

Analyzing Media Coverage of Agricultural Health and Safety Issues

Lisa K. Lundy
university of florida

Tiffany M. Rogers-Randolph
University of Florida


Angela B. Lindsey
University of Florida

Clay Hurdle
University of Florida

Heather Ryan
University of Florida

See next page for additional authors

Follow this and additional works at: <https://newprairiepress.org/jac>

 Part of the [Business and Corporate Communications Commons](#), [Health Communication Commons](#), [Journalism Studies Commons](#), and the [Mass Communication Commons](#)

Recommended Citation

Lundy, Lisa K.; Rogers-Randolph, Tiffany M.; Lindsey, Angela B.; Hurdle, Clay; Ryan, Heather; Telg, Ricky W.; and Irani, Tracy (2018) "Analyzing Media Coverage of Agricultural Health and Safety Issues," *Journal of Applied Communications*: Vol. 102: Iss. 4. <https://doi.org/10.4148/1051-0834.2222>

This Research is brought to you for free and open access by New Prairie Press. It has been accepted for inclusion in Journal of Applied Communications by an authorized administrator of New Prairie Press. For more information, please contact cads@k-state.edu.

Analyzing Media Coverage of Agricultural Health and Safety Issues

Abstract

Farming, by the very nature of the occupation, is riddled with uncertainty. The risks associated with the agriculture industry are just as diverse as the industry itself. For all risks, one challenge is the development and dissemination of safety communication materials tailored for diverse audiences. Valkenburg, Semetko, and Vreese (1999) examined common frames used in news media. Their analysis pointed to four commonly used news frames: conflict, human interest, responsibility and economic consequences. The purpose of this study was to describe the agricultural and health safety issues discussed in Florida news media during the year 2016, discussing the prominence of the frames outlined by Valkenburg et al. (1999). In this study, the most prominent frame was the human interest frame, followed by responsibility, economic consequences, and conflict. Frames carry a great deal of weight in shaping individuals' opinions, attitudes, and actions towards agriculturally based messages; therefore it is essential for agricultural communicators to understand the framing of agricultural health and safety issues. Acknowledging the frames used in the reporting of agricultural issues allows agricultural communicators to enter into informed interactions with media outlets and better prepare the resources they provide to them. These framing analyses also provide agricultural communicators with a solid foundation on which to best position and frame their messaging on behalf of the industry. Further research is recommended to examine frames from an audience perspective and to investigate the impact of human interest frames in the presentation of agricultural news articles.

Keywords

agricultural health and safety, media framing

Creative Commons License



This work is licensed under a [Creative Commons Attribution-Noncommercial-Share Alike 4.0 License](https://creativecommons.org/licenses/by-nc-sa/4.0/).

Cover Page Footnote/Acknowledgements

This manuscript was based on research presented at the 2018 Association for Communication Excellence (ACE) annual conference in Scottsdale, AZ. This study was funded by a CDC NIOSH grant. In 2016, the CDC, through NIOSH, awarded the University of Florida's College of Public Health and Health Professions, a grant of nearly \$10 million for a five-year project to create the Southeastern Coastal Center for Agricultural Health and Safety.

Authors

Lisa K. Lundy, Tiffany M. Rogers-Randolph, Angela B. Lindsey, Clay Hurdle, Heather Ryan, Ricky W. Telg, and Tracy Irani

Analyzing Media Coverage of Agricultural Health and Safety Issues

Farming, by the very nature of the occupation, is riddled with uncertainty. This uncertainty could manifest in the form of crop or livestock disease, weather, national economics, or international policies (Wadud, Kreuter, & Clarkson, 1998). The Agrarian Myth and agrarian philosophy would suggest that farmers accept these uncertainties as an inevitable part of their livelihood (Kelsey, 1994). “If this orientation translates to farmers’ beliefs about their own health, we would expect them to have a generally fatalistic view of work-related disease and injury” (Wadud, Kreuter, & Clarkson, 1998, p. 15). Wadud, Kreuter, and Clarkson (1998) found that farmers’ beliefs about the preventability of diseases, precautionary behavior, and personal risk all influenced their perceptions and participation in farm safety practices. “The perceived lack of control over adverse life events may keep many farmers from taking precautions to reduce their health and injury risks” (Wadud, Kreuter, & Clarkson, 1998, p. 22). However, the deeply entrenched view of agrarian philosophy that “health” and “ability to work” are nearly synonymous has led to increased efforts in awareness and implementation of preventative measures with regard to agricultural risks (Kelsey, 1994).

The risks associated with the agriculture industry are just as diverse as the industry itself. According to Palermo and Ehlers (2002), the recognition of these different problems, resources, priorities, and values of the diverse workforce involved in farming, forestry, and commercial fishing is one of the most challenging aspects of promoting agricultural safety. According to Evans and Heiberger (2016), the industry faces a wide array of health and safety issues ranging from back discomfort to disfigurement or death. The risk-laden activities associated with the industry include the use of power tools and machinery; equipment operation; livestock management; exposure to environments with dust, noise, heat sources, chemicals, and electricity; working in elevated areas; and other dangers (Evans & Heiberger, 2016). Nationally, occupational injury rates have been on the decline; however, the rate of decline among farmers has been minimal in comparison (Zejda, McDuffie, & Dosman, 1993). The work death rate for agriculture is eight times higher than the all-industry average (Murphy & Lee, 2009).

