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Lisa Pelstring
Cornell University, Ithaca, New York

James Shanahan
Cornell University, Ithaca, New York

Ben Perry
Cornell University, Ithaca, New York

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THE PRESS AND CITIZEN PARTICIPATION: A CONTENT ANALYSIS

LISA PELSTRING, Department of Communication, Cornell University, Ithaca, New York

JAMES SHANAHAN, Department of Communication, Cornell University, Ithaca, New York

BEN PERRY, Department of Communication, Cornell University, Ithaca, New York

Abstract**:** We conducted a content analysis of regional New York State newspapers to assess media coverage of the Department of Environmental Conservation's (DEC) deer management program. The goal of this analysis was to ascertain media depiction of DEC's deer management program during the 1985-97 time period. Specifically, this research examines how deer management issues were portrayed both prior to and after implementation of a DEC public participation program (the Citizen Task Force [CTF] process) to determine if deer management issues received more favorable coverage after CTFs were implemented.

Key Words: citizen task force, content analysis, deer, Department of Environmental Conservation, management, media, New York, *Odocoileus virginianus*, public participation

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INTRODUCTION

Research has shown that the media—primarily television and newspapers—are the most widely cited sources of information for a variety of publics (Tichenor et al. 1980; McCallum et al. 1991; Scherer and Yarbrough 1991; Ostman and Parker 1986/1987). According to Atkin (1991), television is the most influential medium, followed by newspapers, radio, and magazines. Similarly, Cottle (1993:108) states that mass media are likely to be of "…major importance in the selection, transformation, and circulation of environmental meanings in modern society." Although some researchers may question the power of mass media in terms of ultimate effects, most agree that the media's influence exists less in dictating opinion and more in setting the agenda in terms of the general public's concerns (McQuail 1994). Along these lines, McLeod et al. (1996) found that increased local media use is positively correlated with interest in local politics and community knowledge.

Given this, communication efforts by federal and state governments ought to focus more on mass communication activities when considering education or outreach programs. Agencies interested in benefiting from mass media need to understand how media information sources present issues. Knowing more about how the media depict a wildlife or natural resource conflict, for instance, may help guide agency communication and outreach efforts, reduce unnecessary community conflict, and lead to more thoughtful, informed, and effective community discussion.

Content analysis of media texts (such as newspaper articles) is one method for understanding how the media present issues. Stone et al. (1966:5) define content analysis as "…any research technique for making inferences by systematically and objectively identifying specified characteristics within the text." Most inferences in content analyses are drawn after researchers have assigned meaning to text units through coding procedures (i.e., humans read text and make decisions about the text in a subjective process). However, methods also exist for computer analysis of text frequency that avoids some of the problems common with human coding. We used such computer-aided methods in our research.

Past content analysis research has examined such varied texts as presidential speeches, fairy tales, personal letters, and even suicide notes (Stone et al. 1966). In the media area, most content analyses focus on newspaper or other journalistic texts. Tichenor et al. (1980) looked at the

relationship between community type and structure and acquisition of knowledge from newspapers. They examined coverage of issues ranging from the siting of a nuclear power plant to sewage disposal in nineteen different communities. Their research indicated that newspaper coverage was related to community type—rural community newspapers commonly provided coverage on less conflict-ridden local events whereas urban community newspaper covered more national and international events, frequently focusing on conflicts.

Kellert's series of studies that examined American attitudes, behaviors, and knowledge about wildlife also included a content analysis. Kellert and Westervelt (1981) examined attitude shifts toward wildlife during a 75-year time period by sampling clips from 2 rural and 2 urban newspapers in the far West, the Rocky Mountain area, the Northeast, and the South. Each wildlife article was coded using a typology of 10 attitudes: aesthetic, dominionistic, ecologistic, humanistic, moralistic, naturalistic, negativistic, neutralistic, scientistic, and utilitarian.

Kellert's research yields some interesting, but not terribly surprising findings. The most prevalent attitude conveyed in 48% of these newspaper articles was the utilitarian view—a practical and material outlook toward animals. The humanistic wildlife view—an interest and affection toward wildlife—was the second most prevalent wildlife attitude, appearing in 16% of the articles. The humanistic and aesthetic attitudes toward animals were found more often in urban newspapers, whereas rural newspapers were more likely to convey a utilitarian wildlife attitude in their coverage.

