach drew media attention, and it has been determined that the media has paid particular attention to food safety stories since that time (Hanacek, 2007). This combination of factors can lead to conflicting news stories about food safety when they provide information that comes from non-scientific sources and viewpoints from a variety of individuals. It is important that the agriculture industry take note of these factors and the ways that messages can differ even from story to story within the same category. To that end, this research study was conducted.

Framing Theory

Framing theory is "a central organizing idea or story line that provides meaning to an unfolding strip of events" (Gamson & Mogdigliani, 1987, p. 143). Framing theory explains how journalists may choose certain elements of a story and present them in a way that places more emphasis on those parts of the story (Entman, 1993). This study uses Scheufele's (1999) model of framing effects (see Figure 1), more specifically the top half of the model, to analyze the media frames presented during both outbreaks and compare them to one another.

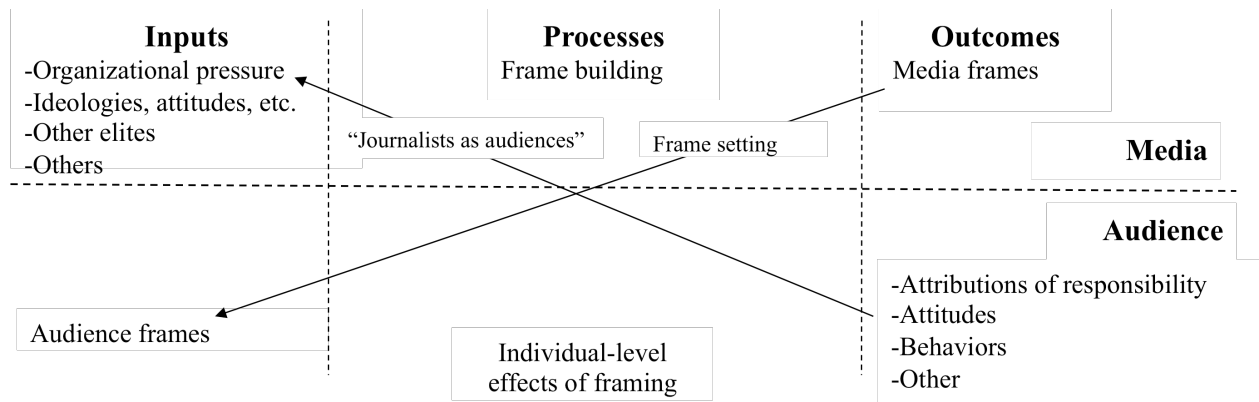


Figure 1. Model of framing effects (Scheufele, 1999).

The top half of this model explains inputs which affect the framing process. Factors such as organizational pressures and ideologies can have an impact on how messages are framed. Next are processes, which details exactly how messages are framed by the media. Finally, we see the outcomes of those media frames, which are present in the finished stories and what aspects of those stories were chosen or altered.

While reporters may choose frames to use while constructing a story, they do not always frame a story intentionally; constraints from various sources may influence the story’s angle or tone. This refers to the input section of Scheufele’s model. These inputs can include organizational management, a reporter’s own judgment, the writer’s opinion about the audience, and the situation in which the story occurs (Neuman, Just, and Crigler, 1992). In addition to these factors, which are fairly close to a reporter, there are outside factors that may affect the frame of a story, such as interest groups, social groups, and activists, who may influence journalists to report a story in such a fashion as to present their own individual frames (Baran & Davis, 2009).

This study focused on how the frames used by reporters in two different food safety crises compared to each other and where contrast was found. Of particular interest in some of the data collection were the influences on framing from outside sources, such as the interest groups and social groups listed above, and how these influenced the overall tone of the stories, both singly and compared to one another.

By using the top half of the model, this research seeks to explain the inputs that might impact the framing of these food safety issues, such as organizational pressure; the framebuilding processes undertaken during the creation of those stories; and the outcomes of those framing efforts, such as how organizations were portrayed in stories that were presented on television.

