

Associated Press Wire Service Coverage of Agricultural Issues

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Abstract

Some of society's most controversial topics currently involve agriculture. Therefore, it's vital that the general public have an accurate view of the food and fiber industry. This view is highly dependent on the agricultural literacy of those in the media. Consequently, researchers studied the coverage of agricultural issues to evaluate bias in Associated Press wire service coverage.

The study enlisted content analysis methodology, based on the Hayakawa-Lowry news bias categories to code the identified articles.

Results revealed a 22% increase in the number of agricultural articles posted on the wire service from 1997 to 2000. Findings also indicated that fewer than one-half of the statements from the Associated Press wire service were based on verifiable facts. Reporters have more than tripled the number of articles with agricultural policy as the primary theme. In addition to the coverage of agricultural issues increasing, researchers studied the level of bias in each sentence.

The results of this study emphasize the importance of continued educational efforts to increase the agricultural literacy of reporters. Making reporters aware of their bias statements may encourage them to include more factual and verifiable statements. Greater frequency of fact-based articles and decreased use of inference statements will result in an increasingly accurate picture of agriculture.

Introduction and Theoretical Framework

Agricultural literacy is broadly defined as education about agriculture. This definition, as developed by the National Academy of Science Research Council (1988), notes that an agriculturally literate population ensures that citizens make intelligent and informed decisions concerning agricultural policies that benefit all society. The many changes occurring in agriculture during the past decade have made the need for agricultural literacy increasingly evident. Consumers, as well as policy makers, need to be "agriculturally literate" in order to respond appropriately as issues arise (Frick, Birkenholz & Machtmes, 1995).

The fact that American society is "agriculturally ignorant" has drawn a considerable amount of attention (Terry & Lawver, 1995). Coon and Cantrell (1985) emphasize that "Today, the public's image of agriculture is a kaleidoscope of leftover attitudes and images of what agriculture was in the '40s, '50s and '60s" (p. 22). The first step in improving the agricultural literacy level of a population is to determine the current literacy level (Frick et al., 1995).

A basic knowledge of agriculture is especially important when it is the major industry in a state, and the lack of agricultural knowledge and experience impedes economic development (Williams & White, 1991). The importance of the agricultural industry to society increases the need for agricultural literacy.. Law (1990) states:

Americans know very little about the social and economic relevance of agriculture in the United States, and agriculture is too important a subject to be taught only to a relatively small proportion of students enrolled in vocational agriculture. As special interest groups revolving around issues such as animal rights, pesticides usage, soil and water conservation, and other environmental concerns gain more media and public attention, it becomes even more important that the general public have some background and understanding of not only what agriculture is all about, but of how it affects each person's life on a daily basis (p. 5).

Achieving the goal of agricultural literacy produces informed citizens able to participate in establishing the policies that support a competitive agricultural industry in this country and abroad (National Academy of Sciences Committee, 1988). "Despite the importance of agriculture to America's economic, environmental, and cultural growth, agricultural news is a surprisingly neglected topic in the mass media" (Stringer & Thomson, 1999, p..1).

According to Whitaker and Dyer (1998):

Journalists have a responsibility to report news both accurately and fairly. If they fail in their duties, responsible reporting and consumption of agricultural news will not occur. Likewise, misinformed individuals may make important decisions affecting the food and fiber industry (p. 445).

The influence of mass media should not be underestimated because perceptions and attitudes go hand-in-hand. Many of the attitudes expressed through the media directly affect consumers' perceptions of agriculture. According to Lutz (1991), attitudes refer to positive or negative feelings toward an object or issue. Humans are not born with attitudes. Rather, they are teamed with feelings of favorability or unfavorability through information gained about the attitude through various media or direct experience.

In mass communications, Multiattribute Attitude Models portray consumers' attitudes with regard to an attitude "object" (such as the perception of agriculture) as a function of consumers' perceptions and assessments of the key attributes or beliefs held with regard to the particular attitude "object" (Schiffman and Kanuk, 1997). An example of the multiattribute attitude model is the Theory of Reasoned Action Model (Figure 1).

The theory of reasoned action represents a comprehensive integration of attitude components into a structure that is designed to lead to both better explanation and better predictions of behavior. The theory of reasoned action model incorporates a cognitive component, an affective component, and a conative component. The cognitive component represents a person's knowledge and perceptions that are acquired by a combination of direct experience and related information from various sources (such as the mass media). The affective component refers to a person's feelings or emotions about a particular issue or object. The conative component is concerned with the likelihood or tendency that an individual will undertake a specific action or behave in a particular way (Schiffman & Kanuk, 1997).

