The Cow That Stole Christmas: Framing the First U.S. Mad Cow Crisis

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Abstract

The discovery of bovine spongiform encephalopathy (BSE) in the United States made an impact on the beef industry. Determining how the BSE outbreak was framed by the news media is significant because research indicates that media shape public perceptions. This study examined how several key newspapers framed the 2003 outbreak of BSE in the United States. Determining how the media framed this issue can help communicators ensure bias-free media coverage of similar issues in the future. The study followed established framing analysis categories identified from the literature. There were 149 articles identified in *The Washington Post, The Seattle Times,* and *USA Today* for investigation in this study. Findings showed that the BSE issue was framed as an industry crisis and that the tone of the articles and headlines portrayed the beef industry negatively. When compared to the other two newspapers, *USA Today* framed the issue differently, with economic calamity being the dominant frame. The most heavily cited sources in the articles were government officials. This study recommends that media professionals avoid framing an issue for the public, focusing instead on reporting news in an objective and unbiased manner. Further research is recommended to examine the impact of tone and frame on specific audiences.

So What?

The words journalists use in stories can have powerful effects on how audiences perceive crises and other highly publicized events. This article explores the messages framed by three major newspapers' coverage of the first U.S. case of bovine spongiform encephalopathy (commonly known as mad cow disease) in 2003. Insights from this article can help applied communicators better understand how media frame complex issues.

"Today we received word from USDA's National Veterinary Services Laboratories in Iowa that a single Holstein cow from Washington State has tested as presumptive positive for BSE or what is widely known as mad cow disease" (Veneman, 2003, ¶ 3).

On December 23, 2003, the landscape of the beef industry in the United States changed forever. Any individual with ties to the beef cattle industry has heard of "the cow that stole Christmas." This phrase refers to the first animal in the United States identified as infected with bovine spongiform encephalopathy (BSE). The announcement of the first case of BSE in the United States sent leaders in the beef industry and agricultural government officials scurrying to deal with the issue.

The United Kingdom was faced with the crisis surrounding BSE in the late 1980s and the 1990s. The disease hit the North American continent in May 2003, when a case was diagnosed in Alberta, Canada (Government of Alberta, 2007). The disease devastated the beef industry in the United Kingdom and sent shockwaves through Canada and its partner to the south, the United States. However, at the time, no case had been reported in the United States.

BSE is a degenerative neurological disease affecting the central nervous system in cattle. The Cattlemen's Beef Board & National Cattlemen's Beef Association Web site (2005) states, "After the first U.S. case of BSE in December 2003, USDA and FDA took extra precautionary steps to prohibit from the food supply parts of the animal that could carry the BSE agent" (¶ 14). These steps, executed to ensure no BSE-contaminated product enters the food supply, reduce the opportunity for humans to contract Creutzfeldt-Jakob Disease (CJD), a human disease similar to BSE.

A variant form of CJD (vCJD) is believed to be caused by eating contaminated beef products from BSE-affected cattle. To date, there have been 155 confirmed and probable cases of vCJD worldwide among the hundreds of thousands of people who may have consumed BSE-contaminated beef products. The one reported case of vCJD in the United States was in a young woman who contracted the disease while residing in the UK and developed symptoms after moving to the U.S. (U.S. Food and Drug Administration, 2004, ¶ 10)

This study focused on how the first U.S. BSE outbreak was framed in *The Washington Post, The Seattle Times,* and *USA Today*. Previous research has shown that when it comes to issues of food safety and health, consumers perceive print media to be more reliable than television (Bruhn & Schutz, 1999, as cited in Ruth & Eubanks, 2004). Therefore, print media were chosen for this study.

The purpose of this study was to examine how several key newspapers framed the outbreak of BSE in the United States. Determining how the media framed this issue can help us discover ways to influence the media's agenda should a similar issue arise in the future.

Research Questions

The following research questions were used to guide this study:

1. How has the BSE issue been framed in the three major U.S. newspapers (*The Washington Post, The Seattle Times,* and *USA Today*) using the frames identified by Ruth and Eubanks (2004)?

