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Newspaper Coverage of the Bovine Spongiform Encephalopathy Outbreak in the United States: A Content Analysis

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Abstract

Objectivity is a hallmark of good journalism. Objective news writing is particularly important when covering agricultural issues. In this study, researchers used the Hayakawa-Lowry news bias categories to examine the objectivity of news coverage of the bovine spongiform encephalopathy (BSE) outbreak that occurred December 23, 2003, in the United States. The study looked at 149 articles published in *USA Today*, *The Washington Post*, and *The Seattle Times*, dating from the day of the outbreak to February 10, 2004, when the USDA concluded its investigation of the outbreak. Based on the findings, the three newspapers studied were more objective than judgmental in their coverage of the outbreak. Although judgment statements were relatively uncommon, the majority of the judgment statements found were negative toward agriculture. Analysis of the level of objectivity for each newspaper revealed that *USA Today* was the least objective in its coverage; *The Seattle Times* was the most objective. This study recommends that reporters be encouraged to include more objective sentences in their writing, that journalism and agricultural communications students be educated about the Hayakawa-Lowry news bias categories, that additional research be conducted on media coverage of other agricultural issues, and that the agricultural literacy level of journalists be examined.

So What?

Newspaper editors can influence reader opinion and the public agenda based on the objectivity of the news stories they print. This article explores the objectivity of articles published by three major U.S. newspapers about the first U.S. case of bovine spongiform encephalopathy, or BSE, in 2003. Results from this study can help applied communicators better understand the importance of objectivity in news writing and the need for factual statements related to agricultural issues.

Research

The products of the agriculture industry fulfill a wide range of human needs, from the food we eat to the clothes we wear. As a result, agricultural issues are frequently the focus of news stories, and much of what consumers learn about agriculture comes from mass media sources (Sitton, 2000). In recent years, media coverage of agriculture has focused on food safety issues and the safety of the American food supply, which are issues of national importance. Sweeney and Hollifield (2000) stated that "the media are a factor in shaping of the public's perception of important issues and in helping to place specific issues on the nation's political agenda" (p. 26). Reisner and Walter (1994) indicated that reporting about agriculture and its related issues could influence the public's understanding of and participation in the agricultural policy process. In addition, Wlezien (1995) wrote that "public responsiveness to policy is most likely . . . where information is readily available (at least) in mass media reporting" (p. 984).

Most people develop their initial awareness of issues through the mass media (Rogers, 2003), and the media are also a primary source of information about technology and science issues (Einsiedel & Thorne, 1999). Many individuals receive their news from daily newspapers, and it is important that the public be presented with objective information so that individuals can form their own opinions about complex or controversial issues, including those related to the agricultural industry (Terry, Dunsford, & Lacewell, 1996). Fico and Soffin (1995) discussed the importance of fairness in news reporting, noting that if one point of view is given more attention than another, the public's view can be altered. Terry et al. (1996) stressed the need to consider the accuracy of information presented to the public through mass media coverage of agriculture.

Mainstream print media such as newspapers and magazines have begun to serve agriculture in a more indirect way. They now provide information regarding agricultural issues and events to the nonfarm public, who use this information to gain knowledge about and make decisions regarding issues facing the agricultural industry (Reisner & Walter, 1994). However, general newspapers do not report in such a way as "to increase public understanding of issues facing farmers or farmer understanding of public concerns about agriculture's environmental or social effects" (Reisner & Walter, 1994, p. 536). Reisner and Walter's study found that general reporters give the nonfarm public an incorrect picture of agriculture because reporters do not understand farming. Additionally, Reisner and Walter's study found that "general interest newspapers' farm writing tends to be superficial, stereotyped, and crisis-oriented" (p. 533).

To analyze the reporting of topics such as agricultural issues, researchers use content analysis. Content analysis "is an observational research method

that is used to systematically evaluate the symbolic content of all forms of recorded communications" (Kolbe & Burnett, 1991, p. 243). Berelson's (1952) highly cited definition described content analysis as "a research technique for the objective, systematic, and quantitative description of the manifest content of communication" (p. 18). The goal of content analysis is to produce valid measures of news content, and its success depends on the reliability of the procedure (Lichter, Amundson, & Noyes, 1988). While content analysis can be used to evaluate many kinds of messages, it is most often used to evaluate mass-mediated communication (Lombard, Snyder-Duch, & Bracken, 2002).