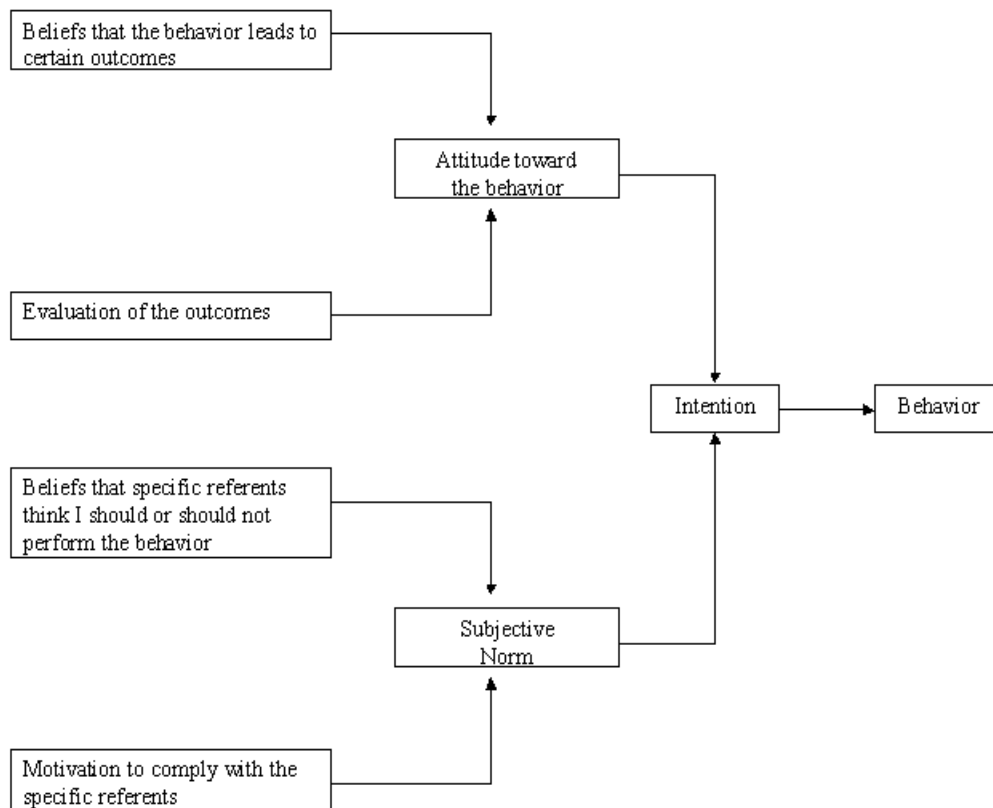


Figure 1: Simplified Version of the Theory of Reasoned Action (Schiffman & Kanuk, 1997).

The theory of reasoned action depicts the process a person goes through in order to reach a desired outcome or behavior. This process is extremely important to those studying the perceptions of agriculture. The public receives much of its information about agriculture from specific referents such as the mass media. This information will help to form a person's attitude or perception, which in turn leads to a specific behavior or no behavior at all.

The mass media has opportunities to reach the general public through newspapers, television, Internet, and radio. According to Farrar (1997), daily American newspaper circulation exceeds 60 million, and more than 8,000 weeklies are published in the United States, only 14% of all adult Americans saying they rarely or never read a newspaper.. He found that television sets operate in 99% of all American households and that 96% of all Americans report they listen to the radio regularly. The Associated Press is the primary wire service for most of these media outlets. According to its Web site, the Associated Press has 242 news bureaus worldwide, providing information to 1,700 newspapers and 5,000 radio and television stations. There are also 8,500 international subscribers in 121 countries. The Associated Press reports news 24 hours a day, seven days a week and averages 20 million words each day (Associated Press, 2002). Considering these numbers, studying the Associated Press wire service, as opposed to some other news outlet, may yield important insights. Researchers should study the coverage of agricultural issues to evaluate the amount of bias reported in the articles and the types of subjects receiving coverage.

Purpose/Objectives

This study sought to identify articles written about agriculture on the Associated Press wire service in the Fall of 2000, to categorize the articles into agricultural literacy concept areas, and to determine the level of bias in each article. This study also sought to compare the coverage of the agricultural industry available through the Associated Press wire service to a previous study by Hess (1997).