Purpose and Objectives

The purpose of this study was to examine media coverage of the *Salmonella* outbreaks in 2008 and 2009 and then compare and contrast that data using framing theory to determine how the coverage differed between the two outbreaks and where similarities were found. The overall goal of this research was to determine how the differences in the stories changed the frames used and the overall feel of the stories the reporters presented, despite the overall similarities (both stories being food safety crises dealing with *Salmonella* bacteria).

If communications researchers know how reporters choose to frame messages, public relations practitioners can provide more accurate information by tailoring their provided information in a way that will make its usage more likely. Knowing how news stories differ from topic to topic, yet stay the same, can help prepare these practitioners for similar crises where stories may be tailored to provide different types of information.

Four research objectives guided this study:

1. Determine how the two *Salmonella* outbreaks were framed by ABC, CBS, CNN, and NBC news networks.
2. Determine how the individual sources used by these networks affected the framing of both crises.
3. Determine how the frames used were similar between the two crises.
4. Determine differences that appeared in the framing of the two crises.

The research was conducted by analyzing transcripts of news stories that covered both *Salmonella* outbreaks. A limitation present in the research is a lack of analysis of video clips; however, by the time the research was conducted, most of the video clips covering the material had been removed from Web sites, and obtaining the material through other methods was not feasible.

Methodology

The data were collected and analyzed from both outbreaks by utilizing qualitative content analysis. Qualitative research is based on the search for meaning and context first and foremost; the researcher often serves as the instrument of analysis, an inductive strategy is preferred, and a descriptive outcome is reached (Merriam, 2002). Through qualitative research, researchers try to understand why things are the way they are and place individual factors, people, or circumstances into a greater context. It is also preferred when a detailed and rich account of an issue is needed (Creswell, 2007). In this way, it differs from quantitative research, which primarily seeks to determine the cause of particular phenomena and then to generalize and predict.

Content analysis was chosen as the type of qualitative research best suited for this study. Content analysis for this study involved selecting relevant items, selecting parts of those items deemed relevant to the research questions, and coding those selections with descriptive tags. The coded items were then organized.

For both outbreaks, the researchers chose specific time frames that would allow for the collection of transcripts that covered the entire crisis. For the jalapeno crisis, a Lexis-Nexis search was employed with a timeframe of May 1, 2008 to October 1, 2008, and for the peanut outbreak, a timeframe of December 1, 2008 to April 1, 2009 was used. In both cases, the keyword '*Salmonella*' was used on the Lexis-Nexis search engine to obtain as many relevant transcripts as was possible. Transcripts were gathered from the ABC, CBS, CNN, and NBC news networks for both crises using this method. In both cases, it was deemed appropriate to use national news sources since the outbreaks covered multiple states. Duplicate stories were removed from the data set, and due to the data sets for each outbreak being of moderate size, each story was analyzed by the researchers. The 2008 outbreak in jalapeno and Serrano peppers produced 71 stories for analysis, and the 2009 outbreak in peanut products produced 101 stories. These numbers reflect the number of stories obtained after duplicate and irrelevant stories had been removed from the data set.

Individual stories were analyzed using a coding sheet developed by the researchers. The categories on this sheet were loosely based on a study conducted by Ashlock et al. (2006) that covered the mad cow crisis. The sheet included the network, the total number of words in the story, the air date of the story, types of sources used, the overall tone of the story (positive, negative, or neutral), and prominent frame(s). Frames were recorded by the researchers as they emerged in the individual stories.

Two of the researchers coded each article according to the sheet independent of each other, then met to reach a consensus on each story that was coded. Though the researchers agreed on 95% of the coding, the consensus was still used to ensure that the data presented was consistent throughout the research. Accountability was enforced by implementing an audit trail consisting of all transcripts used and all coding sheets used by both researchers for both outbreaks. Reflexive notes were collected by two of the researchers, which were used to aid in further data analysis.

The researchers have backgrounds in agriculture and consider themselves to have positive attitudes toward American farmers. Though this is recognized as potential bias, conscious effort was made to avoid applying this bias to the research process. In addition, the researchers preferred different national news networks for their primary news source, which helped to prevent additional bias in the form of favoritism.