A more recent content analysis (Corbett 1992) looked at this difference in community structure and newspaper coverage of wildlife issues. Like Tichenor et al. (1980), Corbett also found that newspaper coverage in 6 different Minnesota communities largely depended on the respective communities' structures. She also found that urban newspapers were more likely to cover conflict-ridden stories than were rural newspapers. Corbett examined coverage of wildlife themes—utilitarian versus preservation—in urban and rural newspapers. As predicted by Corbett, urban newspapers carried articles with preservation- and conservation-oriented themes, whereas the rural media focused more on utilitarian wildlife themes.

Stout and Knuth (1995) conducted a content analysis of 180 newspaper articles in the Rochester, New York, area to examine the relationship between an agency's communication efforts and number and kinds of stories the media reported. Researchers were looking for changes in attitudes and opinions of suburban residents about deer and deer management after a New York Department of Environmental Conservation (DEC) communication plan had been implemented. The cornerstone of this communication plan was a Citizen Task Force (CTF)—a group of representative stakeholders convened to provide a deer population management recommendation. In addition to content analysis, these authors also used survey and evaluation methodologies to understand residents' views on deer and deer management, as well as information channels used to obtain information about these topics. Verifying media research results mentioned earlier, Stout and Knuth (1995) found that the majority of respondents received their information from newspapers, television, and radio. The evaluation also indicated little change occurred in public attitudes and opinions among residential property owners—in other words, the impacts of DEC's communication plan were slight.

Their content analysis of newspaper articles identified 2 primary themes: deer population management strategies and the controversy surrounding deer management. Stout and Knuth (1995) found that newspaper coverage focused primarily on the controversy and less on substantive recommendations or information. However, most of the agency's communication with the press occurred after the task force decision was made. This serves as a telling example of the disconnect between agency and media information sources, and consequently the stakeholders. As previously mentioned, the extant literature suggests that citizens routinely rely on mass media, especially newspapers and television, to obtain information. Perhaps a more

proactive stance in interacting with the media—in addition to other communication activities—would produce more substantive coverage of the issue.

This paper presents our examination of newspaper coverage of the DEC's deer management program from 1985 to 1997. Of particular interest is newspaper coverage of the DEC's CTF process, which first was implemented in the early 1990s.

BACKGROUND: DEER MANAGEMENT IN NEW YORK

Since 1990, DEC has used a participatory, citizen-based approach for decision-making about white-tailed deer (*Odocoileus virginianus*) population levels in specific areas of the state. This type of management approach initially was implemented because of growing discontent among hunters and an increasing demand for public participation (Nelson 1992). During the late 1980s, opposition to DEC management was so intense that the agency came close to losing deer management authority. DEC objectives for using a more participatory, task force approach included improving agency image, enhancing communication, increasing stakeholder involvement, and broadening management support among diverse groups of the public (Nelson 1992).

New York is divided into roughly 80 Deer Management Units (DMUs). Within almost every DMU, a CTF is convened every 5 years to establish deer population objectives for that unit. Citizens are chosen to represent various stakeholder interests such as homeowner, hunting, farming, highway safety, conservation and wildlife, and tourism and business interests. CTF meetings are attended by $\geq$1 DEC deer biologist who may provide technical information relating to deer biology and management considerations. In addition, a "neutral" party, often a Cornell Cooperative Extension (CCE) Agent, facilitates each CTF meeting. Often, the deer biologist or CCE Agent will distribute a press release to alert the media about the CTF process, its purpose and members, and any resulting recommendations.

The CTF generally meets twice with a 2- to 4-week interval between meetings to provide time for CTF members to contact and solicit input from stakeholders. Input generally is obtained through a questionnaire that CTF members submit to individual stakeholders. The first CTF meeting usually is informational in nature, where the CCE Agent offers introductory comments and the DEC biologist gives a presentation on deer biology and the human dimensions of deer management. At the second meeting, CTF members share information gathered from stakeholders and then attempt to achieve consensus on amenable deer population objectives. The CTF approach has been effective in providing participating citizens an opportunity to learn about deer management and to help set acceptable deer population objectives.

