Agricultural Communications Skills, Abilities And Knowledge Desired By Employers Compared To Current Curriculum: A Literary Review

Agricultural communications college programs across the nation strive to train prepared individuals that are ready to meet the challenges of the profession upon graduation. These programs look to current professionals and employers of recent agricultural communications graduates for the skills to teach students in the program. Agricultural communications programs have existed in the United States for nearly 100 years (Large, 2014). These programs have evolved over the years from a specified option to a specialization then finally a degree program including minors and graduate degrees (Ahrens & Gibson, 2014).

Large (2014) discovered 41 varied and growing programs across the country for agricultural communications. Agricultural communications is a recognized discipline with substantial research presented each year from many of these programs. Among the 41 programs, 19 offer a major option for agricultural communications; eight programs offer a minor; and seven programs offer a concentration, specialization, emphasis or option for agricultural communications. Current enrollment numbers and the year each program was founded also provide insight into the makeup of the agricultural communications programs. These numbers are all reflected in Table 1. This figure also shows the development and basic structure of the various programs (Large, 2014).

Table 1

Historic recollection and current enrollment and make up of agricultural communications programs (Large, 2014)

Institution	Major	Minor	Concentration	Year Founded	# of Students
Auburn University	X			----	37
Cal Poly State University	X	X	X	----	130
Clemson			X	1999	8
Connors State College	X			2006	10
Kansas State University	X			1946	68
Missouri State University	X			1995	60
New Mexico State University			X	1995	30
North Dakota State University	X	X		2009	40
Ohio State University	X	X		1980	83
Oklahoma State University	X			----	150
Pennsylvania State University		X		----	8
Purdue University	X			1971	44
South Dakota State University	X			----	20
Southern Illinois University			X	2007	7
Texas A&M University	X			1918	360
Texas Tech University	X	X		1992	160
University of Arkansas		X	X	1998	41
University of Florida	X	X		2004	75
University of Georgia	X			2000	40
University of Idaho			X	2000	50
University of Illinois at Urbana-Champaign	X			1961	40
University of Kentucky			X	----	--

Table continues

Table 1, continued

Institution	Major	Minor	Concentration	Year Founded	# of Students
University of Nebraska-Lincoln	X			----	25
University of Wisconsin-Madison	X			2006	--
Utah State University	X			2006	20
West Texas A&M University	X			2008	60

The *Journal of Applied Communications* is the primary outlet for research and professional scholarship in the agricultural communications field (Edgar, Rutherford, & Briers, 2009). Research themes in the publication and agricultural communications research were analyzed, and Edgar et al. (2009) found the following primary research themes:

- Information Sources and Technology
- Communications Management
- Communications of Scholarship
- Biotechnology Communications
- Media relations
- Distance Education
- Accountability
- Consumer/Audience Response and Analysis
- Curriculum and Program Development
- Electronic Media
- Food, Agriculture, Natural Resources, Health, and Family
- Institutional Organization and Institutionalization
- Critical Thinking
- Framing
- Professional Development
- Risk and Crisis Communications
- Agriculture Literacy
- Instructional and Program Delivery Approaches
- Policy Issues
- Processes, Principles, and Styles of Learning
  Volunteer Development and Leadership

Along the lines of curriculum and program development research category, agricultural communications researchers have conducted various studies as to what skills employers desire in agricultural communications graduates and new employees. There has also been research on the content colleges and universities with agricultural communications programs teach in their respective degree plans.

The goal of this review of literature is to consolidate all of this information into one document for colleges and universities to utilize in preparing or revising curriculum and degree paths in the future. With this broad understanding of needs of graduates, the specific skills desired of the industry were examined through a review of existing literature to form a comprehensive skill set desired for an agricultural communications graduate. The purpose of this study was to identify and understand the skills, abilities, and knowledge agricultural communications students needs to obtain during college training to prepare for work in the agricultural communications industry based on current literature as well as the current curriculum being taught to ag comm students and give directions to the existing programs for the future. The study was guided by two objectives:

1. Examine the literature for skills, abilities, and knowledge desired from agricultural communications graduates by various entities.
2. Examine the literature for skills, abilities, and knowledge already being taught in various collegiate agricultural communications programs.

Methodology

To accomplish the research objectives, several data sources were utilized. The researchers analyzed articles published in the *Journal of Applied Communications (JAC)*, the top tier journal for the industry; the *Journal of Agricultural Education (JAE)*; papers presented at the American Association for Agricultural Education national and regional research conferences; and others presented at various conferences where

agricultural communications research studies are typically presented. These sources were selected because they are the preferred outlets for publication of agricultural communications research. An additional data source was theses and dissertations published in the last 25 years through universities with agricultural communications programs. The four universities examined were Texas Tech University, Oklahoma State University, University of Florida, and Texas A&M University. These four universities were chosen because they were rated as the top four schools that offer a master's degree in agricultural communications (Miller, Large, Rucker, Shoulders, & Buck, 2014).

Data sources were gathered from the *Journal of Applied Communications* online, the *Journal of Agricultural Education* online, Southern Association of Agricultural Scientists Proceedings online, the Texas Tech University Electronic Theses and Dissertations library, the online Oklahoma State University Thesis and Dissertation Archive, the Texas A&M University Theses and Dissertations electronic database, and the University of Florida online catalog using the keywords "agricultural communications skills," "agriculture," "communication," "abilities," and "competencies." Articles, research papers, theses and dissertations were reviewed for relevance to the purpose and objectives.

After searching the databases within the keywords, articles were evaluated for skills evaluated by industry professionals and faculty members and ranked in need of importance to new graduates or curriculum in college program degrees. This led to six theses or dissertations from Texas Tech, five from Oklahoma State, two from Texas A&M, and one from University of Florida. Two articles from *Journal of Applied Communications,* one from the *Journal of Agricultural Education,* one from the annual meeting of the American Association for Agricultural Education, and one from the Southern Association of Agricultural Scientists (SAAS) met the keyword search requirements. One outlier thesis was utilized from the University of Arkansas—A paper was presented based on the thesis at the 2015 SAAS conference. The information

contained in the full thesis was invaluable to this study and the data were utilized. Each piece of literature was analyzed after the literature was read and categories of skills, abilities, and competencies were identified and compiled across all literature pieces.