Beyond the apparent health risks, farm health and safety impacts are also noticeable through a monetary lens. Medical costs and a productivity loss of \$8.3 billion were attributed to agricultural occupational injuries in 2014 (Agricultural Safety and Health Council of America, 2015). The cost of a single tractor overturn has been estimated at \$1 million (Agricultural Safety and Health Council of America, 2015). Beyond a dollar value, “safety plays out in the daily lives of people on farms in the form of frustration, anxiety, stress, resentment, depression, fatigue, and other negative consequences that contribute to a reduction of quality of life” (Evans & Heiberger, 2016, p. 92). New areas of safety concern emerge with each technological advancement. Evans and Heiberger (2016) write that the recent developments of drones, precision farming equipment, new production practices, and larger machinery underscore the timeliness and importance of farm safety.

Evans and Heiberger (2016) identify this revolution of technological change when acknowledging current industry trends, such as increased mechanization and new farming practices. This wave of technological change, coupled with the rising cost of doing things wrong, has served as a catalyst for industry-wide recognition of the importance of farm safety programs and communication (Evans & Heiberger, 2016). In addition to new technologies, new regulations, new kinds of enterprises, and changes in demographics and scopes of operations have

“introduce[d] new forms of occupational risk and create[d] greater need for appropriate safety communications” (Evans & Heiberger, 2015, p. 68). While agricultural and health safety issues are often well known by those within agriculture, this study sought to examine coverage of these issues by news media sources.

Literature Review

Each innovation and shift in industry conditions creates not only new safety challenges for agricultural workers but new communication challenges as well (Evans & Heiberger, 2016). One such challenge is the development and dissemination of safety communication materials tailored to diverse audiences. Evans and Heiberger (2016) noted the need for farm safety communication to meet the needs of various audience members, ranging from the farm worker from abroad without command of English to the highly educated producer specialist to the general public (Evans & Heiberger, 2016). According to Palermo and Elders (2001), each of these audience members has:

diverse problems, resources, priorities, and values of the unique workforce involved in farming, forestry, and commercial fishing. Understanding this challenge is critical for not only implementing successful prevention but for conducting successful research programs that identify the most feasible interventions and programs. (p. 161)

The relationship between the industry and mass media has long been appreciated as vital to the process of agriculture (Evans & Heiberger, 2016). Past creation of awareness, increase in knowledge, and change in perceptions in regard to farm safety have all been attributed to education interventions, specifically those communicated by mass media (Evans & Heiberger, 2016). While strides have been made in farm safety communication through the utilization of mass media, the mass media’s coverage of such topics is not without its critics. This coverage is frequently described as sensationalized, biased, and inaccurate (Abrams & Meyers, 2010). According to Singer and Endreny (1994), these criticisms might be attributed to the conflict between the “business of news and what social scientists and others call risk communication” (p. 265).

Singer and Endreny (1994) suggested that mass media sources tend to avoid reporting on hazards and associated risks. However, when coverage is dedicated to these issues, there is a gap of coverage discussing the risks, benefits, ethical dilemmas, economic issues, or long-term considerations associated with hazards (Singer & Endreny, 1994). Evans and Heiberger (2016) stated:

Nothing in the rules of journalism says that the reporter must, in addition to describing an industrial accident, also inform readers about the likelihood of such an event occurring again, or about the risks posed by the industry in general, or about alternatives and their benefits and costs. (p. 92)

What farm safety risks are covered by the mass media are often determined by the demands of media organizations, audience preferences, and source availability (Abrams & Meyers, 2010). While media does communicate about farm safety risks, the decisions about the topics that are selected and how the coverage is configured “may not be as sensitive as scientists would wish” (Dunwoody & Peters, 1992, p. 108). Much of the severity of a hazard is not directly communicated through the content presented, but rather the prominence and time allotted for a story. Singer and Endreny (1994) discussed the reactivity of media coverage when it comes to farm safety

communication. They characterized the media coverage as focused on events that have previously occurred rather than discussing issues or possible future trends in farm safety.

Gaining media attention can be a tall order for any event as time and space on the media agenda are hard to come by (Dearing & Everett, 1996). In many instances, it takes an unpredictable, sudden event to garner media attention (Birkland, 1997).

An event occurs and the news media coverage on the scene of the accident or disaster. Dramatic footage is aired, and photos are printed of property damage, visible environmental damage,...victims, and grieving families. Soon the media's attention (and our own) turns to people who can explain why the event happened: corporate officers, government officials, experts, and community leaders. (Birkland, 1997, p. 2)

Society then seeks consensus on where to place blame for the incident (Birkland, 1997). Was the event a freak accident, natural disaster, or the result of human failings such as government neglect, operator error, or poor design? Efforts are made to find answers in the form of legislative hearings, board formations, and reports being issued. These energies are exerted to improve preparation and response or avoid a repeat event altogether. An incident such as this is considered to be a focusing event. Birkland (1997) defined a focusing event as a "rare, harmful, sudden event that becomes known to the mass public..." (p. 3). The new attention and amount of coverage that media designates to an event are indicative of the media agenda. Due to the very nature of the event and the characteristics of the related news coverage, focusing events often play a powerful role in the agenda setting process (Birkland, 1997).

Agenda Setting and Framing

Agenda setting theory operates under the premise that news sources act as professional gatekeepers that maintain a set of shared news values (Johnson, 2014). Mass media exposure magnifies social problems into public issues (Dearing & Everett, 1996). Agenda setting provides the media with the ability to focus the attention of the public and to guide the public perceptions of the current pressing issues (Johnson, 2014). This guidance occurs through the public's perceived prominence, also known as the transfer of salience, of events highlighted by the media to the public agenda (Guo & McCombs, 2016). Agenda setting has the potential to elevate an issue from obscurity to an area of intense public interest (Birkland, 1997). Birkland (1997) defined agenda setting as the process through which problems, ideas, issues, and solutions gain great mass and elite attention.

