

Newspaper Coverage of Swine Production Issues: A Closer Look at Reporters and Their Objectivity

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Abstract

Newspaper journalists should cover news objectively, including news about agriculture. Using the Hayakawa-Lowry news bias categories, the researchers assessed the objectivity of newspaper coverage concerning Oklahoma swine concentrated animal feeding operations (CAFOs) and profiled the journalists who authored the articles. Based on the findings, the journalists who published CAFO articles were objective in their reporting, and 63.6% of the sentences were categorized as reports. However, the majority of the sentences categorized as judgments (69%) were negative toward agriculture. The majority of respondents were male, had earned a bachelor's degree, had never lived on a farm or ranch, and had not been involved in either agricultural or environmental organizations. These journalists' average tenure as reporters was 21.1 years, their assigned beats were varied, and most wrote approximately 20 agricultural news stories per year. The journalists said they liked to report agricultural news, felt qualified to do so, and would participate in an agricultural media workshop. The journalists' mean score on an agricultural literacy instrument was 50.5% and their mean perception of agricultural issues was slightly positive. Recommendations include media workshops for journalists, media training for agriculturists, agricultural courses for students studying journalism, and additional research into the sources used by journalists who write about agricultural issues and into journalists' coverage of agricultural issues.

Introduction and Theoretical Framework

News, regardless of the media source, should be presented in a factual manner to inform readers, viewers, or listeners and to allow them to form their own opinions concerning issues or events. Journalistic coverage of all topics, including agriculture, should be written objectively. Brooks, Kennedy, Moen, and Ranly (1996) asserted that objectivity is viewed as essential by

leaders in American journalism. Although specific definitions of objectivity and bias vary (Fico & Soffin, 1995; Stevenson & Greene, 1980), journalistic professional organizations and publications agree about the need for fairness in reporting and provide journalists with codes of ethics and standards to follow as professional guides (Fico & Soffin, 1995). In spite of this agreement, studies show the majority of news stories to be unbalanced (Fico & Soffin, 1995; Terry, Dunsford, & Lacewell, 1996; Whitaker & Dyer, 1998) and that reporters with liberal philosophies (St. Dizier, 1989) understand they might not always be impartial (Rothman, as cited in Whitaker & Dyer, 1998).

While everyone forms an individual opinion of the information presented through the media (Stempel & Westley, 1989), researchers have turned to content analysis methodology to create a more formal, systematic approach for studying the media's dissemination efforts (Berelson, 1952). Some content analysis efforts are qualitative; however, Dennis T. Lowry (1971, 1985) built on the efforts of linguist S.I. Hayakawa to create and validate a quantitative approach to content analysis research. Researchers have used the Hayakawa-Lowry news bias categories to study various topics and media, including agricultural topics (Lowry, 1971; Terry et al., 1996, Whitaker & Dyer, 1998).

While agricultural producers use both the mass media and agricultural media to gather information (Ortmann, Patrick, Musser, & Doster, 1993; Schnitkey, Batte, Jones, & Botomogno, 1992), consumers are primarily informed about agriculture through mass media sources (Reisner & Walter, 1994). However, research has indicated that mainstream media neglect agricultural topics and present a narrow picture of the agricultural industry and its related issues (Reisner & Walter, 1994; Stringer & Thomson, 1999). In coverage of agricultural and other science-based topics, details are often omitted (Moore & Singletary, 1985; Stevenson & Greene, 1980), and, based on studies of the media's limited coverage of agriculture, the information presented is written in a biased manner with primarily negative statements about agriculture (Hess, 1997; Terry et al., 1996; Whitaker & Dyer, 1998).

In spite of the lack of media coverage about agriculture, Americans should be knowledgeable about the sources of their food and fiber products (National Research Council, 1988; Pope, 1990). However, based on various agricultural literacy studies, Americans are not knowledgeable (Cox, 1994; Frick, Birkenholz, & Machtmes, 1995; Howell, 1995; Terry, 1994; Terry et al., 1996). This lack of knowledge can affect public policy that directly affects producers and, ultimately, consumers. "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" (Sweeney & Hollifield, 2000, p. 26).