Findings

Research objective one

Literature were examined for desired skills from agricultural communications graduates by the industry. Cartmell (1993) determined the following as the most sought after skills according to industry professionals: writing, followed by public relations, graphic design and layout, broadcasting, advertising, photography, and internship experiences. Other general education items were speech, English, journalism, agriculture, leadership, and computer knowledge. Bailey-Evans (1994) found the same skills desired by then-current members of the agricultural communications industry: writing, editing, public relations, public speaking, personnel management, marketing, and photography. Each skill area was defined further by specific sub- sets within the area (see Table 2.)

Terry, Vaughn, Vernon, Lockaby, Bailey-Evans, and Rehrman (1994) determined the following concepts should be included in agricultural communications curriculum: policies and laws, public relations, writing and grammar, general agriculture, ethics, problem solving, and critical thinking. Akers (2000) found the skills of importance as ranked by faculty, industry professionals, and high school teachers to be video; web design; radio; policies and law; business analysis and statistics; public relations; audience analysis; general agriculture; and networking.

Table 2
Skill sets based on industry professional use daily (Bailey-Evans, 1994)

Skill area	Skill set
Advertising	1. Budgeting 2. Media planning 3. Typography 4. Campaign planning 5. Creative strategies 6. Graphic design
Journalism	1. Editing, grammar 2. News writing, creative writing, technical writing 3. Reporting 4. Ethics in journalism 5. Dissemination systems 6. Design and layout of publications
Photography	1. Composition 2. Printing 3. Camera functions 4. Ethics in photography
Public Relations	1. Campaign planning 2. Personnel management 3. Problem solving 4. Government policy, political analysis, legislation
Public Speaking	1. Speech writing 2. Oral communications 5. Nonverbal communications
Telecommunications	1. Script writing 2. Broadcasting 3. Television production 4. Video production 6. Radio production
Internship Experience	1. Application of agricultural communications concepts 2. Development of personal/interpersonal skills 3. Problem solving 7. Employee responsibilities
International Relations	1. Trade relations 2. Cultural differences 3. Communication systems 4. Political constraints 8. Economics

McGaha (2000) wanted to discover the rankings of employability skills of agricultural communications graduates. Effectively using verbal communication skills was ranked number one, followed by using effective written communication skills, planning and completing projects, analyzing information for problem solving, teamwork, and leadership skills. Ciuffetelli (2002) sought to determine skills for agricultural communications graduates before entering the workforce. Those skills were identified as using proper grammar, spelling, and punctuation; emphasizing demographics and culture; ability to create and design a website; marketing; ability to be knowledgeable of current agricultural issues; being able to report things correctly and meeting deadlines; and being fluent in computer technology such as Microsoft Office and Adobe Creative Suites (Cieffetelli, 2002).

Simon (2003) found the following skills necessary for an agricultural communications graduate with a master's degree, according to both university faculty and industry professionals: elements of design; thesis project; media, crisis and information management; marketing; communications law; strategic communications planning; public relations; writing; and mass communications. Other skills that were mentioned were graphic design; emerging technology, publications, research, video/broadcast, advertising, internships, photography, case studies, technical writing, media relations, media analysis, editing, social marketing, reporting, and communications theory.

Deering (2004) surveyed farm broadcasters for proficiencies used in the industry daily as well as proficiencies that should be required in curriculum. Those proficiencies were marketing theories; identifying the impact of government and legislative policy on agriculture; economic impact analysis of the agricultural industry; biotechnology and the food systems; current government programs that support agricultural business; analyze public perception; U.S. agricultural policy in foreign markets; and defining and

understanding the types of agribusiness marketing (Deering, 2004). More skills industry professionals use on a daily basis are interviewing; effective speaking; using voice; using a variety of inflection, tone and volume; describing the influence of agriculture to the public and the role of agriculture internationally; responsibility and credibility; time management; utilizing the Internet and email correspondence; conflict resolution; information gathering and citing those sources; and common sense.

Competencies needed by graduates and the frequency of use in agricultural communications were evaluated in a series of ranking systems (Maiga, 2005). The highest ranked skills were applying writing skills in the real world; editing the work of others; accurately proofreading a document; and using the correct grammar, spelling, and punctuation. Other skills mentioned were using correct editing marks; determining the proper channel for an article whether that be a news article or feature article; and writing for the Internet (Maiga, 2005).

These skills remain throughout research focused on identifying factors influencing the way agricultural journalists and agricultural communicators do their jobs (Chenault, 2009). Those factors that are the most important based on industry professional opinion of importance are personal attributes and ag journalist skills. Personal attributes desired were caring, having empathy, and being able to learn new information. The ag journalist skills were writing, reporting, research, production, photography, and using new technology.

Based on employers' experiences, agricultural communications professionals found that recent graduates were trustworthy, easy to work with, and reliable. However, they needed improvement in the areas of creativity, common sense, and organization (Irlbeck & Akers, 2009). Communications-specific skills that were rated highest included photo editing, page layout, and public relations, yet sales, Web design, and news writing were the lowest-rated skills for recent graduates (Irlbeck & Akers, 2009).

Three main categories of soft skills were identified as important agricultural communications skills for graduates: networking, relationship, and team building skills; communication and social skills; and leadership skills (Strickland, 2011). Within those categories, various skills were identified. In networking, relationship, and team building, common skills were collaboration with other groups; developing personal and professional networks; human relations skills; negotiation skills; teamwork; and understanding different personality skills. Desired communication and social skills were verbal and non-verbal communication skills; listening skills; ability to run a meeting; developing better public speaking skills; understanding proper etiquette; and learning how to initiate conversations. Within the leadership skills category, critical and strategic thinking; understanding different cultures; self-awareness; leadership; and developing a sense of accountability were identified (Strickland, 2011).