PURPOSE OF RESEARCH

One of the major functions of the CTF process was to achieve broader, more equitable representation and participation from stakeholders in New York's deer management program. This outcome has been realized (Nelson 1992). However, a subsidiary concern was that information about the success of the CTF process, and the discussions that occurred in these meetings, be communicated to the public to ensure that a more democratic discourse about deer management develops among this wider audience. Although the DEC did not mount a coordinated campaign to publicize the activities of these CTFs, many of these meetings frequently were covered, especially where controversial deer situations existed. Given the potential impact of this coverage, and the amount of effort devoted statewide to the CTF process, it would have seemed prudent to determine whether these CTF processes were being presented in fundamentally positive or negative ways. Further, it would be reasonable to ascertain what impact CTFs had on the public discourse about deer management as a whole. Knowledge of media treatment can be used to evaluate whether CTFs had any impact on the general public's understanding of deer management.

We conducted a content analysis of regional New York State newspapers to assess media coverage of the deer management program. The goal of

our analysis was to ascertain media depiction of the DEC's deer management program during the 1985-97 time period. Specifically, we examined how deer management issues were portrayed both prior to and after implementation of the CTF process to assess whether deer or deer management issues received more favorable coverage after CTF implementation. The hypothesis being tested is:

- DEC's implementation of the CTF process for deer management produced more positive newspaper coverage of deer issues and the deer management program.

Examination of articles printed before and after DEC implemented the CTF process may provide an indicator of whether this public participation program generated more positive newspaper media coverage of the agency and its program.

METHODS

We used Nexis/Lexis to obtain articles printed in New York State newspapers from 1985 to 1997. We selected the 1985 start date to assure sufficient coverage before the CTF process was implemented in 1989-1990. The following keywords and phrases (from the full text of the articles) were used to identify relevant newspaper articles:

- deer management and/or citizen task force(s);
- deer and/or citizen task force;
- deer and/or public participation;
- deer management and/or public participation; and
- deer and/or wildlife and/or citizen task force(s).

Originally, 366 articles from New York State newspapers (*The Albany Times Union*, *The New York Times*, *The Buffalo News*, and *Newsday*) were downloaded. Of those 366 articles, 235 were found suitable for review, that is, they concentrated on deer issues in some way. The full text of each article was formatted and then analyzed using VBPro, a computer content analysis program. By using computers instead of human coders to analyze content, better coding reliability is achieved and overall reliability is enhanced.

Computer-aided content analysis relies on the numerical analysis of word frequencies to characterize text. This normally is done through the use of word "dictionaries" that address particular concepts. For instance, the researcher may create a dictionary to analyze the frequency with which "positive" words appear in a text as a way to characterize the overall "positive-orientation" of that text. Similarly, "negative" words can be counted and analyzed. Previous work in the field has identified dictionaries for a wide variety of concepts and issues (Weber 1990).

In this exploratory study, we began by examining all terms that appeared in the sample of articles and selected terms that we believed reflected positive or negative evaluative dimensions. Only terms that appeared relatively frequently in the text sample were selected for further analysis.

The selected terms then were factor analyzed to see whether the frequency of their co-occurrence in paragraphs could help us identify underlying dimensions of meaning in the text. Many separate factors were revealed in this analysis. However, two factors could be interpreted easily as either a "positive" factor (terms such as "like," "success," "support," "happy") or a "pragmatic" (or problem-oriented) factor (words such as "damage," "disease," "injure," "loss," "concern," "complain").

From these factors we computed two simple summed indices of the frequency with which these terms appeared in a given article. The more times a "positive" term appeared in an article, the higher the article would be rated on the scale measuring "positive" orientation. Similarly, articles with more "pragmatic" terms mentioned would be rated more highly on the "pragmatic" orientation scale.

We also measured the frequency of occurrence of terms that referenced the CTF process (words such as "deer management unit," "citizen task force," "deer biologists") and that mentioned DEC. Again, these frequencies were analyzed at

the level of the article. Thus, articles that mentioned CTFs more frequently would get higher scores on the "CTF" scale; a high number of references to DEC would increase the value on the "agency" scale.