The process of agenda setting occurs on different levels. The first level focuses on the prioritization of issues which indicates importance to the public (Guo & McCombs, 2016). The second level of agenda setting hones in on specific characteristics the media utilizes to depict a topic. Past research has been dedicated to examining both levels of agenda setting, considering what the public sees as the most prevalent issues and how the public regards these issues (Bardes & Oldendick, 2012). Both levels are impacted by media effects, the prior through agenda setting and the latter through framing. These two perspectives can be compiled through the sentiment, "the news not only determines what we think about but also affects how we think about a given topic" (Guo & McCombs, 2016, p. 2). Agenda setting theory and framing theory are tied together by their contributions to media effects; however, they remain unique in their specific influence. Guo and McCombs (2016) posit that agenda setting finds its roots in explicit materials in the form of manifest content, while framing theory examines implicit connections in the material.

Framing can be an especially useful communication tool when it comes to conveying complex information to an audience (Scheufele & Tewksbury, 2007). Its usefulness becomes apparent when a communicator is able to connect its message to the underlying frameworks and schema possessed by their audience members (Scheufele & Tewksbury, 2007). The framing selected by the communicator has direct implications on how the message is interpreted on an individual level by each audience member. Frames are extremely influential in determining how an audience processes new information.

Valkenburg, Semetko, and Vreese (1999) examined common frames used in news media. Their analysis pointed to four commonly used news frames: conflict, human interest, responsibility, and economic consequences. The conflict frame focuses on the conflict between people, groups or institutions (Neuman et al., 1992) and has been found to be often overly simplified (Patterson, 1993). The human interest frame highlights the experiences of an individual, often lending an emotional component to the information presented. This approach can offer personalization or dramatization for otherwise technical information (Valkenburg et al., 1999). The responsibility frame highlights the attributed responsibility for an issue or problem, pointing to individuals or parties that may have contributed. The responsibility frame may point to individuals, organizations, or systemic causes. The economic consequences frame emphasizes the impact of an issue or problem on economic conditions for an individual, group, institution, region or country. Economic impacts have been found to be compelling for audiences who may otherwise see an issue as unrelated to their lives (Gamson, 1992).

Framing theory is no stranger to agricultural communications research. Several studies have aimed to discover the frames introduced by the news media surrounding agriculturally-based events. The frames of the media coverage of the Salmonella outbreak in peanut products were discussed by Irlbeck, Akers, and Palmer (2011) while Irlbeck, Akers, Baker, Burris, and Brashears (2017) focused on the Salmonella outbreak in jalapenos. A comparative analysis of the coverage of the two events was subsequently conducted by Barr, Irlbeck, and Akers (2012). Cannon and Irani (2011) discussed the media frames surrounding foot and mouth disease outbreaks. News media's framing of mad cow disease was explored by Ruth, Eubanks, and Telg (2005) and Ashlock, Cartmell, and Kelemen (2006). Other agricultural topics explored through news media framing analyses include organic food (Meyers & Abrams, 2010) and biotechnology (Lundy & Irani, 2004). Edgar, Johnson, and Estes (2017) utilized the four predominate news frames presented by Valkenburg et al. (1999) in an agricultural context to examine media coverage of antibiotic and hormone use in poultry.

When examining the frames that emerge from the news media coverage of these various agricultural events, it is imperative to consider how "news frames help create public understanding of an event" (Ruth et al., 2005, p. 13). The frames used by the media to present an issue have the potential to paint the understandings, perceptions, and subsequent reactions of the public. These frames could lead to "harmful repercussions for the entire industry" (p.13) by coloring public perceptions of agriculture as a whole and influencing trust placed in the industry (Ruth et al., 2005, p. 13). It should be acknowledged that agricultural issues rarely appear on the media agenda. When that occasional coverage does take place, it tends to be clouded by a negative persona (Ruth et al., 2005). Therefore, it is the responsibility of agricultural communicators to work in conjunction with news outlets to promote objective, bias-free communication (Ashlock, Cartmell, & Kelemen, 2006). Acknowledging the frames used in the reporting of agricultural issues allows agricultural communicators to enter into informed interactions with media outlets and better prepare the

resources they provide to them (Lundy & Irani, 2004). These framing analyses also provide agricultural communicators with a solid foundation on which to best position and frame their messaging on behalf of the industry (Lundy & Irani, 2004).

Bryant and Zillmann (2002) suggested that frames are instrumental in communication. Frames carry a great deal of weight in shaping individuals' opinions, attitudes, and actions (Bryant & Zillmann, 2002). It becomes necessary for agricultural communicators to take news media frames into account when considering the communication of agricultural issues such as agricultural health and safety. When it comes to the development of outreach materials surrounding the topic of agricultural health and safety, there is a need to understand the frames used to present this issue in the past. In an effort to guide the creation process of these agricultural health and safety outreach materials, this study aimed to uncover these news media frames through the framing lens presented by Valkenburg et al. (1999).

Purpose and Research Questions

The purpose of this study was to describe the agricultural health and safety issues discussed in Florida news media during the year 2016. Furthermore, this study sought to uncover the predominant themes of the aforementioned communications. The research questions guiding this study were as follows:

Research Question 1: To what extent did news media in Florida cover agricultural and health safety issues in 2016?

Research Question 2: How prominent were the frames of conflict, human interest, responsibility or economic consequences in Florida media coverage of agricultural and health safety issues in 2016?