A popular form of media message analysis involves use of the Hayakawa-Lowry news bias categories. Hayakawa (1941) developed three categories into which all statements can be classified: reports (facts), inferences, and judgments. Lowry (1971) then expanded upon the three categories to conduct a content analysis of network television before and after U.S. Vice President Spiro Agnew criticized the media in a series of speeches. Following his initial study, Lowry (1985) conducted research to establish the construct validity of the Hayakawa-Lowry news bias categories. Terry et al. (1996), Whitaker and Dyer (1998), Sitton (2000), Whaley and Doerfert (2003), and Saunders, Akers, Haygood, and Lawver (2003) all used the Hayakawa-Lowry method to examine objectivity in the media's coverage of agricultural issues.

Objectivity is crucial to good journalism, but its definition is often debated (Merrill & Lowenstein, 1971). According to Brooks, Kennedy, Moen, and Ranly (1999), two traditions remain central to journalism. The first tradition is an ethic of accuracy and fairness. The second tradition—objectivity—is more difficult to explain and easier to call into question. "Objectivity has been and still is accepted as a working credo by many, perhaps most, American journalists, students and teachers of journalism" (Brooks et al., 1999, p. 16). "All reporting should be fair and objective" (Cohn, 1990, p. 4).

According to Klaidman (1991), journalists are influential because they "decide what to publish, when to publish, how long the story will be, where to put it in the paper, and how to interpret and comment on the situation" (p. 15). Furthermore, researchers have found that 90% of what a person knows about the world comes from the mass media (Nelson & Rhoades, 1986). An objective report from a journalist should be "detached, unprejudiced, balanced, fair, dispassionate, unopinionated, uninvolved, unbiased, and omniscient" (Merrill & Lowenstein, 1971, p. 231). The Commission on the Freedom of the Press (1947) stated that the press "ought to identify the sources of its facts, opinions, and arguments so that the reader or listener can

judge them" (p. 25). Reporters should seek out and report the truth to the best of their ability (Cohn, 1990).

The Society of Professional Journalists (1996) has developed a Code of Ethics for journalists to follow. The code has four main principles: seek truth and report it, minimize harm, act independently, and be accountable.

Reporters can refrain from inserting their opinions but still write biased stories. "Bias . . . is hard to define but many find it easy to recognize in their newspapers and newscasts" (Stevenson & Greene, 1980, p. 115). Stevenson and Greene determined two common definitions of bias: the first, which is used less frequently, is "inaccuracy"; the second "—the one that has been adopted in most serious studies of news bias—is that bias is the systematic differential treatment of . . . one side of an issue over an extended period of time . . . or the failure to treat all voices in the marketplace of ideas equally" (p. 116). Bias can result from the selection of sources, causing a story to be unbalanced or to shift to one position or another (Lee & Solomon, 1990). Bias can also result from the way a story is written—for instance, from highlighting or downplaying information and sources within an article (Lee & Solomon, 1990).

The media can determine an event's importance by the amount of coverage they give to the event (McCombs & Shaw, 1972). According to McCombs and Shaw, the mass media play an important role in shaping the public's perceptions of reality through agenda-setting. Their research investigated agenda-setting based on the content of political campaign news. Agenda-setting theory states that over time, issues given more attention by the press will be seen as more important by the public (Rogers & Dearing, 1988). Therefore, if certain points of view on an issue are given more attention than others, public awareness of these views will increase, which in turn will alter the public debate about the issue (Fico & Soffin, 1995). Agenda-setting theory research has two basic assumptions: (1) media do not simply reflect reality; they filter and shape it; and (2) media increase public awareness and concern for particular issues by devoting more coverage to these issues (University of Twente, 2007).