Morgan (2011) also set out to rank skills for agricultural communications graduates based on three different core areas. The first core area was soft skills with ethics as the most important skill in that area. Following ethics was ability to meet deadlines, dependability, strong work ethic, reliable, organization, professional etiquette, multi-tasking, and time management. The second core area was communication where the highest-ranking skills were the ability to effectively communicate verbally, communications principles, and the ability to recognize communication barriers. The third core area was general education with the skills of correct use of grammar, spelling and punctuation; effective written communication; motivation; strong work ethic; willing to get things done; self-starter; working knowledge of computers; web skills; Microsoft Office; and Adobe Creative Suites being the most important (Morgan, 2011).

Competencies for graduates were identified by employers of agricultural communications graduates (Clem, 2013). The competencies were classified into seven different categories of writing and grammar, communication skills, agriculture, technology, personal skills, specific skills, and business. Writing and grammar focused

on the importance of grammar, spelling, and punctuation; peer editing; and the use of AP style. Communication skills were geared toward audience perception and properly communicating to the audience. Agriculture leaned toward understanding general agriculture and the issues within the industry as well as seeing agriculture from a broader perspective. Adobe Creative Suites and Microsoft Office programs were the main focus within the competencies for technology. Personal skills referred to “soft” or “people” skills not typically taught in classroom. Finally, business skills focused on project planning and management, teamwork, and business principles.

The highest competencies ranked over time were trustworthiness; compose well thought-out written pieces; ability to distill a lot of information into simple, easily understood communications messages; effective written communication for formal communications; clearly articulate writing; strong interpersonal skills; and reliable. These competencies lie in the personal, writing, and communication categories (Clem, 2013).

Clem (2013) also sought to determine the competencies university faculty members ranked most important based on the competencies identified by industry professionals. The top ranking competencies were understanding multiple writing styles; individual is a lifelong learner that seeks to remain on the cutting edge of the profession; committed to a project; trustworthy; reliable; always be respectful; and create and maintain relationships.

Chesher (2014) looked to examine the regularly occurring responsibilities of current agricultural communications industry professionals. Responsibilities include the use of social media, public relations, marketing, management, online content/website development, editing, photography, advertising, writing, graphic design, and video production. Professionals also ranked client relationships, critical thinking, agricultural issues, and strategic planning as important skills for a graduate to have when entering the work force based on current industry responsibilities (Chesher, 2014).

Research objective two

Literature were examined for skills, abilities and knowledge already being taught at various collegiate agricultural communications programs. Cartmell (1993) examined skills already being taught to students in college and included writing, graphic design and layout, public relations, speech, and English. McGaha (2000) found the highest ranking skill being taught in agricultural communications programs was using effective written communication followed by using effective verbal communication, teamwork, project management, and accessing and utilizing a variety of information sources.

DuBois (2009) focused on skills being taught in college programs. The most prevalent skills in order of importance were (1) public relations, (2) journalism and mass communications, (3) journalism, (4) communication, (5) marketing, (6) English, (7) agricultural communication and journalism, (8) advertising. Chenault (2009) also discovered skills currently being taught in programs. Skills such as print journalism, English, liberal arts, and public relations.

Watson and Robertson (2011) examined skills in agricultural communications program curriculum. These skills were writing with proper grammar, spelling and punctuation; describing agriculture to the public; conflict resolution; teamwork; fixing barriers of communication; working under pressure; understanding design and layout; developing an effective campaign; and reporting a topic from multiple points of view.

Large (2014) sought to evaluate the current agricultural communications programs around the nation to determine what courses were currently being taught as well as concepts that could be taught the future. Course subjects currently taught include public relations, campaigns or crisis communications; reporting or feature writing; websites or social media; general agricultural communications; and capstone or seminar. Participants of Large's (2014) study predicted they would add courses in the next five years in the following subjects: capstone, social media in agriculture, an

introductory course, global agricultural communications and development, photography, publication and design, and risk and crisis communication.

Cannon, Specht, and Buck (2014) analyzed course descriptions from 35 agricultural communications programs and found that writing based courses were the most popular offerings nationwide. Introductory agricultural communications courses, internship, writing for publications, and graphic design courses were also commonly offered. Research, study abroad, and international courses were the least offered at that time.

Through all of the research conducted, common themes regarding the skills employers desired from graduates emerged and are shown in Table 3. The skills are classified in broad categories with more specific skills in those categories. These broad categories were an created by the repeating skills and traits within the category across all literature, not every skill mentioned. For example, writing, journalism, grammar, etc. were all skills present but could all be combined into written communication. Over time, writing, as a broad category, has remained the top skill employers expect a recent graduate to possess. Character skills have also remained a predominantly desired skill, followed by visual and technical skills and oral communications skills.

Table 3
Skills desired by employers of agricultural communications graduates

Broad Category	Specific skills desired
Written Communication	• Writing • Journalism • Grammar • Spelling • Punctuation • Accurate reporting • Public relations • Proper editing • Communication planning

Table continues

Table 3, continued

Broad Category	Specific skills desired
Character skills	• Time management • Reliable • Dependable • Uses common sense • Conflict resolution • Ethics • Responsibility • Creativity • Credibility • Trustworthy • Motivation • Respectful • Building relationships • Teamwork • Leadership • Networking
Visual and technical skills	• Technology advances • Understanding of Microsoft Office • Understanding Adobe Creative Suites programs • Graphic design • Layout • Web design • Photography • Advertising and marketing • Broadcast and video
Oral and other communications skills	• Public speaking/verbal skills • Interviewing • Economics • Agricultural policy • General agricultural knowledge • Global agricultural issues

The same method of classification was applied to the common themes of skills being taught at undergraduate programs as displayed in Table 4. The skills align for the written communication, visual and technical skills, and oral communication skills categories. Employers desire soft skills in graduates such as time management,

dependability, responsibility, ethics and trustworthiness. Although courses specifically labeled as soft skills may not exist, many faculty members would argue these skills are incorporated into various courses through lessons on professionalism, team projects, critical thinking activities, and service learning.