Methods

The intent of this study was to evaluate the 2016 news media coverage surrounding agricultural health and safety issues. Specific attention was devoted to exposing the prevalent frames presented through the content. The researcher conducted a content analysis of Florida media coverage of agricultural health and safety issues in 2016. Content analysis is "any technique for making an inference by objectively and systematically identifying specified characterizes of messages" (Holsti, 1969, p. 14). It was selected for this study because it provides insight into situations which is not limited by existing viewpoints or methodologies, allowing new topics to be discovered (Lai & To, 2015).

This analysis addressed news content housed in the Access World News database. This is a comprehensive resource that includes a variety of news publications, including major national and international newspapers, local and regional titles, newswires, blogs, web-only content, videos, journals, magazines, transcripts, and more (News Bank Inc., 2018). This database is updated daily and includes deep archives (News Bank Inc., 2018). The sources used for this study included newswires, newspapers, web sources, and college news publications.

The researcher conducted a keyword search with keywords consistent with the research and outreach initiatives of the National Institute of Occupational Safety and Health Centers for Agricultural Disease and Injury Research, Education, and Prevention. The keywords included: child labor, drowning, farm accident, farm worker, forestry safety, heat exposure, heat stress, hunter safety, migrant worker, pesticide exposure, pesticide safety, seafood accident, seafood

safety, and tractor safety. An all-text query was used to search for articles in Florida published between the time frame of January 1, 2016, and December 31, 2016. This resulted in 97 articles. All articles were considered in the analysis.

A coding instrument and instructions were developed by the researcher to assist in analyzing each piece of content. The instrument sought the following information from each story: the article title, the name of publication, the month of publication, and the primary topic related to agricultural health and safety. The research also classified the type of article amongst the following categories: news, feature, editorial, and other following the guidelines expressed by Edgar et al. (2017).

A framing analysis was conducted with the collected data. Semetko and Valkenburg (2000), discussed the functionality of a framing analysis, highlighting its ability to identify trends in information revolving around an issue and compare variations across different sources. Using the research of Valkenburg et al. (1999) as a guide, a deductive framing analysis was executed. To determine whether agricultural health and safety news coverage aligned with the four predominate news frames they discovered, the following *a priori* codes were utilized: conflict, economic consequences, human interest, and responsibility (Valkenburg et al., 1999). Consistent with the suggestions of Harding (2013), the codebook used to identify these frames was developed using the past literature as a starting point and matching the present frame(s) to those described by Valkenburg et al. (1999).

Elements of framing were identified to determine the frames that were present. Elements of framing included the present tone, symbols, figurative language, and themes, as well as those that were excluded. These elements were aligned with each of Valkenburg and colleagues' (1999) four frames and a coder assigned a score between "0" and "5." A score of "0" was used to signal the frame was not present, a "5" denoted it as the predominant frame of the article. Finally, article content was analyzed to determine at what time period(s) during the year coverage was greatest, what issues were prominent in coverage at different times of the year, and key frames in coverage at different times of the year. To meet these acceptable standards of trustworthiness, the researcher followed Lincoln and Guba's (1985) guidelines for credibility and confirmability. This included peer debriefing to ensure that the message frame coding was logical. The researchers also used an audit trail, detailing the steps taken in the research process from raw data (all the articles), the resulting coding and process notes, and the instrument development process.

Results

Research Question 1: To what extent did news media in Florida cover agricultural and health safety issues in 2016?

A total of 97 articles resulted from the keyword search through Access World News database and were considered for this analysis. The months with the most prominent coverage of agricultural health and safety topics were January, August, and September with 12 (12.63%), 11 (11.58%), and 12 (12.63%) articles respectively. November was the month of lowest coverage with only two (2.11%) articles. Of the 97 analyzed articles, 43 (44.33%) were classified as news, 26 (26.80%) were found to be feature stories, 21 (21.65%) were coded as other, and seven (7.22%) were editorials. Evidence of the following agricultural/health safety topics were found in the analyzed articles: agri-tourism/U-pick accidents, ATV safety, child labor, drowning, farm accidents, forestry safety, heat or thermal exposure/stress, hunter safety, migrant worker issues, pesticide exposure/safety, seafood or fishing safety, tractor safety, and worker transportation/vehicle accidents. Pesticide exposure and safety was the primary topic in 27 of the

articles. Pesticide exposure was followed by migrant worker issues (14 articles) and farm accidents (12 articles).

Table 1

Frequency of Message Frames

Frame	Number of articles
Agritourism/U-pick Accidents	1
ATV Safety	1
Child Labor	6
Drowning	6
Farm Accidents	12
Forestry Safety	4
Heat or Thermal Exposure/Stress	6
Migrant Worker Issues	14
Pesticide Exposure/Safety	27
Seafood or Fishing Safety	3
Tractor Safety	4
Worker Transportation/Vehicle Accidents	1

Research Question 2: How prominent were the frames of conflict, human interest, responsibility or economic consequences in Florida media coverage of agricultural and health safety issues in 2016?

Conflict, economic consequences, human interest, and responsibility were all classifications of frames found among the articles. For each of these frames, researchers assigned a score between “0” if the frame was not present at all or “5” if it was the dominant frame of the article. A mean score was calculated for each frame. The highest mean score among the frames was for human interest ($M = 4.07$, $SD = 0.88$), followed by responsibility ($M = 3.20$, $SD = 1.16$), economic consequences ($M = 2.94$, $SD = 0.98$), and conflict ($M = 2.46$, $SD = 1.22$). The mere presence of the frames was indicated in the following number of articles: human interest found in 82 articles, economic consequences found in 53 articles, responsibility found in 51 articles, and conflict found in 31 articles.

Human interest frame.