2. How do *The Washington Post, The Seattle Times,* and *USA Today* compare in the framing of the BSE issue?

3. What was the tone toward the beef industry in *The Washington Post, The Seattle Times,* and *USA Today* after the BSE outbreak?

4. What sources were used in framing this issue, and how did the sources' information fit within the frames?

Framing Theory

Given that BSE and vCJD could affect the health, safety, and well-being of society, it is important to have a clear understanding of how news coverage provides information to the general public. "As the distance between lay consumers and food producers and processors increases, the most likely source of information on food safety for the lay consumer is the mass media" (Eyck, 2000, p. 45).

Most people turn to the mass media for information, and most people gain knowledge of science and technology issues from the mass media (Einsiedel & Thorne, 1999). Terry, Dunsford, and Lacewell (1996) note that news organizations and the mass media are major sources of agricultural information. Daily newspapers serve as a smorgasbord of information for news consumers. It is crucial for the media to provide objective stories because the public needs to make its own judgments about different subjects.

Erving Goffman (1974) developed the idea of "frames" as a tool for categorizing and interpreting daily occurrences in life. Norris, Kern, and Just (2003) define news frames as "representing persistent patterns of selection, emphasis, and exclusion that furnish a coherent interpretation and evaluation of events" (p. 4).

These news frames are important because they furnish "predictable, simple and powerful narratives that are embedded in the social construction of reality" (Norris, Kern, & Just, 2003, p. 5). With regard to the saliency of

issues, Weaver (1994) maintains "the media can contribute significantly to the construction of a perceived reality of the public" (p. 349).

Through framing, mass media help shape public perceptions of an issue (Bridges & Nelson, 1999; Entman, 1993; Gitlin, 1980; McCombs & Shaw, 1972; McLeod, Kosicki, & McLeod, 1994). According to McCombs and Shaw (1972), the media's role is more complex than telling the public about a particular event; the level of coverage determines the level of importance of an event. Agenda-setting theory emphasizes that media coverage of particular issues is positively correlated to the amount of importance the public attaches to that issue over others (Rogers & Dearing, 1988). Ruth and Eubanks (2004) maintain that there are difficulties in getting the media to put agricultural issues on their agenda and, more importantly, that when the issue is covered, the media's negative depictions of agriculture affect public perception.

Are framing methods different from agenda-setting techniques used by the media? McCombs and Shaw (1972) and Weaver (1994) suggest that framing is a mere extension of agenda-setting. Entman (1993) maintains that news reports can be used to shape and "elicit favorable reactions from readers and viewers" and that these publicly "anticipated reactions affect the rhetoric and actions of the political elite" (p. 7). News story framing is also used to maximize public awareness of an event through media penetration or, by contrast, to simply diminish the coverage duration to reduce public awareness (Entman, 1993). This study seeks to understand how the BSE crisis in the United States was interpreted or framed by U.S. newspapers. Because journalists decide how to frame the story by choosing which information to include in their stories, they have "more power than most to construct social reality" (Tuchman, 1978, p. 208). Ruth and Eubanks (2004) note that, "[I]n short, framing provides an explanation of the power of text" (p. 6).

Methods

The researchers reviewed articles published from December 23, 2003, the day the infected animal was identified, through February 10, 2004, one day after the USDA concluded its investigation of the outbreak, for a total of 50 days. *The Washington Post, The Seattle Times,* and *USA Today* were selected based on their daily circulations according to the 2004 *Gale Directory of Publications and Broadcast Media* along with their locations relative to the outbreak. *The Seattle Times* was selected because it has the largest daily circulation (225,222) in the state of Washington, where the BSE outbreak occurred. *The Washington Post* was chosen because it has the largest circulation (746,724) in the heart of American politics: Washington, D.C. *USA Today* was chosen because it has the largest national circulation (2,136,068).

The researchers identified all articles using any of the following terms: bovine spongiform encephalopathy, BSE, or mad cow disease. The articles were identified using the Factiva (formerly Dow Jones Interactive) site provided by the Oklahoma State University Library. The search excluded republished news, recurring price and market data, and certain other items, such as obituaries, sports, and calendars. If multiple printings of the same article were found in national newspapers with regionally printed copies, only one article was used for this analysis. Editorials were excluded from this study, as the purpose was to examine news stories. Also, any stories that merely mentioned the search terms but focused on a different subject were excluded. The search yielded 149 applicable articles for this investigation.