RESULTS

We divided the sample of articles into two groups: those written before the introduction of CTFs in 1990, and those written after. Because CTFs were phased in over time, we could not establish an exact representative date for the implementation of all CTFs; our somewhat arbitrary division date corresponds generally to the time when most CTFs first were introduced statewide. Also, our data show that CTF terms did not appear initially until 1990-1991.

We then analyzed the frequency of appearance of "positive" oriented terms and text in those two periods. If CTFs contributed to a more positive discourse on deer in the press, we would expect this value to increase across the two periods (Table 1). However, it is possible that CTFs also might convey a negative orientation to the discourse, so we analyzed differences in the "pragmatic" orientation as well (Table 1).

The frequency of "positive" orientation increased significantly across the two time periods, whereas the frequency of "pragmatic" orientation decreased, though not significantly so. These outcomes are consistent with our hypothesis. Thus, the data suggest that positive press coverage about deer increased in the post-CTF period.

However, our analysis does not reveal whether that increase was due specifically to the discussion of CTFs. To examine the role of CTFs in press discourse more closely, we examined relationships between the occurrence of CTF terms and either "positive" orientation or "pragmatic" orientation (Table 2). References to CTFs were more likely to occur in articles that featured a "pragmatic" orientation and less likely to occur in articles that featured a "positive" orientation. These relationships remained significant even after we controlled for the number of words in a given article. In other words, CTF terms did not correlate positively with pragmatically-oriented terms simply because longer articles afforded more opportunity for the appearance of terms. We did a similar analysis on the appearance of agency-related terms, but found no significant relationships.

DISCUSSION

Although we found an increase in the overall "positive" orientation of newspaper articles after the first appearance of CTFs, we also found that specific references to CTFs in these articles were associated most frequently with pragmatic terms and issues (or conversely, a negative association with the frequency of "positive" oriented terms). How can this apparent paradox be explained?

First, it is possible that other unidentified factors may have fostered the increase in "positive" orientation over the years. Historical factors that are not yet accounted for in these data may explain this rise. However, the widely held belief that deer coverage has become more contentious and more conflict-oriented over the years belies this argument. No particular factor other than CTFs immediately is evident that would account for this rise. Still, more detailed explorations of our data are needed to uncover other possible explanatory factors.

Our hypothesis is that CTFs may have increased overall "positive" orientation specifically because they brought contentious deer issues into the open and generated discourse by the press. It is no surprise that CTF terms occurred more frequently in association with pragmatically-oriented terms; that is the reason for the very existence of CTFs. However, even though CTF-specific articles often featured very pragmatically-oriented discourse, it is possible that the *overall* level of "positive" orientation would be raised over time by the appearance of CTFs in the press coverage.

We suspect that CTFs brought issues out into the open in a way that may have defused or deflected later conflict on the issue. This would be congruent with theories of newspaper journalism that focus on the role of conflictual narratives. After a conflict first has been covered, one should expect later discourse on that issue to be less conflicted and perhaps more policy-oriented.

This hypothesis can be analyzed by looking at time series data on the frequency with which CTFs are mentioned and level of "positive" orientation in the text. As illustrated in Figure 1, mention of CTFs occurred cyclically, especially from 1992-1994. "Pragmatic" orientation of text was especially strong in these years. However, in the years immediately *following* heavy CTF coverage, overall "positive" orientation increased, which turned the entire period of coverage in a positive direction. In fact, when we looked at overall degree of "positive" orientation by year, we found that the highest level of "positive" orientation in coverage occurred directly after the period of most frequent reference to CTFs. Thus, one may speculate that any increase in "positive" orientation lagged behind the discourse reflected in the press (Figure 2). We also noted a cyclic pattern in the appearance of "positive" orientation, and that the most recent decrease (1997) in "positive" orientation again was associated with a period of increased reference to CTFs.

Let's look at some specific examples of CTF newspaper coverage to get an idea of how this process might work. First are examples of text that specifically mention CTFs, and, where CTFs are mentioned, "pragmatic" oriented terms are more likely to appear:

> "To reduce deer-car collisions, roadside brush clearance, more effective road signs…are among the alternatives the task force will weigh." *Buffalo News*, March 4, 1997.

> " 'We've seen a lot of thin deer and deer that seem to be suffering,' said Patricia Frankemolle, a member of the North Haven Citizens Task Force…" *Newsday*, March 28, 1994.