Methods/Procedures

The sample for this study included agricultural stories taken from the Associated Press wire service for the month of November 2000 (N = 177). Stories were gathered five times per week (articles written on the weekends were gathered on Monday), using the Associated Press wire service located at a local CBS television affiliate. The results from this particular month should not be inferred to other months of the year. The study enlisted content analysis methodology, based on the Hayakawa-Lowry news bias categories (Lowry, 1985) to code all of the identified articles taken from the Associated Press wire service.

S.I. Hayakawa (1940) developed a system to analyze news articles by placing them in one of three categories: (a) report sentences, (b) inference sentences, and (c) judgment sentences. Report sentences are considered factual and verifiable. However, when a reporter makes an inference, the accuracy of the statement can be weakened. These statements can be subjective and not immediately verifiable. Judgment sentences are expressions of the writer's or quoted

source's opinions. These sentences are considered by readers to be biased by the reporter or reporter's source.

Lowry (1985) expanded Hayakawa's system and developed the Hayakawa-Lowry news bias categories that consist of an additional six categories. The new model considers the attribution of the information and reporter bias. Report sentences are split into the additional categories of attributed (factual and attributed information) and unattributed (factual, but no citation of source). Inference sentences are either labeled (interpretations or generalizations using specific "tip-off" words) or unlabeled (no tip-off words such as "appear" and considered to have more bias). Judgment sentences are broken into four subcategories. Judgment, attributed, favorable sentences are statements of the reporter's approval or disapproval of an event, person, object, or situation attributed to source and favorable toward the subject (agriculture). Judgment, attributed, unfavorable contains a source, the reporter's approval or disapproval, and is unfavorable toward the subject. A judgment, unattributed, favorable means the writer is favorable toward the subject, but does not cite a source. Judgment, unattributed, unfavorable is when the reporter is unfavorable toward the subject and does not cite a source (Figure 2).

Lowry successfully established the construct validity of the Hayakawa-Lowry news bias categories by using a two-part study conducted at Liberty University and Ohio University. He dealt with problems of inter-rater reliability through the development of a tested rater manual (Terry, Dunsford, Lacewell & Gray, 1996).

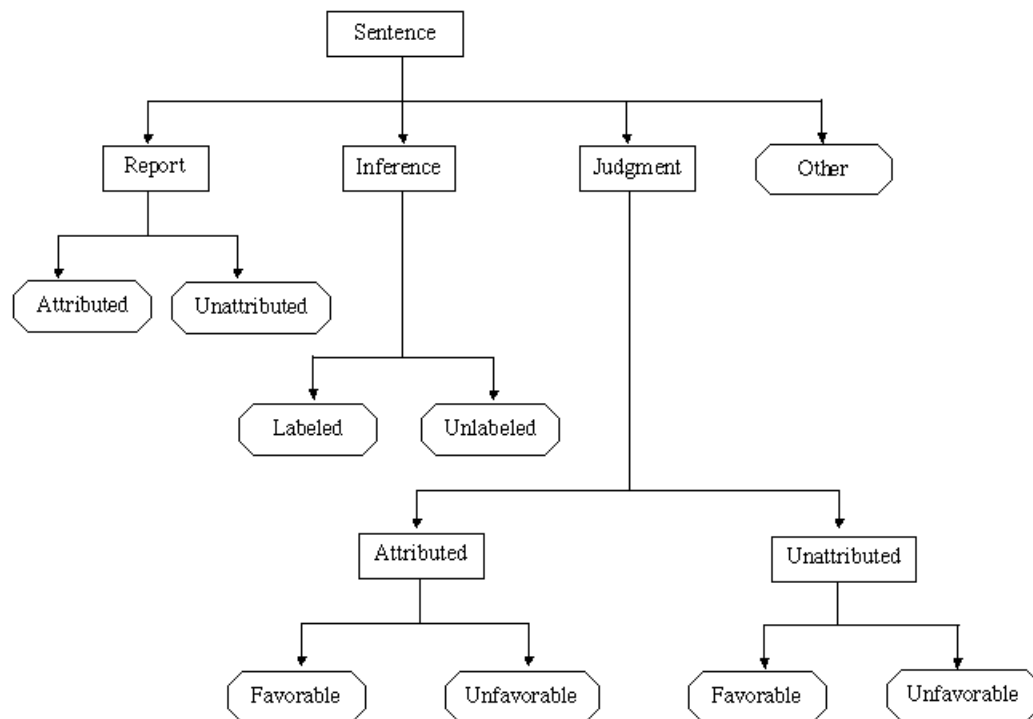


Figure 2. Hayakawa-Lowry News Bias Categories Analysis Model.