Table 4
Skills being taught in agricultural communications undergrad programs

Broad Category	Specific skills desired
Written Communication	• Writing • Journalism • Grammar • Spelling • Punctuation • Proper Editing • Public relations • Campaign development • Creating publications
Character skills	• Working under pressure • Teamwork • Working through communication barriers
Visual and technical skills	• Understanding of Microsoft Office • Understanding Adobe Creative Suites programs • Graphic design • Layout • Web design • Photography • Advertising and marketing • Social media
Oral and other communications skills	• Public speaking • International relations • General agricultural knowledge • Global agricultural issues

Conclusions and Discussion

Based on the information analyzed and examined in the literature, an area missing in the curriculum studies that was found to be of importance in previous literature is accurate reporting. Again, this may be incorporated into numerous courses,

but with this being an area of emphasis for previous studies involving professional communicators, it should remain a continual area of focus.

In all, the skills desired by the industry as mentioned in previous literature align, for the most part, with the skills being taught in agricultural communications programs. The researchers realize many agricultural communications courses incorporate character or soft skills, but it is still important to ensure students are placed in situations that allow them to develop skills such as time management, reliability, dependability, conflict resolution, ethics, responsibility, and others. This can be accomplished through internships, service learning, team-based projects, research projects, study abroad, student organizations, and other higher-level thinking course assignments.

Cooperation between faculty and the industry can continually ensure students are learning the skills necessary to be a desired job candidate and then succeed in the workplace. However, the researchers noticed only a few studies focused on the students. It is important to understand their expectations, desired skills, and satisfaction with their degrees, and is a suggested area of future research.

The skills, abilities, and knowledge desired from agricultural communications graduates by various entities as well as the skills, abilities, and knowledge already being taught in various collegiate agricultural communications programs were all examined in this literature review. The research showed the effectiveness of the current process in teaching ag comm students to be better professionals in the world tomorrow, however, there was still many areas and holes in the research that should be studied further.

The researchers feel certain there are more research studies on this topic; however, they were difficult to locate. Several national and regional research conferences that agricultural communications researchers typically attend do not consistently post proceedings, so the researchers were unable to obtain copies of the manuscripts. In addition, the researchers noticed many of these studies were theses or

dissertations, yet a manuscript was not published in the typical agricultural communications journals or conferences.

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Communicating Climate Change

Abstract

The scientific community has come to the conclusion that the climate is changing, but facts continue to be rejected or doubted, creating communication challenges for professionals. The purpose of this study was to determine how education and communication professionals involved in climate-change communication are framing the discussion of climate change with agricultural producers. Semi-structured phone interviews were conducted to address terminology used, challenges encountered, overcoming challenges, and utilization of social media when educating and communicating about climate change. Responses from professionals indicated: 1) they do not avoid using the term “climate change” but are concerned about jargon in materials; 2) the majority agreed the public believes climate change is happening; 3) not to address the root causes of climate change; 4) frame messages; 5) to address adaption options using local data; and 6) climate organizations are promoting materials on social media. This study recommends practitioners frame each conversation depending on the audience’s beliefs and avoid using terminology that is not accepted by the target audience. Future research should investigate the effectiveness and uses of social media to engage desired audiences when communicating scientific information.

Keywords: Climate change, terminology, social media, educational materials, agricultural producers, communication

Communicating Climate Change: A Qualitative Study Exploring how Communicators and Educators are Approaching Climate Change Discussions

Scientists and governments around the world largely accept the scientific conclusion that the climate is changing and that change has been accelerated through the burning of fossil fuels and land clearing (Macdonald, 2013; Melillo, Richmond, & Yohe, 2014). The vast majority of papers (97%) published during the last quarter century support that conclusion (Cook et al., 2013). However, what is considered scientific fact has come under debate and question by the general public (Weber & Stern, 2011). The current United States administration, under the guidance of President Obama, announced plans to reduce net emissions of carbon by 120 million metric tons by 2025 (The White House, 2013). Agricultural producers have been tasked with limiting contributions to greenhouse gas emissions and adapting to a changing climate through voluntary and incentive-based actions (United States Department of Agriculture, 2015).

The agricultural industry has already experienced the impacts of climate change in both positive and negative ways. Warming trends in global climate have resulted in longer growing seasons as well as expanded growing zones (Melillo et al., 2014). Negative impacts and disruptions have occurred within the agricultural industry in the form of drought, extreme heat, disease, insects, and heavy precipitation events (Aalst et al., 2014), which impact crop yields and livestock health. Even with short-term benefits, long-term impacts of climate change on agriculture are expected to have negative effects on crop yields and livestock (Field et al., 2014). The increasing world population, projected to reach two billion by 2050 (United Nations. Department of Economical and Social Affairs, 2014), will rapidly increase the global demand for agricultural products, including food (Beek, Meerburg, Schils, Verhagen, & Kuikman, 2010). As

global agricultural production increases to match food demand, an increase in greenhouse-gas emissions is projected to occur simultaneously as a result of increased agricultural production (Beek et al., 2010). To meet growing demands and mitigate the impacts of agricultural production, adaptation in agricultural practices must be made at the farm-management level (Howden et al., 2007) and within governments (Vergé, De Kimpe, & Desjardins, 2007).

