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The Journal of Applied Communications

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- Peer-reviewed to ensure accuracy and quality.
- Indexed selectively in AGRICOLA; listed in Ulrich's International Periodicals Directory and ARL's Directory of Scholarly Electronic Journals and Academic Discussion Lists.

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Nicole Singleton
P.O. Box 3948
Parker, CO 80134
866-941-3048
info@aceweb.org

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A Little Birdie Told Me About Agriculture: Best Practices and Future Uses of Twitter in Agricultural Communications

Katie Allen, Katie Abrams, Courtney Meyers, and Alyx Shultz

Abstract

Social media sites, such as Twitter, are impacting the ways businesses, organizations, and individuals use technology to connect with their audiences. Twitter enables users to connect with others through 140-character messages called “tweets” that answer the question, “What’s happening?” Twitter use has increased exponentially to more than five million active users but has a dropout rate of more than 50%. Numerous agricultural organizations have embraced the use of Twitter to promote their products and agriculture as a whole and to interact with audiences in a new way. This article addresses current Twitter use trends within agriculture and offers advice for practitioners.

Introduction

The evolution of interactive, social, and self-publishing media on the Web has irrevocably changed the way we communicate. The presence of Web 2.0 technologies, such as wikis, blogs, podcasts, and social media sites including MySpace, Facebook, and Twitter, has impacted the use of technology among businesses, organizations, and individuals. In most cases, Web 2.0 technologies are free, easy to use, and rewarding for those who wisely make use of their potential (Paulson, 2009). The purpose of this professional article is to address the trend of social media use in agriculture, with particular emphasis on Twitter.

Like any new innovation, social media has taken some time to adopt and diffuse through a system. Some insecurities in using social media do exist; however, problems in adopting social media, some argue, are cultural and not technological (Brenner, 2009). Although mainstream media will continue to be important for the dissemination of information, marketers and public relations practitioners are now able to select from a number of Web 2.0 communication channels. “The ‘new influencers’ are beginning to tear at the fabric of marketing as it has existed for 100 years, giving rise to a new style of marketing that is characterized by conversation and community” (Society for New Communications Research, 2008, p.11). This new style of marketing is being approached both hesitantly and optimistically. Marketers are wary of losing control of their messages, but excited about using these tools to encourage direct conversations with target audience members (Society for New Communications Research).

Many public relations practitioners have recognized the transformative effect Web 2.0 technologies like blogging and social media have had on their industry. Wright and Hinson (2009) found that 73% of public relations practitioners believe blogging and social media have changed the way their organizations communicate by facilitating more two-way communication with publics without the

traditional gatekeepers intercepting and adjusting or blocking the original message. Pavlik (2007) contended that, in public relations, much of the change seen with the advent of Web 2.0 technology is in message control, because the public can now “communicate directly online and the organization can be left out of the conversation entirely” (Pavlik, p. 10).

Some might believe farmers in particular are behind the technology curve for Web use, but the increase in Internet access in the home and use of Internet-enabled phones have allowed farmers greater access to online social networks (Sutter, 2009). The use of social media in agriculture and among farmers provides for more opportunities than checking the weather and knowing when to sell grain. “A growing number of farmers and others in agriculture who are using social media tools to communicate with each other, send out information and educate the public about agriculture” (Rodriguez, 2009a, para. 3). Hoffman (2009) said that farmers and ranchers “are using social media to build bridges of understanding with consumers” (para. 3), and Twitter is one type of social media agricultural communicators are beginning to embrace.

Overview of Twitter

What is Twitter?

Twitter is a form of microblogging, a relatively new form of blogging in which people write brief text updates fewer than 200 characters in length. Compared to regular blogging, microblogging fulfills a need for faster communication. Twitter allows users to write microblogs known as “tweets” of 140 characters or less (Java, Finin, Song, & Tseng, 2007). Not only is Twitter a form of microblogging, it has set the standard for the craft (Comm, 2009). Twitter specifically serves as a mass instant messaging platform that allows people to message from their phones, the Twitter website, or through other Twitter-related applications, to friends and family who can be constantly updated on their whereabouts (Paulson, 2009).

Twitter users sign up for a user name on the site, which gives them a unique identifier, when they develop their profiles. Relationships on Twitter are developed when users “follow” one another. People who follow each other have a two-way relationship; one-way relationships are also possible when one person follows another person’s tweets, but he or she is not followed in return (Java et al., 2007). Twitter goes beyond connecting friends and people who know one another in the physical world. Whether people use it to maintain friendships and conversations, report news, drive traffic to another website, or share links and information, they are prompted to answer the question “What’s happening?” to fulfill their purpose. Figure 1 displays a screenshot for a Twitter account with key features of the interface identified.

Java et al. (2007) identified several main user intentions and categories of users on Twitter. First, users intend to use Twitter to take part in the daily chatter of the site, which is the most common use of the network. The daily chatter consists of people sharing what they are doing throughout the day. The second main user intention is participating in conversations by replying to one another’s posts. Twitter is not just a billboard for making announcements; it provides a way of holding conversations with people who matter (Comm, 2009). A third main intention is sharing information and links to outside information, which often includes sharing links to other websites. Finally, the fourth main intention is reporting the news. Many users report the latest news, weather, or comment about current events on Twitter (Java et al.). Aside from the text tweets, Twitter also allows its users to post and share photos, which could be another user intention for the site (Comm, 2009). Uploading and sharing photos in Twitter is another way for users to create new discussion points and to show people, rather than tell them, what they’ve been doing. Users who upload and tweet about photos often

use a third-party application such as Twitpic (<http://twitpic.com>), TweetPhoto (<http://tweetphoto.com>), and yfrog (<http://www.yfrog.com>).

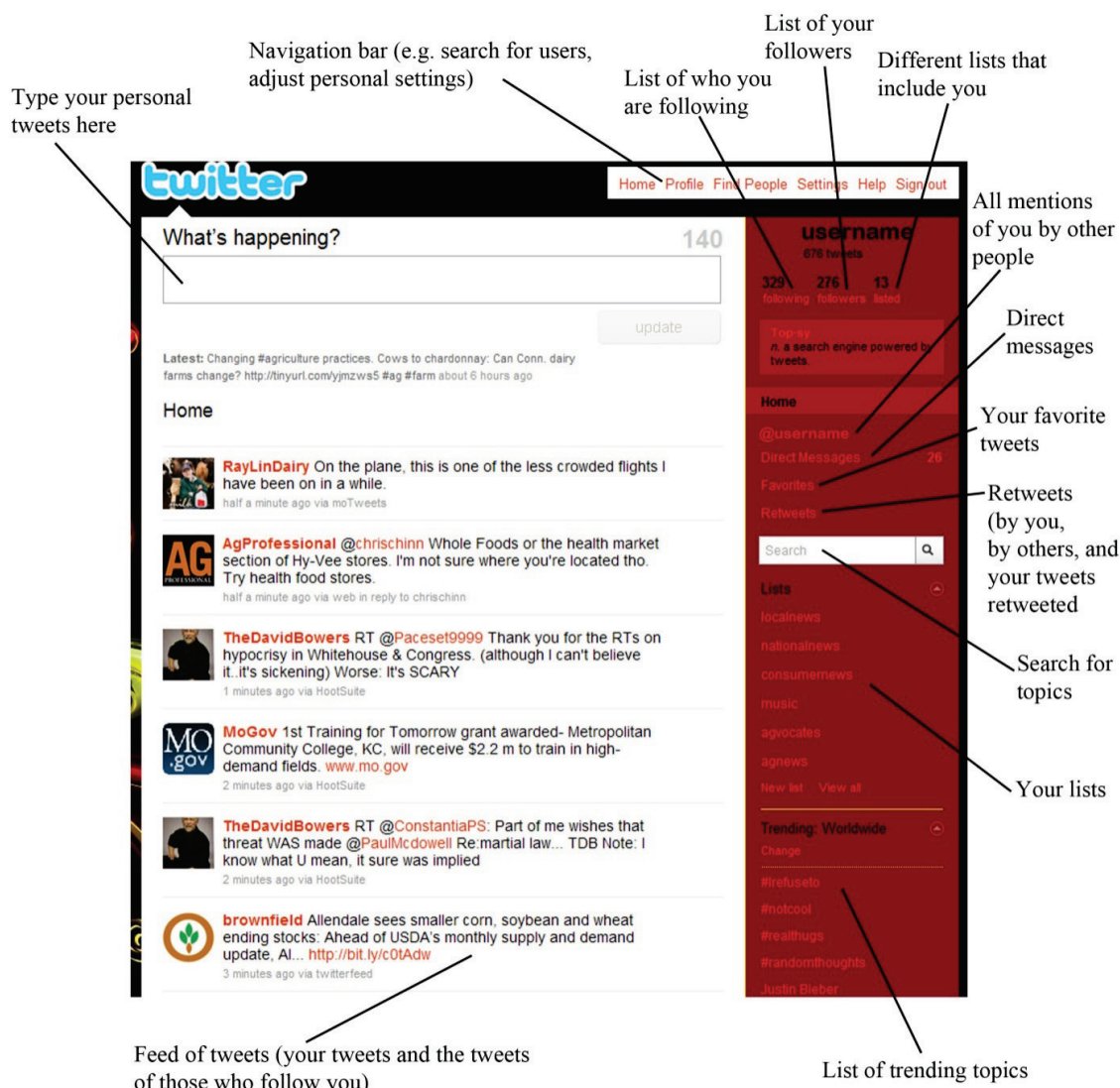


Figure 1. Key Features of a Twitter Homepage.

Who Uses Twitter?

Since its development in 2006, Twitter has grown immensely in use. It had approximately 18 million adult users in September 2009 and is predicted to reach 26 million adult users in 2010 (eMarketer, 2009). Twitter contrasts from other social networking applications in that younger users are not driving the popularity of the site. Twitter's popularity has been driven by an older generation—not teenagers. Although Twitter's creators originally believed the site would provide a way for people to stay in touch, it has become more of a tool to broadcast ideas and questions to the outside world or to market a product—a need few teenagers have (Miller, 2009).

The Pew Internet & American Life Project found that 19% of American adults (Fox, Zickuhr, & Smith, 2009) and 8% of teens ages 12-17 (Lenhart, Purcell, Smith, & Zickuhr, 2010) use Twitter or another form of social media to provide status updates or view the status updates of others. The majority of the adult users are ages 18-24; the age breakdown can be seen in Figure 2.

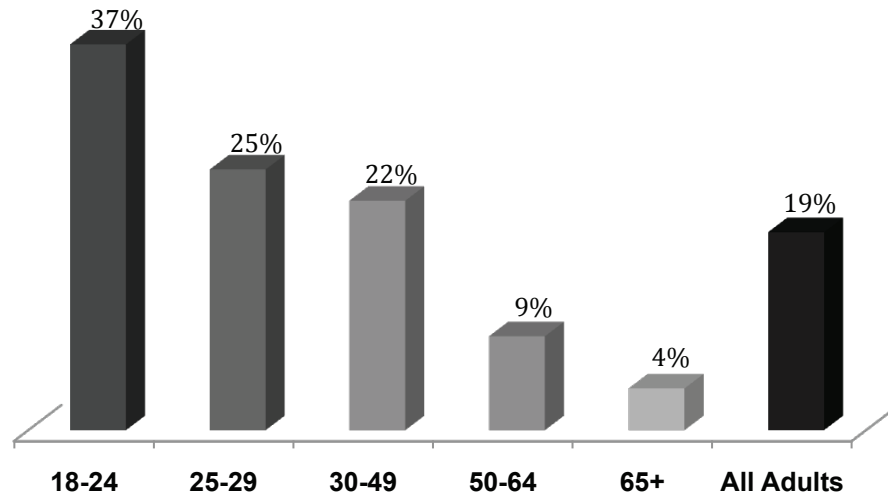


Figure 2. Percent of online adults who use Twitter or another status-updating website. (Lenhart et al., 2010)

Despite the apparent popularity of the site based on the large amount of traffic and growth, Zarrella (2009) analyzed 4.5 million Twitter accounts to find that 56% of users are not following anyone and 55% of users have never tweeted. Martin (2009) found that 60% of users who open a Twitter account do not return to the account within the next month. Although it is unclear why most Twitter users decide not to keep their accounts active, some people have offered suggestions about the trend. St. John (2009) reported that creating entertaining, informative, and interesting tweets requires time, even though the messages are short. Also, getting and maintaining an audience of followers poses a challenge for users. Parrack (2009) said some people decide not to use Twitter because they do not understand what it is, what it does, or how to use it.

A single user of Twitter might have multiple intentions or might even serve different roles in different communities, but Java et al. (2007) reported that Twitter users often fall into three main categories: information sources, friends, and information seekers. Information sources often have multiple followers, as they normally provide valuable updates of high interest. At the time of this report, most relationships on Twitter fell into the “friends” category, which includes a user’s follower base of family, friends, co-workers, and acquaintances with whom he or she tries to maintain a connection and relationship. Finally, information seekers are those who post rarely but follow regularly to keep up with the world.

Twitter’s Value to Agriculture

Agricultural communicators might start out in the friend and/or information seeker categories but should branch out into the information source category. Whether it’s putting a face on the agricultural producer, marketing and branding, covering agricultural news, dispelling myths about

agriculture, conversing with ag- and non-ag publics, monitoring public opinions, or participating in risk and crisis communications, Twitter has value for agriculture (Payn-Knoper, 2009).

Uses for Individuals in Agriculture

Applying the main intentions Twitter users have (Java et al., 2007) to agriculture, farmers and producers could post information to help the public understand the day-to-day happenings on a farm, answer a follower's questions regarding agricultural practices, provide their perspective on current issues facing the industry, link to other recommended websites, or complete all of the identified intentions for using Twitter. For example, Twitter user "at_the_farm" tweets about agriculture and living on a row crop and livestock farm. On the user's profile page reads the bio: "My passion is agriculture, No farmers No food! My husband, kids, & I row crop, raise cattle, grow pigs, & sell seed. Want to know more about farm life, just ask" (at_the_farm, 2010). Twitter allows a follower to connect with the person he or she is following because of the regular updates of that person's life (Comm, 2009). The information provided by agriculturalists could help others gain a better understanding of how food and fiber is produced, dispel myths about agricultural practices, and combat negative publicity in the event of an agricultural crisis.

Uses for Individuals in Agriculture Organizations and Businesses

Aside from the farmers themselves, agricultural groups are also taking action on Twitter. American Farm Bureau has been active in using social media like Twitter, and while Ohio Farm Bureau only announced its presence on Twitter in June 2009, it surpassed the national organization by 100 followers by October after seeing an increase in activity due to a proposed state amendment that would create a board to regulate livestock care (Vaughn, 2009). User "FollowFarmer" maintains a database of agricultural organizations and agriculturalists on Twitter, which currently lists more than 800 Twitter accounts. This number only accounts for those users who directly contact "FollowFarmer" to be included in the list, so by no means is it exhaustive. Many agricultural commodity organizations, such as the National Cattlemen's Beef Association (NCBA), U.S. Grains Council, and the Pork Checkoff, have used Twitter as a marketing tool. Even agricultural news organizations, including Farm Journal Media, Drovers magazine, and Brownfield have Twitter accounts. Many agencies of the United States Department of Agriculture (USDA) also use Twitter to relay agricultural information. Although it may be too early to assess the impact on public opinion as a result of agriculture's use of social media, the effort to use the technology shows no signs of slowing (Rodriguez, 2009b).