The presence of the human interest theme was the most prominent of the four throughout the articles. The emphasis of the human interest frame was to personalize the news story in order to develop the narrative qualities and character of the news piece. Additional layers of the human interest frame involved the act of dramatizing and emotionalizing the issues or event discussed. Throughout the articles, this was frequently seen as an individual’s story used as the vehicle to convey the agricultural/healthy safety issue.

This frame was seen through the story of Jose Rangel Chavez who was featured in a December 22 *Associated Press State Wire* article discussing migrant worker issues and worker transportation/vehicle accidents. Chavez's story was used as a narrative to evoke emotions surrounding this issue and to personify an issue that, by the Associated Press' assessment, has impacted more than 200 migrant workers since 2015. In contrast to the episodic nature of media coverage cited by Singer and Endreny (1994), this article uses Chavez's story to highlight endemic issues in the agriculture industry. The third paragraph of the article makes this connection.

The crash in November 2015 was the result of chronic problems within an American agriculture industry dependent on a reliable supply of low-wage, foreign-born workers. Chavez and the others were part of an annual mass migration made possible partly by a guarantee of free and safe transportation to and from the fields each day and, at season's end, back home to their loved ones. But for many, that transportation is neither free nor safe (Breed, 2016).

Maria Garcia's story was used to bring light to the issue of pesticide exposure. Twelve women, including Garcia, and one man were hospitalized due to this particular incident. From the lead sentence of the article, the reporter draws the reader into the worker's experience, "Dozens of farmworkers looked up at the little yellow plane buzzing over the Florida radish field, a mist of pesticide falling from its wings" (Dearen, 2016).

A third example of the human interest frame in action represented the accounts of Dr. Woody Weeks. In a June 23 article dedicated to the discussion of heat exposure, Dr. Weeks discussed his experiences with seeing an increase in heat exposure-related hospitalizations. Dr. Weeks expressed to the reporter the types of symptoms he saw from victims of heat-related illness. In the article, he was quoted as saying "A lot of times they will have nausea – uncontrollable vomiting" (Mauldin, 2016).

Responsibility frame.

The second most salient frame throughout the analysis was responsibility. This frame is often attributed to the "shaping of public understanding of who is responsible for causing or solving key social problems" (Valkenburg et al., 1999, p. 552). This analysis saw this frame emerge in much the same fashion. The telltale characteristic of this frame's presence was some form of attribution of blame. Responsibility was placed on certain segments of the government, political institutions, groups/organizations, or individuals by blaming them for an issue or crediting them for addressing solutions.

The responsibility frame was apparent in an article about a vote passed by the Florida Environmental Regulation Commission. The Department of Environmental Protection and the state's governor were held accountable for new standards being voted into place around the issue of water quality. Responsibility was also placed on the Florida Department of Agriculture and Consumer Services in accordance with concerns over whether the department properly investigated a crop-dusting accident.

The responsibility frame also reflected the complexities of workers' issues and their endeavors to improve working conditions. In a January 3 article, the reporter described unique protest strategies involving workers bypassing their employers to protest directly to grocery stores and restaurants:

The workers had an epiphany: Why not skip over the farmers and approach the food giants directly? Why negotiate with landowners when it's really the large corporations that have the power as they buy enormous quantities of tomatoes for their grocery shelves, Whoppers and chalupas? (Solomon, 2016).

Economic consequences frame.

The presentation of an agricultural/healthy safety issue through a monetary lens contributed to the economic consequences frame. The economic consequences that accompanied each issue came in two forms: (a) actual economic consequences or (b) potential economic consequences. The consequences that were discussed were often designed to be tailored to a certain demographic (an individual, group, institution, or organization). These consequences were also frequently targeted towards a specific geographical region. It is thought that the economic consequences frame is often used "to make an issue relevant to their audience" (Valkenburg et al., 1999, p. 552).

The economic consequences theme was brought to life in an article discussing a boycott of Wendy's by University of Florida students. Wendy's failure to sign the Fair Food Agreement prompted 120 students to create a demonstration to boycott the fast-food chain. The article discussed the financial impact for Wendy's and for Florida farmers as outlined by the Fair Food Agreement. The workers were requesting an additional penny per pound of tomatoes. According to the article's assessment of the economic impact, "The penny-a-pound premium can amount to as much as \$100 a week in a worker's paycheck, lifting a farmworker's annual salary from about \$10,000 to \$17,000 a year, advocates say" (Solomon, 2016).

Conflict frame.

The conflict frame may have lacked the prominence of the other three but was still present in this framing analysis. The conflict frame was characterized by the accentuation of conflict between stakeholders of various agricultural/health safety issues. This frame typically becomes especially prominent during election cycles. The conflict frame has been known to "reduc[e] complex substantive political debate to an overly simplistic conflict" (Valkenburg et al., 1999, p. 551). Revealing characteristics of this frame include language indicative of competition, games, or wars. It is often seen that winning and losing become the central focus of the conversation.

A confrontation between Luca Benitez and his boss led to evidence of the conflict frame. An altercation between the two men ignited a farmworker-led movement campaigning for dignity and fair pay. This January 3 article featured an intense moment of conflict between Benitez and his employer:

Benitez recalled how his supervisor drove a pickup closer to confront him. He wanted Benitez to help unload a truck instead of taking a time-wasting break. But even more, the boss wanted to show who was in control, and it was not the teen. Benitez, 120 pounds and skinny, insisted on staying put. Why should he be punished for his speed, when he was accomplishing the same tasks as the rest of the crew? The 200-pound boss threw a punch, but the teen blocked it with one hand, a tomato stake in the other, ready for a fight. He looked the boss in the eye and saw wide-eyed shock. "It was the first time anyone had said anything to him," recalled Benitez, now 40. A farmworker-led movement, with Benitez among its leaders, was about to ignite (Solomon, 2016).