Identifying the Frames

The frames used in this study were identified by Ruth and Eubanks (2004) in their study of the BSE outbreak in Canada. These researchers looked at 62 articles in 4 papers (the *Toronto Star*, the *Winnipeg Sun*, the *Los Angeles Times*, and *The New York Times*). Their research identified four frames: industry crisis, economic calamity, blame/responsibility, and health risk (broken into two subframes: zero health risk and amplified health risk).

Industry crisis.

When describing the media's use of descriptive language, Ruth and Eubanks state that "this frame implied that mad cow disease has devastating consequences by communicating the negative aspects of the disease" (p. 9). Issues covered aspects such as the lack of detection, the industry's ability to contain the problem, and the possible consequences to the industry's future.

The following phrases identified by Ruth and Eubanks were used as the context for identifying this frame in the current investigation: "'the embattled beef industry,' 'farmers in dire straits,' 'devastating impact,' 'destroying power,' 'crippling the industry,' 'debt-laden cattleman,' 'cattle industry in a tailspin,' 'pandemonium,' 'desperation,' 'destroy,' and 'losing hundreds of thousands of dollars'" (p. 9).

Economic calamity.

When portraying the impact mad cow disease had on several economies and other industries, Ruth and Eubanks identified "phrases like 'the BSE curse,' 'slamming shut borders,' 'beef ban,' 'borders remain closed indefinitely,' 'slammed the door,' 'destroy economies,' 'prices plummeted,' 'tourism troubles,' and 'economic fallout'" (p. 9-10). These words and phrases were used as the context for identifying this frame in the current investigation.

Blame/responsibility.

Ruth and Eubanks state that "this frame focused on the finger pointing aspect of the mad cow outbreak" (p. 10). Issues such as who was at fault for the outbreak, why and how it happened, and who was going to take the blame were covered.

Ruth and Eubanks identified the following words and phrases associated with this frame: "'diseased cow far down on the priority list,' 'why did it take so long to test this animal,' 'we got lucky this time,' 'investigation is hindered by gaping holes,' 'no legal requirement to keep records,' 'inspectors uncertain,' 'we could have done more,' and 'system is falling short'" (p. 10). These words and phrases were used as the context for identifying this frame in the current investigation.

Health risk.

This frame focused on two areas: zero health risk and amplified health risk (Ruth & Eubanks, 2004). The zero risk subframe focused on information supporting the idea that the disease was controlled and there was no risk to humans. The following words and phrases were identified by Ruth and Eubanks as associated with this frame: "'safe to consume,' 'number one priority is health and safety of consumers,' 'quarantined,' 'no threat to health,' 'continue to eat meat,' 'eating beef is still safer than walking down the street,' and 'disease stopped before making it to the food chain'" (p. 10). The second subframe, amplified risk, "linked BSE to the human disease, Creutzfeldt-Jakob disease (CJD). This frame advised consumers to eat only certain cuts of meat, suggesting that the outbreak was widespread" (p. 10). The following words and phrases were identified by Ruth and Eubanks as associated with this frame: "'fatal,' 'brain-wasting disease,' 'quarantined,' 'tainted beef,' 'food safety crisis,' 'diners leery of beef,' 'chronic wasting disease,' 'crippling brain ailment,' 'risk in consuming certain cuts of meat,' 'no cure,' and 'transmitted to humans through diseased beef consumption'" (p. 11). The words and phrases identified under both subframes were used as the context for identifying this frame in the current investigation.

Source Identification

For consistency, this study used the nine different sources identified by Ruth and Eubanks. "Industry executives" were any sources identified by specific titles, such as "president," "board member," or "staff." Any position not identified as executive level was categorized in the "industry representative" category. "Health care representatives" were sources within the animal or human health care industries, including veterinarians, nurses, medical doctors, or spokespersons for health care organizations or facilities.

"Industry representatives" included any person involved in the beef industry, such as production farmers, ranchers, processors, shippers, buyers, or butcher shop personnel. "University scientists" were categorized based on whether they conducted research in an academic setting. Research scientists working in a government setting were categorized in the "governmental official" category.