More connections can be established now among businesses, organizations, and their customers than before the advent of Twitter. A growing number of company executives are unblocking social networking in the workplace because of potential business benefits and to utilize a free communications resource (Brenner, 2009). Twitter can be used to encourage dialogue among the staff and team of a business or organization (Comm, 2009). Kraft Foods Company is using social media to make more people aware of its efforts in providing meals for U.S. families and raising approximately \$100 million every year for community organizations. To make others aware of its service efforts, Kraft developed a video about its goals and volunteer projects, and in October 2009, asked all its employees to post the video on their personal social networking sites (York, 2009).

Uses for Risk and Crisis Communication

Crisis communication using social media is another area emerging on Twitter. Coombs (2008)

ing used to accelerate and combat a crisis situation. He said crisis managers can use social media tools to search for warning signs of an emerging crisis and monitor crisis response and post-crisis phases to check how any crisis management efforts are being received.

The agricultural industry could benefit from using social media, particularly Twitter, in relieving crisis situations. The nationwide salmonella outbreak in 2009 that resulted from peanuts processed at a Georgia plant prompted the U.S. Food and Drug Administration (FDA) to inform the public about recalled products containing the processed peanuts. While the FDA must act and provide prompt information in any food-related contamination, this particular case led the FDA to use Twitter to announce the recalls. This was a smart move considering how many people are using Twitter, including workers at newspapers, television stations, and other media outlets who could continue relaying the important information from the FDA (Eye on FDA, 2009). In addition, Twitter and other social media sites have also been used to fight negative publicity in agriculture that has been brought on by individuals and groups such as the Human Society of the United States (HSUS) and People for the Ethical Treatment of Animals (PETA), which have used the Internet to portray farmers in a negative light (Rodriguez, 2009b).

Potential Downfalls

The very nature of Twitter makes the site an attractive venue for spammers. Moon (2009) identified three types of spammers within the Twitter community: twitomercials, straight cons, and clueless cons. Twitomercials are likened to television infomercials. Businesses create accounts to promote their products, then “over-tweet” to followers about the products. Straight cons are described as those who use overt attempts to contribute funds to non-legitimate sources, such as in get-rich-quick schemes. Clueless cons, like straight cons, try to entice people to invest in their businesses, but unlike straight cons they often lack the basic business vocabulary to make the spam appear legitimate. Clueless cons often mix spam tweets with legitimate tweets.

Issues with spam have not gone unnoticed by Twitter. On October 13, 2009, Twitter announced a new feature to attempt to slow the proliferation of spam within the Twitter community. By clicking a button, users can flag an account as spam. The questionable account is then blocked from tweeting to or following the reporting user and is investigated by Twitter’s Trust and Safety Team (Twitter, 2009).

Individuals impersonating others also pose a threat to the utility of Twitter. Numerous high-profile celebrities have faced problems with individuals setting up Twitter accounts using celebrities’ names (Rao, 2009). To combat this problem, Twitter initiated a *verified accounts* feature. A Twitter user facing identity imposters is invited to submit his or her account for verification by Twitter. Verified accounts are labeled with badge on the user’s profile page (Twitter, n.d.).

Spam and imposters aside, the sheer number of legitimate tweets often makes managing a Twitter account difficult. Catone (2009) identified 20 filters, or ways to manage tweets and followers. Twitter offers a *favorites* feature that allows users to tag their favorite tweets. Tweets tagged by more than one user as favorites are often of interest.

Twitter users also occasionally face technical problems from the Twitter site itself. When overloaded, the Twitter site displays a now infamous “fail whale” image for a brief time until resources become available to complete the process. To stay abreast of technical issues on the site, Twitter users can follow user “twitter” or check the Twitter status page at <http://status.twitter.com>. The Twitter site is continually updated to improve reliability, but problems occasionally arise (McFedries, 2009).

Advice for Using Twitter

Gaining Followership

When setting up a Twitter account, a user must first recognize his or her purpose for the account. Whether the account is for business or pleasure, the name of the account and type of tweets should match the intentions of the user (Paulson, 2009). A person's username on Twitter must be closely associated to him or her and easy to remember (Comm, 2009). After a username is created and profile is established, a user should look up established friends, contacts, and organizations through searching for specific names or keywords. Table 1 provides a list of recommended users to follow in agriculture and a brief description of what that person or organization does.

Table 1
Recommended Twitter Users to Follow Who Tweet About Agriculture

Username	Brief Description
AgriBlogger	Professional agriblogger, farm podcaster, and President of ZimmComm New Media.
AgNews	National and Midwest agricultural news.
animalag	Animal Agriculture Alliance represents multiple animal agricultural companies, producers, and organizations and tweets about issues in livestock production.
cookcountyext	Illinois Cook County Extension office provides one example of how Extension can use Twitter.
FollowFarmer	Maintains a database of agricultural organizations and agriculturalists on Twitter.
mpaynknoper	Agricultural communications consultant; creator of #agchat.
OhioFarmBureau	A Farm Bureau leader in using Twitter and other social media tools to communicate agriculture.
RayLinDairy	Milk and food producer, social media "agvocate," animal welfare specialist.
USDA_AMS_NEWS	USDA Agricultural Marketing Service news.
USDAFoodSafety	USDA "Be Food Safe" campaign educating consumers about the importance of safe food handling and reducing the risk of foodborne illness.

Once a user adds a few contacts, he or she can look at who those contacts follow and consider following some contacts from those lists. Hopefully, these people will return the favor, and the user can begin developing his or her follower base. The most powerful way users can win followers on Twitter is to follow them themselves, and the most important thing to remember when doing anything on the Internet is to produce content that is interesting, fun, and valuable.

Tweeting Effectively and Efficiently

Another feature of Twitter is the use of “#hashtags,” which is an effective way to group events or topics and respond to tweets about events or group postings. A hashtag is a keyword, and when people search for a keyword, all tweets with the “#” ahead of it will pop up (Paulson, 2009). For example, tweets about H1N1 are typically tagged by experienced users or organization communicators with #h1n1. This helps organize tweets for users interested in following particular topics. In a tweet, the hashtag will turn into a clickable link. When users click on it, a Twitter page with a live feed of tweets tagged with the hashtag will appear. The use of hashtags on Twitter allows for information organization and makes topics more searchable, which contributes to the progress toward Web 3.0 (Cameron, 2009).

No matter who uses Twitter and his or her purpose for using the tool, as is true in any other communications field or use of media outlet, it takes some skill to get the message across effectively. Following the tips of experienced Twitter users can assist other users in meeting their messaging goals. In addition to allowing its users to choose favorite tweets, Twitter offers an option that gives users the ability to organize the accounts they follow into lists. With this function, a user can create lists for more specific areas of interest, go to the complete list of users he or she follows, and use a drop-down menu to assign each user to a created list. These added tools within Twitter help organize the chaos (Mansfield, 2009). Table 2 provides several agricultural related lists Twitter users can follow or use to find additional agricultural contacts.

Table 2
Agricultural Related Lists of Twitter Users

Listorious Name	Brief Description
Ag Journalism http://listorious.com/FollowFarmer/ag-journalism	118 agricultural journalists
American Farms and Ranches http://listorious.com/PoppyDavis/american-farms-ranches	329 farmers and ranchers
University Extension http://listorious.com/urbangarden/universityextension	74 university extension offices and agents
Voices in Agriculture http://listorious.com/PoppyDavis/voices-in-agriculture	497 agriculture-related businesses, organizations, government agencies, media, and pundits

From the standpoint of the public or target audience, Twitter users consider many factors in evaluating tweets from businesses and organizations. Recent usability research suggests one of the public's top annoyances with tweets from businesses is too-frequent updates that crowd out updates by friends. Other annoyances are aggressive selling of products, infrequent updates or management of communication, and poor choice of username and/or logo (Nielsen, 2009).

Shorthand is often necessary to help people write tight and concise posts that stay within the 140-character (including spaces) limit. Users can shorten posts by using shorthand symbols, such as “=” and “&”, and numerals instead of words for numbers. Users should also consider shortening links using <http://tinyurl.com> and other link-condensing websites (Grammar Girl, n.d.). Many third-party applications (see Table 3) are used to access Twitter (e.g., TweetDeck and Tweetie for the iPhone, Echofon for Firefox), and shorten URLs on the fly when they are typed or copy-pasted into a tweet. These third-party applications also organize Twitter friends into groups, highlight tweets of interest, remove tweets of limited interest to the user, and highlight tweets with links. These services are all designed to filter tweets to make following multiple users easier.

Interacting with Users and Monitoring Tweets

Simply putting “@” in front of a person's username means the user is replying *publicly* to a tweet posted by that person or is simply mentioning him or her in a tweet. For example, if a user found a Web page that may be of particular interest to a follower, that user might tweet: “@username would like this article <http://tinyurl.com/yhte5mc>.” This is similar to posting a note on a friend's Facebook wall in that these replies are public. On the other hand, direct messages allow for personal, private, one-on-one communication between two users. This function is akin to sending a message through Facebook in that it is private; however, through Twitter, it is still limited to 140 characters. If a user wants to repost another person's tweet, this function is called “re-tweeting,” which can be achieved by placing a “RT” with the tweet and attributing the tweet to its author or simply selecting “Retweet” as an option within each posted tweet. Twitter users should strive to create valuable tweets that are re-tweetable (Mansfield, 2009).

Third-party applications (see Table 3) can also help in creating specific feeds based on hashtags that the user would like to continually monitor. Keywords can be monitored and searched for using Twitter's search engine on the home page (<http://www.twitter.com>), and these do not have to be hashtags with the # symbol in front of the word. Keyword tracking is a particularly useful tool for public relations practitioners in a time of crisis or in any kind of issue management.

Specifically in the agricultural industry, users with an interest in agriculture and food-related issues can tune in to a live chat on Twitter every Tuesday from 8 to 10 p.m. (Eastern Time) and discuss current topics on the “#agchat” or “#foodchat” feed. These chats provide users with a forum to share advice, insights, and opinions.

Twibes, or groups created by users of Twitter, allow for like-minded people to join in conversation about different topics. The twibe for agriculture (located by accessing <http://www.twibes.com/group/Agriculture>) provides a forum for taking part in the agchat discussions each week. A feed that pulls all “#agchat” tweets can also be accessed at <http://twubs.com/agchat>.

Table 3

Where to Find Free Twitter Third-Party Applications to Help With Efficiency

Application	Brief Description
Analytic Apps http://twitter.pbworks.com/AnalyticsApps	List of paid and free analytic tools to measure your Twitter feed's impact. Some, like http://objectivemarketer.com , include free 30-day trials.
Cloudberry TweetIE for Internet Explorer http://tweetie.cloudberrylab.com	Internet Explorer add-on that allows users to tweet and view tweets through their browser without going to http://twitter.com .
Echofon for Firefox http://echofon.com/twitter/firefox	Firefox add-on that allows users to tweet and view tweets through their browser without going to http://twitter.com .
Hoot Suite http://www.hootsuite.com	Allows users to manage multiple Twitter accounts, organize twitter feeds they follow into tabbed lists, set up keyword tracking, view statistics, and run analytics all from one online (or installed software) user interface.
Mashups http://mashable.com/2009/07/03/twitter-filter	A social media guide that provides tips for filtering tweets.
Twitpic http://www.twitpic.com	Allows users to login with their Twitter username and password, upload their photos, and prompt their followers to view the photos by sending a link to them in a text tweet.
Selective Twitter Status http://apps.facebook.com/selectivetwitter	Allows users to selectively update their Facebook status through Twitter. This is a Facebook application that works with a Twitter account.
TinyURL http://tinyurl.com	Condenses URLs into shortened hyperlinks so that they do not take up as many of the 140 characters.
TweetDeck http://www.tweetdeck.com	Similar to HootSuite, except the software needs to run on a computer. Also a good application for iPhone users (search through iPhone "Apps" store).
Twitterfeed http://twitterfeed.com	Automatically tweets a link to blog posts as they are created.
Twubs http://twubs.com	Twubs are Twitter groups based on content aggregated from #hashtags.
Unofficial Twitter Wiki http://twitter.pbworks.com/Apps	Categorized descriptions of hundreds of third-party applications compatible with Twitter.

Evaluating Impact

Finally, as with any new type of outreach, evaluating Twitter's value to an organization is paramount to adjusting the organization's communication strategies. As mentioned earlier in the article, Twitter is a public relations tool, and as such, its potential value may be viewed as elusive when compared to standard business interpretations of return on investment. However, the features of Twitter add more tangible measures with which to glean impact and value. Because it is online, several Web analytical tools (see Table 3) can collect data about how far tweets travel (from followers to their social networks via re-tweets); number of interactions with customers, audiences, or stakeholders; how followership changes over time; and the salience of a brand or organization's key issues in the "Twitterverse," just to point out a few. A defined social media strategy should include measures of success for Twitter, and analytic applications, whether paid or free, are useful for demonstrating impact (Duncan, n.d.).

Quick Tips for Twitter Use

- Develop a social media strategy that includes specifics for Twitter. For a general guide, see Morgan (2009) and Williams (2009) for a detailed template.
- Be clear about the purpose of your Twitter account and select a username that is both descriptive and memorable.
- Use a simple logo or image that is easily identifiable for the Twitter account. Test it by having someone look at it for a couple of seconds to see if he or she can easily identify it.
- Beware of spoof accounts if your organization or business is well known. Consider creating accounts using alternate forms of the organization's name (e.g., acronyms, full names) if only to redirect people to the official Twitter page. Also check for verified accounts (<http://twitter.com/help/verified>).
- Create a unique Twitter background using Photoshop (guidelines available on <http://twitter-backs.com>), <http://www.flickr.com/photos/tags/twitterbacks>, or <http://www.twitterbacks.com>.
- Search for people to follow to quickly build your list of followers. Use the "favorites" and "lists" features in Twitter to organize who you follow.
- Do not overload your audience with annoying messages. Make your tweets interesting and usable to improve the likelihood they will be re-tweeted. Consider using some basic principles of psychology to improve your engagements (see Sexton, 2010).
- Include hashtags in your tweets so they can be easily searched by others looking for a similar topic.
- Using hashtags, re-tweeting, and mentioning users (@username) helps users gain followership. See Tables 1 and 2 for people or organizations in agriculture to follow.
- Explore third-party applications to help manage and filter tweets (see Table 3).
- Measure the return on investment using Twitter analytical tools (<http://twitter.pbworks.com/AnalyticsApps> or <http://www.hootsuite.com>) that measure re-tweets, mentions, followers, and several other indicators of impact.

Discussion/Conclusions

Social media use requires both creativity and strategy to develop an accurate and effective message. Although learning the Twitter applications and features can take time, Twitter is still a fun, valuable tool that is helping to strengthen online communication (Mansfield, 2009). Twitter has many features, but the idea behind it is simplistic, and Comm (2009) argued that simplicity has contributed to a large part of its success. “On Twitter, people are happy to let everyone know what they had for lunch, but that’s not because Twitter asked them to” (Comm, p. 29).

A lot of people, especially those more familiar with Facebook status updates, see Twitter as nothing more than mundane status updates of people’s lives. Common criticism, especially from newcomers, sounds a little like this: “Why should I care about what some schmoe had for breakfast?” Actually, updates like that are highly appealing to marketers looking for ways to help potential customers discover their products or publicize their brand to their networks through these seemingly “mundane” updates. The idea that Twitter provides only pointless personal details is a limited perspective. Twitter was built on the idea of providing real-time updates, which is transferable to situations like the jet landing on the Hudson River, members of Congress tweeting about a legislative proposal, or live coverage of a speaker at a research or trade conference. Twitter has recognized this shift in how social media is used and changed the question above the box to post a tweet from “What are you doing?” to “What’s happening?” to reflect the transition in its use.