One issue covered by the mass media in Oklahoma has been swine concentrated animal feeding operations (CAFOs). In fact, Oklahoma members of the Associated Press selected the “debate on hog farming and other agricultural issues” as the third most important news story in Oklahoma in 1997 (Kurt, 1997, p. 1). Because of the increase of these large-scale operations, swine numbers in the state grew substantially during the late 1990s (Bloyd, 1999), prompting legislation to regulate the operations’ impact on the environment (Oklahoma Concentrated Animal Feeding Operations Act, 1998).

With these things in mind, how much newspaper coverage was given to the swine concentrated animal feeding operations issue and how objectively was it reported by Oklahoma newspapers with the largest total circulation?

Purposes and Objectives

The purposes of this study were to evaluate the news published about swine concentrated animal feeding operations (CAFOs) by the two largest Oklahoma newspapers and to profile the people who authored that news. The objectives developed to accomplish these purposes were to:

1. Identify the news articles published about swine CAFOs by the two largest Oklahoma newspapers;
2. Determine the level of objectivity in the identified articles;
3. Determine the favorability of judgment statements in the identified articles; and
4. Develop a collective profile of the journalists responsible for these articles, including their professional characteristics, agricultural literacy, and perceptions about agricultural topics.

Methods and Procedures

To achieve Objective 1, the *Gale Directory of Publications and Broadcast Media* (Fischer, 1998) was used to identify the two largest Oklahoma newspapers based on total circulation: *The Daily Oklahoman* (215,000 daily and 306,000 Sundays) and the *Tulsa World* (160,000 daily and 225,000 Sundays). Subsequently, the Dow Jones Interactive site on the World Wide Web was used to identify all news stories concerning swine CAFOs published in the two newspapers between January 1, 1998, and December 31, 1998. The selected articles, as well as articles on other topics, were compared to original newspapers to ensure the completeness of the set of articles studied. No differences were detected. From the article bylines, a comprehensive list of the journalists who authored the articles was created to achieve Objective 4.

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Content analysis methodology based on the Hayakawa-Lowry news bias categories was used to achieve Objective 2 and Objective 3. Publishing his original work in 1939, linguist and former U.S. Senator S.I. Hayakawa (Hayakawa & Hayakawa, 1990) said statements can be categorized into three categories:

1. Report sentences are factual and verifiable statements (Lowry, 1971, p. 574).
2. Inference sentences are subjective and not immediately verifiable (Lowry, 1971, p. 574), statements “about the unknown based upon the known” (Hayakawa & Hayakawa, 1990, p. 24) where a writer “draws an inference from some set of observable data” (Hayakawa & Hayakawa, 1990, p. 24).
3. Judgment sentences express the writer’s opinions (Lowry, 1971) and are “expressions of the speaker’s approval or disapproval of the occurrences, persons, or objects he is describing” (Hayakawa & Hayakawa, 1990, p. 25).

Lowry (1971) expanded on Hayakawa’s earlier work, creating the nine Hayakawa-Lowry news bias categories:

1. Report sentence/attributed (factual information attributed to a source);
2. Report sentence/unattributed (factual information without citing a source);
3. Inference sentence/labeled (predictions, interpretations, or statements about the unknown based upon the known that contain “tip-off” words such as appear, could, may, perhaps, or possible to let the reader know the information is subjective);
4. Inference sentence/unlabeled (same as category 3, but without the “tip-off” words);
5. Judgment sentence/attributed/favorable (statements of approval or disapproval of an event, person, or situation that are attributed to a source and are favorable toward the subject, which in this case was agriculture);
6. Judgment sentence/attributed/unfavorable (same as category five except unfavorable toward the subject);
7. Judgment sentence/unattributed/favorable (same as category five except no attribution is presented);

8. Judgment sentence/unattributed/unfavorable (same as category six except no attribution is presented); and
9. All other sentences (primarily questions and incomplete sentences).