The "political leader" category included those who held elected positions, such as senators, representatives, mayors, governors, or party leadership. "Governmental officials" included sources having either hired or appointed governmental positions, such as secretaries of agriculture or any USDA spokespersons or government research scientists not affiliated with an academic institution (excluding FDA officials and those involved in food inspection services). The "food safety representative" category included any individual representing food inspection services, government or industry, or any FDA affiliation. The "consumers" category was the final area identified by Ruth and Eubanks, identifying any general consumer source, from restaurant patrons to consumer groups.

The last category of sources cited in this study was called "other." Sources identified as "other" did not meet the specificity of the remaining source categories and were sorted in this manner. The "other" category included food service employees, owners/operators of food service businesses, political/financial analysts, and representatives of the tourism industry.

Coding norms for this investigation were established during a one-hour training session. The article was used as the unit of analysis. The researchers used a coding sheet highlighting the frames identified by Ruth and Eubanks. The coding sheet allowed for collecting information about the article, such as overall tone, sources used, article length, and the newspaper where the article was located.

The tone of each article toward the beef industry was coded as positive, neutral, or negative. For example, articles written primarily with factual data about the scientific differences between BSE and vCJD were coded as "neutral" due to the lack of language slanting for or against agriculture. However, articles written with language such as "devastated the beef industry" or "wake-up call for the beef industry," which were identified earlier as indicators of the industry crisis frame, are written to convey a negative connotation about the situation and, therefore, were coded with a "negative" tone toward the beef industry. By contrast, articles written with language in support of the USDA, for example, or stating that the situation was being controlled, were coded with a "positive" tone designation.

Two researchers independently coded each article and then met to determine consensus on all pieces of the coding information. Coders completed the first 15 (10%) articles and then compared their coding. To ensure more similar coding choices for future articles, a focused conversation about coding differences was held during the meeting. Coders independently completed the second 15 articles (10%) and discussed any variation between codes. The second focused discussion showed that the independently chosen codes were sufficiently similar, with approximately 10% variability, to proceed with independent coding for the remainder of the articles.

Results

Sample Details

One hundred forty-nine articles were reviewed from *The Washington Post, The Seattle Times,* and *USA Today*. *The Washington Post* published the majority of the articles (*n* = 77, 51.68%). *The Seattle Times* published 54 articles (36.24%) and *USA Today* published 18 articles (12.08%). Of these articles, 115 were news stories (77.18%), 20 were news briefs (13.42%), and 14 were identified as feature stories (9.39%).

Of the 149 articles printed during the time period studied, 70 articles were published from December 23-31, 2003; 71 were printed from January 1-31, 2004; and eight were printed from February 1-10, 2004. There was no comparison of the articles by publication date. Thirty days prior to the BSE outbreak, only two articles were printed in the chosen publications about BSE. The articles investigated in this study ranged in length from 319 to 2,088 words.

Once the coding of the 149 articles was complete, the results for overall frame and overall tone of the articles were sorted. The four frames (industry crisis, economic calamity, blame/responsibility, and health risk—zero health risk or amplified health risk) identified by Ruth and Eubanks were used to identify the overall frame for the articles in this study.

Framing BSE

The first and most prominent frame identified was industry crisis, with a total of 54 (36.24%) articles. When describing this frame, authors used language depicting the state of the beef industry and its effect on the producers. Words and phrases like "uncertainty," "bolstering suspicion," "epidemic," "devastated the beef industry," "dreaded illness," "DNA test confirmed," "wake-up call for the beef industry," and "spreading widely" conveyed images of an industry perceived to be out of control and dangerous. Comments such as "battle has not gone well," "opening a raft of questions about where else the infection might spread," "impact on the

beef industry could be staggering," "crippling effect on the meat industry," and "virtually halted U.S. beef trade world-wide" were used to substantiate claims of a crisis for the industry. One political leader stated that the crisis "underscores the urgent need for a national system to make diseased livestock easier to track and contain." This statement reinforced the notion that the crisis was national and not isolated to the state of Washington.