Another article depicted the conflict frame through the debate over the safety of mosquito population control practices. This issue was of particular concern due to the spread of the Zika virus through Florida counties. The article summed up the controversial topic with the following headline, “[County] has turned to an insecticide that’s toxic to people and some wildlife, but county and U.S. officials insist it’s safe in the small doses used.”

Conclusions/Recommendations

In communicating about agricultural health and safety in Florida, pesticide exposure/safety garnered a great deal of media interest in 2016. This will be an important topic for agricultural communicators going forward. Communicators can help by creating information subsidies for media professionals related to the risks of pesticide exposure as well as worker protection standards and programs in place to ensure workers’ safety.

“The ways in which the news stories are framed ha[s] a significant effect on readers’ thoughts” (Valkenburg et al., 1999, p. 565). This fact stresses the need for agricultural communicators to understand how topics of an agricultural nature are being framed by the media and subsequently thought of by various audiences (Bryant & Zillmann, 2002). In the case of agricultural health and safety issues for media coverage issued in 2016 in Florida, the most prominent frame was that of human interest. This finding is consistent with the work of Edgar et al. (2017) and their examination of another area of agricultural messaging, poultry production. Frames influence how people think about an issue, the framing of agricultural issues through a human interest lens may prompt individuals to engage with the information in an emotional manner (Edgar et al. 2017; Valkenburg et al., 1999).

While it is standard practice to frame news in terms of a human interest piece to produce a more compelling story, there are concerns with how this impacts readers’ ability to recall the information. Valkenburg et al. (1999) found that participants had more difficulty recalling the facts of a human interest piece than information that was presented through other frames. Valkenburg et al. (1999) offer two explanations for this phenomenon: first, that the emotional nature of the information may hinder information processing; or second, that the color in the story may have “induced cynicism in the reader, which in turn made them discount the information presented by the story” (p. 566). With the frame of choice for agricultural stories being a human interest approach, this could be a cause of concern when communicating about important health and safety risks.

The second most prevalent frame was responsibility, this was once again consistent with Edgar and colleagues’ (2017) appraisal of the *New York Times*’ poultry production coverage. This frame attributed responsibility to government, political institutions, groups/organizations, or individuals. This provides the opportunity for readers to think that agricultural health and safety issues should be blamed on one of the groups listed (Edgar et al., 2017; Birkland, 1997; Valkenburg et al., 1999). The economic frame will prompt readers to think fiscally about the health and safety risks, and the conflict frame will allow readers to see the tension between the entities involved in these issues. The combination of the presence of these frames influence audiences to process agricultural health and safety as an issue that “should be viewed emotionally, with responsibility for the issues attributed to one or more groups, who may or may not be in conflict with each other” (Edgar et al., 2017, p. 14).

News media have the capability to not only influence the issues that individuals are thinking about, but it also has the potential to shape how they think about these issues (Guo & McCombs,

2016; Valkenburg et al., 1999). It is essential for agricultural communicators to understand the frames being used to present these issues, along with taking strides to ensure the accuracy and objectivity of information presented within these articles (Ashlock, Cartmell, & Kelemen, 2006). For these reasons, it is suggested that agricultural communicators make intentional efforts to build positive relationships with news media contacts (Lundy & Irani, 2004). The relationships should consist of opportunities to provide media journalists with opportunities and resources to increase their personal exposure and knowledge of agricultural health and safety issues. Along with providing journalists with industry contacts who can serve as credible sources of information (Lundy & Irani, 2004).

Whether writing about government policies, worker conditions or trade practices, journalists often chose to frame their stories through the lens of an individual worker's experiences as a human interest piece. These stories give a face and a name to issues that are often complicated and can seem removed from the lives of many readers. As communicators seek to help foster public understanding of issues like farm accidents, heat or thermal exposure/stress and pesticide exposure/safety, it is important to keep relating the scientific or technical information presented back to the people impacted. Engaging agricultural workers in telling their stories related to agricultural health and safety accomplishes two goals. It gives voice to the workers who may, in some situations, be marginalized or misunderstood in policy and regulatory discussions. It also helps develop more compelling and more newsworthy content for communicators seeking to increase awareness of agricultural health and safety issues. This will be a critical component of how agricultural communicators decide to frame their messaging and how they assist journalists in the framing of their messages as well (Lundy & Irani, 2004). Agricultural communicators should exercise caution with this practice, and work with media journalists to do the same, to ensure that it does not diminish but rather enhances the recall of important agricultural health and safety information provided to readers (Valkenburg et al. 1999).

It is recommended that further research is conducted to determine the most effective way for agricultural communicators to build relations with media institutions outside of the agriculture industry. Research should also be conducted to understand how individuals interpret and process the framing of agricultural health and safety news stories. One suggestion to accomplish this is to have readers to engage in thought-listing activities after engaging with the content to determine the presence of frames from their perspective. Further research should seek to understand if a human interest frame is the most common way to depict news stories of all agricultural topics, and how journalist frame and set agendas around agricultural health and safety topics. The impact of the human interest frame in the presentation of agricultural topics should be tested to understand how it garners audience interest and impacts their information-processing and recall.

This study was funded by a CDC NIOSH grant. In 2016, the CDC, through NIOSH, awarded the University of Florida's College of Public Health and Health Professions, a grant of nearly \$10 million for a five-year project to create the Southeastern Coastal Center for Agricultural Health and Safety.