Based on research and industry perspectives, Twitter will continue its explosive growth over the next year before it begins to level out. Businesses and organizations will use it to inform and listen to their audiences. The listening aspect will increase so that organizations and businesses can better predict their audience members’ needs. Twitter will play a major role in crisis communication to provide information as quickly as possible because information travels faster through social networks. While Internet users currently utilize Web 2.0 technologies, Web 2.0 companies may find themselves transformed by another wave of Web innovators who are making use of Web 3.0—making information easier to read, understand, and process (Metz, 2007) and connecting people who share common interests (Cameron, 2009). With the use of hashtags and lists to better organize information, links, news, and conversations, Twitter is helping take social media into this new realm of semantic Web technology. Because Web 2.0 applications have allowed for more connections among people than ever before, they will continue to be used, but Web 3.0 will allow for a new generation of technology that manages data and ideas more efficiently (Hendler, 2009). While Twitter might be considered a step forward in the future of Web use, the transition to implement more Web 3.0-related products could be delayed until a stronger market forms for them (Hendler, 2008).

Agricultural communicators should develop a plan for social media that includes Twitter and how and why the organization will use it. Morgan (2009) provided a brief overview of how to implement a social media strategy, and Williams (2009) shared a detailed template for Twitter specifically. Tweeting and staying on top of the Twitterverse can be time consuming and brings up the important question: “Is this worth it?” Measuring the return on investment is critical to evaluate Twitter’s worth for an individual or organization, keeping in mind that it takes time to build a successful presence. While the value of Twitter may be viewed as more intangible compared to traditional business measures of success, Web analytics can provide a data-driven approach to measure its business value (Duncan, n.d.).

It is important to remember that not all audiences use Twitter, so organizations should supplement other social media tools (e.g., Facebook, YouTube) and traditional mediums. Twitter’s capabili-

ties as a public relations tool means agricultural communicators need to be using it to engage and monitor various publics and issues of interest to their organization. Furthermore, recognizing that Twitter is not a hypodermic needle to deliver information, but rather a tool with which to interact with publics, is critical, yet difficult.

“People and organizations are threatened by the idea of opening themselves up to being the non-experts, a mere part of the conversation (as opposed to the directors and choreographers of it), and to being the recipients of communications – not the source. What people and organizations who try to play in this new world with their old rules discover is that the networked world is also not a very forgiving place.” (Lefebvre, 2007, p. 38)

Agricultural communicators need to shift their thinking to recognize, as Lefebvre (2007) suggested, that the people formerly known as the audience might be better sources of information than those who are officially sanctioned. With tools like Twitter at their fingertips, people no longer want to be audiences, but instead, active participants in the conversation of agriculture. Public relations practitioners’ blogs and social media (Twitter would fall into both of those categories) have impacted the profession in that they have “made communications more instantaneous because they encourage organizations to respond more quickly to criticism” (Wright & Hinson, 2009, p. 16).

Agricultural communicators need to open themselves up to the idea of being a part of the conversation, not just the orchestrators of it. When used strategically, Twitter can be a tool that shapes communication strategies, and ultimately, how agriculture operates to remain a viable and publicly valued industry. When supplemented with traditional communication mediums, Twitter offers communicators the potential to reach new audiences (Wright & Hinson, 2009). However, the selection and use of communication technology must be done purposefully with full consideration given to audience member preferences and the capabilities of the tool. Twitter does have some downfalls that must be recognized and overcome. Additional research is still needed to measure the impact of Twitter as a communication outlet in agriculture. It would be interesting to research the characteristics of individuals who follow producers or agricultural organizations to determine if Twitter is indeed reaching new audiences and to see how it can be used to increase public engagement with agricultural issues.

This article is meant to be a starting point for agricultural communicators who are considering the use of Twitter in their communication efforts. When used effectively, Twitter provides agricultural communicators with another medium to tell the story of agriculture—140 characters at a time.

Keywords

Web 2.0, Web 3.0, social media, Twitter, public relations, crisis communications, agricultural communications

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Feeding the Debate: A Qualitative Framing Analysis of Organic Food News Media Coverage

Courtney Meyers and Katie Abrams

Abstract

Consumer interest in organic food has increased in recent years due to concerns over conventional production practices, health standards and environmental protection. Organic food production can be viewed as both an ally and rival of traditional agriculture. Americans tend to be more susceptible to media coverage about production agriculture. Determining how the media frames organic food is important because news frames can determine what becomes salient in conversations from the dinner table to Capitol Hill. This study employed qualitative content analysis methodology to discover how five national newspapers framed organic foods during an 18-month period. Emergent frames included “ethical,” “health,” “production,” and “industrialization.” Emphasis was placed on the ethical and moral reasons to purchase organic food with limited discussion of the scientific evidence for consumer claims of superior quality, safety, and nutrition. Overall, common sources included consumers, industry representatives, and organic farmers. Future research should utilize the identified frames to examine news coverage over a longer time frame and in additional media such as agricultural magazines.

So What?

The organic and natural food markets have experienced tremendous growth recently due to an increase in consumer demand for these products. When consumers seek information to make food purchasing decisions, one of the most trusted sources is the media. How the media covers agriculture is important because it can influence consumers’ perceptions of how food is produced, handled, or processed. Understanding how agricultural topics have been presented (or framed) in the media helps agricultural communicators understand what is being said and by whom. This perspective then helps agricultural communicators determine what additional information is necessary to support or correct that coverage. This article provides that perspective for the specific topic of organic foods with the purpose of discovering what frames are used in this coverage.

Introduction

Consumers’ desire for food that is healthy, safe, and ethically produced often motivates them to buy organic food as insurance and/or investment in health (Yiridoe, Bonti-Ankomah, & Martin, 2005; Zehnder, Hope, Hill, Hoyle, & Blake, 2003). This purchasing behavior has encouraged the rapid growth in the organic and natural food market in recent years. Once limited to a small number of retail stores, organic foods are now available in natural supermarkets, conventional supermarkets, farmers’ markets, and discount club stores (Greene et al., 2009).

In 2008, the sale of organic food products was more than \$22 billion, which represented a 15.8% increase in sales from 2007 (Organic Trade Association, 2009). Produce (fruits and vegetables) and dairy products account for more than half of organic sales, followed by beverages, packaged foods, bread and grains, snack foods, sauces, and meat (Greene et al., 2009). A poll of U.S. consumers by the market research firm Harris Interactive found that 31% of consumers buy organic food occasionally while a smaller percentage (7%) purchase organic food “all or most of the time” (“Harris poll results,” 2007).

Studies report that consumers purchase organic foods because they perceive them as higher in nutritional value, chemical free, environmentally friendly, and better tasting than conventionally produced food (Scholderer, Nielsen, Bredahl, Claudi-Magnussen, & Lindahl, 2004; Magkos, Arvaniti, & Zampelas, 2006). The Harris Poll found that more than three-quarters of the U.S. public believes organic food is safer for the environment (79%) and healthier (76%) than conventional foods (“Harris poll results,” 2007). However, whether organic food actually delivers on these desires and beliefs is controversial and the subject of scientifically inconclusive debate (Obach, 2007). Factors prohibiting consumers from purchasing organic foods include price, lack of knowledge, lack of trust, and limited availability (Yiridoe et al., 2005; California Institute for Rural Studies, 2005).

The majority of the general U.S. public has little or no direct knowledge of farm practices and food processing and “as a result, members of that general public are more familiar with and susceptible to media and other information sources, which likewise do not have expertise in agriculture and are oriented more toward reporting controversies” (Zimbelman, Wilson, Bennett, & Curtis, 1995, p. 154). When writing news articles, journalists use frames to organize stories and put the story in context with other events (Gamson & Modigliani, 1989). Because the media serve as the most trusted source of food-related risk information (Frewer, Howard, Hedderley, & Shepherd, 1996), it is therefore important to discover how agricultural topics, such as organic foods, are being presented in media coverage.

Literature Review

The U.S. Department of Agriculture (USDA) established the National Organic Program in October 2002 to assure consumers that organic-labeled products were produced, processed, and certified to meet consistent national organic regulations. For organic meat production, the standards prohibit the use of antibiotics and growth hormones, require animals to be fed 100% organic feed, and require animals to have access to outdoors and pasture for ruminants. For organic crop production, the standards prohibit the use of genetic engineering, radiation, sewage sludge, and unapproved synthetic pesticides and materials (USDA National Organic Program, 2008).

Consumers want to be confident their food is safe, and organic food is often equated with safer food. Perceptions of food safety typically relate to concern about food production technologies. In the United States, concern is highest for pesticides and hormones, followed by antibiotics, genetic modification, and irradiation (Hwang, Roe, & Teisl, 2005). The USDA organic regulations address these concerns, and the USDA certified organic label distinguishes the food as free of those perceived risks. Because the organic standards are not imposed on all food producers nor required for any health or environmental reasons, a theoretical, ethical, and scientific debate has emerged in the United States (Obach, 2007).

The debate

The debate surrounding organic food focuses on a variety of specific, and supposedly demonstrable, characteristics that proponents claim make it superior to conventional farming and processed products. How organic food is grown, handled, and processed is the only differentiation from conventionally produced food (USDA NOP, 2008). The use of chemical pesticides and fertilizers is a common practice in conventional agriculture. The presence of pesticide residues in food is known, but the degree of risk posed by these residues remains uncertain. The Organic Trade Association (2008a) asserts that organic agriculture protects the health of people and the planet by reducing the overall exposure to toxic chemicals from synthetic pesticides that can end up in the ground, air, water and food supply, and that are associated with health consequences from asthma to cancer. Trewavas (2004) reported that although studies have found that the presence of these chemicals can be reduced by switching to an organic food diet, the health effects, if any, are unknown..

Organic advocates also assert that organic agricultural production benefits the environment through the use of “earth-friendly” practices such as protecting ground water supplies and reducing chemical runoff (Organic Trade Association, 2008b). However, conventional agriculture proponents argue that the application of synthetic nutrients will always be required to sustain a global agriculture system that feeds the world’s growing population (U.S. Geological Survey, 1999). “While chemical inputs [for organic food production] are somewhat limited, greater usage of naturally occurring substances that are as environmentally damaging as some synthetic chemicals will inevitably grow, if they prove more cost-effective” (Obach, 2007, p. 236).

A review of 162 studies conducted over 50 years found that organic food had no nutritional or health benefits over conventional food (Dangour et al., 2009). A few studies have shown organic food may be higher in vitamin C, but other studies attempting to prove so have not been consistent (Trewavas, 2004). Organic food that comes from local sources may taste better than conventional food, but then it is a matter of freshness, not production technique. Studies conducted with trained taste panels and consumers have found little to no difference in taste between organic foods and conventional foods (Fillion & Arazi, 2002). Consumers’ perceptions of the merits of a production system are highly likely to influence their perception of the quality of a product produced from such a system (Edwards, 2005).

Framing theory

Frames are cultural structures that organize understanding of social phenomena. Frames are used to determine what content is relevant to discussion of a concern; to define the roles of stakeholders, to outline relevant beliefs, actions, and values; to determine the language used to discuss the topic; and to outline the values and goals of the content area (Hertog & McLeod, 2001). Framing involves the selection of some aspects of a situation and making them more salient through communicating text to perform four main functions: define problems, diagnose causes, make moral judgments, and/or suggest remedies (Entman, 1993). Frames are used every day to organize life experiences and make sense of them (Goffman, 1974).

Journalists use frames to filter large amounts of information, determine what is important, and efficiently communicate that information to their audiences (Gitlin, 1980). “The news frame organizes everyday reality and the news frame is part and parcel of everyday reality...[it] is an essential feature of news” (Tuchman, 1978, p. 193). News frames have significant impact on audience members’ interpretation of issues and resulting attitudes by emphasizing certain elements of a controver-

sial topic to shape readers' opinions and policy preferences. How audience members interpret issues may depend on how the media chooses to select and present issues (Price, Tewksbury & Powers, 1995). When a frame is used to discuss a topic familiar to audience members, it increases consideration of pre-existing beliefs. However, when a frame is used to explain a topic unfamiliar to audience members, the new perspective can influence changes in opinion (Tewksbury, Jones, Peske, Raymond, & Vig, 2000).

Interest groups attempt to gain favorable public opinion and policymaker support by supplying new facts or changing interpretation of those facts. Even more so, they work to change the frames that are used to evaluate the facts and the issue (Miller & Riechert, 2001). Andsager (2000) examined how pro-life and pro-choice interest groups attempted to frame the late-term abortion debate. Findings indicated that the sources selected for news stories can influence the terminology used in news text and impact the framing of the article.

Framing research has been conducted to examine how food-related issues such as biotechnology (Lundy & Irani, 2004) and mad cow disease (Ruth, Eubanks, & Telg, 2005; Ashlock, Cartmell, & Keleman, 2006) are framed in print media, but no research has been conducted to explore framing of organic food in the U.S. media.

Purpose and Research Questions

The purpose of this exploratory study was to discover how frames are used in the news coverage of organic foods, which may influence the debate around the topic. A review of the literature pertaining to organic food and framing theory suggests the following research questions:

Research Question 1: How have the national print media framed organic food as an issue?

Research Question 2: What sources are utilized and with what frames are they associated?

Methodology

To answer the research questions, the study utilized a qualitative content analysis research design. Altheide (1996) said the goal of qualitative research is to understand the characteristics of documents and what they represent in the broader social context. Qualitative data analysis does not focus on counting or coding, although these techniques can assist in the research process. Instead, qualitative data analysis is utilized to gain a thorough understanding of documents under study and how they relate to theoretical or conceptual issues (Altheide, 1996).

Because the organic food market is not restrained to a geographic area, five national newspapers were selected: *The New York Times*, *The Washington Post*, *Los Angeles Times*, *Atlanta Journal & Constitution*, and *Chicago Sun-Times*. *The New York Times* was selected because it is recognized for its extensive readership and quality of reporting. *The Washington Post* was selected because of its coverage of political issues such as new legislature. These two newspapers also represent the East Coast. The remaining three newspapers were selected because they represent different geographical locations: West Coast, South, and Midwest.

The coverage time frame was March 1, 2005 to September 13, 2006. In March 2005, Whole Foods Market, the world's leading retailer of natural and organic foods, was named a Fortune 500 Company. For this reason, the data collection time period began when the economic significance of organic foods became evident. The end date was selected because it is before the September 14, 2006

E. coli outbreak in organic spinach. The researchers felt the news coverage of this food safety crisis would be unrepresentative of previous organic food coverage and bias the resulting frames.

Articles were collected using the Lexis-Nexis Academic online database by searching for the term “organic food” in the database’s “headline, lead paragraph(s), terms” search parameter. News, feature, and opinion/editorial articles were included in the study. Letters to the editor, restaurant reviews, and book reviews were not included in analysis because these types of articles give an abbreviated account of organic food. Articles less than 300 words were rejected because the researchers believed these shorter pieces would not have an appropriate amount of detail to develop frames adequately. Articles that contained the search terms, but did not focus on organic foods were also excluded. The articles were cross referenced and duplicates eliminated.

Individual articles served as the unit of analysis and were each assigned an identification number. Following an initial training session, coders used a coding sheet to record newspaper name, date of publication, headline, type of article (news, feature, opinion/editorial, column), word length, and author. Coders analyzed each article to discover: (1) recurring themes in news coverage of organic food; (2) sources of direct and paraphrased quotations; and (3) dominant frames used to explain organic food.