The second frame, economic calamity, was identified in 35 (23.49%) of the 149 articles. This frame emerged as the authors used terminology such as "halted imports," "economic fallout," "heavy blow," "multi-million-dollar-meat-export business," "knee-jerk reaction," "beef industry was battered," and "recall had absolutely no connection whatsoever to the company" to describe the outbreak's effect on the stock market and cattle futures, as well as industries closely tied to beef, such as food service or retail businesses. Other phrases continued to paint a picture of an industry headed for difficult times. Comments such as "stocks fell in extended trading," "beef futures fell the market limit," "mad cow disease sends stocks lower," "more declines are expected," "beef prices dropping sharply," "steep drops in demand," "trading volatile," "frightened consumers," and "stoked public fear" conjured images of financial worries and limited supplies or rising costs of beef. Beef producers and processors were discussed in terms of decreasing profits, idle inventories, and declining sales. The articles related how shipments of beef that had been in transit or on the docks in other countries before the outbreak were turned back or declined. This frame continually emphasized the effects of the outbreak on foreign markets, with the resulting bans of U.S. beef by Canada, Mexico, Europe, and Japan.

The third frame, blame/responsibility, was the least frequently identified in articles carried by these selected newspapers. It was found in 25 (16.78%) of the 149 articles published. The authors often described this frame when discussing fault or responsibility for the outbreak. Most articles used this frame when discussing the Canadian birth origin of the infected cow, while also including strong disputes by the Canadian government. Words and phrases accompanying this frame included "negligent," "spider web of possibilities," "painstaking search," "the cow didn't spend her whole life in the state of Washington," "the cow looked relatively healthy," "the cow was probably infected before it got to Mabton," "discrepancies in cow records," "identifying the herd is crucial," and "confirmation came as no surprise." There were many comments criticizing the USDA inspection service for inefficient enforcement of governmental regulations. Examples of this frame directed toward the government included "inadequacy or inefficiency of governmental efforts to prevent the spread," "criticized poor enforcement,"

"consumer groups dispute," and "the inspection service works because we caught this cow."

Health risk, the fourth and final frame, was divided into two separate categories or perceptions with regard to public risk. Thirty-five (23.49%) of the 149 articles were within this frame; 16 (10.74%) were coded in the zero health risk subframe and 19 (12.75%) were coded into the amplified health risk subframe. In the zero health risk subframe, reassurances were given by food safety representatives and USDA officials to ease public concern about susceptibility to the disease and to support continued beef consumption. Phrases and comments within this subframe included "risk of any human health effects is very low," "disease is minuscule," "my advice to consumers is not to worry," and "I plan to serve beef for my holiday dinner." Other industries—for example, food service—made company statements to distance their products and the company name from the outbreak or any relation of the product to the disease. Comments included "our meat doesn't come from anywhere near Washington state," "no reason to warn consumers to avoid meat products," "our products don't contain AMR [automated meat recovery] meat," "proclaimed operations safe," and "we just keep assuring them it's fine."

The second subframe, amplified health risk, was used to convey the opposite side of the overall health risk frame. This subframe dealt with the direct relation of BSE to the human form, Creutzfeldt-Jakob disease. This frame used comments and phrases to describe the possibility of diseased meat entering the food supply and promoted organic beef as the safest meat to eat. Many feature articles written in this frame discussed the advantages of eating organic beef or were written to dissuade the consumer from taking any chances with inorganically grown beef. Words and phrases included "reckless," "eerie," "incurable," "always fatal," "prions are impervious," "fatal disease," "no treatment," "deadly wasting disease," "some of the recalled meat has been accounted for, some has not," "exploring meat alternatives," and "introducing animal by-products into animal feed clearly creates some risks."

Framing Comparison Among Newspapers

Coverage was disproportionate among the selected papers. The paper closest to the political heart of the United States, *The Washington Post*, published the most articles ($n = 77$) relating to the BSE crisis. The newspaper geographically closest to the outbreak, *The Seattle Times*, published 54 of the articles investigated. The national paper, *USA Today*, published 18 articles related to the BSE outbreak, the fewest among the three newspapers investigated.