The media turned their attention to the beef industry when the discovery of a case of bovine spongiform encephalopathy, or BSE, was reported in the United States on December 23, 2003. The beef industry is the largest segment of the U.S. agriculture industry (Cattlemen's Beef Board & National Cattlemen's Beef Association, 2006). A crisis within the beef industry could easily cause the loss of billions of dollars and millions of jobs (Cattlemen's Beef Board & National Cattlemen's Beef Association, 2004). BSE is a neurological disease that is rare but fatal to infected cattle.

Cattle can acquire this disease when they consume BSE-contaminated feed, such as feed containing animal by-products. A ban on feeding animal by-products to cattle was implemented in 1997 (U.S. Department of Agriculture, 2004). The BSE outbreak in the United States led to the recall of suspected meat, the suspension of U.S. beef exports, and the depopulation of many suspected animals (U.S. Department of Agriculture, 2004). The USDA ended its investigation of the case on February 9, 2004 (Cattlemen's Beef Board & National Cattleman's Beef Association, 2004).

The BSE outbreak was a significant crisis for the agricultural industry and was widely covered by the media. This study examines the coverage of this outbreak in selected newspapers and assesses the objectivity of the coverage.

Purpose and Objectives

The purpose of this study was to evaluate the news published about the BSE outbreak in the United States from December 23, 2003, when the outbreak was first discovered, until February 10, 2004, the day after the USDA concluded its investigation of the outbreak. These were the specific objectives of the study:

1. To identify the news articles published about BSE by three major daily newspapers: the most widely circulated daily newspaper in the United States, the most widely circulated newspaper in the state of Washington (where the outbreak occurred), and the most widely circulated newspaper in Washington, DC;
2. To determine and compare the level of objectivity in the identified articles, as determined by the Hayakawa-Lowry news bias categories; and
3. To determine the favorability of judgment statements toward or against agriculture in the identified articles.

Methods

To achieve Objective 1, the *2004 Gale Directory of Publications and Broadcast Media* (Hedblad, 2004) was used to identify the top-circulation daily newspapers in the United States, in Washington state (the state where the outbreak occurred), and in Washington, DC. *USA Today, The Washington Post,* and *The Seattle Times* were the daily newspapers selected for this study. *USA Today* has the largest circulation (2,136,068) in the United States. *The Washington Post* was chosen for its location in the nation's capital and its circulation size (746,724). *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 researchers identified 149 articles in the three newspapers using the Factiva (formerly Dow Jones Interactive) Web site. The Factiva site allowed a search for all articles that contained the words "bovine spongiform encephalopathy" or "BSE" or "mad cow disease." News stories, feature stories and news briefs were examined in this study. News stories included articles that presented the news of the day; feature stories focused on more in-depth reporting of a particular issue; and news briefs included condensed articles, or "snippets" of information, about a particular issue.

The Hayakawa-Lowry news bias categories content analysis method was used to address Objectives 2 and 3. Hayakawa (1941) asserted that statements could be placed into three categories: reports, inferences, and judgments. Hayakawa and Hayakawa (1990) noted, "Reports adhere to the following rules: first, they are verifiable; second, they exclude, as far as possible, inferences, judgments, and the use of 'loaded' words" (p. 23). "One case of bovine spongiform encephalopathy was found in the state of Washington" is an example of a report statement. Inferences, according to Hayakawa (1941), are statements about the unknown based upon the known. "The disease may spread to additional animals" is an example of an inference statement. Hayakawa's last category is judgments, which are "expressions of the speaker's approval or disapproval of the occurrences, persons, or objects he is describing" (Hayakawa & Hayakawa, 1990, p. 25). Hayakawa and Hayakawa further stated that a judgment is a conclusion that evaluates previously observed facts: "The outbreak will devastate the U.S. beef industry."