For the 2008 crisis, ABC aired 17 stories, CBS aired 16 stories, CNN aired 24 stories, and NBC aired 14 stories. Some of NBC's stories were aired twice, once on the Nightly News and once on the Today Show, which lowered their overall story count.

For the 2009 crisis, ABC aired 30 stories, CBS aired 31 stories, CNN aired 11 stories, and NBC aired 29 stories.

Findings

Findings in Relation to Research Objective 1

2008 Salmonella Outbreak

The framing of the 2008 outbreak began with the mystery as the story. Many of the early stories focused on how the true source of the *Salmonella* bacteria was unknown. Over half of the stories ($n = 50$) focused at least partly on how the source of the bacteria was still a mystery.

When analyzing additional frames, the stories were split up into whether the overall tone was positive, negative, or neutral. The most common frame was criticism of government entities ($n = 29$), primarily the FDA, but occasionally the President or some aspect of the government's import regulations. CNN's had the highest number of government-negative stories for a single network ($n = 13$).

While the investigation was ongoing, 23 stories about tomato farmers aired across all the networks. Of these, 20 were positive in nature—they showed support of the farmers themselves. Of these 23 stories, 12 were aired by CNN, of which 11 were positive. The stories in support of the growers focused on how upset the farmers were with government entities and how some were financially distressed by being unable to sell their crop.

Four stories were presented by CNN that negatively framed importing produce from Mexico. Another story on NBC covered the same topic but was presented in a neutral fashion. CNN went into greater detail on measures such as country of origin labeling and food tracking systems.

The researchers identified themes in the stories that could not be considered a true frame. Of these themes, informational stories were the most popular ($n = 19$). All of these stories had a neutral tone, and primarily presented facts of use to the public, such as the FDA's warning, lists of *Salmonella*

symptoms, proper food preparation techniques, lists of tomatoes to avoid, states that grew safe tomatoes, and numerical data on persons with *Salmonella*.

While general stories about tomatoes were predominantly negative in the early weeks of the crisis, with 15 negative and two positive, this negative frame shifted to peppers in the later weeks as the investigation shifted to those foods. Nine negative stories were identified about peppers.

2009 Salmonella Outbreak

Frames presented in stories covering the outbreak of *Salmonella* in peanut products differed in various ways from those in the outbreak in peppers. The majority of the frames presented were informational or warning stories ($n = 61$), most of which displayed a neutral tone ($n = 54$), though there were seven that displayed a negative tone instead. These informational and warning stories often contained the word ‘avoid’ to inform consumers on products that were potentially unsafe for consumption. All four networks occasionally presented stories with numerical data on persons ill or deceased as a result of the *Salmonella* contamination.

All the networks had shifted to a negative tone by late January; ABC and NBC shifted from a neutral to a negative tone on January 24, while CBS shifted to a negative tone on January 20, and CNN, who had started with a negative tone and shifted to a more neutral one, shifted back to a negative tone on January 28.

ABC’s stories were mostly straightforward reports of FDA investigations that were being conducted, though many were negative toward the PCA. There was one opinionated comment by a reporter noting how peanut butter was safe but parents were more than likely going to avoid it anyway.

CBS’s stories offered some information that was not found in stories reported by other networks. Two reports were done on PCA operations, specifically explaining that the company was not a manufacturer of peanut butter for end consumers, but instead provided peanut butter and paste in bulk to other companies who then used it in their own products. CBS also explained the difference between peanut butter and peanut paste, a topic which was potentially confusing due to the similar terms used for the two products (S. Nutt, Texas Peanut Producers Board, personal communication, January 18, 2010). When FDA investigation results were released, CBS’s reports provided the most precise summary of what was found. CBS was also the only network to report that the owner of PCA, Stewart Parnell, was on the United States Department of Agriculture (USDA)’s Peanut Standards Board. Despite this overall concise and information-rich reporting, some of which could not be found on any network, CBS also had some rather opinionated comments, noting that the products under recall were “foods you should not be eating anyway.” They also reported that PCA had used contaminated peanuts, which was incorrect and had not been reported anywhere else. CBS provided contradictory information on which products to eat or avoid, switching between statements telling consumers to completely avoid peanut products and lists of which products were safe. There was also one example of potential leading by the news anchor during a live interview.