Analysis of the coverage of the BSE outbreak by newspaper against the four frames identified by Ruth and Eubanks (2004) shows that the results continue to follow the representation stated above. Of the 54 articles assigned to the industry crisis frame, 26 (48.15%) were from *The Washington Post*, 23 (42.59%) were from *The Seattle Times*, and 5 (9.26%) were from *USA Today*. When assessing the 35 articles coded in the economic calamity frame, 18 (51.43%) were from *The Washington Post*, 11 (31.43%) were from *The Seattle Times*, and 6 (17.14%) were from *USA Today*. When assessing the 25 articles coded in the blame/responsibility frame, 14 (56.00%) were from *The Washington Post*, 9 (36.00%) were from *The Seattle Times*, and 2 (8.00%) were from *USA Today*. When assessing the 35 articles coded in the health risk frame, 16 (45.71%) were coded in the zero health risk subframe and 19 (54.29%) were in the amplified health risk subframe. When assessing the zero health risk subframe, 7 (43.75%) were from *The Washington Post*, 6 (37.50%) were from *The Seattle Times*, and 3 (18.75%) were from *USA Today*. When assessing the amplified health risk subframe, 12 (63.16%) were from *The Washington Post*, 5 (26.32%) were from *The Seattle Times*, and 2 (10.52%) were from *USA Today* (see Table 1).

Table 1. *Number of Articles Written in Each Newspaper by Frame*

Newspaper	Industry crisis	Economic calamity	Blame/ respon- sibility	Zero health risk	Amplified health risk	Total articles
The Washington Post	26 (48.15%)	18 (51.43%)	14 (56.00%)	7 (43.75%)	12 (63.16%)	77 (51.68%)
The Seattle Times	23 (42.59%)	11 (31.43%)	9 (36.00%)	6 (37.50%)	5 (26.32%)	54 (36.24%)
USA Today	5 (9.26%)	6 (17.14%)	2 (8.00%)	3 (18.75%)	2 (10.52%)	18 (12.08%)
Total	54	35	25	16	19	149

Overall Article Tone Toward the Beef Industry

When analyzing the tone of the article toward the beef industry, the researchers used three categories: positive, neutral, and negative. Once the coding was complete for each article, the researchers assigned a category to each article representing the article's portrayal of the beef industry.

The researchers coded each article by tone using the frames identified by Ruth and Eubanks (2004). Articles were first coded by overall frame, and then by frame for each newspaper. The researchers also analyzed the overall tone for all 149 newspaper articles, and then the tone by each newspaper.

The majority of newspaper articles were written with an overall negative tone toward the beef industry. Of the 149 articles, 87 (58.39%) were negative, 41 (27.52%) were neutral, and 21 (14.09%) were positive (see Figure 1).

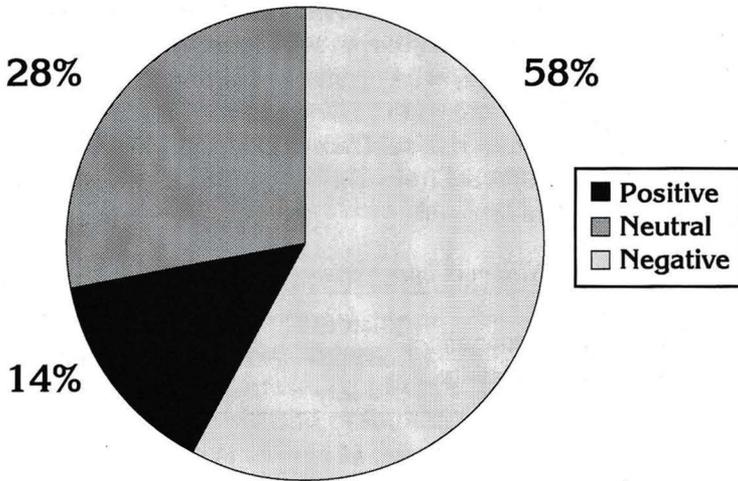## Overall Tone Toward the Beef Industry

Figure 1. Overall tone of articles toward the beef industry.