While other content analysis methods were available, the validated Hayakawa-Lowry method (Lowry, 1985) approaches the analysis from a quantitative, objective perspective. All sentences in the set of articles from *The Daily Oklahoman* and the *Tulsa World* were coded by three individuals trained to use the Hayakawa-Lowry news bias categories (Lowry, 1971) through a training workshop conducted by the Oklahoma State University Department of Agricultural Education, Communications, and 4-H Youth Development. When sentences were not coded the same initially by all coders, the coders reviewed individual sentences to reach consensus on each sentence's final code. From the initial coding in nine categories, all report sentences were valued as "1," all inference sentences as "2," and all judgment sentences as "3" (Hayakawa's original categories) to calculate a mean for each story to determine objectivity levels. In addition, Hayakawa-Lowry categories five and seven were combined to determine the quantity of sentences that were favorable toward agriculture, and categories six and eight were combined to determine the quantity of sentences that were unfavorable toward agriculture. Descriptive statistics were calculated using Microsoft Excel®.

To achieve Objective 4, journalists who wrote one or more of the articles identified for Objective 1 were contacted via telephone to complete a survey that addressed their professional characteristics, agricultural literacy, and perceptions about agricultural topics. The instrument was based on an instrument developed by Terry (1994) in his survey of Texas television reporters. Terry reported a Cronbach's alpha on Part I of the instrument as .70 and on Part II of the instrument as .86. Descriptive statistics and correlations were calculated using Microsoft Excel®.

Findings

Identification of Articles

The search for articles related to swine CAFOs published in *The Daily Oklahoman* and the *Tulsa World* between January 1, 1998, and December 31, 1998, resulted in 40 articles. Of those, 21 (52.5%) were published in *The Daily Oklahoman*, and 19 (47.5%) were published in the *Tulsa World*. Thirty-six (90%) were news stories while four (10%) were feature stories. The articles, article placement, publication date, and publication are presented in Table 1.

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Table 1. News Articles, Article Placement, and Date of Publication

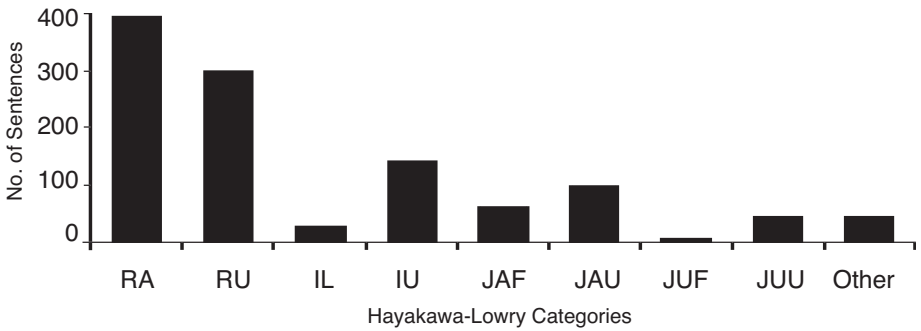
Article	Page Placement	Date
1. Hold Your Nose, But Not Your Breath ...*	1	January 12
2. Top Lawmakers Urge Hog Farm Moratorium ...*	1	January 13
3. County Option on Feedlots Discussed**	6	January 22
4. State Inspector's Job Keeps Her Busy ...*	1	January 30
5. Farm Groups Set Agenda**	1	January 30
6. Lawmaker Expects Moratorium on Animal Operations**	13	January 31
7. CAFOs To Top Agenda**	1	February 1
8. Rally Held for Poultry, Pig Interests**	12	February 4
9. 2 Waste Proposals Trashed**	9	February 11
10. Panel Oks Limits on Feed Operations ...**	17	February 13
11. Seaboard Permits*	2	February 19
12. State Board Approves Fine Against Seaboard*	1	February 19
13. Hog Farm Moratorium Gets Key Backing**	6	February 19
14. Keating Blames Demos for Hog Moratorium Bill**	12	March 4
15. Letter Favoring Tyson in Moratorium Retrieved ...**	10	March 5
16. EPA Floats Proposal to Regulate Manure*	17	March 6
17. EPA Chief Denies Aim to Punish*	1	March 7
18. Senate Approves OU-OSU/Tulsa Bill**	10	March 11
19. New Legislation is Unlikely to Alter Oversight**	11	March 16
20. Nader to Speak at OU ...*	1	April 24
21. Poultry, Hog Bills Pushed**	1	April 25
22. Water Quality Hearing Set for Guymon*	12	May 10
23. EPA Seeking Public Views on Pig, Poultry Operations ...*	6	May 11
24. Federal Agency Gets Both Sides of Hog Debate*	1	May 16
25. Hog Runoff May Reach Lake ...*	1	June 1
26. Hog Bill Called Nation's Strictest ...*	1	June 11
27. EPA Regulations on Farm Waste to be Updated*	1	July 6
28. Union Chief Sees Problems With Farm Act in Lean Times*	1	July 12
29. Public Hearing Set on Animal Waste Discharge Permit ...**17		July 18
30. EPA Plans Hearing on Feeding Operations*	15	August 12
31. Wastewater Plan Divides ...*	7	August 14
32. Wasting Time: Hearing Draws Crowd, Diverse Views**	1	August 14
33. EPA Extends Comment Period*	23	August 27
34. EPA Extends Comment Time on Animal Operations**	3	August 29
35. Hog Farmers in Quandary Over Rules*	1	August 29
36. Federal Plan to Control Waste Runoff Released**	1	September 17
37. Poultry Waste Talk Set**	1	November 14
38. Groups Split on Animal Pollution Plan**	1	November 17
39. Counties Allowed to Regulate Lagoons*	6	November 21
40. Environmentalists Want State to Hire More Farm Inspectors*	5	December 4