CNN’s coverage started with a negative report which stated that the FDA was “wasting money.” They also reported on January 9 that the source of *Salmonella* contamination was still unknown, despite the fact that the Minnesota Departments of Health and Agriculture reported the same day that they had discovered *Salmonella* in a container of peanut butter. They were also seen to have a contradictory statement, noting that peanut butter was safe but then informing viewers later in the same story not to eat peanut butter at all.

CBS and NBC reported that consumers should not eat peanut butter as late as January 18 de-

spite government statements and coverage from other networks that only certain products were contaminated. NBC's other coverage was free of reporter speculation, and they presented a story framed as positive in regard to PCA employees, noting how 50 of them were now jobless due to the crisis. NBC was also the only network to offer information on how the crisis was negatively impacting the peanut industry financially and the only network to interview a USDA official. They also reported on the fate of the PCA when the company filed for bankruptcy.

Findings in Relation to Research Objective 2

As the sources used by reporters can drastically influence the frame and tone of a news story, it was important to consider which sources were used by reporters during both crises and what impact these had overall.

2008 Salmonella Outbreak

The FDA was the most common source in these stories ($n = 28$) with David Acheson, the commissioner of the FDA, providing interviews for 23 of those stories (see Table 1). The second most popular interviewee was Caroline Smith DeWaal, the food safety director of the Center for Science in the Public Interest, who provided five interviews. The third most popular overall source was farmers and growers, who provided information for 12 stories.

2009 Salmonella Outbreak

In this outbreak, victims or their family members acted as sources for the largest number of stories ($n = 21$) with politicians close behind ($n = 16$). The FDA provided information for only 13 stories during this crisis. There was also a strong presence from former FDA officials. Eleven interviews were conducted with medical doctors and dietitians, who primarily provided factual and unbiased information, with only one providing speculative statements. There were nine interviews with PCA employees, which came from those who had previously worked for the company, though several networks pulled sound bites from Stewart Parnell's testimony before Congress. The Center for Science in the Public Interest was used four out of the six times the networks utilized consumer watchdog groups as sources, with three interviews on ABC and one on NBC.

Findings in Relation to Research Objective 3

When determining the similarities between the frames of the two *Salmonella* outbreaks, the primary similarity is Informational stories, despite the fact that this was considered a theme and not a frame during the first outbreak (see Table 2). Of these, the 2008 outbreak had 19 and the 2009 outbreak had 61. Stories concerning the government were also featured in both crises, with the 2008 outbreak featuring 42 stories concerning the government in some fashion and the 2009 outbreak featuring 26. Other frames cannot be directly compared between the two stories due to the different products that had been contaminated and the differing situations (imported foods versus in-plant contamination).

Findings in Relation to Research Objective 4

When considering the differences between the frames of the two outbreaks, many come to light. The first outbreak featured stories about farmers ($n = 23$) and Mexico ($n = 5$) while the second outbreak focused on PCA ($n = 41$), food manufacturers ($n = 5$), the Georgia Department of Agriculture

($n = 4$), and the peanut industry as a whole ($n = 4$). Themes identified in the first outbreak that could not be classified as frames on their own, nevertheless had a number of stories; tomato themed stories were featured 17 times, pepper themed stories nine times, and stories with a theme discussing the supply chain aired four times.

Table 1

A comparison of frames used between the 2008 and 2009 Salmonella outbreaks

Sources	2008	2009	Total
FDA	16	13	29
Victim	2	21	23
Politician	1	16	17
Doctor	2	11	13
Consumer	9	4	13
Company Employee	-	9	9
Farmer/Grower	8	-	8
Other	5	3	8
Former FDA Employee	-	7	7
Center for Food Safety	6	-	6
Supply Chain	6	-	6
Special Interest Groups	-	6	6
Attorney	1	4	5
Center for Science in the Public Interes	4	-	4
Food Safety Expert	2	1	3
CDC	1	2	3
Government, other	1	-	1
Health Department	1	-	1
Total	65	97	162