Results

Using the article selection guidelines, 59 articles were found – 28 articles from *The New York Times*; eight articles from *The Washington Post*; four articles from the *Los Angeles Times*; 10 articles from the *Atlanta Journal & Constitution*; and 9 articles from the *Chicago Sun-Times*.

Research Question 1: How have the national print media framed organic food as an issue?

Examination of the articles for word choice, narratives, sources and structure revealed four major frames: ethical frame, health frame, production frame, and industrialization frame (see Table 1).

Table 1
Identified Frames by Newspaper

Newspaper	Ethical Frame	Health Frame	Production Frame	Industrialization Frame
<i>The New York Times</i> (n=28)	11	3	7	7
<i>The Washington Post</i> (n=8)	3	2	2	1
<i>Atlanta Journal & Constitution</i> (n=10)	5	4	0	1
<i>Chicago Sun-Times</i> (n=9)	3	3	2	1
<i>Los Angeles Times</i> (n=4)	2	0	1	1
Total (n=59)	24	12	12	11

Ethical frame

The most common frame utilized in the coverage of organic foods was the ethical frame. This frame was created through description of environmentalism and social responsibility. Terms and phrases that described this frame were: “environmentally friendly,” “eco-friendly,” and “ethical principles.” Organic food was explained as beneficial for the environment because production of these foods does not use pesticides or chemicals. Emphasis on the environmental benefit of organic foods described the ethical superiority of these goods to conventionally produced food. This frame also discussed organic foods as a part of larger social movements such as “metrospirituality,” which is a lifestyle based on treating people and the Earth with respect.

Articles with the ethical frame connected the increased consumer demand for organic products to social responsibility, which is a combination of personal values and beliefs. An article in *The New York Times* described one consumer’s reasoning for purchasing organic food:

Ms. Gersten worried about what synthetic growth hormones, pesticides and antibiotics might do to her child and to the environment. She was concerned about the health of cows and the survival of local farmers. So she became one of the new mothers who are making milk the fastest growing slice of the organic market.

Buying organic was often equated with buying local to support local farmers and sustainable farming practices. Purchasing food at farmers’ markets allows consumers to know the producers and how the food is produced. The lead sentence of an *Atlanta Journal-Constitution* article emphasized the argument to purchase local food: “A local organic farm owner wants the community to have vegetables grown by someone using the wisdom of nature rather than someone with a knowledge of pesticides.” Several other articles discussed the “ethical principles” needed to determine what types of food to purchase. An article in *The Washington Post* described the personal dilemma of deciding what to buy:

The point is, choosing what to eat and drink has become hard work. It’s not simply a case of taste or price. Now we have to ask ourselves: Is this good for my health? Have animals suffered? Is it local? Organic? Bad for the planet? Harvested by child workers?

Health frame

The health frame and the production frame were utilized in 12 of the articles analyzed. The health frame described organic foods as a source of nutrition and a solution to the current obesity problem in the United States. This frame emphasized organic foods as safe (free from pesticides and other chemicals), which elevated their health status. Keywords and phrases in this frame included: “natural, authentic, and healthy,” “real food,” and “health-oriented.” Articles using this frame did not tout any specific health benefits of organic food, but they were framed as healthy in a holistic way.

This frame was used in articles that described organic foods as the superior food choice. An article in the *Chicago Sun-Times* demonstrated how parents are purchasing organic foods to provide the best food for their children.

Erin O’Neal has two daughters and a fridge stocked with organic cheese, milk, fruits and vegetables in her Annapolis, Md., home. She is among the increasing number of parents who buy organic to keep their children’s diets free of food grown with pesticides, hormones, antibiotics or genetic engineering.

An *Atlanta Journal-Constitution* article described why a 10-year-old boy conducted a science fair project to share his organic diet with classmates:

Cal doesn’t preach to his classmates about the virtues of an all-organic diet – he usually buys the school lunch rather than pack his own – but the science project gave him the chance to speak up. He eats grass-fed beef, wild-caught salmon and organic produce at home. “I want to be healthier because I don’t want to be a guy that’s overweight,” Cal said. “I want to be a healthy guy. I want to live a long time.”

This frame was evident in coverage of new organic food products. Several articles featured the organic market’s expansion from the traditional produce section to the liquor store. An article in the *Atlanta Journal-Constitution* described how the taste of organic beer, made from organic malts and hops, has evolved: “Most organic beers taste like dirt,” Sprouse says. “I didn’t want to brew a beer like that.” *The New York Times* ran an article explaining the new market of organic liquor:

It’s hard to imagine a more congenial way of saving the world than sipping an eco-friendly cocktail, which may be why organic spirits – those distilled from grains, fruit or sugarcane that’s been certified organic – are inching their way behind the bars of a few of the city’s more crunchy establishments.

Production frame

The production frame discussed the production practices that influence supply and demand of organic food, including the cost and regulations facing the organic industry. These articles also debated the difference between organic and natural foods and the use of labeling to identify organic foods. Articles in this frame included keywords such as “labeling,” “demand,” “supply,” “shortages,” “cost,” and “regulations.”

An article about organic milk in the *Chicago Sun-Times* discussed the supply shortage: “Organic milk is moving so fast off the shelves at some Chicago-area stores that if you phone to see whether it’s in stock, workers offer to put it on hold for you.” The article went on to explain the need to recruit organic dairy farmers in order to meet the increased consumer demand.

The production frame focused on explaining how organic foods are produced. *The Washington Post* ran an article about the organic milk shortage and included details about the organic certification process. This information detailed the USDA’s requirements for milk to be certified as organic.

The production frame also discussed issues facing farmers in the production of organic foods. An article in *The New York Times* focused on the coexistence of genetically modified and non-genetically modified crops: “Scientifically, there are strong disagreements about whether ‘coexistence’ is possible, at what cost and even how it should be defined.” Another article in *The New York Times* explained the science of genetic modification and how organic foods are often genetically modified through

natural practices over centuries of time. This article addressed how alarmist warnings have pressured people into purchasing organic foods without truly understanding the science behind biotechnology.

The production frame also explained the difference between the labeling regulations of “organic” versus “natural.” An article in *The New York Times* explained how the natural label, when applied to meat, is confusing and does not require as stringent production requirements as the organic label. A *Los Angeles Times* article discussed the confusion about the two terms when applied to meat.

“Consumers do not understand the difference between all-natural, grass-fed and organic beef,” says Rick Machen, who grew up on a cattle ranch and is now a livestock specialist at Texas A&M University. “I don’t understand them myself and I’m a university professor. It’s something that the industry needs to work on so consumers fully appreciate and understand the differences between these products.”

Industrialization frame

The final frame in the coverage of organic foods was the industrialization frame, present in 11 articles. This frame was identified by its focus on big businesses (e.g. Wal-mart, Target, Whole Foods Market) entering the organic market and threatening the organic ideology. The industrialization frame compared consumers’ perception of organic food production to descriptions of corporate organic farms “just like their conventional counterparts.” Traditional organic farming was characterized as a conscience and moral effort to “return to the land.” Keywords such as “alternative to agribusiness,” “sustainable,” “family farm,” and “small or local farms/farmers” were used to describe what organic farming should be and what it will lose once it is industrialized.

This frame demonstrated how the portrayal of organic food is shifting as large food companies enter the organic food market. An article in the *Atlanta Journal-Constitution* made the comparison between the traditional description of organic food and the contemporary description:

In the past, supporting organic farming also meant favoring locally grown food over mass-produced varieties that are often grown using greater quantities of fossil fuels for production and transport. On store shelves, the line between organic and mass-produced has blurred.

The industrialization frame discussed possible positive and negative outcomes related to big business entering the organic food industry. One article in *The New York Times* presented both sides of the debate:

Some organic food advocates applaud the development, saying Wal-Mart’s efforts will help expand the amount of land that is farmed organically and the quantities of organic food available to the public. But others say the initiative will ultimately hurt organic farmers, will lower standards for the production of organic foods and will undercut environmental benefits of organic farming.

Much of the debate about big businesses entering the organic food market deals with the use of the organic label. A column in *The Washington Post* discussed the confusion over what the organic label means:

The meaning of the organic label rests on a shifting balance between what the corporate lobbies want and what the watchdogs can prevent. Most organic brands are now niche labels of larger food companies that have no interest in the finer, more holistic aspects of the grower's craft.

Research Question 2: What sources are utilized and with what frames are they associated? Table 2 displays the sources used in each of the four identified frames.

Table 2
Sources Used in Identified Frames

Frame	Sources Used
Ethical	organic consumers, organic proponents, and organic farmers or business owners
Health	consumers, researchers, an advocate organization, and nutritional experts
Production	organic farmers, scientists, and organic industry representatives
Industrialization	corporate spokespersons, organic advocacy groups, sustainable agriculture proponents and groups, and organic farmers

Ethical frame

Sources in the ethical frame were organic consumers, organic proponents, and organic farmers or business owners. Organic consumers and proponents described personal values and beliefs that correspond with purchasing organic foods. A feature article in the *Chicago Sun-Times* about Mary-Jane Butters (a mother, organic farmer, and "American's organic lifestyle maven") used a quote that illustrated a common viewpoint found in the ethical frame:

"Food nurtures us in so many ways that it's important to support the family farm and locally grown foods," says the farm girl-turned-advocate. "It's an easy choice – do you want a naturally-grown organic apple or an apple with 52 chemical ingredients? I'm not righteous about it, but I just think of all the things you spend your money on, food offers the best investment – it's like life insurance. When you buy at farmers markets and organic restaurants, you'll save money in the long run on medical bills and you'll be supporting a beautiful [farm] landscape."

Author Michael Pollan was utilized as a source in several articles because his book, "The Omnivore's Dilemma," was released during the study time frame. He was often referred to in columns and editorials about the need to purchase organic or local foods. In an article in *The Washington Post*, Pollan was asked why organic food often costs more, he said: "It's a crime that only the fairly affluent in this country can afford to eat healthy food. But the problem is not that that food is so expensive. It's that industrial food is so cheap."

Organic business owners positioned their companies as values-based because of the characteristics of the organic industry. An article in *The New York Times* quoted an organic company owner: "Making organic is important, Ms. Mitzner said, but the main goal is "buying, selling and promoting

products that are socially responsible and environmentally sustainable – because after all, that’s all we’ve got as people on this planet.”

Health frame

In the health frame, sources included consumers, researchers, an advocate organization, and nutritional experts. Consumers often cited health and safety concerns as motivation to eat organic and live a healthy lifestyle. A mother quoted in *The New York Times* explained why she began buying organic foods: “There’s so much out there that I can’t protect them from,” she said of her children. “At least their home and the food they eat should be as safe as I can make it.”

Another mother quoted in the *Chicago Sun-Times* justified her decision to purchase organic foods for her family: “The pesticide issue just scares me – it wigs me out to think about the amount of chemicals that might be going into my kid,” said O’Neal, 36.

The director of the Center for Culinary Development, which develops recipes for food companies, was quoted in *The New York Times* about the interest in healthy, natural, and authentic food: “The move to ‘real’ food has legs and will be around for quite a while,” said Marc Halperin.

The Environmental Working Group, an advocacy group, was cited in a *Chicago Sun-Times* article because it provides a guide about which types of produce have high or low levels of pesticides – a commonly cited health concern for consumers.

Nutritional experts such as pediatricians, doctors, and nutritionists were cited sparingly to testify to the nutritional content of organic food, but did not make specific health claims to posit organic is better than conventionally produced food.

Production frame

Organic farmers, scientists, and organic industry representatives were the most quoted sources in the production frame. Organic farmers were utilized as sources to describe the production practice and the commitment they place on providing high quality food through accepted organic practices. A feature article in *The New York Times* highlighted the organic farming practices of Joel Salatin: He describes his methods as “beyond organic” and has pioneered techniques that admiring colleagues and competitors describe as above reproach.

Organic farmers were described as dedicated to practicing organic production techniques. An article in *The New York Times* quoted a Spanish farmer who, upon learning that his crop contained 12% genetically modified corn, burned the corn still in his field: “If I could not farm organic, I would not farm,” said Mr. Navarro, dressed in sweatpants and a stained T-shirt as he sipped coffee in his shed. “I could not sleep at night if I sold that crop.”

Several scientists presented information about the debate surrounding agricultural biotechnology or genetically modified foods, which are often viewed as the opposite of organic foods. Dr. Henry I. Miller, a fellow at the Hoover Institution and co-author of “The Frankenfood Myth” provided information about the safety of genetic modification: “There hasn’t been a single untoward event documented, not a single ecosystem disrupted or person made ill from these foods,” he said in an interview.

Organic industry representatives included spokespeople for organic interest groups or organic food companies. Sue McGovern, spokesperson for Organic Valley brand foods, was quoted in a *Chicago Sun-Times* article to explain why organic milk production could not meet consumer demand.

An article in *The Washington Post* about the organic milk shortage also quoted representatives from organic food companies: “You can’t push a button and get more organic cows,” said Cathleen Toomey, a spokesperson for organic producer Stonyfield Farm.

Industrialization frame

In the industrialization frame, sources were typically corporate spokespersons, organic advocacy groups (i.e. Organic Trade Association and Organic Consumers Association), sustainable agriculture proponents and groups, and organic farmers. Corporate spokespersons and the Organic Trade Association defended big business’ entrance into the organic market by saying they are making organic food more affordable and improving the image of their store and/or products. Karen Burk, spokesperson for Wal-Mart, expressed this viewpoint in an *Atlanta Journal-Constitution* article:

“Although we have sold organic food products for some time, our customers have not always thought of Wal-Mart as a place to find them,” said company spokesperson Karen Burk. “We want them to know that we have these products, and that we have them at prices that are better than those offered by the competition.”

Sustainable agriculture proponents and organizations attributed their ideology of organics to that which more closely resembles the production practices of small organic producers. An article in *The New York Times* quoted Ronnie Cummins, national director of the Organic Consumers Association, discussing Wal-Mart’s plan to enter the organic food business: “[Wal-Mart is] going to end up outsourcing from overseas and places like China,” he said, “where you’ve got dubious organic standards and labor conditions that are contrary to what any organic consumer would consider equitable.”

Organic farmers provided quotes about their opinions regarding big business entering the organic food market. Although many farmers did not share this viewpoint, an article in the *Atlanta Journal-Constitution* paraphrased one producer:

Organic farmer Stufflebeam concedes that the increased corporate presence in the market has probably taken business away from some independent organic farms, but, at the same time, mainstream chains are increasing public awareness of organic foods in general.

Conclusions

The USDA National Organic Program (2008) distinguishes organic foods from conventionally produced foods only in how they are grown, handled, and processed. This definition does not introduce issues related to sustainability, environmentalism, nutrition, or taste. However, the selected national newspapers portrayed organic food as part of a moral and ethical responsibility for the environment, society, and consumers’ health. The ethical frame suggested that consumers who chose to buy organic food care about the environment, are concerned with sustainability, and support small farmers or local businesses. This frame featured quotes from consumers about why they purchase organic foods, and these quotes coincide with prior studies (Yiridoe, et al., 2005; California Institute for Rural Studies, 2005).

Articles with the health frame presented organic food as superior in terms of its health benefits, safety, and quality. Although studies have not found a difference in taste between organic and conventional foods (Fillion & Arazi, 2002), sources in this frame presented organic food as a better

food choice. The confusion was often in describing organic food and local food as one in the same; however, this is not always the case. By means of comparison, conventional food production was often explained as inferior in safety, quality, and moral standards. This representation of organic food makes it seem elitist because consumers who care about ethical issues will pay the higher price to purchase it.