Lowry (1971) expanded upon Hayakawa's early work to create nine separate categories known as the Hayakawa-Lowry news bias categories. Lowry used this method to conduct a content analysis of television news during the Richard M. Nixon presidency. Using Hayakawa's categories, Lowry (1985) stated that "Report sentences are factual and verifiable," "Inference sentences are subjective and not immediately verifiable," and "Judgment sentences contain expressions of the writer's or speaker's favorable or unfavorable opinions about whatever is being described" (p. 574). Therefore, the Hayakawa-Lowry news bias categories are report sentence/attributed (RA); report sentence/unattributed (RU); inference sentence/labeled (IL); inference sentence/unlabeled (IU); judgment sentence/attributed/favorable (JAF); judgment sentence/attributed/unfavorable (JAU); judgment sentence/unattributed/favorable (JUF); judgment sentence/unattributed/unfavorable (JUU); and all other sentences (O) (Lowry, 1985). Sentences classified as attributed include an indication of the source of the information.

In order to prevent researcher bias, the researcher did not code the articles. Instead, all articles from the three newspapers were coded by three assistants who were trained to use the Hayakawa-Lowry news bias categories accurately and consistently by an expert faculty member. To achieve Objective 2, every sentence of the identified articles was coded using the Hayakawa-Lowry news bias categories.

After the initial coding, the sets were compared and any differences were recorded. These differences were reviewed and discussed by the coders to reach consensus on each sentence's category, as in previous studies by Terry et al. (1996) and Sitton, Terry, Key, and Cartmell (2004).

To determine Objective 3, a mean score (level of objectivity) for each article was determined by recoding all report sentences as "1," all inferences as "2," and all judgment sentences as "3." Therefore, using Hayakawa's procedures, the higher the mean was for each story, the less objective (more biased) the story. Means were calculated for each news story and by newspaper. Additionally, researchers used the frequencies of positive and negative judgment sentences to determine the favorability of the writing toward U.S. agriculture. The judgment/attributed/favorable (JAF) category was combined with the judgment/unattributed/favorable (JUF) category to produce the "positive" category toward agriculture. The judgment/attributed/unfavorable (JAU) category was combined with the judgment/unattributed/unfavorable (JUU) category to produce the "negative" category toward agriculture.

Results

Identification of Articles

The cases for this study included 149 newspaper articles published in *USA Today, The Washington Post,* and *The Seattle Times* between December 23, 2003, and February 10, 2004. As shown in Figure 1, *USA Today* published 18 articles (12.1%), *The Washington Post* published 77 articles (51.7%), and *The Seattle Times* published 54 articles (36.2%).

Of these 149 articles, 115 were news stories (77.2%), 20 were news briefs (13.4%), and 14 (9.4%) were identified as feature stories (Figure 2).

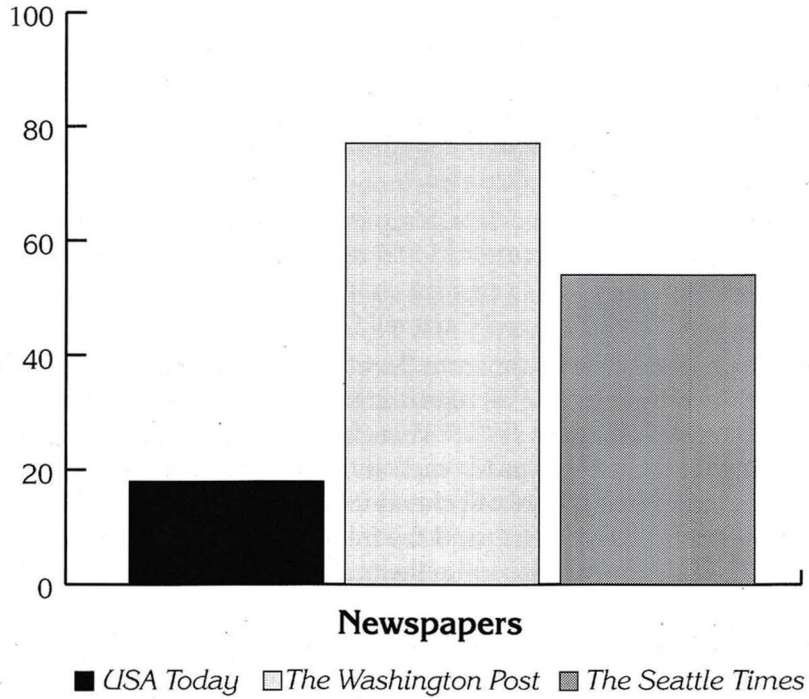


Figure 1. Published articles about the BSE outbreak by newspaper.