Table 2
A comparison of frames used between the 2008 and 2009 Salmonella outbreaks

2008 Outbreak Frames	ABC			CBS			CNN			NBC			
	Pos.	Neg.	Neu.	Pos.	Neg.	Neu.	Pos.	Neg.	Neu.	Pos.	Neg.	Neu.	Total
Government	7			1	4		1	13	13		3		42
Farmers	4			5	2		11	1					23
Mexico								4				1	5
<u>Themes</u>													
Information			3			7			4			5	19
Tomatoes	1	5			4			2		1	4		17
Peppers		4			1			4					9
Supply Chain					1			1		1			3
Total	5	16	3	6	12	7	12	25	17	2	7	6	118
2009 Outbreak													
Frames	Pos.	Neg.	Neu.	Pos.	Neg.	Neu.	Pos.	Neg.	Neu.	Pos.	Neg.	Neu.	Total
Information/Warning			16		4	16		2	2		1	20	61
PCA			14		12			6	1		6	2	41
Government		7			8		1	5		4	1		26
Food Manufacturers		1		1	1			2					5
GA Dept. of Ag.		1						1		1	1		4
Peanuts/Peanut Industry				1	3								4
Total	9	30	16	2	28	16	1	10	8	1	12	24	141

Conclusions and Discussion

This study, overall, showed that even stories that are over similar agricultural topics (such as food safety issues) can be handled in very different ways. Though some similarities existed, there were differences in the types of sources used and in the way some groups used as sources were treated. Though governmental sources were generally framed in the same manner in both crises, other sources were viewed in different ways from crisis to crisis. Finally, both crises showed the use of sources that were not true experts on the situation, with a notable lack of food safety experts in either crisis and the usage of special interest groups and other similar sources for information.

The frames utilized in the two crises and the way they compare to each other provided insight into the ways that news stories are created and the way that different topics, such as agriculture and food safety, are handled. Despite the outward similarities between the two crises, only two true similarities were discovered in the way they were handled by the media.

The first and largest similarity was the usage of informational stories. However, in and of itself this is also a difference, since this was not considered a theme in the data analysis of the coverage of the 2008 Salmonella outbreak. Despite this, the media considered it important in both crises to provide information to consumers—information about what food items were contaminated, how the FDA investigations were being handled, how many people were sick, and other related topics. Above all, spanning both crises, the media saw a need to simply inform consumers about what was going on.

The second similarity was the usage of negative frames when speaking about the government. In the first crisis, CNN and CBS ran stories that were critical of the FDA and the overall food tracking system in the United States. In the second crisis, stories again criticized the FDA and the food tracking system, despite the fact that the FDA discovered the source of the outbreak much faster than it did in 2008.

The major differences between the two cases appear when considering the other stories that were aired about these crises. Frames and themes in the first outbreak focused on tomato farmers, Mexico, and the produce itself, as well as the supply chain. In the second outbreak, the focus of the media's stories was firmly on PCA as an organization and food manufacturers, with only a handful of stories about the peanut industry despite the fact that it had suffered the same heavy losses as the tomato industry during the first crisis.

When considering the sources used for both crises, the findings align with those found in the framing of the stories themselves; stories from the first outbreak used farmers as sources more often than any other group except the FDA, with politicians in third and public interest groups, food safety experts, and doctors trailing behind. The second outbreak used more victims or family members as sources, followed by the FDA, and then by politicians. No farmers were interviewed, but former employees of PCA were.

The difference in sources between the two crises could be due to the fact that tomato farmers with product that was not selling were easy to spot; tomatoes sitting in baskets and rotting made for dramatic video footage. Peanut farmers deliver their product to processing plants where it is mixed in with other peanuts, and the 2009 *Salmonella* crisis occurred in the winter and not during the growing season. This, combined with the fact that the *Salmonella* contamination was firmly on the processing plants and not the individual farmers, means that the farmers were not individually involved in the crisis, although the public quit buying their products.