Note. Items marked with an asterisk (*) were published in *The Daily Oklahoman*. Items marked with two asterisks (**) were published in the *Tulsa World*.

Article Objectivity

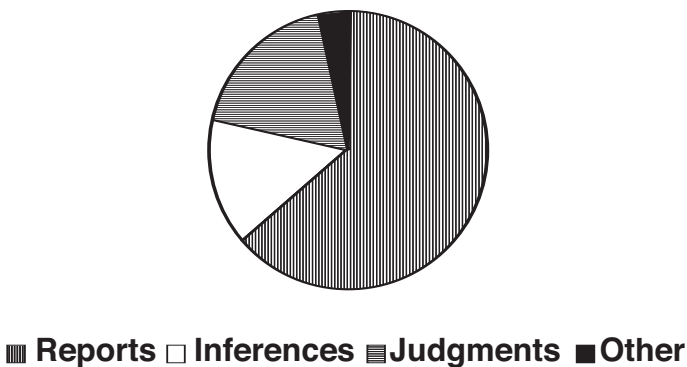
The 40 articles contained 1,091 sentences. Overall, 394 sentences (36.1%) were “report sentence/attributed” and 300 sentences (27.5%) were “report sentence/unattributed.” There were 26 sentences (2.4%) coded as “inference/labeled” and 139 sentences (12.7%) coded as “inference/unlabeled.” Additionally, 57 sentences (5.2%) were “judgment/attributed/favorable,” 94 sentences (8.6%) were “judgment/attributed/unfavorable,” 2 (0.2%) were “judgment/unattributed/favorable,” and 40 (3.7%) were “judgment/unattributed/unfavorable.” Thirty-nine sentences (3.6%) were coded in the “all other sentences” category. This data is illustrated in Figure 1.

Figure 1. Total sentences by Hayakawa-Lowry news bias category.



Based on the recoding to Hayakawa’s original three categories, 694 sentences (63.6%) were reports, 165 sentences (15.1%) were inferences, 193 sentences (17.7%) were judgments, and 39 sentences (3.6%) were “other.” This data is illustrated in Figure 2. The level of objectivity (mean) was 1.52. In

Figure 2. Percentage of sentence categories.