The production frame focused on how organic foods are produced and how consumer demands are being met. This frame included feature articles about organic farmers who presented the idealistic reasons they chose to grow organic foods; however, these articles did not address why some farmers have chosen not to produce organic foods. Currently, organic food production accounts for a small percentage of the total U.S. food production. Although several farmers were used as sources in the production frame articles, no conventional farmers were quoted to provide balance.

The emphasis of the industrialization frame demonstrated the increasing consumer demand for organic foods and the need for larger businesses to meet this demand. However, the articles in this frame portrayed big business as ruining the humble, small-farm ideology associated with organic food production. An overlooked area was how the increase in consumer demand was going to be met, if not by larger businesses.

The findings from this study indicate that the national news media emphasized the ethical and moral reasons to purchase organic food. The limited discussion of scientific evidence for the claims of superior quality, safety, and nutrition contributes to consumers' dependence on personal morals and ethics. A phrase in a *New York Times* article justifies the need for additional emphasis on explaining the science surrounding food: "It is no secret that the public's understanding of science, and genetics in particular, is low."

Implications and Recommendations

The media examined in this study favored organic food and the organic ideology. By not balancing coverage of the topic with scientific evidence or other viewpoints, they are perpetuating an ideology rather than providing facts for consumers to make their own decisions. The media avoided pointing out the uncertainties surrounding supposed health risks of conventionally produced foods and supposed health benefits of organically produced foods.

The frames discovered in this exploratory study provide the framework for additional quantitative studies to research different time periods and media sources. For example, this study did not include coverage of the *E. coli* outbreak (on September 13, 2006) in organic spinach. A framing analysis of this food safety crisis event would reveal if and/or how the frames were adjusted to portray organic food and the production process. A longitudinal study would further examine how organic foods are being framed over time and in relation to key events, such as the food safety scares involved *E. coli* in spinach or salmonella in peanut butter. Additional research should investigate coverage of organic foods in production agriculture magazines (i.e. *Progressive Farmer*, *Successful Farming*) to determine how this type of agriculture is being discussed with agricultural audiences.

Miller and Riechert (2001) said interest groups can attempt to frame issues by supplying new facts or changing interpretation of those facts. Additional research should evaluate how organic interest groups (i.e. Organic Consumers Association, Organic Trade Association) frame issues in news releases, speeches, and quotes and how that influences the overall frame in the media. As the organic food industry continues to grow, consumers will seek information from numerous sources, including print media. Therefore, how the print media utilizes frames to improve readers' understanding or behavior will have significant impact on the future of organic foods and the agriculture industry.

Agricultural communications practitioners need to continue to provide factual information regarding both conventional and organic foods. This information needs to address consumer concerns for sustainability, environmental impact, nutrition, and taste. The organic food trend appears to be growing in popularity and consumers will continue to seek information to make informed purchasing decisions. If agricultural communicators' intentions are to connect with their audiences and create public value for agriculture, then organic agriculture could be a route to inform consumers who may not otherwise be curious about production practices. However, a dilemma exists in how to promote conventional or organic agriculture without unfairly criticizing the other. This presents a challenging situation for agricultural communicators.

While educational efforts will be a part of the solution, the positive attitudes toward organic agriculture are already in place, even if they may be based on marginal scientific evidence. It is difficult to change attitudes that have already been formed (Perloff, 2008); therefore, a more proactive communication approach is needed. As the agriculture industry changes and evolves, it will continue to face challenges in which it seems if only the public and media were more educated or informed, they would make better decisions. Oftentimes, traditional agriculture takes a more reactive approach and tends to "circle the wagons" when threatened by attacks that seem unfounded or emotional. In an era when journalists may blatantly ignore the conventional agriculture argument, as evidenced in the *Time Magazine* cover story by Bryan Walsh (2009) entitled "Getting Real About the High Price of Cheap Food," we have to ask ourselves how we can communicate more meaningfully without trivializing the positive attitudes and beliefs toward organic agriculture or attacking conventional practices. The media will continue to seek information regarding this topic and agricultural communication practitioners should be prepared to provide newsworthy, meaningful information.

Keywords

organic food, framing, content analysis, media, newspapers, organic debate

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Stiffening Strategies: A 20-Year Review of Agricultural Journalist Experiences in the Publication-Reader-Advertiser Triad

Stephen Banning, Jim Evans, Owen Roberts, and Karen Simon

Abstract

This research examined relationships among agricultural journalists/editors, publishers of U. S. commercial farm periodicals and advertisers across a 20-year period, from 1988 to 2008. In particular, it focused on the journalists' perceptions of influences on editorial content. Researchers used a contractualist model within the framework of social contract theory that features relationships based on mutual consent, pursuit of mutual benefits and mutual options for departure from the publication-reader-advertiser triad. They replicated studies of 1988 and 1998 among members of the American Agricultural Editors' Association to permit a 20-year analysis of trends in perceptions and experiences. Findings revealed continuing concern among agricultural journalists about pressures on editorial content and integrity. They reported harm associated with advertising-related pressures, as well as with getting too close to those they cover. At the same time, results of this study revealed evidence of active, increasing resistance to such pressures and increased sensitivity to harm that may be associated with practices that compromise editorial coverage and content. Also, results of the 2008 survey showed evidence that advertisers may be taking steps to help protect the editorial independence of these agricultural journalists and their publications.

Introduction

Relationships between agricultural publishers and advertisers have come under scrutiny from the early days of commercial farm publishing. For example, in 1902 Miller Purvis commented to readers of *Agricultural Advertising* magazine:

There are certain elements that make flour valuable and desirable. To mix the flour with chalk may not change its looks, but it injures its quality. Advertising space is valuable if it is backed up by good quality in the paper in which it is found and quantity in the way of circulation. With those lacking it is worth anything down to nothing. (p. 14)

An ethics-related caution flag about that relationship has been waving with special vigor during the past 20 years. An alert came during 1988 in the form of a national survey among members of the American Agricultural Editors' Association. Responses revealed a serious level of concern among agricultural journalists over what they saw as potential consequences of advertising-related pressures they were facing (Hays & Reisner, 1990).

Risks and concerns on the ethics front had, of course, been registered earlier (e.g., Reber, 1960; Evans & Salcedo, 1974; Long, 1980; Reisner & Hays, 1987). However, the 1988 survey may have been the earliest quantitative research effort among agricultural journalists and editors, nationally, to identify their experiences and perspectives about advertiser-related pressures on editorial content.

More caution flags emerged from various sources during the following decade. In 1995, Oliver and Paulson reported findings of their study of ethical issues facing agricultural communicators in seven national agricultural communicator organizations. Findings prompted them to recommend that each organization create or update a code of ethics and that academic curricula in this field should prepare students more effectively to deal with ethical issues. They also recommended a study to see what cultural differences, if any, affect ethical decision making (Oliver & Paulson, 1995, pp. 19-20).

In 1998, Banning and Evans replicated the 1988 study by Hays and Reisner, using the same questions and, again, the American Agricultural Editors' Association membership. In their series Banning and Evans used a contractualist model proposed by Cunningham. It analyzed ethical issues in terms of power relationships among advertisers, media and consumers. According to this model, "power requires mutual agreement by all parties - like players in a game, everyone must agree on the rules" (Cunningham, 1999, p. 86). The researchers observed that the model places importance on all partners in the triad and "offers more promise than finger-pointing approaches this topic easily generates" (Banning & Evans, 2004b, p. 26).

The 10-year comparison (1988-1998) revealed intensifying concern among journalists in the agricultural advertiser-media-reader triad. Responses pointed toward increasing pressure during that decade, in terms of advertiser influence on editorial matter (Banning & Evans, 2001).

The second survey in the series examined views of farmers - the reader partners in this triad. Researchers conducted a national mail survey during 2003 among a probability sample of U. S. producers who farm 500 acres or more. Results showed that most producers "are seeing signs of advertiser influence, editorial trade-offs and pressures from advertisers and other sources that influence what topics are covered or not covered. And they are concerned about how this influence affects the information they receive" (Banning & Evans, 2004a, p. 17).

The third study, a qualitative analysis, analyzed the views of agricultural publishers and advertising executives about media credibility, editorial independence, advertiser efforts to influence editorial content and the extent to which farmer/readers are concerned. Findings, reported in 2004, indicated that publishers and advertisers placed high value on editorial independence, in the interest of credibility. They shared a feeling that advertising-related pressures should not influence the independent stance and credibility of editorial matter. Publishers, in particular, emphasized the difference between feeling advertiser-related pressure and giving in to it (Banning & Evans, 2004b, p. 34).

In 2006 agricultural editor Karen Simon reported the results of her graduate research on developing ethical accountability systems that empower agricultural journalists as ethical, effective and enduring leaders. Using qualitative research methods, she interviewed editors and publishers of selected national agricultural publications to identify ethical dilemmas that exist and to determine which accountability systems would be effective.

Findings prompted Simon to suggest agricultural publishers and editors establish standards of integrity developed specifically for agricultural publications, and establish a policy that makes sure those standards are upheld (p. 51). She emphasized an approach akin to the contractualist model used by Banning and Evans (2001), that is, the approach should involve "every aspect of the publish-

ing industry - writers and editors, publishers and the sales force, advertisers and their agencies, and the farmers who read agricultural publications” (Simon, 2006, p. 49).

Deliberations among agricultural editors, publishers and others picked up markedly as these research results were published. A review of information in the Agricultural Communications Documentation Center, University of Illinois, identified more than 40 documents published since 1988 about ethical issues related to farm journals in the U. S.

This prompted Gene Johnston to ask fellow AAEA members “Is the wall coming down?” during a 2004 AAEA meeting, referring to the traditional wall between editorial and advertising. Citing journalistic guidelines on editorial ethics, he called attention to dangers in taking steps that can lead from editors informing advertising sales staff about approaching editorial content to the stage of editors being told what to write, when to write it, where to place it and so on (Johnston, 2004).

“The line is being crossed,” observed an agricultural editor Simon interviewed in her graduate research. “Ethics hasn’t been the focus lately ... and it shows,” according to the editor. “...we need to make it clear where we stand and why” (Simon, 2006, p. 28).

Agricultural journalists and editors identified a varied assortment of ethical dilemmas they face in relating to the interests of advertisers. Such dilemmas included: cover treatments such as false covers, cover wraps, belly bands, ink jet wraps, gatefolds, artwork in the corner, cover blurbs, text on mailing labels (Simon, 2006, p. 25; Simon, June 2006), advertisers seeking story placement and advertorial copy without disclaimers (Crummett, 2005), demands about where advertisements are placed (Ag editors and publishers, 2006), gifts or favors, paid trips, speaking engagements for editorial staff members (Walter, 2007; Taylor, June 2007), advertiser-sponsored sections (Wilson, 2004), stock investments in companies covered (Taylor, June 2007) and labeling of Web sites (Taylor, August 2006).

Some discussion has also centered on how advertiser interests may directly or indirectly influence the topics that agricultural publications address, and on how the publications cover topics that may be marketer-sensitive. Farmer/writer Gene Logsdon argued at an agricultural editor conference: “Journalists in the industry are still too timid and too nice, afraid to raise the questions that need to be asked” (Wall, 2003).

In 2005, AAEA appointed an ethics task force to revise the association’s code of ethics, which had not been updated in many years. After intensive research and discussion, the task force proposed adoption of the American Business Media (ABM) code of ethics, along with some additions that pertained specifically to AAEA. ABM is the professional association of magazine publishers and it was felt that, ultimately, publishers had the ability to enforce the code. The AAEA board of directors adopted the new code of ethics in 2006 (Ag editors and publishers, p. 32). It emphasized five general editorial standards: maintain honesty, integrity, accuracy, thoroughness and fairness in the reporting and editing of articles, headlines, and graphics; avoid all conflicts of interest as well as any appearances of such conflicts; maintain an appropriate professional distance from the direct preparation of special advertising sections or other advertisements; show the distinction between news stories and editorials, columns and other opinion pieces; and accept as their primary responsibility the selection of editorial content based on readers’ needs and interests (American Agricultural Editors’ Association, 2006, p. 72).

In general, the new code of ethics provided more specific guidelines and provided a method of enforcement. For example, publications that do not follow the code can be excluded from participating in contests highlighting their work. The code was revised in 2008 to include new media, stating,

“The AAEA code of ethics applies to all members, regardless of the medium that showcases their work. This includes print publications, broadcast, Internet, blogs and podcasts” (American Agricultural Editors’ Association, 2008, p. 1).

In 2006 the board of directors also voted to make the ethics task force a standing committee. Since that time, the ethics committee has provided educational information at the annual Agricultural Media Summit and in issues of *The ByLine* newsletter. Currently, the ethics committee is working to enhance the AAEA Web site to provide more educational resources pertaining to ethics, is researching the possibility of proposing codes of ethics for affiliate members of the association, as well as specific ethical guidelines for photographers. AAEA also provided partial financial support for this most recent round of the triad research to help assess the current situation and trace trends over the past 20 years.

Theoretical framework

The current study continues use of the contractualist model that Banning and Evans (2001) applied in their 1998 research. As noted earlier, this model as proposed by Cunningham analyzes ethical issues in terms of power relationships among advertisers, media and consumers. According to the model, “power requires mutual agreement by all parties – like players in a game, everyone must agree on the rules” (Cunningham, 1999, p. 86).

Within the framework of social contract theory, this triad concept features power relationships based on mutual consent, pursuit of mutual benefits, and mutual options for departure. It operates on the premise that any party to this triad – reporters/editors/publishers, advertisers and producers/readers – can step out of the contract when power relationships become untenable to them. Thus, all three share the risks and potentials of the relationship.

This framework is consistent with that of other researchers such as Martin & Souder (2009) who propose interdependence as a guiding principle for media ethics. They say journalists must not violate the standards of accuracy and fairness, and “audiences and advertisers must recognize the importance of credibility...journalists must publicize professional standards and apply those standards consistently. Audiences and advertisers must acknowledge these efforts by respecting the status of journalists even when the news is disagreeable” (ibid., p. 142).

The study reported here focuses on perceptions held and experiences described by agricultural reporters and editors in that triad. It relates to Research Priority Area 1 within the National Research Agenda for Agricultural Communications: “RPA 1 – Enhance decision making within the agricultural sectors of society.” It specifically addresses two key research questions within that priority area: What are the most effective ways to identify and communicate information that has economic and social value? What information do various stakeholders need to make informed decisions?

Methods

Research questions

Following are the research questions for this study among active members of the American Agricultural Editors’ Association:

RQ1: What perceptions and experiences do members report, in terms of their relationship with advertisers?

RQ2: How do their current perceptions of, and experiences with, advertisers compare with perceptions and experiences reported 10 and 20 years ago?

RQ3: To what extent and in what ways, if any, do members see harm to the agricultural journalism profession resulting from relationships with advertisers?

RQ4: How do their current perspectives about harm to the profession compare with perceptions expressed 10 and 20 years ago?

RQ5: What policies of the publications for which they write guide their relationships with advertisers?

RQ6: To what extent, if any, have those publication policies developed or changed during the past 10 and 20 years?

RQ7: To what extent, if any, do members' perceptions and experiences differ in terms of age?

RQ8: How have age-related differences changed, if at all, during the past 10 and 20 years?

RQ9: To what extent, if any, do members' perceptions and experiences differ in terms of gender?

RQ10: How have gender-related differences changed, if at all, during the past 10 and 20 years?

Research approach

It was important to replicate the studies of 1988 and 1998 as closely as possible, so this study paralleled them by involving a survey among members of the American Agricultural Editors' Association (AAEA). It also used the same survey instrument as in those previous surveys.