Also, despite the negative tones toward various groups, the 2008 coverage was generally positive and sympathetic when dealing with individual farmers. The complete lack of farmers in the 2009

outbreak coverage protected them from negative publicity, but also distanced them from the story even as the peanut industry lost money much as the tomato industry had the year before.

PCA itself was framed very negatively in the majority of cases, though this comes as no surprise due to the fact that the FDA found them wholly at fault for the contamination and this information was passed directly on to the media.

In addition to the disparity between the usage of farmers as sources in one crisis and the complete lack of them in the other, there were differences in the other types of sources used. The FDA was a heavily-used source in both situations, though in the second case victims were used more. Politicians were used both times, as were doctors and special interest groups. However, in the second study, doctors were used more often than watchdog groups, which is at odds with previous research (Anderson, 2000; Eyck, 2000; Ashlock et al., 2006). Food safety experts were used seven times in the 2008 outbreak, but only once in the 2009 outbreak. The researchers expressed concern during the 2009 outbreak as well since a celebrity chef, Bobby Flay, was used as a food safety expert on one occasion; and although the information he provided was correct, the amount of true authority he has on the subject is questionable.

Conveying difficult information accurately is a concern since many reporters may not have a background in science (Anderson, 2000). This can make specialized information difficult to report or prone to errors. However, with a few exceptions (mostly for numerical inaccuracies likely due to a lack of fact-checking, and a few reporter opinions or speculation) the reporting for both outbreaks was accurate. Being a commodity at the center of a food safety investigation conducted on such a scale, with the stories that follow, is never a good thing for the food product involved, but the losses incurred by the industry in both cases were not due to poor or biased reporting. In the case of the first outbreak, the media diligently reported what the FDA was investigating, which was tomatoes until July 1. In the case of the second outbreak, the reporting focused on PCA and not the peanut industry as a whole, as the FDA investigation moved in that direction and found them to be the culprit. There were a few cases of speculation, particularly on the true source of *Salmonella* during the first outbreak, but the facts were reported in both cases when they became known.

Recommendations For Practitioners

The media's coverage of food safety stories does not always negatively impact the product under investigation. However, by studying the way these stories are framed, public relations practitioners can discover better ways to distribute messages to the public, even in times of crisis.

The media seems to favor producers as sources for stories when they are more personally involved. The inclusion of farmers as sources in the 2008 outbreak can probably be attributed to the easy connection between the farmers and their produce; in many cases, since the produce was not selling, the farmer and his produce and then displayed for viewers to see with their own eyes. However, in the second story, peanut farmers were no longer capable of being associated with their own product, as it had been delivered, roasted, stored, and then converted into other products before being contaminated. This level of separation, and lack of personal connection with the peanuts they grew, may well have contributed to reporters deciding not to use them as sources.

Reporters should never be afraid to ask food scientists and other experts to serve as sources for their stories, as these individuals should be represented by public relations practitioners who can help reporters communicate with the experts. Though used several times in the stories covering the

2008 outbreak, only one food scientist served as a source during the coverage of the 2009 outbreak. PR practitioners can help these experts provide scientific information about just what is happening during a food safety crisis and prevent inaccuracies and inconsistencies within individual stories and within a station's reporting as a whole. This can help to minimize the damage done both to the reputation of reporters and stations and to those involved in the crisis who may not be responsible for the contamination, such as the peanut industry as a whole and the American tomato farmers.

For Future Research

Future research should focus on how other food safety crises are framed by the media and how these differ from story to story. Effort should be made not only to determine what frames exist, but what sources are used, and how these sources affect the frames used as well.

In addition, different food safety crises should be compared and contrasted to one another as was done here. This will help to provide a clearer and concise picture of how the media frame their stories and what can be done in the future to help provide more useful information in these situations.

About the Authors

Kori Barr is a graduate of Texas Tech University's Agricultural Communications program. She received her bachelor's degree in Agricultural Communications in 2008 and her master's in 2011, both from Texas Tech University. Erica Irlbeck is an assistant professor of Agricultural Communications, Department of Agricultural Education and Communications, Texas Tech University. Cindy Akers is a professor in agricultural communications and serves as the associate dean of academic and student programs in the college of agricultural sciences and natural resources.

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