> "In response, Council Member Jane S. Woodward said the task force proposed by Mrs. Santillo was seen as a stalling tactic devised by the forces opposed to bait-and-shoot. 'We've studied, we've talked, we've investigated, we've done all that for the past several years' Mrs. Woodward said." *Newsday*, March 4, 1997.

> " 'That means beleaguered homeowners' most effective option may be the cumbersome one selected two years ago by a North Haven citizen task force' Lowery said; obtaining a nuisance hunting permit to have deer shot in the backyards where they are creating a nuisance." *Newsday*, January 2, 1995.

Next are examples of text that show how deer management was perceived to be successful. These text examples do not mention CTFs necessarily, but they use previous deer management successes as grounds for positive coverage of deer issues.

> "In the final year of a five-year birth-control experiment aimed at reducing an increasing Fire Island deer population, residents and researchers conducting the program are calling it a success." *Newsday*, June 8, 1997.

> "The deer take has been rebounding during the last three years and New York's award-winning deer management practices will continue to ensure healthy deer herds and successful hunts in the future." *Newsday*, May 25, 1997.

> "The DEC believes that the slight reduction in reported collisions statewide may have resulted from successful deer management efforts, the winter kill in some parts of the state, and the reluctance of some motorists who hit a deer to claim it because of reports of rabies." *Buffalo News*, September 16, 1994.

These examples of program success are not credited necessarily to specific sources (such as CTFs) in every case. Readers may not be aware that CTFs themselves contributed to positive coverage. Similarly, we found that agency-related terms were related to neither "positive" nor "pragmatic" orientation. Thus, readers of articles about deer, if they are affected by the

articles they read, are likely to conclude that the deer situation is "getting better" without thinking about or attributing a reason to that improvement.

DEC and other agencies may want to increase mass media outreach efforts specifically relating to CTFs and other public participation processes. Such actions initially may increase "pragmatic" orientation of coverage given to deer management issues. However, over time, our data suggest that "positive" oriented coverage will increase—perhaps as a direct result of earlier, more controversial coverage of CTFs. Gaining media attention often is time-consuming and difficult for an agency. However, because audiences use mass media as their prime information sources, agencies may benefit more from purposefully obtained media coverage than by other outreach activities. At best, the mass media should not be ignored as a viable communication tool.

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Table 1. Variation in “positive” and “pragmatic” orientation in pre- and post-Citizen Task Force implementation, as reflected by the frequency of use of CTF terms per article.

	Pre-CTF (up to 1990)	Post-CTF (1990 and after)
Positive-orientation	1.7	2.9*
Pragmatic-orientation	2.5	1.5

*= significant difference (t-test), $p < .05$

Table 2. Correlations between frequency of occurrence of Citizen Task Force (CTF) terms in newspaper articles and a “positive” and “pragmatic” orientation.

Correlation with:	Pragmatic orientation	Positive orientation
CTF terms	.14***	-.16**
CTF terms, partialled for number of words in article	.18***	-.13*