Abrams, K. M. & Meyers, C. A. (2010). Conversations with gatekeepers: An exploratory study of agricultural publication editors' decisions to publish risk coverage. *Journal of Applied Communications*, 94(1&2), 6-18. doi: [10.4148/1051-0834.1183](https://doi.org/10.4148/1051-0834.1183)

Agricultural Safety & Health Council of America. (2015). Facts 2015. Be safe. Be profitable. Marshfield, WI: Marshfield Clinic, 2016. Retrieved from <https://agsafety.osu.edu/sites/agsafety/files/imce/ASHCA-2015-Ag-Safety-Fact-Sheet.pdf>

- Ashlock, M. A., Cartmell, D. D., and Kelemen, D. B. (2006). The cow that stole Christmas: Framing the first U.S. mad cow crisis. *Journal of Applied Communications*, 90(2), 29-46. doi: [10.4148/1051-0834.1282](https://doi.org/10.4148/1051-0834.1282)
- Baldwin, J. R., Perry, S. D., & Moffitt, M. A. (2004). *Communication theories for everyday life*. White Plains, New York: Pearson Education.
- Bardes, B. A., & Oldendick, R. W. (2017). *Public opinion: Measuring the American mind*. Plymouth, United Kingdom: Rowan and Littlefield Publishers, Inc.
- Barr, K., Irlbeck, E., & Akers, C. (2012). Salmonella and the media: A comparative analysis of coverage of the 2008 Salmonella outbreak in jalapenos and the 2009 Salmonella outbreak in peanut products. *Journal of Applied Communications*, 96(1), 29-41. doi: [10.4148/1051-0834.1144](https://doi.org/10.4148/1051-0834.1144)
- Birkland, T. A. (1997). *After disaster: agenda setting, public policy, and focusing events*. Washington, DC: Georgetown University Press.
- Brackbill, R. M., Cameron, L. L., & Behrens, V. (1994). Prevalence of chronic diseases and impairments among US farmers, 1986-1990. *American Journal of Epidemiology*, 139(11), 1055-1065. doi: [10.1093/oxfordjournals.aje.a116949](https://doi.org/10.1093/oxfordjournals.aje.a116949)
- Breed, A. G. (2016, December 22). Unsafe transport leads to death: Farmworkers 'disposable'? *Associated Press State Wire: Florida*. Retrieved from <http://www.apnews.com>
- Bryant, J. & Zillmann, D. (2002). *Media effects: Advances in theory and research*. Mahwah, NJ: Lawrence Erlbaum Associates.
- Cannon, K. J. & Irani, T. A. (2011). Fear and loathing in Britain: A framing analysis of news coverage during the Foot and Mouth Disease outbreaks in the United Kingdom. *Journal of Applied Communications*, 95(1), 6-21. doi: [10.4148/1051-0834.1171](https://doi.org/10.4148/1051-0834.1171)
- Dearen, J. (2016, February 3). Review reveals problems protecting workers from pesticides. *Associated Press State Wire: Florida*. Retrieved from <http://www.apnews.com>
- Dearing, J. W., & Rogers, E. M. (1996). *Agenda-setting*. Thousand Oaks, CA: Sage Publications.
- Dunwoody, S. & Peters, H. P. (1992). Mass media coverage of technological and environmental risks: A survey of research in the United States and Germany. *Public Understanding of Science*, 1(2), 199-230. doi: [10.1088/0963-6625/1/2/004](https://doi.org/10.1088/0963-6625/1/2/004)
- Edgar, L. D., Johnson, D. M., & Estes, S. (2017). Poultry production messaging in two national-circulation newspapers. *Journal of Applied Communications*, 101(1), 6-18. doi: [10.4148/1051-0834.1010](https://doi.org/10.4148/1051-0834.1010)
- Entman, R. M. (1993). Framing: Toward clarification of a fractured paradigm. *Journal of Communication*, 43(4), 51-58. doi: [10.1111/j.1460-2466.1993.tb01304.x](https://doi.org/10.1111/j.1460-2466.1993.tb01304.x)
- Evans, J. & Haiberger, S. (2016). Agricultural media coverage of farm safety: Review of the literature. *Journal of Agromedicine*, 21(1), 91-105. doi: [10.1080/1059924X.2015.1106376](https://doi.org/10.1080/1059924X.2015.1106376)
- Gamson, W. (1992). *Talking politics*. New York: Cambridge University Press.
- Guo, L., & McCombs, M. E. (2016). *The power of information networks: New directions for agenda setting*. New York: Routledge.
- Harding, J. (2013). *Qualitative data analysis from start to finish*. Thousand Oaks, CA: Sage Publications.
- Holsti, O. R. (1969). *Content analysis for social sciences and humanities*. Reading, MA: Addison-Wesley.
- Hruschka, D., Schwartz, D., St. John, D. C., Picone-Decaro, E., Jenkins, R. A., & Carey, J. W. (2004). Reliability in coding open-ended data: Lessons learned from HIV behavioral research. *Field Methods*, 16(3), 307-331. doi: [10.1177/1076228504266540](https://doi.org/10.1177/1076228504266540)