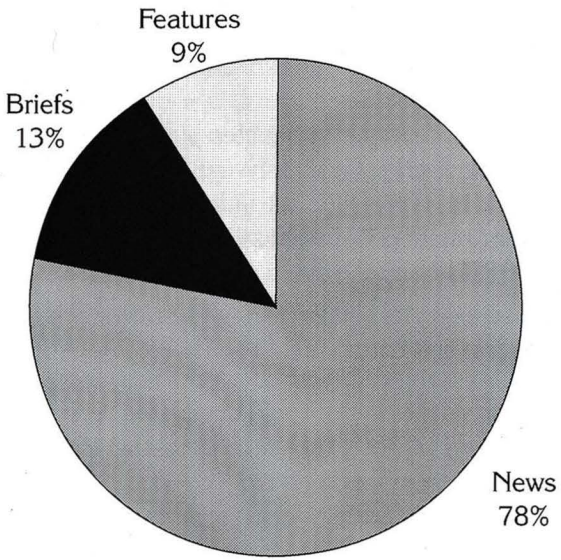


Figure 2. Published articles about the BSE outbreak by story type.

Article Objectivity

Of the 4,944 total sentences, 1,711 (34.61%) were "report sentence/attributed" (RA) and 648 (13.11%) were "report sentence/unattributed" (RU) (Figure 3). The "inference sentence/labeled" (IL) category included 115 sentences (2.32%) and 2,142 (43.33%) were "inference sentence/unlabeled" (IU) sentences. Fifty-two sentences (1.05%) were "judgment/attributed/favorable" (JAF), 92 sentences (1.86%) were "judgment/attributed/unfavorable" (JAU), 15 sentences (0.30%) were "judgment/unattributed/favorable" (JUF), and 87 sentences (1.76%) were "judgment/unattributed/unfavorable" (JUU). Furthermore, the "other" (O) category contained 82 sentences (1.66%).

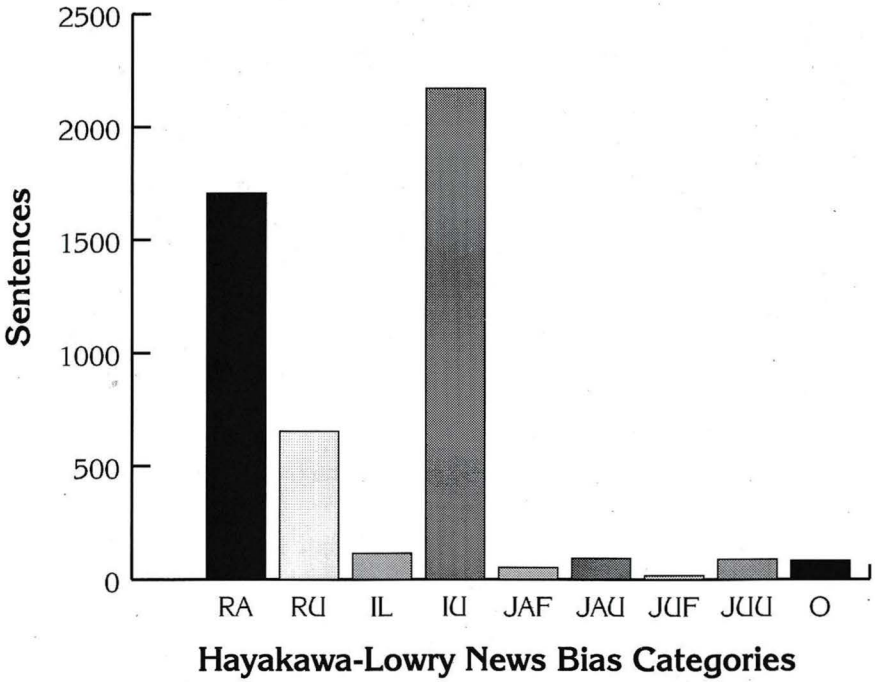


Figure 3. Total sentences, by Hayakawa-Lowry news bias categories.