* $p < .05$, ** $p < .01$, *** $p < .001$

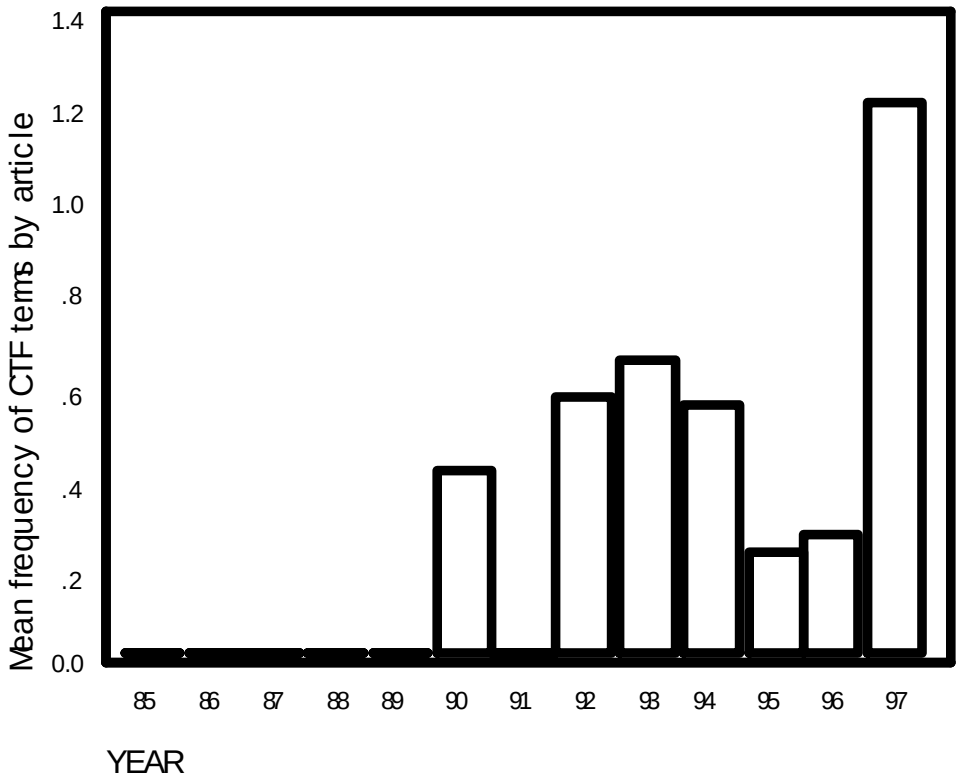

Figure 1. Mean frequency for which Citizen Task Force (CTF) terms are mentioned in New York newspaper articles over the period 1985-1997.

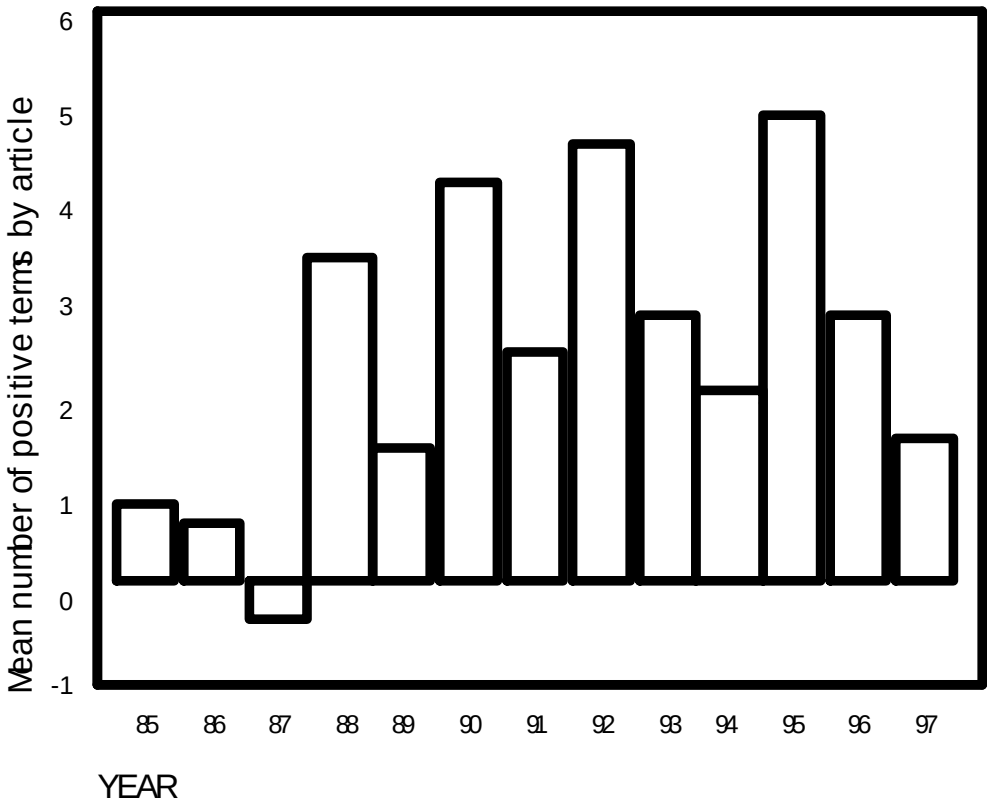

Figure 2. Frequency of “positive” orientation to New York newspaper articles, by year, for the period 1985-1997.