As the results were further scrutinized, they presented a more detailed picture of each newspaper's tone toward the beef industry as it relates to the individual frames. Of the 77 articles published in *The Washington Post*, 44 (57.14%) were negative, 24 (31.17%) were neutral, and 9 (11.69%) were positive. Of the 26 articles within the industry crisis frame, 15 (57.68%) were negative, 8 (30.78%) were neutral, and 3 (11.54%) were positive. Of the 18 articles within the economic calamity frame, 13 (72.22%) were negative, 5 (27.78%) were neutral, and none were positive. Of the 14 articles within the blame/responsibility frame, 5 (35.71%) were negative, 9 (64.29%) were neutral, and none were positive. Of the 7 articles in the zero health risk subframe, none were negative, 1 (14.29%) was neutral, and 6 (85.71%) were positive. Of the 12 articles in the amplified health risk subframe, 11 (91.67%) were negative, 1 (8.33%) was neutral, and none were positive (see Table 2).

Table 2. *Article Tone Toward the Beef Industry by Frame and Newspaper*

Newspaper	The Washington Post			The Seattle Times			USA Today		
Tone	+	o	-	+	o	-	+	o	-
Industry crisis	3	8	15	0	7	16	1	1	3
Economic calamity	0	5	13	1	3	7	0	1	5
Blame/ responsibility	0	9	5	0	5	4	1	1	0
Zero health risk	6	1	0	6	0	0	3	0	0
Amplified health risk	0	1	11	0	0	5	0	0	2
Total	9	24	44	7	15	32	5	3	10

Note. + = Positive; o = Neutral; - = Negative

Of the 54 articles published in *The Seattle Times*, 32 (59.26%) were negative, 15 (27.78%) were neutral, and 7 (12.96%) were positive. Of the 23 articles in the industry crisis frame, 16 (69.57%) were negative, 7 (30.43%) were neutral, and none were positive. Of the 11 articles in the economic calamity frame, 7 (63.64%) were negative, 3 (27.27%) were neutral, and 1 (9.09%) was positive. Of the 9 articles in the blame/responsibility frame, 4 (44.44%) were negative, 5 (55.56%) were neutral, and none were positive. Of the 6 articles in the zero health risk subframe, all 6 (100%) were positive. Of the 5 articles in the amplified health risk subframe, all 5 (100%) were negative.

Of the 18 articles published in *USA Today*, 10 (55.55%) were negative, 3 (16.67%) were neutral, and 5 (27.78%) were positive. Of the 5 articles in the industry crisis frame, 3 (60.00%) were negative, 1 (20.00%) was neutral, and 1 (20.00%) was positive. Of the 6 articles in the economic calamity frame, 5 (83.33%) were negative, 1 (16.67%) was neutral, and none were positive. Of the 2 articles in the blame/responsibility frame, none were negative, 1 (50.00%) was neutral, and 1 (50.00%) was positive. Of the 3 articles in the zero health risk subframe, all 3 (100%) were positive. Of the 2 articles in the amplified health risk subframe, both (100%) were negative.

Sources Used Overall and by Newspaper

Ruth and Eubanks (2004) identified nine major sources used in the articles in their framing study of the Canadian BSE outbreak: industry

executive, health care representative, industry representative, university scientist, political leader, governmental official, food safety representative, consumer, and other. In this study, the researchers coded all sources into one of these nine categories. There were 691 sources identified in this study of 149 articles printed in *The Washington Post, The Seattle Times,* and *USA Today.* Of the 691 sources, 70 (10.13%) were industry executives, none were health care representatives, 90 (13.02%) were industry representatives, 31 (4.49%) were university scientists, 34 (4.92%) were political leaders, 241 (34.88%) were governmental officials, 23 (3.33%) were food safety representatives, 31 (4.49%) were consumers, and 171 (24.74%) were classified as other (see Table 3).