Review of Literature

Public Perception of Climate Change

While the vast majority of scientists agree that climate change is occurring and has been accelerated by human activity (Cook et al., 2013), a significant portion of the American public doubt that climate change is occurring (Leiserowitz, Maibach, Roser-Renouf, & Smith, 2011). Public perception of climate change is reflected in political views (Hamilton, Hamilton, Duncan, & Colocousis, 2007). Rural residents in Kansas indicate they have strongly held conservative views, (Hamilton et al., 2007), which are typically associated with doubts about climate change (Nisbet & Myers, 2007). Conservative politicians have been proponents of climate-change denial since its onset, as accepting climate-change impacts would impede upon their belief in progress created by the free market and the increased possibility of government regulations (Dunlap & McCright, 2011). Manufactured doubt, also known as organized climate-change denial, is partially responsible for the decline of public concern over climate change (Lewandowsky, Gignac, & Vaughan, 2013). However, individuals have been more willing to attribute long-term climate shifts to human causes after they had been informed of the scientific consensus of anthropogenic climate change (Lewandowsky et al., 2013).

A study of Central Great Plains agricultural producers found producers question the scientific validity of climate change for numerous reasons including receiving mixed messages

and observations of historical fluctuations in precipitation and temperature (Hibbs et al., 2014). Producers still expressed profitability and productivity concerns based on uncertain climate conditions, whether or not they believed in climate change (Hibbs et al., 2014). Adaptive actions focused on preparing for extreme weather events are largely supported by producers while mitigative actions through government action are not (Arbuckle et al., 2014). Producers who have adapted to climate change considered their actions to be risk-management strategies to maintain crop productivity (Hibbs et al., 2014).

Climate-Change Communication

There is an increased urgency for agricultural producers to adapt to weather variations associated with climate change starting at the farm-management level (Howden et al., 2007). Agricultural communicators and climate professionals have been tasked with the mission of relating climate-change information to the public and agricultural producers so they can increase their climate knowledge and be better equipped to make management decisions (Howden et al., 2007). However, farmers' beliefs about climate change and their need for adaption and mitigation vary with trust and perceived risk of climate change (Arbuckle, Morton, & Hobbs, 2013a). Agricultural producers' background and past experiences will also play a role in their acceptance of climate-change information (Merriam & Brockett, 2007). Messages addressing an individual's personal beliefs, environment, and experiences are more likely to create engagement (O'Neill & Nicholson-Cole, 2009). In a study related to The Cooperative Extension Service's delivery of climate-change information to agricultural producers, Morris, Megalos, Vuola, Adams, and Monroe (2014) suggest that providing information about the changing climate to audiences lacking interest may be detrimental to efforts. Instead they recommended providimg

"climate science information" (p. 5) to believers, while providing local information regarding "risk management" (p. 5) of specific threats to non-believers.

Since the 1980s, the term "global warming" has been used to describe the impact of increasing levels of greenhouses gases linked to human activities (Whitmarsh, 2009). Global warming may describe the concept of global risk and capture the attention of the public, but it obscures the complex and potentially devastating range of effects resulting from what scientists refer to as climate change (Houghton, 2009). Awareness, affects, and knowledge largely vary among the public depending on the term, climate change or global warming, used in communication (Whitmarsh, 2009). Climate change messages that use scare tactics can create barriers to an individual's engagement. Messages about climate change that are, "dramatic, sensational, fearful, shocking…" (p. 375) are capable of capturing the public's attention and creating a general feeling of importance for the topic (O'Neill & Nicholson-Cole, 2009). However, framing climate change in this way can also overwhelm individuals causing them to disengage from the topic. Terminology choice also influences how the public understands and evaluates the issue (Whitmarsh, 2009).

Terminology used by communications professionals, educators, and agricultural producers has expanded beyond the use of global warming and climate change. Agricultural producers make distinctions between climate variability and anthropogenic climate change (Hibbs et al., 2014), and discuss climate shifts (Arbuckle, Morton, & Hobbs, 2013b). Individuals perceive climate change in a variety of ways and prioritize different values, therefore, climate change cannot be responded to in a single way (O'Brien & Wolf, 2010). Efforts to include

agricultural producers in voluntary climate initiatives should consider framing climate impacts and behavioral goals (Haden, Niles, Lubell, Perlman, & Jackson, 2012).

A values-based approach to climate-change adaptation and vulnerability acknowledges that individuals and cultures have subjective, qualitative reactions to climate change (O'Brien & Wolf, 2010). Different values between groups also means that efforts to satisfy one group's needs through climate policies can create conflict amongst those groups (O'Brien & Wolf, 2010). In response to these challenges, audience segmentation has been suggested as a possible strategy to develop effective communications targeted to specific groups who share similar values, beliefs, behaviors, and/or policy preferences about climate change (Hine et al., 2014). Through audience segmentation and framing of messages audiences respond and pay closer attention to persuasive messages that match attitudes and behavior (Fujita, Eyal, Chaiken, Trope, & Liberman 2008).

Websites and social media are a vital tool and method for organizations working in climate change to reach their target audiences. A study of 60 climate change organizations' websites worldwide revealed 35 climate change organizations in the United States promote the organizations' social-media pages on the organizations' websites (Jun, 2011). The top three social media links provided on websites were Facebook, Twitter, and YouTube, respectively. Researchers credited failure to identify key publics as the main challenge for climate-change organizations working to relay climate information between experts and the public. Websites were primarily used as media relations and as fundraising efforts to interact with target audiences in an effort to build relationships (Jun, 2011).

Purpose and Research Questions

Previous literature has looked at broad challenges faced by climate-change communication, but the specific challenges faced by education and communication professionals when communicating climate-change information remains unknown. Another gap in the literature is the identification and utilization of specific communication tools, like social media, and how these tools are being used to promote climate-change educational materials. The purpose of this study was to determine how education and communication professionals involved in climate-change communication are framing the discussion of climate change with agricultural producers. It is of additional interest to learn the specific frames used, challenges in effective communication, and communication tools that are most effective. The following research questions guided this study:

RQ 1: What terminology do education and communication professionals use when discussing climate change?
RQ2: What challenges do education and communication professionals encounter when discussing climate change?
RQ 3: How are challenges overcome when communicating climate-change information?
RQ4: Are organizations utilizing social media to promote climate-change education and information?