For this study, a trained panel of experts coded all of the identified articles to ensure coder reliability. Each sentence of the identified articles was coded using the Hayakawa-Lowry news bias categories. The coding sets were compared and discrepancies were noted. The panel reviewed the discrepancies until consensus was reached on the code assigned to each sentence.

Each story was categorized into primary and secondary agricultural classifications such as the plant industry, farming, or disease. The stories were then placed in the proper agricultural literacy concept areas, using the same procedure as Terry et al. (1996).

Results/Findings

Results revealed a 22% increase in the number of agricultural articles posted on the wire service since 1997 (145 articles in 1997 and 177 articles in 2000). The daily average of articles during the month of November 2000 was 8.85, and the daily average of sentences was 64.7.

Generally, there were more than eight articles posted per day. On average, the Associated Press agricultural articles read were relatively short ($M = 7.31$). The number of sentences written in 1997 was 1,182 (daily average = 59.1) and in 2000 it was 1,294 (daily average = 64.7). This indicates a 9.5% increase in the three-year period between 1997 and 2000.

Table 1 indicates that reporters have more than tripled their coverage of agricultural policy issues as the primary theme. This category had a 250% increase between 1997 and 2000. As far as secondary themes (Table 2), reporters have tripled their coverage of animal science (228.57% increase), the plant industry (230% increase), and natural resources (200% increase).

Table 1
Comparison of Concept Areas (primary) between 1997 and 2000

Category	Primary (1997)	Primary (2000)	Increase
General Agriculture	33	33	0.00%
Animal	23	21	-8.69%
Plants	32	38	18.75%
Natural Resources	9	10	11.11%
Policy	4	14	250.00%
Marketing	13	35	169.23%
Processing	12	9	-25.00%
Miscellaneous	19	17	-10.53%
TOTAL	145	177	

Table 2
Comparison of Concept Areas (secondary) between 1997 and 2000

Category	Secondary (1997)	Secondary (2000)	Increase
General Agriculture	33	33	0.00%
Animal	7	23	228.57%
Plants	10	33	230.00%
Natural Resources	2	6	200.00%
Policy	15	15	0.00%
Marketing	26	30	15.38%
Processing	33	20	-39.39%
Miscellaneous	19	17	-10.53%
TOTAL	145	177	

Reporters are writing more factual sentences compared to 1997 (Table 3). The number of report sentences in 1997 was 503 (42.6%), and in 2000 it was 597 (46.13%). This statistic indicates an 18.69% increase in the number of report sentences found in the Associated Press wire articles.

Table 3
Comparison of sentence categories between 1997 and 2000

Sentences	No. of Sentences (1997)	No. of Sentences (2000)	Increase
Report	503	597	18.69%
Inference	214	323	50.93%
Judgment	303	299	-1.32%
Other	162	75	-53.70%

Even though reporters are writing more report sentences, the majority of the sentences are unattributed. Between 1997 and 2000, report unattributed sentences increased 20%, whereas report attributed increased only 14.84%. Reporters are also writing significantly more inference sentences. In 1997 there were 214 (18.1%) inference sentences and in 2000 there were 323 (24.96%). These sentences had the largest percent increase (50.93%) between 1997 and 2000. The majority of these sentences contain no "tip-off" words to let the reader know the information is subjective to some extent. The occurrence of inference unlabeled sentences doubled, with an increase of 117.43%, and the occurrence of inference labeled sentences decreased by 55.67%.

Reporters are writing slightly fewer judgment sentences than in 1997. The number of judgment sentences declined from 303 (25.6%) to 299 (23.11%) within three years, resulting in a 1.32% decrease. Although reporters are writing fewer judgment sentences, the majority of the ones that

are written are unattributed. Judgment unattributed, favorable sentences more than tripled to 218.18% and judgment unattributed, unfavorable sentences more than doubled with a 160% increase. However, the study does show that Associated Press reporters are writing more favorable sentences with judgment attributed, favorable sentences increasing 40% between 1997 and 2000 (Table 4).