Table 3. *Number of Sources Used by Newspaper*

Sources	The Washington Post	The Seattle Times	USA Today	Total sources used
Industry executive	29	30	11	70 (10.13%)
Health care representative	0	0	0	0 (0.00%)
Industry representative	35	42	13	90 (13.02%)
University scientist	16	11	4	31 (4.49%)
Political leader	19	12	3	34 (4.92%)
Governmental official	130	95	16	241 (34.88%)
Food safety representative	13	8	2	23 (3.33%)
Consumer	6	19	6	31 (4.49%)
Other	82	66	23	171 (24.74%)
Total sources by paper	330	283	78	691

Discussion and Conclusions

The findings indicate that *The Washington Post* published a majority of the articles (77 of 149) in this study regarding the BSE outbreak in the United States. Interestingly, the paper with the largest circulation (*USA Today*) published the fewest articles, with only 18. This implies that the BSE

crisis was very newsworthy in the heart of American politics. This result may further imply that coverage of the outbreak or of the BSE crisis may be of more interest (because of its relation to foreign policy and the exportation of beef) to people with an interest in government than to individual citizens concerned about health risks. However, this elicits a question: *Should* this have been the focus of the coverage?

Of the four frames used in this study, the industry crisis frame was the most prominent. This finding could indicate that the BSE outbreak was framed as having the most impact on the beef and/or agricultural industry. However, Ruth and Eubanks (2004) found the health risk frame to be the most dominant. This finding has important implications when attempting to understand the changing perception of the media's intention and what is driving their agenda. For example, during previous issues with BSE, such as the 1986 European BSE problem, dramatic emotional themes were prominent in the media's framing of that particular crisis (Poulsen, 1996), whereas health risk and human illness was the dominant frame from the U.S. point of view on the Canadian BSE crisis (Ruth & Eubanks, 2004).

The likely difference between the two studies was the fact the disease was present within the United States, rather than in imported, contaminated beef from another country. The presence of BSE in the U.S. beef supply can be concluded to have affected the perception of the framing in the newspapers. The beef industry was being scrutinized both nationally and internationally. No longer was there the option to turn away imported beef; the U.S. beef industry was dealing with a crisis resulting in export embargoes directed toward the industry.

While the industry crisis frame was dominant in *The Washington Post* and *The Seattle Times*, it is interesting to note that *USA Today* framed the issue primarily under the economic calamity frame. This implies that *USA Today's* focus was centered more on the overall national economic impact than on the crisis in one particular industry.

Analysis of the articles revealed an overall negative tone toward the beef industry, which is congruent to the Ruth and Eubanks (2004) finding of a ubiquitous negative tone. The implication, as noted by McCombs and Shaw (1972), is that the media's persistent negative tone helps shape a negative public perception of the beef industry.

An analysis of the sources used in the articles showed that government officials were the most relied-upon sources. This further implies that the BSE outbreak was perceived more as an issue of government response than as a widespread consumer health concern. This is supported by the fact that no health care representatives were cited as sources for any article investigated

in this study. By contrast, the Canadian BSE crisis study by Ruth and Eubanks (2004) discovered the health risk frame to be the most dominant one used by the media. This may imply that U.S. media editors were concerned with news angles slanted toward potential economic crises, downturns in beef sales, and surges of surplus, rather than stories with angles slanted toward health and safety.

Recommendations

Perception is often reality, and statements by the media play a large role in shaping public perception. In the recent agricultural crisis concerning the BSE outbreak in the United States, three U.S. newspapers published and framed articles in a negative tone toward agriculture and, in particular, the beef industry. Thus, it is recommended that the media become more cognizant of the importance of reporting news in an objective and unbiased manner that does not prematurely frame an issue for the public.

Newspaper reach and target audience may or may not play a role in how stories are framed, but further research should be done to examine how tone and frame impact audiences' perceptions of an issue. Specific demographics of the target audience need to be studied, as well as reporters' prior knowledge of particular issues. Other studies may be needed to further analyze tone and interpretation, especially those focused on how journalists' and communicators' agricultural knowledge may be related to the tone of the article and reader perception.

Future studies describing how newspapers in other countries framed the BSE issue as it happened in those countries would provide helpful insights, as would a separate study examining the framing of the issue from a regional perspective within the United States. Researchers may also want to compare the frames used by the agricultural media and agricultural communications professionals when publishing or releasing information about crisis events. Examples include information used in corporate communication press releases from beef industry corporations like Tyson Foods, Excel (Cargill), and Colorado Boxed Beef, or industry magazines, such as *BEEF* magazine, *The Cattleman*, or *Successful Farming*.

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Keywords

framing, agenda setting, media coverage, bovine spongiform encephalopathy, mad cow disease, BSE, beef industry

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