Who's talking anyway? An analysis of sources used by a St. Louis newspaper to communicate about Monsanto's dicamba-tolerant seed technology

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Introduction/Need for Research

Weed management has long been an issue for farmers. In fact, a survey of South Carolina soybean farmers indicated improved weed control strategies was the number one request of university Extension and research efforts (Norsworthy, 2003). Seed and herbicide technologies play a key role in controlling weeds in crop production. However, many weeds quickly grow resistant to herbicides, and studies have indicated stakeholder concerns regarding herbicide remittance (Norsworthy, Bond, & Scott, 2013).

In response, agriculture seed and chemical company Monsanto began developing a dicamba-tolerant seed trait in 2008, despite risk associated with the herbicide dicamba (Dowell, 2017). Monsanto launched its dicamba-resistant cotton seeds in 2015, and dicamba-resistant soybeans in 2016 – both without a corresponding dicamba-based herbicide (Dowell, 2017). While excitement for the new technology was experienced in the beginning, problems began to emerge shortly after the new seeds were released (Dowell, 2017). The issues were lessened when the corresponding herbicides were approved by the EPA in late 2016 (Dowell, 2017).

The media can be helpful in educating the public about issues regarding science and technology. As agricultural technology can be prone to controversy (Nisbet & Huge, 2006), the sources utilized by the news media play an important role in what is communicated to the public (Andsager, 2000; Pan & Kosicki, 1993). Issues of science and technology are often met by reporters with little understanding of the issue, and the need to find reliable sources (Nelkin, 1987). The development and release of Monsanto's dicamba-tolerant seeds provides an opportunity to determine what sources were commonly relied upon during the lifecycle of a new agricultural technology. Given the role of the source in communicating issues of science, a study of sources utilized to cover this issue was warranted.

Conceptual Framework

Sources hold the potential to influence terminology and choice of words or phrasing selected by journalists for publication (Andsager, 2000). In working with journalists, sources share their viewpoints to help to design, construct, or impact an article's frame (Pan & Kosicki, 1993). For these reasons, journalists should strive to include appropriate expert sources from the associated field of study when covering scientific topics. However, journalists tend to select sources that favor economic growth (Andrews & Caren, 2010) and those individuals within close proximity of the news (Stempel, 1991).

Sources selected by journalists hold the potential to impact readers on a variety of levels. For example, the perceived level of source expertise is an important factor in the outcomes of strategic risk communication (Yuan, Ma, & Besley, 2019). Previous studies have examined source and expert types quoted in scientific news articles. For example, Conrad (1999) found that researchers, scientists, or activists involved in the issue were commonly used as sources. Quotes from experts helped "shape the news in two ways – indirectly by providing information, interpretation, and perspective, and directly by providing the quotes that enrich the story" (Conrad, 1999, p. 300).

Methodology

News articles printed in the *St. Louis Post-Dispatch* were analyzed by the researchers. Using Nexis Uni, articles were identified using the terms "dicamba" and "Monsanto." *The St. Louis Post-Dispatch* was selected for analysis for a variety of reasons. First, Monsanto is headquartered near St. Louis, and the *St. Louis Post-Dispatch* is the largest newspaper in the area and state (Agility PR Solutions, 2019). Secondly, local newspapers play an important role in covering local businesses (Riffe & Reader, 2007), and lastly, newspapers, more so than other media sources, dominate local business news due to their ability to devote resources to covering business news and complex stories (Riffe & Reader, 2007). The timeframe selected for analysis was January 1, 2008, to December 31, 2018 to encompass both the dicamba-tolerant seed and corresponding herbicide's development and use. After removal of one duplicate article and three editorials from the dataset, the lead researcher analyzed the remaining 53 articles to determine source types. Relevant sources included any person or organization quoted or cited within the articles.

Results

The analysis revealed 11 different source types throughout the 53 articles. While many sources appeared to be referenced several times within different articles during the timeframe under investigation, sources were cited throughout the dataset a total of 155 times. Monsanto sources were most commonly cited (n = 39), and included senior-level leaders, named spokespersons, product leads, and unnamed sources. University scientists were the second most common sources, appearing 27 times. The University of Missouri appeared within the articles 15 of these 27 times, but nine other universities were also included. The third most common source was the farmer (n = 25). Other sources included financial analysts (n = 18), governmental agency representatives (n = 9), farm organization representatives (n = 8), activist groups (n = 8), other chemical companies (n = 8), outside attorneys (n = 7), agricultural industry spokespersons (n = 4), and elected officials (n = 2).

Conclusions & Recommendations

As previous studies have indicated, journalist tend to seek sources within close proximity (Stempel, 1991) and those associated with economic growth (Andrews & Caren, 2010), it is not surprising that Monsanto sources were the most commonly cited throughout the dataset. The prevalence of Monsanto representatives as sources could also be an indication that the company sought to influence the message frame (Andsager, 2000). The second most common source, university scientists, was consistent with Conrad's (1999) study that suggested journalists tend to rely upon researchers and scientists for scientific news articles. Finally, the journalists' use of farmers as sources was likely done in efforts to share a viewpoint of an impacted stakeholder in the issue (Pan & Kosicki, 1993).

Scientific issues tend to follow a pattern in the news media with positive coverage early on, but increased negativity and conflict over time (Cacciatore et al., 2012). As Monsanto's dicamba-tolerant seed and herbicide products progressed through a cycle of early innovation to problem resolution, future research should investigate Monsanto's media responses at different points in time. Additionally, the *St. Louis Post-Dispatch* relied upon a variety of sources to report upon this issue. Future research should investigate the degree to which media outlets rely upon the same, or different sources over time.

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