The sample pool was drawn from the 2008 AAEA membership roll. All those in the active membership class were initially included for evaluation. As employees or freelancers, they write, edit, design, photograph or otherwise provide editorial services for commercial farm periodicals (that is, those relying on income from readers and/or from varied advertisers). Affiliate members, such as public relations professionals or communicators with public agencies, were not included. The two previous studies of 1988 and 1998 also excluded non-journalist members of the organization.

This method offered a high level of confidence that the survey provided a valid reflection of the AAEA, which represents a majority of U.S. agricultural journalists writing for the farm media.

The two previous studies were accomplished through a mailed instrument, whereas this study used an online survey with a link from an email. Both methods reflect the most common system of written communications in their times. In the decade since the 1998 study, use of regular postal mail has declined and email has become the preferred method of communications for most agricultural journalists. The researchers considered the email method more appropriate and effective in achieving a high level of response. The fact that only two of the eligible members were unreachable by email supported this decision.

An announcement article written by one of the researchers appeared in the AAEA *ByLine* e-newsletter approximately four weeks before the survey was sent. It was designed to generate interest among AAEA members and give credibility to the transmittal email when it arrived.

Administration of the online survey began with an email blast sent to 220 AAEA members simultaneously. The transmittal note contained a live link to the survey site. After the first blast, four emails bounced back. This reduced the usable sample pool to 216. Within two days, more than 20% of the members had responded to the survey. Five days later 89 members (about 45%) had responded. To prompt others, a reminder e-mail with link to the survey site was sent six days after the first to the remaining 133 unresponsive members. In all, a 53% response rate was achieved or 115 responses out of a possible 216.

Results

1. Responses revealed that advertiser influence on editorial content continues to be a serious concern among these agricultural journalists. Responses in Table 1 show that in 2008, 87% said they consider attempts by advertisers to influence what stories appear as “harming the profession” or as “a problem in some cases.” This level compared with 84% 10 years earlier and 87% 20 years earlier.

Table 1

AAEA Members' Perceptions of Degree of Harm to the Profession: 1988, 1998, 2008

	Harming Profession			Problem in some cases			Not a problem		
	08	98	88	08	98	88	08	98	88
Attempts by advertisers to influence what stories appear	22%	28%	37%	65%	56%	50%	13%	16%	13%
Biased stories due to difficulty getting both sides of the story	13	14	25	70	62	51	17	24	24
Biased reporting due to reporters injecting own points of view	24	22	24	59	55	51	17	23	25
Biased reporting due to the inherent difficulties of being objective	20	11	16	60	56	48	20	34	36
Biased reporting due to editors becoming too close to individuals or organizations they cover	24	22	36	62	61	47	14	17	17
Biased reporting due to difficulty of getting information	11	7	26	60	54	48	29	39	26
Pressures from publishers or editors to slant stories to please advertisers	28	25	37	46	44	32	26	31	31
Pressure from publishers to editors to fit publications' point of view	18	12	25	39	46	44	43	42	31

2. These journalists also expressed active concern about harm to the profession arising from biased reporting that is due to:

a. Becoming too close to individuals or organizations they cover. In 2008, 86% viewed this bias as harming the profession, or a problem in some cases, compared with 83% in 1998 and 83% in 1988.

b. Reporters injecting their own points of view. In 2008, 83% viewed this bias as harming the profession, or a problem in some cases, compared with 77% in 1998 and 75% in 1988.

c. Difficulty in getting both sides of the story. In 2008, 83% viewed this bias as harming the profession, or a problem in both cases, compared with 76% in 1998 and 1988.

d. Inherent difficulties of being objective. In 2008, 80% viewed this bias as harming the profession, or a problem in some cases. Pearson chi-square goodness of fit analysis revealed this level of response as significantly higher than the 66% reported in 1998 ($p < .001$).

3. Considering only the “harming the profession” responses, it appears that AAEA members’ concerns about influence of advertisers on editorial content have been increasingly joined by concerns about the influence of publishers, editors, politicians and others. For example, pressure from advertisers to influence what stories appear ranked highest as harming the profession 10 years ago (28%) and 20 years ago (37%). In 2008, however, pressure from publishers and editors to slant stories to please advertisers ranked highest as harming the profession (28%). Also, in 2008 a significantly greater share of members reported harm to the profession due to pressures from politicians and other sources (17%), compared with 6% in 1998 ($p < .02$) and 9% in 1988.

4. Actions by media competitors continued to intensify the advertising-related pressures these agricultural journalists feel. Findings in Table 2 suggest the competitive spirit remains alive. Eighty percent agreed in 2008 that some media seem to bend over backwards to please sponsors, identical to the 80% level of agreement 10 years earlier. Sixty-one percent agreed that other agricultural publishers’ efforts to please advertisers make it more difficult to operate at arm’s length without any kind of vested interest. This was similar to the 58% level of agreement 10 years earlier.

5. More of these agricultural journalists seem unsure about the state of agricultural publishing. Forty-eight percent responded “neutral” to the statement that the agricultural press is the most controlled media in America, significantly above the 28% “neutral” share 10 years earlier ($p < .0001$) and 27% share 20 years earlier. Neutral responses to the statement that “the agricultural press is completely beholden to the agri-business industry” rose to 35% in 2008, significantly above the 18% share 10 years earlier ($p < .05$) and 14% 20 years earlier.

Table 2*AAEA Members' Perceptions of Degree of Problems: 1988, 1998, 2008*

	Agree			Neutral			Disagree		
	08	98	88	08	98	88	08	98	88
Agricultural press is most controlled media in America	10%	9%	18%	48%	28%	27%	43%	63%	55%
Agricultural press is completely beholden to the agri-business industry	18	13	15	35	18	14	47	69	72
It's hard to be pure and competitive in the marketplace today	41	46	38	22	18	15	37	36	47
I am under no specific obligation to please advertisers	53	66	90	26	23	4	21	11	6
Some media seem to bend over backwards to some commercial outfits to butter up sponsors	80	80	64	20	15	22	1	4	14
Other agricultural publications' efforts to please advertisers make it more difficult for me to try to operate at arm's length without any kind of vested interest	61	58	47	27	24	26	12	18	27
Advertising people use other media's willingness to mention their products to put pressure on me	33	38	28	28	33	32	39	29	40

6. Within this environment of ethical concern, AAEA members and the publications for which they write show increasing regard for ethics and stiffening response to advertising-related pressures on editorial content. For example:

a. Publishers have increasingly put ethics-related policies into place. In 2008, 47% of respondents said their publications have a policy with regard to free meals (Table 3). This share is significantly higher than the 30% of 10 years earlier ($p < .0004$) and only 9% 20 years earlier.

b. Free meals seem popular occasionally (42% in 2008 vs. 28% in 1998), but any more than that and they slip in popularity (51% in 2008 vs. 67% in 1998).

Table 3*Publication policies and experiences: 2008, 1998 and 1988*

	Yes			No		
	08	98	88	08	98	88
Does your publication pay your expenses to attend events sponsored by commercial companies?	82%	92%	63%	18%	8%	37%
Are you expected to pay your own way in attending events covered by commercial companies?	48	28	N/A	52	72	N/A
Does your publication have a policy in regard to free meals by sources or business representatives?	47	30	9	53	70	91
Do you see any harm in accepting a free gift?	62	43	N/A	38	57	N/A
Do you believe gifts influence judgment?	48	33	N/A	52	67	N/A
During the past year have you received threats to withdraw advertising from advertisers displeased by editorial copy?	31	39	62	69	61	38
Have you had advertising withdrawn by advertisers displeased by editorial copy?	32	42	48	68	58	52
Have you experienced direct demands for editorial copy as a trade-off for advertising?	37	42	20	63	58	80
Does your company allow advertisers to pay all or part of your expenses in attending events sponsored by commercial companies?	37	55	27	63	45	73

c. In 2008, 82% said their publication pays expenses for attending events sponsored by commercial companies. That level is significantly below the 92% of 10 years earlier ($p < .006$), but well above the level of 63% 20 years earlier. This pattern may reflect the influence of a larger share of AAEA reporters freelancing.

d. Forty-eight percent of the respondents said they pay their own way to events sponsored by commercial companies, a level significantly higher than the 28% of 10 years earlier ($p < .05$).

e. Fewer publishers allow advertisers to pay all or part of reporters' expenses for attending events sponsored by commercial companies. In 2008, 37% allowed such expenses, significantly below the 55% reported in 1998 ($p < .0002$).

f. These journalists expressed more sensitivity to possible harm in accepting free gifts. In 2008 62% said they see harm, a level significantly higher than the 43% of 10 years earlier ($p < .05$). Also, 48% said in 2008 they believe gifts influence editorial judgment. That level is significantly higher than the 33% of 10 years earlier ($p < .002$).

g. They expressed continued strong belief that phone calls pushing products or copy are not effective (65% in 2008 and 69% 10 years earlier). In 2008, 61% reported receiving calls more than once a year (Table 4).

h. However, they reported a tendency toward feeling more obliged to please advertisers (Table 2). In 2008, 53% indicated they feel under no special obligation, significantly less than the 66% of 10 years earlier ($p < .01$)

Table 4

AAEA Members' Perceptions of Degree of Problems: 1998 and 2008

	Never		Occasionally, but less than once a year		More than once a year	
	08	98	08	98	08	98
How often are you offered gifts by sources or business representatives?	19%	10%	49%	55%	32%	35%
How often are you offered free meals by sources or business representatives?	6	5	42	28	51	67
How often do you attend events sponsored by commercial companies?	7	2	35	27	58	71
How often have you received phone calls pushing products or copy?	9	6	30	76	61	-

7. Advertisers seem to be taking a softer approach, perhaps to help protect editorial integrity. Results in Table 3 show that in 2008 31% of these journalists said that during the past year they received threats to withdraw advertising from advertisers displeased by editorial copy. This level is reduced from 39% in 1998 and 62% in 1988. Advertising was reported to be withdrawn less often by advertisers displeased by editorial copy. In 2008, 32% of these journalists reported having advertising withdrawn, significantly below the reported 42% in 1998 ($p < .03$) and 48% in 1988.

Similarly, fewer direct demands were being made for editorial copy as a trade-off for advertising. The share of respondents that reported having experienced such demands dropped from 42% in 1998 to 37% in 2008. However, in 1988 only 20% had received such demands.

Free gifts showed a tendency toward being offered less often by sources or business representatives (Table 4). A larger share of members (19%) reported never being offered free gifts in 2008, compared with 10% in 1998.

8. The 114 respondents who identified their gender in this 2008 survey included 65 males (57%) and 49 females (43%). Males and females responded similarly in 1998 and 2008 to most questions in the survey. However, Pearson chi-square goodness of fit analyses revealed that female respondents expressed significantly greater concern than male respondents about several sources of bias they considered to be harming the profession. These included pressures from publishers or editors to slant stories to please advertisers ($p < .04$), pressures from publishers or editors to slant stories to fit publications' points of view ($p < .02$) and the harm of accepting a free gift ($p < .02$).

9. The 111 respondents who identified their ages ranged from 22 to 74 years, with a median age of 50. This compared with the 1998 respondents whose ages ranged from 23 to 88 with a median of 45 years.

Age was not correlated with variations in responses to nearly all questions in the 2008 survey. Pearson chi-square analyses of responses, by age, revealed only one question that produced significant age-related differences between 1998 and 2008. The younger journalists were significantly more neutral or ambivalent than the older respondents regarding the statement that the agricultural press is completely beholden to the agri-business industry ($p < .001$). They expressed lower levels of agreement - and disagreement - with the statement, most of them (50%) feeling neutral. This pattern was a reversal from 10 years earlier when younger respondents were significantly more likely to disagree with that statement ($p < .05$).

Discussion

Several messages seem apparent from these 2008 results of a unique longitudinal analysis of relationships within the agricultural publication-reader-advertiser triad.

First, the experiences and perspectives reflected in this survey show that agricultural journalists in the U. S. continue to be deeply concerned about pressures on editorial content and integrity. They feel harm associated with advertising-related pressures. Their concern also focuses on bias and harm they see threatening through other causes, such as getting too close to those they cover and trying to address the interests of publishers anxious to please advertisers. As well, they express concern about a competitive media marketplace in which some media bend ethical standards in efforts to sell space.

Second, if *fading voices* was the theme of findings from the partner studies of 10 and 20 years earlier, then it seems that *stiffening strategies* could be a theme of these 2008 findings among U. S. agricultural journalists. Results of this study reveal evidence of active resistance to such pressures. Evidence is apparent in the increased numbers of publications that have put ethics-related policies into place, in the recently strengthened AAEEA Code of Ethics and in an increased sensitivity to harm that may be associated with practices that compromise editorial independence. Evidence of "stiffening" also is apparent in increasing use of practices (such as the handling of coverage expenses) that help side-step inclinations toward bias in editorial coverage.

Banning and Evans (2001) concluded that in 1998 these journalists were facing more pressure than they did a decade before, but believed they were handling it ethically. In other words, they did not believe more pressure from advertisers resulted in less ethical behavior. The 2008 survey shows a similar feeling among respondents. They said they feel a great deal of pressure, but that they are able to withstand it and perform in an ethical manner. A feeling among writers that their profession is responding to business pressures with an emphasis on ethics would explain many of the trends between the 1998 and 2008.

Third, results of the 2008 survey show evidence that advertisers may be taking steps to help protect the editorial independence of these agricultural journalists and their publications. Indications seem apparent in the reported decline since 1998 of advertising being withdrawn due to advertiser dissatisfaction with editorial content and fewer direct demands of editorial copy to accompany the purchase of advertising space.

Fourth, while the results show trends, they do not show a universality of opinion. On almost every question, there is a wide gamut of response. Data curves may be skewed to one side or the other, but there is almost never a singular viewpoint that dominates all responses. Furthermore, the middle ground was popular in many responses, showing a lack of extreme reaction by many respondents.

Stakes are high in this matter, as the commercial farm press continues to be the largest, most influential means of continuing education in the U. S. agriculture enterprise. The risks are high as well. If commercial farm periodicals position themselves primarily as conveyors of agricultural information, they are increasingly vulnerable to a host of online, 24/7 sources of such information. If they position themselves primarily as vehicles for agricultural advertising they fall prey to alternative, direct advertiser-to-producer channels. Also, a new challenge arises if they fail to exercise effectively their special capabilities as independent voices. If they fail to do so they become vulnerable to a barrage of new social media through which anyone can exercise an independent voice from a worldwide digital platform.

In that challenging environment, experiences during the past decade point to the value and potential of a triad concept of mutual interdependence and higher-order collaboration among agricultural publications, readers and advertisers. This concept cuts through narrow interests of the competitive day and focuses on long-term value for all three sectors. Editorial independence and integrity will be the heart of that relationship, as it has been in the past, accompanied by keen editorial judgment and high journalistic standards that command the respect and trust of readers. Never have producers faced greater need for help from the farm media in sorting, organizing and distilling a blinding blizzard of information that producers can use to make sound decisions.

Continuing emphasis on ethical standards by the AAEA organization will be important for continued progress. As well, continued research to monitor issues, challenges and progress throughout the triad can help guide and strengthen future efforts.