Based on Hayakawa's original three categories, 2,359 sentences (47.71%) were reports, 2,257 sentences (45.65%) were inferences, 246 sentences (4.98%) were judgments, and 82 sentences (1.66%) were coded as other (Table 1).

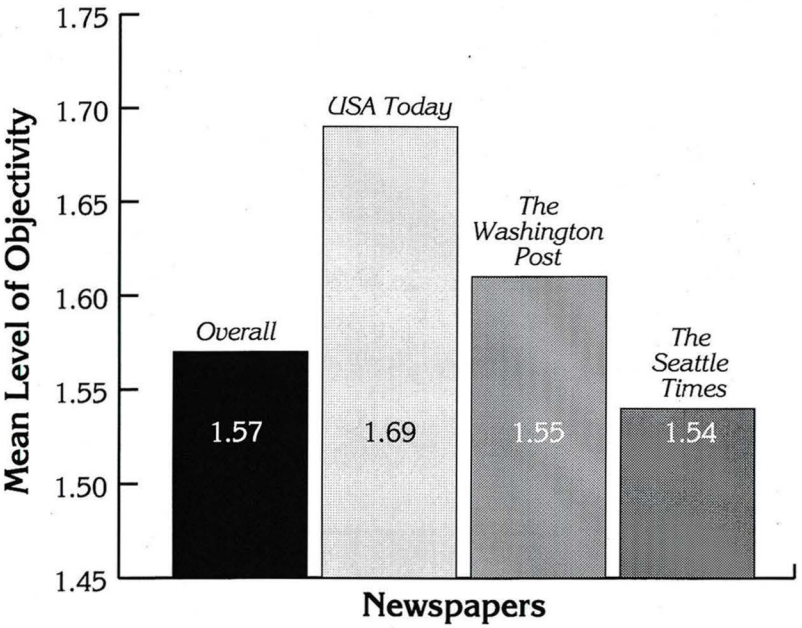
Table 1. *Objectivity Levels of USA Today, The Washington Post, and The Seattle Times*

Newspaper	Reports	Inferences	Judgments	Other	Total
USA Today	212	290	43	20	565
The Washington Post	1,130	1,161	75	39	2,405
The Seattle Times	1,017	806	128	23	1,974
Overall	2,359	2,257	246	82	4,944

Table 1 also illustrates the number of report, inference, and judgment sentences found in each of the newspapers in this study.

Levels of Objectivity

The overall objectivity level was a mean of 1.57, with *USA Today* having a mean of 1.69, *The Washington Post* a mean of 1.55, and *The Seattle Times* a mean of 1.54 (Figure 4). When considering objectivity means for a story or a newspaper, a lower mean signifies more objective writing, while a higher mean represents less objective writing.



Note. 1 = *report*; 2 = *inference*; 3 = *judgment*

Figure 4. Comparison of mean objectivity levels for *USA Today, The Washington Post,* and *The Seattle Times.*

Article Favorability

Of the 246 judgment statements, 67 sentences (27.24%) were positive toward agriculture, while 179 sentences (72.76%) were negative toward agriculture (Figure 5).