- Irlbeck, E. G., & Akers, C. (2010). The summer of salmonella in salsa: A framing analysis of the 2008 salmonella outbreak linked to tomatoes and jalapenos. *Food Protection Trends*, 30(11), 628-634. Retrieved from <https://www.cabdirect.org/cabdirect/abstract/20113003413>
- Irlbeck, E., Akers, C., Baker, M., Burris, S., & Brashears, M. (2014). A case study and framing analysis of the 2008 Salmonella outbreak. *Journal of Applied Communications*, 98(2), 65-77. doi: [10.4148/1051-0834.1079](https://doi.org/10.4148/1051-0834.1079)
- Johnson, T. J. (2014). *Agenda setting in a 2.0 world: new agendas in communication*. New York, NY: Routledge.
- Kelsey, T. W. (1994). The agrarian myth and policy responses to farm safety. *American Journal of Public Health*, 84(7), 1171-1177. doi: [10.2105/AJPH.84.7.1171](https://doi.org/10.2105/AJPH.84.7.1171)
- Lai, L. S. L. & To, W. M. (2015). Content analysis of social media: A grounded theory approach. *Journal of Electronic Commerce Research* 16(2), 138-152. Retrieved from http://www.jecr.org/sites/default/files/16_2_p05.pdf
- Lincoln, Y. S. & Guba, E. G. (1985). *Naturalistic inquiry*. Newbury Park, CA: Sage Publications.
- Lundy, L. K. & Irani, T. A. (2004). Framing biotechnology: A comparison of U.S. and British national newspapers. *Journal of Applied Communications*, 88(2), 37-49. doi: [10.4148/1051-0834.1319](https://doi.org/10.4148/1051-0834.1319)
- Mauldin, A. (2016, June 23). Water is key to surviving summer heat. *Suwanee Democrat*. Accessed online at <https://www.suwanneedemocrat.com>
- Meyers, C. & Abrams, K. (2010). Feeding the debate: A qualitative framing analysis of organic food news media coverage. *Journal of Applied Communications*, 94(3 & 4), 22-36. doi: [10.4148/1051-0834.1190](https://doi.org/10.4148/1051-0834.1190)
- Murphy, D. J. & Lee, B. C. (2009). Critical issues facing agricultural safety and health. *Journal of Agricultural Safety and Health*, 15(3), 203-205. doi: [10.13031/2013.28031](https://doi.org/10.13031/2013.28031)
- Neuman, W. R., Just, M. R., & Crigler, A. N. (1992). *Common knowledge*. Chicago: University of Chicago Press.
- News Bank Inc. (2018). *Access World News Overview*. Retrieved from <http://www.newsbank.com/libraries/schools/solutions/us-international/access-world-news>
- Palermo, T. & Ehlers, J. (2002). Coalitions: Partnerships to promote agricultural health and safety. *Journal of Agricultural Safety and Health*, 8(2), 162-174. doi: [10.13031/2013.8429](https://doi.org/10.13031/2013.8429)
- Patterson, T. (1993). *Out of order*. New York: Knopf.
- Ruth, A. M., Eubanks, E. E., & Telg, R. (2005). Framing of mad cow media coverage. *Journal of Applied Communications*, 89(4), 39-54. doi: [10.4148/1051-0834.1312](https://doi.org/10.4148/1051-0834.1312)
- Scheufele, D. A., & Tewksbury, D. (2007). Framing, agenda setting, and priming: The evolution of three media effects models. *Journal of Communication*, 57(1), 9-20. doi: [10.1111/j.1460-2466.2006.00326_5.x](https://doi.org/10.1111/j.1460-2466.2006.00326_5.x)
- Singer, E. & Endreny, P. M. (1994). Reporting on risk: How the mass media portray accidents, diseases, disasters, and other hazards. *Risk: Health, Safety & Environment*, 5(3), 261-270. Retrieved from <https://heinonline.org/HOL/P?h=hein.journals/risk5&i=271>
- Semetko, H. A., & Valkenburg, P. M. (2000). Framing European politics: A content analysis of press and television news. *Journal of Communication*, 50(2), 93-109. doi: [10.1111/j.1460-2466.2000.tb02843.x](https://doi.org/10.1111/j.1460-2466.2000.tb02843.x)
- Solomon, L. K. (2016, January 3). Through years-long push, farmworkers persuade big food companies to sign on to human-rights movement. *Sun Sentinel*. Accessed online at <http://www.sunsentinel.com/>

- Valkenburg, P. M., Semetko, H. A., & Vreese, C. H. (1999). The effects of news frames on readers' thoughts and recall. *Communication Research*, 26(5), 550-569. doi: [10.1177/0893320099026005002](https://doi.org/10.1177/0893320099026005002)
- Wadud, S., Kreuter, M., & Clarkson, S. (1998). Risk perception, beliefs about prevention, and preventative behaviors of farmers. *Journal of Agricultural Safety and Health*, 4(1), 1-24. doi: [10.13031/2013.15345](https://doi.org/10.13031/2013.15345)
- Zejda, J. E., McDuffie, H. H., Dosman, J. A. (1993). Epidemiology of health and safety risks in agriculture and related industries. Practical applications for rural physicians. *The Western Journal of Medicine*, 158(1), 56-63. Retrieved from <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC1021941/>

ABOUT THE AUTHORS

Lisa K. Lundy is an Associate Professor in the Department of Agricultural Education and Communication at the University of Florida.

Tiffany M. Rogers-Randolph is a doctoral candidate in the Department of Agricultural Education and Communication at the University of Florida.

Angela B. Lindsey is an Assistant Professor in the Department of Family, Youth and Community Sciences at the University of Florida.

Clay Hurdle is a Doctoral Student in the Department of Spanish and Portuguese Studies at the University of Florida.

Heather Ryan participated in this research as an Undergraduate Student in the Department of Agricultural Education and Communication at the University of Florida.

Ricky W. Telg is a Professor in the Department of Agricultural Education and Communication at the University of Florida and Director of the Center for Public Issues Education.

Tracy Irani is Professor and Chair of the Department of Family, Youth and Community Sciences at the University of Florida.