Methods

In order to address the research questions, qualitative, semi-structured phone interviews were conducted with 16 participants who communicate climate-change information across the United States. Phone interviews are the best way to obtain information when researchers do not have direct access to participants (Creswell, 2007). The semi-structured interviews contained 15 questions related to terminology used by participants, challenges encountered, how to overcome these challenges, and if social media is utilized. Two researchers at [University] with an understanding of climate change and communication practices conducted the semi-structured interviews. To refine the interview questions a panel of experts reviewed the questions. The panel consisted of an agronomy assistant professor with an Extension appointment and an

associate professor in agricultural communications. Extension has a substantial background working with climate-change adaptation and mitigation methods in agriculture; however, it may not be labeled as such. The associate professor is an agricultural communications professional trained to handle controversial issues surrounding agriculture. The [University] institutional review board considered the ethical issues of this study and approved the study prior to participant recruitment.

The purposive sampling frame for this study was education and/or communication professionals involved in communicating with or educating adults about climate change. Participants were found by conducting a Google search for "adult climate change curriculum" and/or were suggested by the panel of experts. The Google search revealed climate-change professionals, or the organizations they work for, that are actively promoting adult climate-change curriculum or information. Participants were asked if they knew of others working on adult climate-change curriculum. This snowball sampling method was used to increase the number of participants that fit into the study's sampling frame (Babbie, 1992). Information obtained from the Google searches included name, title, organization, and contact information. Researchers then used this information to conduct the semi-structured phone interviews from June 2015 to August 2015. Researchers conducted follow-up phone calls for any participants they were initially unable to reach. The participants ranged in occupation from university professors to government agencies and all were considered climate change professionals. Participants represented the following organizations: Kansas State University, Oklahoma State University, University of Wisconsin System, University of Georgia, K-State Research and Extension, Oklahoma Cooperative Extension Service, College of Agriculture and Life Sciences

Cooperative Extension, University of Alaska Fairbanks Cooperative Extension Service, National Oceanic and Atmospheric Administration, and Conservation. Soils. Partners.

Researchers explained the purpose of the study to all participants. After covering consent information, emphasizing confidentiality and no costs or anticipated risks to participate, the participants provided verbal consent for the study to proceed. The average length of the phone interviews were 20 minutes. To address transferability, as much description of the participants' responses were provided in the results as possible (Creswell, 2007). All interviews were digitally recorded and transcribed verbatim by the researchers. The audit trail kept by the researchers aided the dependability of the study (Ary, Jacobs, Sorensen, & Walker, 2013).

The data for this study was analyzed using Glaser's (1965) constant comparative method. Researchers used open coding to create categories and subcategories of the data. Transcripts of the semi-structured interviews were printed and analyzed by hand for themes in accordance with Glaser's (1965) constant comparative method. This study utilized Glaser's first approach to the analysis of qualitative data, coding participants' responses into categories then analyzing the categories in an effort to answer a research question (Glaser, 1965). To protect participants' confidentiality, pseudonyms were assigned during the analysis of the data. Researchers also kept member checks and low-inference descriptors by using quotes to aid to the credibility of the study (Ary et al., 2013). Another step to ensure credibility was participation by both researchers in the coding and identification of the six major themes. This technique, stepwise replication, was also used to ensure the dependability of the study (Ary et al., 2013).

Disadvantages of phone interviews include the cost of long distance phone calls and the lack of visible, non-verbal communication cues on behalf the participant (Creswell, 2007).

Another limitation of this study was the timing of the calls. Due to the large number of university participants in the study many were on vacation or away from their office during the summer.

Results

RQ 1: What Terminology do Education and Communication Professionals Use When Discussing Climate Change?

Participants were asked to identify terminology they used when speaking about climate change. Results show the majority of participants are not afraid to use the term climate change. Participants also recommended similar terms they are using and other terms to avoid.

Terminology. Eight of the participants said they use the term "climate change" and do not "side step" the politics of using the term. Carl outlined the importance of being honest when speaking about controversial topics, "I will use climate change. I know it's not a popular phrase in this part of the country, but just honestly talk about it and not try to disguise it as something else." Another participant, Albert, also called for honesty stating, "Well, I mean you can't get completely away from the term climate change since the climate is changing."

Not everyone in the study agreed with this view. Diane suggested the term "changing climate." She said, "Changing climate does not apparently have the political association with anthropogenic climate change that climate change does." Walter agreed, "You can present it in such a way that effectively communicating the idea that the risks are changing without using politically charged buzz words."

Terms avoided by participants included "global warming", "climate disruption," "cycles," "anthropogenic climate change," and "greenhouse gases". Participants were also concerned about the use of jargonistic terms in climate-change materials. Carl touched on the importance of writing climate-change material in lay terms saying:

> In general a lot of what I'm familiar with out there on the web is more geared towards people who are going to be a meteorology student or there tends to be a lot of jargon in them, so I'm a little hesitant to just throw those out there. The content is fine, but it needs to be in a language that is more understandable sometimes.

RQ2: What Challenges do Education and Communication Professionals Encounter When Discussing Climate Change?

Participants were asked to identify how they address challenges when relaying climate information to the public. Two major themes emerged from participant responses. The two themes were a general acceptance of climate change and recommendations to not address the root causes of climate change.

General acceptance of climate change. The majority of participants (14) agreed the public has accepted climate change is happening. Although, there will always be the minority that believe differently, professionals are ready to work with the segment of the population that has accepted climate change. Carl said, "We work with the ones who want to have that conversation and there are plenty of requests we get, more than we can handle. Usually we're calling up our partners trying to say, can you go to this one."

The public's view has shifted in recent years and many believe it's due to the public experiencing the effects of climate change. Bethany believes educators are open to climate change, "which is different from what I saw four years ago. Things have changed. First off the public attitude toward climate change has softened. I think people are seeing the heavier rainfalls and stronger events predicted by climatologists."