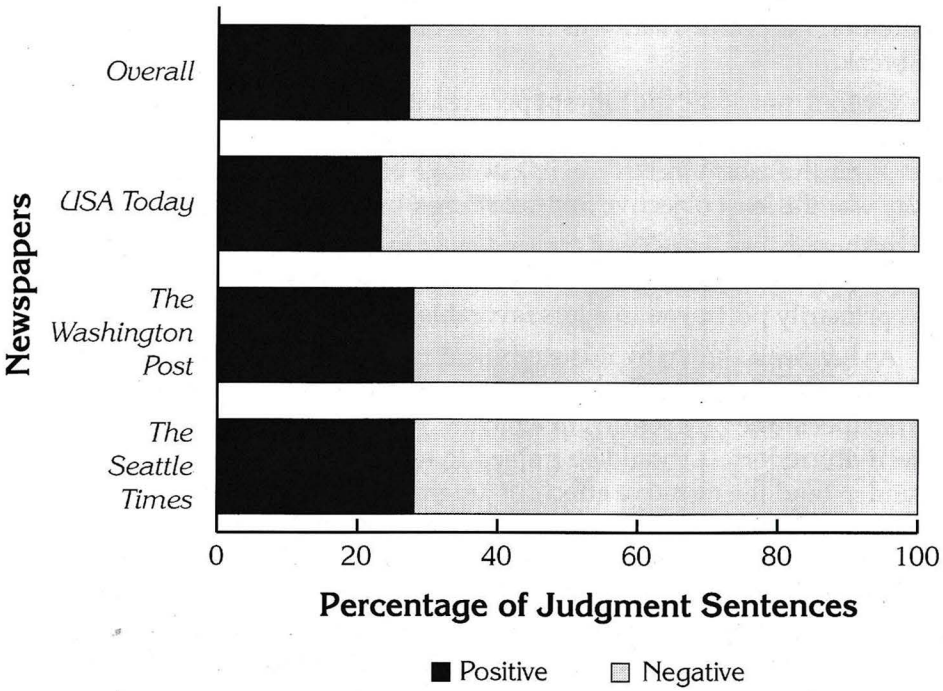


Figure 5. Favorability of judgment sentences by newspaper and overall.

Of the 43 judgment statements in *USA Today*, 10 sentences (23.26%) were positive toward agriculture, while 33 sentences (76.74%) were negative toward agriculture. Of the 75 judgment statements in *The Washington Post*, 21 sentences (28.00%) were positive toward agriculture, while 54 sentences (72.00%) were negative toward agriculture. Of the 128 judgment statements in *The Seattle Times*, 36 sentences (28.13%) were positive toward agriculture, while 92 sentences (71.88%) were negative toward agriculture.

Conclusions

Although the newspapers in the study published varying numbers of articles about the BSE outbreak, the majority of the articles were news stories rather than news briefs or features. This preference for news stories over features is not surprising given the time sensitivity of the subject during the study period.

The percentage of report sentences in this study was lower than that reported in other studies of newspapers' coverage of agricultural issues (Sitton, 2000; Terry et al., 1996; Whitaker & Dyer, 1998). Only *The Seattle Times* had more report sentences than inferences, while *USA Today* and *The Washington Post* had more inference sentences than report sentences. Therefore, *The Seattle Times* was the most objective in its coverage of the BSE outbreak.

Overall, however, the newspapers researched in this study were more objective than judgmental in their coverage of the BSE outbreak. *The Seattle Times* was the most objective in its coverage of the BSE outbreak, while *USA Today* was the least objective in its coverage.

Although less than 5% of the sentences in this study were judgment statements, when judgment statements were used, the agricultural industry was primarily portrayed in a less favorable manner.

As has been shown by this study and previous research (Sitton et al., 2004; Terry et al., 1996; Whitaker & Dyer, 1998), readers should not assume newspaper stories are written in a factual, objective manner. To improve their objectivity, reporters should be trained to recognize judgment statements, to understand the negative effects of judgment statements, and to reduce the number of judgment statements they use, while including more report sentences in their stories. When judgment statements are included in a story, they should include attribution and come from both sides of an issue. Journalism and agricultural communications students should be exposed to the Hayakawa-Lowry news bias categories so they can understand how to write more objectively.

In the future, more studies should be conducted on the media's coverage of agricultural issues and events. In addition, the results of this study should be compared to studies of other mass media coverage, such as television, radio, magazines, and the Internet, since this study looked only at newspaper articles. Future research could compare reporters' level of objectivity to their knowledge and understanding of agriculture and investigate editors' agricultural knowledge and their role in determining which stories are published.

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Keywords

content analysis, Hayakawa, media, bias, objectivity, newspapers

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