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Keywords

farm journals, ethics, journalism, advertising, social contract theory

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Influence of Subjective Norms and Communication Preferences on Grain Farmers' Attitudes toward Organic and Non-Organic Farming

Kelsey Hall and Emily Rhoades

Abstract

Interpersonal communication and mass media can influence an individual's attitude or behavior. International and American studies have shown that interpersonal contacts have influenced farmers' decisions to adopt or not adopt organic farming while other studies have revealed the communication preferences can differ between organic and non-organic farmers. This study was unique as it combined components of the theory of planned behavior and diffusion of innovations to describe the role subjective norms and communication channels have on forming attitudes toward organic and non-organic farming by non-organic Midwestern grain farmers. Data were collected through a questionnaire sent to 320 members of the Ohio Corn Growers Association or the Ohio Wheat Growers Association. Respondents cared about the opinions of their subjective norms but did not feel pressure from these subjective norms to adopt organic farming. Ohio grain farmers in this study also indicated the importance of communication channels for influencing their decisions to adopt or not adopt farming practices. Interpersonal communication channels (demonstrations, other farmers, meetings, workshops, suppliers, Extension agents) were the most important. The researchers suggested that agricultural communicators and commodity organizations consider the purpose of their messages and select the most appropriate source for delivery. Recommendations were made for further research and teaching by agricultural communication faculty.

Introduction

Once considered a niche market sold in limited retail locations, organic food products are available in natural food supermarkets, farmers markets, club stores, and conventional supermarkets across the country. The United States reached \$1.7 billion in sales of organic food products, and Ohio reported \$25.6 million in organic product sales (United States Department of Agriculture, 2009). However, supply and demand are an issue since the organic agriculture industry has experienced a 20% increase in demand for raw materials each year, and farmers have increased supply of organic raw materials, especially soybeans and grains, by roughly 1% annually (Villagran, 2008).

Given the supply and demand issue for organic foods, it would be valuable to understand how communication channels influence non-organic farmers when forming attitudes, so communicators and educators will be better able to inform them of new farming practices. Previous studies have explored the types of interpersonal contacts that influenced farmers' decisions to adopt or not adopt organic farming (Darnhofer, Schneeberger, & Freyer, 2005; Midmore, Padel, McCalman, Isherwood,

Fowler, & Lampkin, 2001; Schneeberger, Darnhofer, & Eder, 2002). Other studies have revealed farmers' preference of communication channels when wanting information about organic and non-organic farming practices (Duram, 1999; Egri, 1999). Although these studies concentrated on either interpersonal contacts or communication sources used, there has not been a study that combined both areas to comprehensively describe how they play a role in determining attitudes toward organic and non-organic farming.

Theoretical Framework

This study applies concepts from the theory of planned behavior and diffusion of innovations. Ajzen (n.d.) developed the theory of planned behavior as a way to understand and predict individuals' behaviors that are involuntary (see Figure 1). One direct variable for determining an individual's intention to perform a behavior is subjective norms (Ajzen & Fishbein, 1980). Subjective norms apply social pressure on an individual to perform or not perform a specific behavior. When subjective norms were combined with an individual's attitude toward a behavior and their perceived behavioral control, the three components could help determine an individual's intention to perform the behavior. An individual's probability of engaging or not engaging in a behavior could derive from what important people or groups think the individual should do (Ajzen, n.d.). People who may exert this social pressure (intentionally or unintentionally) include a spouse, friends, peer groups, family, co-workers, community leaders, or celebrities. Normative beliefs, an indirect measure of an individual's subjective norms, are an individual's opinion of what other people or groups think the individual should do. Motivation to comply, an indirect measure of normative beliefs, measures how much someone cares what opinion leaders think should be done about the behavior.

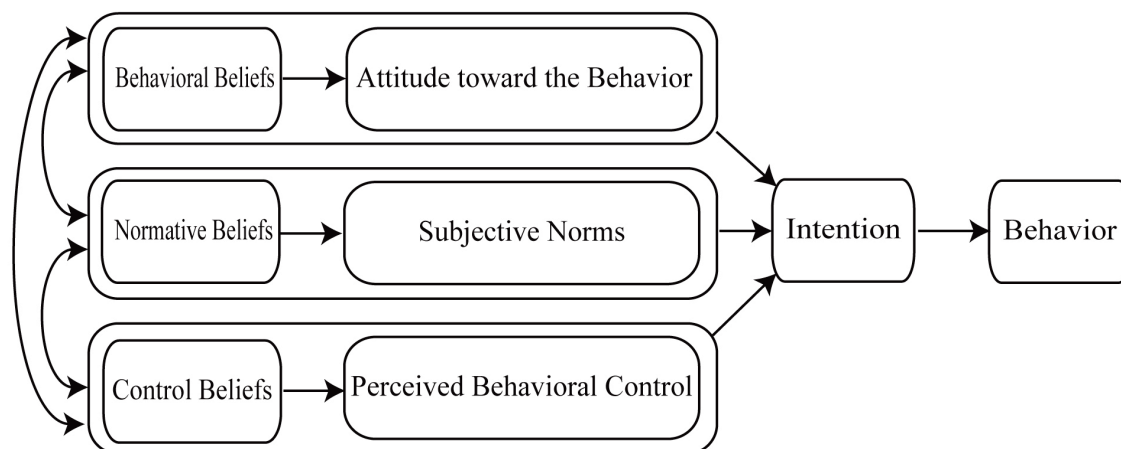


Figure 1. The Theory of Planned Behavior. (Ajzen, n.d.)

Diffusion of Innovations

Much research on mass media and interpersonal communication influence has derived from the theory of diffusion of innovations (Lavergne, 2004; Parra-Lopez, De-Haro-Giménez, & Calatrava-Requena, 2007; Rogers, 1995). Diffusion is a communication process by which communication channels deliver information concerning new innovations to one or several individuals. Communication channels have different roles in bringing knowledge and persuading individuals to change their attitude toward adopting an innovation, such as organic farming (Rogers, 1995). Communication channels could be classified as either mass media or interpersonal. Mass media deliver messages by using a “mass medium” like newspapers, magazines, radio, or television. Mass media channels could increase knowledge by disseminating information to large audiences, which could then change weakly held attitudes and behaviors (Bryant & Thompson, 2002; Rogers, 1995). However, interpersonal channels are more effective in changing strongly held attitudes (Rogers, 1995). Fellow farmers, Extension agents, salesmen, and family members are examples of these interpersonal channels. According to Rogers (1995), diffusion studies indicated that scientific reports were less relevant than subjective reports from individuals who have already adopted innovations when individuals were deciding to adopt or not adopt new innovations. When individuals shared personal and social characteristics, the exchange of information would have a greater effect in gaining knowledge, developing an attitude, and changing an attitude or behavior.

Factors Influencing Adoption of Organic Farming Practices

In considering the components of the theory of planned behavior, research has been done on the subjective norms that influenced farmers to adopt or not adopt organic farming practices. Darnhofer et al. (2005) reported that agriculture organizations were social influencers that motivated Austrian farmers’ choice between organic and non-organic farming. Regarding organizational communication, farmers considering organic practices voiced criticism against the regulations and vague contract information imposed by agri-environmental programs and organic farmer associations. Organic farmers thought the information was insufficient, and the associations lacked the ability to keep them informed with up-to-date standards and regulations. Another study addressed the subjective norms that motivated Austrian cash-crop producers’ decisions to move toward organic practices (Schneeberger et al., 2002). Respondents were more concerned with resistance to organic farming within their families, more so than with friends.

Considering less studied social influencers, Midmore et al. (2001) designed a study to determine farmers’ attitudes toward organic farming and to explore what perceptual barriers to organic conversion existed. In this study, the spouse was one of the most important social influencers with respect to the decision to convert.

Communication Influence

While some research concentrated on subjective norms, other studies focused on communication sources organic and non-organic farmers used to learn about their production methods (Duram, 1999; Egri, 1999). Egri (1999) reported that preference for different communication sources helped explain strong differences in attitudes among organic and non-organic farmers in Canada. Roughly 32% of conventional farmers and 36% of organic farmers used television and radio as information sources. Conventional farmers in the study were dependent on government sources, whether through publications (79%), education courses (45.9%), or local Extension agents (78% reported at least

occasional contact). Only 43% of organic farmers referred to government publications, while 27% attended government education courses, and 45% had contact with agricultural Extension agents. Contractors and industrial suppliers of agricultural products and equipment were also major sources of information (61%) for conventional farmers. In contrast, organic farmers (17%) were less likely than conventional farmers to identify contractors or suppliers as sources.

Conventional farmers rarely searched for alternative agriculture information sources (either interpersonal or media). This study's finding demonstrated that conventional farmers' access sources that support and confirm pre-existing practices and biases (Egri, 1999). Conventional farmers paid less attention to sources that challenged conventional practices such as using synthetic agrichemicals.

The Canadian organic farmers in Egri's study (1999) referred to similar information sources as organic farmers in Colorado (Duram, 1999). Almost all of the organic farmers studied in Colorado (96%) said they frequently read various books and magazines, but only 14% primarily read traditional farm publications. Other sources of information included soil science and environmental books.

In contrast to previous studies, Colorado organic farmers did not find traditional sources such as university agricultural research and Extension offices as helpful (Duram, 1999). Many respondents thought more universities should switch research directions to sustainable agriculture. These organic farmers did not consider the land-grant universities' ideas about cutting back on chemicals as truly organic and thought land-grant universities misled conventional farmers.

In a study using diffusion of innovations, researchers discovered the sources of information olive farmers in southern Spain used during the adoption process (Parra-Lopez, De-Haro-Giménez, & Calatrava-Requena, 2007). The study considered attendance at courses/conferences, talks with Extension professionals, membership in agricultural and non-agricultural organizations, books, and trips as sources of information. Findings reported that olive farmers in areas where organic farming was adopted had limited contact with agricultural Extension agents, did not attend courses/conferences, and did not read books. Contact with other farmers and local organic agricultural organizations were more valuable sources for these producers.

Purpose and Objectives

The purpose of this study was to explore and describe the social influencers of Ohio grain farmers' attitudes toward adopting organic farming by applying constructs from the theory of planned behavior and diffusion of innovation. By understanding farmers' influencers, commodity groups, communicators, and educators will have a better understanding of what channels to use when sharing new farming practices with farmers. The following objectives were developed to address this purpose:

- 1) To describe the demographic characteristics of Ohio grain farmers.
- 2) To explain the subjective norms that influence Ohio grain farmers' attitudes toward adopting organic farming.
- 3) To determine the importance of communication channels for influencing Ohio grain farmers' decisions to adopt or not adopt farming practices.
- 4) To describe the communication channels that relate to Ohio grain farmers' attitudes toward organic and non-organic farming.

Method

A random sample of 320 farmers out of a population of 1,907 was selected from the membership lists of the Ohio Corn Growers Association and Ohio Wheat Growers Association. These associations are significant to Ohio since the state was ranked 8th in corn production and 9th in winter wheat production nationally in 2005 (Ohio Office of U.S. Department of Agriculture's National Agricultural Statistics Service, 2005). Ohio was also ranked 6th for certified organic corn acreage and 16th for certified organic wheat acreage in 2005 (Greene, 2006).

The researchers developed a 29-item questionnaire that was adapted from previous studies (Egri, 1999; Fairweather, Campbell, Tomlinson, & Cook, 2001; Midmore et al., 2001; Niemeyer & Lombard, 2003; Schneeberger et al., 2002). Seven subjective norm items were directly measured on a 7-point Likert scale ranging from strongly disagree (1) to strongly agree (7). Respondents indicated their level of agreement or disagreement with six normative belief strength statements on a 7-point Likert scale (1=strongly disagree to 7=strongly agree). Motivation to comply, a component of normative beliefs, was measured using seven items on a 7-point Likert scale ranging from not at all to very much. There were 22 items measuring the importance of communication channels on a 5-point scale (1=not very important to 5=very important). After a panel of experts reviewed the questionnaire items to establish validity, the questionnaire was pilot tested by each association's board members. The researchers reported a Cronbach's alpha of .89 for the subjective norms scale. An alpha of .70 was calculated for the normative beliefs scale. For the motivation to comply scale, an alpha of .88 was calculated. The communication influence scale had an alpha of .94.

The researcher implemented survey procedures as described by Dillman's Tailored Design Method (Dillman, 2007). A total of 243 surveys out of 320 were returned for a response rate of 76%. The researcher handled non-response to the survey by comparing early to late respondents. No significant differences were found.

Results

Objective 1: To describe the demographic characteristics of Ohio grain farmers.

All respondents indicated that they farmed using non-organic methods. The majority of respondents ($n = 156$, 76.1%) indicated that they have never even considered organic production on their farms, while 42 respondents (20.5%) have considered organic production and did not adopt. The respondents were unevenly distributed by gender, with 98.5% ($n = 202$) male and 1.5% ($n = 3$) female. Respondents' age was also unevenly distributed with a slight majority, 28.9% ($n = 59$), older than 62 years; followed by 24% ($n = 49$) ranging in age from 52-56; 16.2% ($n = 33$) ranging from 47-51; and 12.3% ($n = 25$) ranging from 57-61. Eighteen (8.8%) respondents ranged in age from 42-46, and 10 respondents (4.9%) ranged in age from 37-41. Only 4.9% ($n = 10$) reported being 36 years or younger.

The majority, 55.9% ($n = 114$), earned a high school education, followed by 26.5% ($n = 54$) with a bachelor's degree, 11.8% ($n = 24$) with an associate's degree, and 5.4% ($n = 11$) with a master's degree. Only one individual obtained less than a high school education. The majority of bachelor's degree or graduate degree programs completed were in agricultural business and economics, agricultural education, agronomy, animal science, dairy science, or agricultural production.

Farming was the main occupation for 170 of the respondents (82.9%), while 35 respondents (17.1%) held other occupations off the farm. Roughly, 89% ($n = 183$) of the respondents had at least one of their parents who farmed.

Objective 2: To explain the subjective norms that influence Ohio grain farmers' attitudes toward adopting organic farming

The overall mean for subjective norms was 2.06 ($n = 198$, $SD = 1.03$). As seen in Table 1, Ohio grain farmers did not feel under pressure from farming neighbors to continue farming using non-organic methods ($M = 2.61$, $n = 196$, $SD = 1.68$), and indicated little pressure from consumers to adopt organic farming ($M = 2.47$, $n = 194$, $SD = 1.48$). Ohio grain farmers had the strongest disagreement with the statement, "I feel under pressure from members in my agricultural organizations to adopt organic farming," ($M = 1.74$, $n = 196$, $SD = 1.18$).

Table 1
Mean for Subjective Norms (7 Items)

Subjective Norm	n	Mean	SD
I feel under pressure from other farming neighbors to continue farming using non-organic methods.	196	2.61	1.68
I feel under pressure from consumers to adopt organic farming.	194	2.47	1.48
I feel under pressure from non-farming neighbors to adopt organic farming.	196	2.09	1.38
I feel under pressure from family to adopt organic farming.	129	1.84	1.18
I feel under pressure from county extension agents to adopt organic farming.	197	1.79	1.18
I feel under pressure from friends to adopt organic farming.	193	1.79	1.20
I feel under pressure from members in my agricultural organizations to adopt organic farming.	196	1.74	1.18
Overall Mean	198	2.06	1.03

Note. Scores based on Likert scale with 1 = strongly disagree and 7 = strongly agree.

Normative belief strength items measured subjective norms indirectly. Respondents indicated their level of agreement or disagreement with normative belief strength statements on a 7-point Likert-type scale. A low mean (1-3) was interpreted as disagreement with items, while a high mean (5-7) was interpreted as agreement. The overall mean for normative belief strength was 3.33 ($n = 204$, $SD = .79$) (see Table 2). Farmers in this study reported a mean of 4.53 ($n = 199$, $SD = 1.60$) for their agreement with the statement, "My county extension agent thinks that I should not adopt organic farming." Respondents agreed that friends ($M = 4.42$, $n = 203$, $SD = 1.88$) and neighboring farmers ($M = 4.04$, $n = 201$, $SD = 1.94$) thought that they should not adopt organic farming. It was strongly disagreed that family members thought respondents should adopt organic farming ($M = 1.93$, $n = 203$, $SD = 1.27$).