Two participants did not believe the public, or specifically agriculture producers, are ready to accept climate change. However, these participants deliberately referred to research that

contradicted their personal assessment of public acceptance of climate change. Jack and Edward referred to Becerra and Middendorf's (2015) study which showed 125 (N = 226) Extension educators in Oklahoma and Kansas believe the climate is changing. Edward said, "My perception is that there is [a large resistance to climate change], but when I see some of the surveys that come out they aren't quite as anti-climate change as my perception." Diane supported this viewpoint stating, "I don't think people are really as denialist as the general perception is."

Avoiding Root Causes. Participants in the study stressed the opinion that the public is not ready to hear about the root causes of climate change. Henry said, "I think I'm seeing a little bit more concern among individuals, not that they know what to do, but at least they want to learn." The public is ready to learn about climate change but the message they want isn't how to mitigate climate change. Glenn supported this viewpoint saying, "It's not an accepted fact of the causes that is a controversial topic."

"Our goal is not to get into a political discussion as to what is causing [climate change]," Albert stated. "Human caused," "anthropogenic," and "greenhouse gases" are all terms participants recommend avoiding when speaking about climate change. Diane supported avoiding these terms stating she didn't see, "necessarily an opposition to [climate change] but a lack of belief in it and/or a lack of belief in anthropogenics."

RQ 3: How are Challenges Overcome When Communicating Climate Change Information?

Participants were asked questions related to how they address opposition to climate change and how they overcome challenges when communicating. Two themes emerged in this

data. Themes identified were professionals frame conversations to convey messages and address adaption options using local data.

Framing communication. The consensus of the participants was not to push information on those who are not ready or willing to hear it. Carl pointed out, "The bottom line is that it's important that everybody has access to this and learns as much as they care to learn." Robert supported this school of thought saying:

> Our philosophy I guess on this is that there is a learning curve and we are more interested in providing education and information to people that are ready to receive it than we are in changing the minds of people that may not be ready for it.

Participants also recommended using tailored messages and scholarly information. Diane is working to educate Extension professionals on climate who in turn provide information to agricultural producers. The information she gathers is, "largely federal reports, but it's sort of vetted government produced or peer reviewed information that is accessible and written for a lay audience."

Participants recommended not lecturing at an audience. Thomas believes professionals need to understand that, "a lot of these farmers are pretty sophisticated now, even those that don't have a lot of education." Participants like to use PowerPoints for engaging with audiences and as a reference tool. Utilization of PowerPoint varies in depth, length, and knowledge depending on the audience. Walter said, "You know I may get through five slides out of 40 because you know older people are more likely to engage and interact and so forth."

Carl pointed out, "[I] use a number of things to illustrate and try to use actual data where I can so it's not just illustrations or schematics." Ralph also heavily relied on tailored presentations saying,

> I probably give 50 or 60 of these talks a year. They are all subtle variations of a theme depending on where I'm going and who I'm talking to… And we make a lot of this stuff too, as far as products and pieces of information and different kinds of outreach materials.

PowerPoints are not the only tool being used in participants' communication and education efforts. Donna uses maps as a tool. "You can tell people what climate change is but when you actually teach it you have to give them a tool or a method and so I've been using maps because you can use local data." Carl uses materials he finds on the Internet. "There are some really good modules that are available and the National Weather Service has a site JetStream that some. It was really well done I think."

Addressing adaptation options using local data. Adaptation is the main focus of professionals' conversations when communicating about climate change. The public wants to know, "how not necessarily to prevent it, but how to adapt to it, how to deal with it," said Caleb. He also pointed out, "Rather than stressing climate change, or the causes of climate change, any of that, we've taken a more proactive approach of how to adapt to these changing conditions". Walter stressed the need to know what is important to agricultural producers. "You need to focus on what is relevant to them, which is drought. Drought is going to be the biggest one, changes in rainfall, you know distributions and things like that," said Walter. When providing the public with information on how to adapt, participants recommend using data that is local to the area. "That's another point I've learned, is to kind of show them the data and also try to relate it to local situations, said Edward. Henry agreed saying:

> What we found in our interview with the ag science teachers and also the producers throughout the state is they want local data…The other suggestion that I have, if you're looking specifically at ag producers is target it to the information that is relevant to them.

RQ 4: Are Organizations Utilizing Social Media to Promote Climate Change Education and Material?

Participants were asked if they promoted any type of climate-change information through their personal or organization's social media accounts. Researchers found the majority of participants provided social media accounts for organizations and not their personal accounts. Facebook and Twitter accounts were provided the most.

Promoting materials on social media. If participants provided social media accounts for an organization, the majority were for organizational accounts. Two participants did provide personal Twitter accounts. These participants follow climate organizations and retweet information the organizations provide. "What they [Climate Change Agriculture and Food Security Research Program] do is they post stuff about climate smart agriculture and climate smart villages and how to adapt to climate change…so then I'll retweet that stuff," said Edward. Diane provided social media information for her organization instead of her personal sites. "Maybe 10 to 20% of our posts are things like we posted today, a cool sort of infographic, like a chart that you can play with what shows the different forgings of climate and the global temperature."

Participants addressed the lack of personal social media accounts for professional or information gathering purposes. Participants suggested that a vast segment of the public only uses social media for personal use instead of as a way to seek information. Gerald identified with other participants' struggle to use social media to engage their target audience.

> …one of the problems is the educators we're finding don't use social media for professional purposes. They use it for personal purposes so they go to Twitter for their

personal reasons. And that's a challenge for us to figure out where the engagement strategy using digital tools for our target audience is…

Gerald's organization is also syndicating educational materials and recently signed a contract with PBS LearningMedia to promote his organization's material. PBS LearningMedia offers free digital content to preschool through high school educators and will promote the material through their website and social media accounts. Overall, participants provided organizational information for eight Facebook sites, eight Twitter pages, one blog, one YouTube channel, and one podcast.

Conclusion and Discussion

The results of this study indicate climate educators and communicators believe in speaking honestly when talking with agricultural producers. Professionals no longer avoid using the term climate change. However, key findings suggest other terms such as climate disruption, cycles, anthropogenic climate change, global warming, and greenhouse gases should be avoided in climate materials and discussions. Knowing that individuals perceive climate change in a variety of ways and prioritize different values, climate change cannot be responded to in a single way (O'Brien & Wolf, 2010).