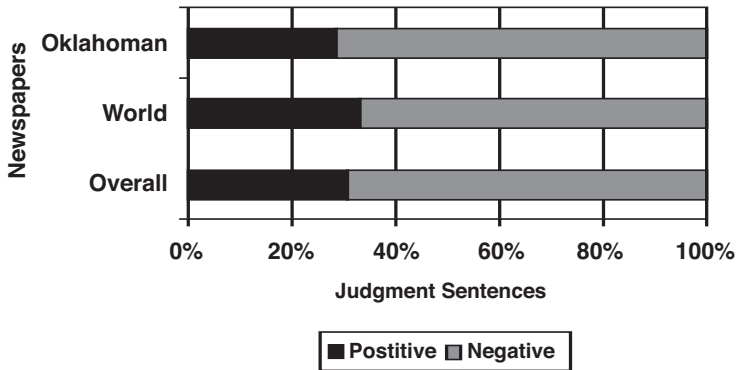
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considering the level of objectivity, a lower mean indicated more objective writing in the articles while a higher mean indicated less objective writing.

Article Favorability

Of the 193 judgment sentences, 59 sentences (30.6%) were positive toward agriculture while 134 sentences (69.4%) were negative toward agriculture (Figure 3).

Figure 3. Favorability of judgment sentences by newspaper and overall.



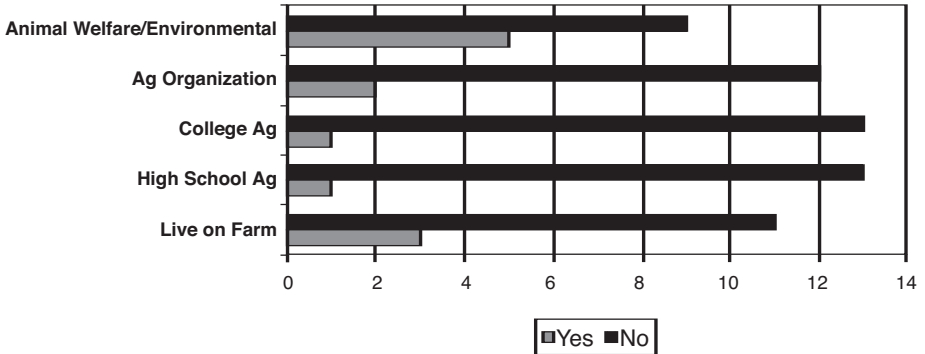
Journalists' Profile

Fifteen journalists were identified to have authored or co-authored at least one newspaper article related to swine CAFOs. The 10 journalists from *The Daily Oklahoman* represented 66.7% of the authors while the five *Tulsa World* journalists represented 33.3%. Of the journalists identified, 12 (80%) were male and three (20%) were female. In May 2000 when the questionnaire was administered, 14 (93.3%) of the journalists were still employed at the same newspaper.

For the questionnaire portion of the study, 14 of the 15 journalists (93.3%) completed the instrument via telephone. As illustrated in Figure 4, three respondents (21.4%) have lived on a farm or ranch; two respondents (14.3%) have taken formal coursework in agriculture (one in high school and one in college); two respondents have been members of FFA, 4-H, Farm Bureau or other agricultural organization; and five (35.7%) have been members of People for the Ethical Treatment of Animals (PETA), Green Peace, Sierra Club, or other animal welfare or environmental organization.

Fourteen (100%) of the respondents have received degrees above the high school level. Twelve respondents (85.7%) earned bachelor's degrees

Figure 4. Agricultural and environmental background of identified journalists.



while one (7%) earned an associate’s degree and one (7%) earned a master’s degree.

The respondents’ average tenure as newspaper reporters was 21.1 years. The respondents’ assigned beats varied with five (35.7%) assigned to “government or state capitol,” three (21.4%) assigned to “general news coverage,” two (14.3%) assigned to “agriculture,” and one each assigned to “demographics” (7%), “southwest Oklahoma” (7%), “University of Oklahoma and Norman” (7%), and “Washington, D.C.” (7%).