Reporters are using fewer lead, introduction, and concluding statements, so there were a relatively low number of “other” sentences in this study. Experts coded 5.80% of the total sentences as "other." Between 1997 and 2000 there was a 53.70% decrease. After accounting for "other" statements, approximately half of all sentences coded were inference or judgment sentences, indicating that Associated Press reporters are writing almost as many inference and judgment statements as factual statements.

Table 4
Comparison of sentence numbers occurring in each sentence category between 1997 and 2000.

Sentence Categories	No. of Sentences (1997)	No. of Sentences (2000)	Increase
Report Attributed	128	147	14.84%
Report Unattributed	375	450	20.00%
Inference Labeled	194	86	-55.67%
Inference Unlabeled	109	237	117.43%
Judgment Attributed, Favorable	75	105	40.00%
Judgment Attributed, Unfavorable	108	107	-0.926%
Judgment Unattributed, Favorable	11	35	218.18%
Judgment Unattributed, Unfavorable	20	52	160.00%
Other	162	75	-53.70%

Conclusions/Recommendations/Implications

The results of this study emphasize the importance of continued educational efforts by agricultural educators and communicators to increase the agricultural literacy of reporters. Making reporters aware of their bias statements may encourage them to include more factual and verifiable statements. Greater frequency of fact-based articles and decreased use of inference statements will result in an increasingly accurate picture of agriculture.

Agricultural literacy efforts also need to be continued for the general public. It is important that they be aware of the possibility of bias in articles. This study concurs with the recommendations of Peper-Sitton (2000) that 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.

It is also recommended that those within the agricultural industry be educated continuously on the new issues that arise.. Commodity groups and the Extension Service should develop media training programs to teach those within the industry how to talk to the media. Greater access to and use of knowledgeable and reliable sources in the agricultural industry will help reporters write more factual and verifiable statements.

Researchers should investigate whether other industries, such as the health industry, experience reporter bias. A review of the articles covering the various industries will determine where the weaknesses lie. The findings of this study provide a benchmark for comparison to results of future studies inside and outside of the agricultural industry.

Future researchers should also look at the articles posted on the Associated Press wire service during a different month. The results are likely to change according to the different seasons of the year as well as with the different seasons of the agricultural industry.

It is also recommended that future researchers conduct a study using agricultural publications. It is important that those within the agricultural industry are agriculturally literate and are not writing an excess of bias, favorable statements. Researchers should also look at the coverage of agriculture in other countries. The findings of such a study would show how agriculture is reported in foreign countries and help to determine the agricultural literacy of those reporters. This type of study could encourage the expansion of agricultural literacy efforts internationally.

A longitudinal study should also be conducted in the future to monitor whether the number of agricultural stories posted on the Associated Press wire service and the number of factual statements in these articles continue to increase..

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Associated Press Wire Service Coverage of Agricultural Issues

A Critique

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This paper is a good one to pair with the Arkansas daily newspaper editors one. This paper provides a national snapshot of an agricultural literacy issue. Do national news articles about agriculture have a bias?

The introduction combines a review of the agricultural literacy literature with a theoretical framework explaining how attitudes affect perceptions, which affect behaviors. The methodology was well explained and appropriate for the study. Figure 2 was extremely helpful in understanding the analysis model. Although the authors correctly warned that study results could not be transferred to other months of the year, this reader still wonders why the month of November and the years 1997 and 2000 were chosen for this study. Was there a previous, not cited study conducted in 1997 that also used the month of November? Without this information, the increases/decreases reported in Tables 1 through 4 have little meaning. Would looking at 1990 versus 2000 have shown similar or different trends?

The results of this study paint an interesting picture. An average of eight agricultural articles per day is encouraging to this reader. It is also encouraging that every agricultural literacy concept area, for primary and secondary, had multiple articles. However, although factual sentences are the plurality, they are not the majority of sentences. Also, the use of unattributed sentences seems to be on the rise while the use of “tip-off” words is on the decline.

In light of the findings of the Arkansas editors study, it is interesting that these authors also recommend that the Extension Service needs to develop training on how to talk to the media. Is there evidence from either research or practice to show that the Extension Service is not currently providing such training?

This paper provides a benchmark that future studies can compare against. The authors recommend that other months of the year and other years be explored to develop longitudinal studies. Does any of the literature suggest time periods that would be appropriate for study, such as every five years or every presidential election year?

The authors provide several points of discussion.

1. How do the bias results for agriculture compare to other industries?
2. How do the bias results for the Associated Press wire service compare to agricultural publications?
3. Is there bias in the agricultural reporting in other countries?