Motivation to comply, an indirect measure of normative beliefs, was measured using seven items on a 7-point Likert-type scale ranging from not at all to very much. Motivations to comply indicate how much the respondents care about the opinions of specific individuals. The overall mean for motivation to comply was 3.32 ($n = 200$, $SD = 1.33$). As seen in Table 3, respondents indicated that they care most for their family's opinions ($M = 4.41$, $n = 198$, $SD = 1.94$), followed by consumer opinions ($M = 3.89$, $n = 195$, $SD = 1.78$). Respondents indicated a mean of 3.26 ($n = 195$, $SD = 1.80$) in regards to how much they care about the opinions of members of their agricultural organizations.

Table 2
Mean for Normative Belief Strength (6 items)

Normative Belief Strength	n	Mean	SD
My county extension agent thinks that I should not adopt organic farming.	199	4.53	1.60
My friends think that I should not adopt organic farming.	203	4.42	1.88
Neighboring farmers think that I should not adopt organic farming.	201	4.04	1.94
My non-farming neighbors think that I should adopt organic farming.	199	2.84	1.50
The employees at the elevator where I sell my grain think that I should adopt organic farming.	200	2.31	1.45
My family members think that I should adopt organic farming.	203	1.93	1.27
Overall Mean	204	3.33	.79

Note. Scores based on Likert scale with 1 = strongly disagree and 7 = strongly agree.

Table 3
Mean for Motivation to Comply (7 Items)

Motivation to Comply	n	Mean	SD
How much do you care what your family thinks you should do?	198	4.41	1.94
How much do you care what consumers think you should do?	195	3.89	1.78
How much do you care what members in your agricultural organizations think you should do?	195	3.26	1.80
How much do you care what your friends think you should do?	198	2.99	1.67
How much do you care what county extension agents think you should do?	197	2.98	1.76
How much do you care what other farming neighbors think you should do?	194	2.93	1.64
How much do you care what non-farming neighbors think you should do?	189	2.63	1.56
Overall Mean	200	3.32	1.33

Note. Scores based on Likert scale with 1 = not at all and 7 = very much.

Objective 3: To determine the importance of communication channels for influencing Ohio grain farmers' decisions to adopt or not adopt farming practices.

Ohio grain farmers reported the importance of communication channels for influencing their decision to adopt or not adopt farming practices. There were 22 items on a 5-point scale ranging from not very important to very important. The overall mean for communication channels was 2.89 ($n = 203$, $SD = 0.69$), which indicates that mass media and interpersonal communication channels were not important influencers in the decision process.

Demonstrations/field days were considered the most important communication channel with a mean of 3.68 ($n = 199$, $SD = 1.00$), followed by talks with other farmers ($M = 3.59$, $n = 198$, $SD = 0.89$), farming publications ($M = 3.45$, $n = 201$, $SD = 0.94$), and meetings ($M = 3.40$, $n = 201$, $SD = 0.99$) (see Table 4). The least important communication channels were government agency publications ($M = 2.78$, $n = 200$, $SD = 1.08$), newspapers ($M = 2.29$, $n = 202$, $SD = 1.04$), radio ($M = 2.24$, $n = 199$, $SD = 0.98$), and television ($M = 2.18$, $n = 203$, $SD = 1.03$).

Table 4
Mean for Importance of Communication Channels (22 Items)

Communication Channel	n	Mean	SD
Demonstrations/Field Days	199	3.68	1.00
Talks with Farmers	198	3.59	0.89
Farming Publications	201	3.45	0.94
Meetings	201	3.40	0.99
Workshops	201	3.27	1.11
Talks with Suppliers	202	3.17	1.04
Newsletters	200	3.12	1.12
Talks with Extension Agents	198	3.04	1.09
Talks with Family Friends	203	2.96	1.04
Contact with Statewide Commodity Organizations	199	2.88	1.01
Contact National Commodity Organizations	202	2.87	0.99
Books	202	2.86	1.06
Internet	200	2.82	1.20
Talks with University Professors	202	2.79	1.11
Government Agency Publications	200	2.78	1.08
Data Transmission Network	198	2.69	1.20
Contact with Environmental Organizations	200	2.37	1.01
Newspapers	202	2.29	1.04
Radio	199	2.24	0.98
Television	203	2.18	1.03
Talks with Non-Farming Neighbors	201	2.12	0.95
Overall Mean	203	2.89	0.69

Note. Scores based on Likert scale with 1 = not very important and 5 = very important.

Objective 4: To describe the communication channels that relate to Ohio grain farmers' attitudes toward organic and non-organic farming.

Further data analysis explored the relationship between communication channels and attitude. A Spearman's rho showed a relationship between attitude toward organic farming and specific channels of communication. At the .05 level, a Spearman's rho showed a low significant relationship between attitude toward organic farming and radio ($r = .152$). There is a significant, yet low, relationship at the .01 level between attitude toward organic farming and talks with non-farming neighbors ($r = .197$), talks with university professors ($r = .192$), and contact with environmental organizations ($r = .190$). There was a low and negative relationship ($r = -.143$) between attitude toward non-organic farming and books at the .05 level of significance.

Conclusions

Past research has indicated that Austrian cash-crop producers were concerned with the opinions of family members more than friends, regarding their resistance to adopting organic farming (Schneeberger et al., 2002). This study also provides insight into the subjective norms that influence Ohio grain farmers to adopt or not adopt organic farming practices. Ohio grain farmers did not feel under pressure from family, friends, county Extension agents, members of agricultural organizations, consumers, farming neighbors, non-farming neighbors, and employees at grain elevators to adopt organic farming practices. Family members might not pressure respondents to adopt organic farming if they are satisfied with using non-organic farming practices, or these individuals are not interested or knowledgeable in organic farming. Findings about these subjective norms in this study could be explained by the sources that Ohio grain farmers consider important. Farming neighbors and suppliers who were considered important sources of information regarding the adoption or non-adoption of farming practices might not have interest or knowledge in organic farming. Organic farming can have higher production costs because of labor, specialized equipment, non-synthetic chemicals, organic seed, fertilizer, storage, and transportation (Oberholtzer, Dimitri, & Greene, 2005). If these farmers would be responsible for these additional expenses, they might not care about the opinions of individuals who do not provide monetary assistance, such as non-farming and farming neighbors, and elevator employees. Hence, Ohio grain farmers might not feel pressure from them to adopt organic farming practices. Furthermore, Ohio grain farmers did not view contact with national or statewide commodity organizations, non-farming neighbors, and family friends as important sources of information related to organic farming. Pressure from these subjective norms to adopt organic farming might be irrelevant since Ohio grain farmers did not view them as important. This finding does not mean respondents are wasting their time talking to members or staff of commodity organizations. While statewide and national commodity organizations can provide information, they might not currently discuss the adoption of new farming practices, and thus farmers do not see them as a source for this specific type of information.

The analysis of communication channels used indicated that Ohio grain farmers referred to many of the same sources of information mentioned in previous studies, such as radio, television, books, farm publications, Extension agents, farmers, educational workshops, and demonstrations/field days (Duram, 1999; Egri, 1999). While 32% of conventional farmers in Canada used television and radio as information sources, Ohio grain farmers did not consider radio and television as important as other sources of information. Mainstream television and radio stations in the United States might have fewer programs targeting farmers.

According to Duram (1999), Colorado organic farmers referred to books and farm publications rather than university agricultural research and Extension services. Very few (14%) of the Colorado organic farmers read farm publications. This was not the case with non-organic farmers' communication sources in this study. While Ohio grain farmers in this study viewed books as an unimportant source of information, farming publications were referred to when considering the adoption or non-adoption of farming practices. The higher importance placed on farming publications could be attributed to the non-organic topics covered in these publications. As noted earlier, non-organic farmers in Canada referred to communication sources that supported and confirmed their pre-existing practices and biases (Egri, 1999). This same concept could be applied to Ohio grain farmers.

Canadian non-organic farmers also considered government agency publications as an important source of information. Findings in this study did not concur. This study found that government agency publications were not important sources that influence decisions to adopt or not adopt farming practices. This finding could be due to the increasing incidence of government agencies that disseminate their reports on the Internet. Some farmers might have difficulty in searching for documents on government agency Web sites and downloading documents. Ohio grain farmers might also be unaware of government research on farming practices, and hence they would not seek information from this source. On the other hand, it could be argued that Ohio grain farmers do not use the Internet since, as indicated in this study, they consider it an unimportant source of information.

The finding that respondents did not consider the Internet as an important source of information might be supported by the fact that the majority of respondents were 62 years old or older. According to Fox (2004) with the Pew Internet & American Life Project, access to the Internet was available to only 22% of Americans older than 65. These farmers might be less familiar with search engines, media sites, and government or agribusiness Web sites that publish information. Others might question the truthfulness of information from the Internet since individuals, businesses, and government agencies can easily publish documents, audio, and video based on their own agendas. Web-based information might also be difficult to access for some Ohio grain farmers due to the availability of dial-up or broadband services in rural, Appalachian areas of the state. Other studies have also reported that computer technology is traditionally not preferred for delivering agricultural information (Maddox, Mustian, & Jenkins, 2003; Wood-Turley & Tucker, 2002). Agricultural producers in North Carolina ($n = 707$) preferred personal communication channels (62%) and printed materials (23%) when looking for agricultural information (Maddox et al., 2003). Computer based (6%) and electronic communication (2%) sources were least preferred. In a readership study exploring preference for agricultural media sources in Ohio, fewer than 25% of respondents reported a preference for electronic information (Wood-Turley & Tucker, 2002). While the Internet has seen wider adoption since these studies, it appears Ohio grain farmers still agree with the findings.

Canadian non-organic farmers depended on government sources, such as educational courses. Ohio grain farmers also considered demonstrations/field days, and workshops as important sources of information. This could be due to the numerous demonstrations that the Ohio Agricultural Research and Development Center (OARDC) and Extension services host throughout the state.

Non-organic Canadian and Ohio farmers also found talks with Extension agents as an important source of information. Ohio farmers might think Extension agents are important sources of information since the purpose of Extension is to interpret the research provided by OARDC and the land-grant university so Ohio farmers can use it. However, it was surprising that Ohio grain farmers did not care what their county Extension agents thought should be done on their farms. This finding

could be explained by the fact that Ohio grain farmers trust their Extension agents to provide them with farming information, but do not feel pressured to adopt their recommendations.

Research on communication sources used by conventional Canadian farmers indicated that contractors and industrial suppliers of agricultural products and equipment were also major sources of information (Egri, 1999). Similarly, this study found that talks with suppliers of agricultural products were important sources for Ohio grain farmers. This might indicate that non-organic farmers develop trust and loyalty with the individuals who sell seed, fertilizers, and equipment. If these farmers are willing to purchase products from suppliers, they then might consult them about farming practices.

Communication channels can influence the formation of attitude toward organic farming. The relationship between contact with environmental organizations and attitude toward organic farming was supported by previous research that showed organic farmers considered environmental organizations as important sources of information (Egri, 1999). Contact with environmental organizations could help form an attitude toward organic farming. Interpersonal communication sources deliver information that could help form attitudes and change behavior (Rogers, 1995). Therefore, interpersonal contact might explain why talks with non-farming neighbors ($r = .197$) and talks with university professors ($r = .180$) had low, yet positive relationships with respondents' attitude toward organic farming at the .05 level.

The researcher also reported the Spearman's rho between each communication channel and attitude toward non-organic farming. Books had a significant, but low and negative, correlation ($r = -.143$) with respondents' attitudes toward non-organic farming. Rogers (1995) wrote that mass media channels were used for gaining information and understanding about innovations. Books as a source for deciding whether to adopt or not adopt farming practices could influence respondents' attitudes toward non-organic farming.

Recommendations

The findings of this study must be taken as is, as they are not generalizable outside of the associations. However, they do offer insight into how Ohio farmers are gaining information and forming attitudes. This study could set a ground work for similar studies in other areas of the United States. Agricultural communication researchers should explore mass media and interpersonal communication sources that influence the decisions of adopting farming practices by other commodity organizations. Focus group research with members from different commodity organizations could help develop a list of communication sources for future informational campaigns. Furthermore, the focus group participants could indicate whether interpersonal communication or mass media channels are preferred for different types of information. Knowledge of the role of interpersonal communication and mass media channels would assist agricultural communication faculty and Extension educators in disseminating news, as farmers receive information through a variety of channels any given day. Further research exploring the influences of Extension agents might also be helpful for those agents charged with helping farmers adopt new farming technology. Research could describe or explore the role of commodity organizations in the farmers' perspective.

Demonstrations, field days, and meetings are educational tools frequently used for Extension programs. Findings indicate that this is a preferred information source, and researchers, educators, and communicators should continue to use these methods to reach traditional farmers.

Findings indicated that Ohio grain farmers preferred interpersonal communication sources when seeking information about adopting or not adopting farming practices, but did not care what these sources thought should be done on their farms. Agricultural communicators should consider their

messages' purpose such as informational, persuasive, or technical when selecting communication sources. Rogers (1995) stated that interpersonal communication sources are appropriate for persuading individuals whereas mass media is used for individuals to gain knowledge. Other farmers and suppliers might be more appropriate sources for persuading adoption of certain farming practices over other media sources. As an important interpersonal communication source, Extension agents could fulfill their information-filtering role that assists farmers in understanding innovations in agriculture.

Ohio grain farmers reported that radio, television, the Internet, and the Data Transmission Network (DTN) were unimportant sources in the decision process to adopt or not adopt farming practices. However, all of these communication channels have the ability to deliver timely, relevant information to large audiences. Agricultural communicators need to consider the urgency, timing, and content of their messages if they select radio, television, and Internet sources. This could be more important during planting and harvest when farmers would be away from access to digital and mass media. However, this preference should continue to be monitored as more access to these mediums are available to farmers on their tractors and cell phones.

Commodity organizations would benefit from knowing the communication sources that Ohio grain farmers consider important. If organizations want to inform their members about commodity news, membership information, or legislative actions, they might select a mass media channel like an organizational newsletter or magazine. Many commodity organizations conduct membership drives. Recruitment activities might be more effective when opinion leaders from the organizations deliver persuasive messages by telephone, face-to-face meetings, or letters.

Findings in this study might have implications on the curriculum agricultural communication faculty would teach. Previous studies have showed that the general population has turned to electronic communication channels for information (Stempel, Hargrove, & Bernt, 2000); however, this is not the preferred communication channel for receiving traditional agricultural news (Maddox et al., 2003). Agricultural communication faculty should make an effort to balance their teaching of electronic and print media as communication channels. There is still a need to teach publication design and writing for print media in the undergraduate curriculum. Findings in this study also show that Ohio grain farmers consider interpersonal communication sources important. Agricultural communication faculty might consider teaching about the importance of interpersonal communication in public speaking and public relations courses. Rogers (1995) said interpersonal communication sources are preferred when persuading individuals to adopt or not adopt innovations. Undergraduate students in agriculture could benefit from this skill when working in the industry. Agricultural communication faculty might also consider teaching program planning since demonstrations, meetings, and field days were identified as important sources of communication.

Keywords

theory of planned behavior, subjective norms, communication channels, organic farming, grain farmers, survey research, diffusion of innovations

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