The respondent’s coverage of agricultural news ranged from one story to 220 stories in the past year. For the past year, the mean number of stories was 35.15, and the median was 20 stories. On a scale of 1 (lowest) to 10 (highest), respondents had a mean response of 8.36 with a range of responses from 5 to 10 on the importance of agricultural news. Thirteen respondents provided answers concerning their ability and enjoyment of reporting agricultural news as well as their interest in a media workshop related to agriculture. Of those, 10 (76.9%) indicated that they liked to report agricultural news, 12 (92.3%) indicated that they felt qualified to report agricultural news, and 11 (84.6%) were interested in attending a workshop on agriculture.

Agricultural Literacy of Respondents

Thirteen open-ended items on the questionnaire acquired data concerning the respondents’ knowledge of agriculture’s contribution to society, the economy, and government, as well as Oklahoma’s top commodities and farm size. The respondents’ scores ranged from three (23.1% correct) to 10 (76.9% correct) with a mean of 6.57 points or a mean of 50.5% correct.

Perceptions about Agriculture

To determine respondents' perceptions about agriculture, they were asked to indicate their level of agreement with 17 statements about agricultural issues, including food safety, animal treatment, environmental impact, and economic impact (Figure 5). A five-point Likert-type scale (-2 = strongly disagree; -1 = disagree; 0 = neutral; 1 = agree; 2 = strongly agree) was used for each item. The journalists who responded were neutral, or undecided, in their perceptions about agricultural career opportunities for young people (mean = -0.50), the taxpayers' cost of farmer assistance programs (mean = 0.43 using a reversed scale to represent the content of the item), agriculture's impact on the environment (mean = 0.14), humane treatment of animals for food (mean = -0.14), humane treatment of animals for leisure activities (mean = -0.21), the healthfulness of red meats (mean = 0.50), agriculturalists as good caretakers of the environment (mean = 0.50), and the value of biotechnology for the U.S. food and fiber system (mean = 0.42). Journalists indicated their agreement, or positive perception, on the following topics: abundance of the U.S. food and clothing supply (mean = 1.43), the safety of the U.S. food supply (mean = 1.14), the treatment of companion animals (mean = 0.86), the safety of fruits and vegetables (mean = 1.00), healthfulness of fruits and vegetables (mean = 1.50), the safety of poultry products (mean = 0.93), healthfulness of poultry products (mean = 1.14), and the safety of red meats (mean = 1.00). The respondents strongly agreed that agriculture is an important contributor to the U.S. economy (mean = 1.79). The mean for the 17 items was 0.84, which places it within the real limits of the "agree" category.

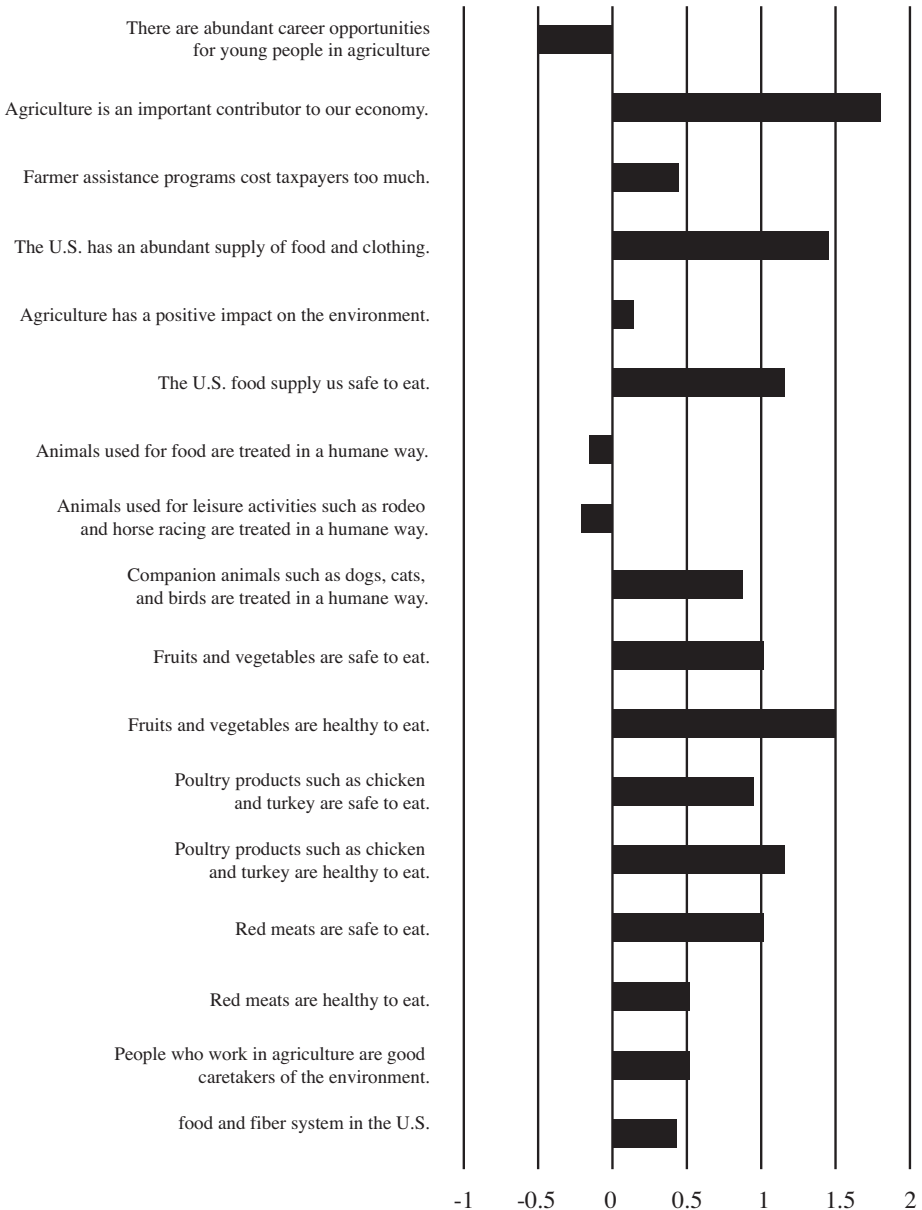
Conclusions and Recommendations

The majority of the articles related to swine CAFOs published in *The Daily Oklahoman* and the *Tulsa World* were news articles, rather than feature articles.

Objective in their coverage of swine CAFOs, *The Daily Oklahoman* and the *Tulsa World* included a higher percentage of report sentences than in other publications evaluated in previous studies (Terry et al., 1996; Whitaker & Dyer, 1998). When judgment sentences were used, issues related to swine CAFOs were portrayed in a negative manner. This agrees with content analysis research by Terry et al. (1996) and by Whitaker and Dyer (1998) where the majority of judgment sentences were negative.

The journalists who participated in this study indicated they like to report news about agriculture and feel qualified to do so; however, few have the background or education normally associated with agriculturally literate

Figure 5. Journalists' perceptions about agricultural topics



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persons and few have the appropriate knowledge to inform the public accurately about the agricultural industry. An agricultural course designed for journalism majors should be developed so that future journalists could better understand their topic and accurately inform the public about agriculturally related issues.

When considering legislation related to agriculture, legislators and other policy makers should review information from those knowledgeable about agriculture and use newspapers as only one source of information.

Citizens should use newspapers as a source of information, but they should not consider every sentence to be factual information stated in a purely objective manner.

Agriculturists, especially swine producers, should fully educate themselves about the issues regarding their industry and speak factually about such issues. Furthermore, they should make themselves available to the media for interviews as reporters prepare stories about agricultural issues.

Due to the level of interest expressed by the journalists, agricultural communications professionals and agricultural educators should develop a media workshop or seminar designed to teach participants about agriculture and how to report agricultural topics effectively.

In addition, the Oklahoma Cooperative Extension Service, agricultural organizations, and agricultural commodity groups should implement media training programs for agricultural producers and agribusiness professionals.

In the future, researchers should investigate the sources used by journalists when writing about agricultural topics and how those sources are selected. In addition, media coverage of other agricultural issues and topics should be analyzed.

Key words: content analysis, newspapers, bias, objectivity.

About the authors

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