The majority (97%) of scientific writing supports the fact that climate is changing (Cook et al., 2013). The challenge now becomes addressing the causes of climate change, adaptation and mitigation options. Participants in the study indicated the general public is not ready for cause and mitigation discussions and to avoid the topics. Providing this information might overwhelm audiences and cause them to disengage from the conversation (O'Neill and Nicholson-Cole, 2009).

Participants consider the audience and frame climate-change messages to meet the comfort levels of the audience. In response to these challenges, audience segmentation can be used to develop effective communications targeted to specific groups who share similar values, beliefs, behaviors, and/or policy preferences about climate change (Hine et al., 2014). Participants provide local data to audiences in an effort to relate to their personal beliefs, environment, and experiences since they are more likely to create engagement in climate change communication (O'Neill and Nicholson-Cole's , 2009).

This study revealed most climate educators and communicators are not promoting climate change through their personal social media accounts. Participants referenced climate change organizations' social media sites. The top two social media sites provided by participants were Facebook and Twitter. This finding is similar to Jun's (2011) study of climate change organizations, which found Facebook, Twitter, and YouTube are the top three promoted social media sites. Climate education and communication professionals promote adaptation options through social media, however, they doubt their audiences often seek information about climate change there. Identifying a target audience is one challenge education and communication professionals face in promoting climate change information on social media platforms (Jun, 2011).

Recommendations for Practitioners

Several recommendations for practitioners surfaced from the study. Audience segmentation and framing repetitively appeared as a theme throughout interviews. To be successful in communicating climate-change information, professionals must identify a target audience and their preferred methods of communication.

Communications and education professionals should avoid using terminology that is perceived negatively or not accepted by the target audience. Specifically, respondents said use of climate disruption, cycles, anthropogenic climate change, global warming, and greenhouse gases should be avoided when discussing climate change. Framing should also occur when selecting data and information. Local data and tools were best received by the target audiences and should be utilized in communication.

Respondents to the survey depend on social media material from climate organizations to share on their respective organization's social media presence. Practitioners should identify reputable sources of climate information to promote on social media accounts. Consideration should also be given to the audience segment using social media to seek out information on climate change during message creation and promotion.

Recommendations for Research

Through this study, researchers identified that education and communication professionals are using social media to promote climate-change information. Respondents indicated that the effectiveness and reach of their efforts in social media were unknown. Additional research should investigate the use of social media to by specific audiences to seek climate change information. It would be of additional interest to examine the effectiveness of social media in engaging the desired audience on the subject of climate change. Professionals in climate-change education and communication indicated that they used both organizational and personal social media accounts to share climate-change information. The relationship and frequency of use in social media to share climate-change information should be further examined.

Respondents in this survey indicated they used a wide variety of terminology and indicated several motivations for the terms used. Terminology that specific audience segments accept and understand should be further investigated to assist in message development and framing. Sources of trusted information should also be explored since this study revealed that professionals use a variety of sources to promote information, but are unsure if their messages are being received by the desired audiences.

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Research Paper

Poultry Production Messaging: Frames and Emergent Themes in Three National Newspapers, 1994 to 2014

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Poultry Production Messaging: Frames and Emergent Themes in Three National Newspapers, 1994 to 2014

Abstract

Content analysis was used to assess selected articles (*n* = 139) from USA Today, the New York Times, and the Wall Street Journal to identify frames and emergent themes about antibiotic and hormone use in poultry production over a 20-year period. Overall, human interest (27.5%), responsibility (21.6%), and conflict (18.7%) were the most frequently used frames. Five emergent themes were evident in the analysis of these articles: C*onsumers Awareness of and Concern for Antibiotic/Hormone use in Poultry Production* (41.0%, *n* = 57); *Role of Antibiotic Use in Poultry Production in Increased Levels of antibiotic-Resistant Bacteria* (40.3%, *n* = 56); *Regulation of Antibiotic Use in Poultry Production* (36.0%, *n* = 50); *Purpose of Antibiotic/ Hormone use in Poultry Production* (32.4%, *n* = 45); and *Transparency of Antibiotic Use Poultry Production Practices* (13.7%, *n* = 19). Recommendations included a stronger focus on understanding and addressing consumer concerns about antibiotic and hormone use in poultry production, increased transparency, and improved relations with media contacts who cover antibiotic and hormone use in poultry production.

Keywords: Agricultural Communications, Content Analysis, National Newspapers, Poultry Production Messaging, Qualitative Research

Introduction

Understanding the production methods that provide the public with food is of growing importance and concern for the modern consumer. One area of consumer concern is the use of antibiotics and hormones in food animal production, including poultry (Brewer & Rojas, 2006; Hwang, Roe, & Teisl, 2005). Although the use of hormones in poultry production is not allowed in the U.S., many consumers are unaware of this prohibition (National Chicken Council, 2012).

Newspapers play an important role in informing the public about agriculture (Reisner, 2005). Information disseminated by newspapers inherently reflects the views of the journalists and editors who write and determine content for the outlet (Reisner, 2005). The way journalists and editors interpret and view a story is the way it is presented to the public in the newspaper (Reisner, 2005). This framing of newspaper articles tell readers *what* are the salient issues and *how* to think about those issues (Scheufele & Tewksbury, 2007).

Theoretical Framework

Framing is a way of understanding how an issue is characterized in media and affects how the public views the issue (Scheufele & Tewksbury, 2007). It is based on the assumption that characterization of an issue in a news report can have an influence on how an audience understands it (Scheufele & Tewksbury, 2007). Framing is used by journalists to "present information in a way that resonates with existing underlying schemas among their audiences," which does not necessarily mean that journalists intentionally spin news stories in a certain way or try to deceive their audiences (Scheufele & Tewksbury, 2007, p.12). Essentially, framing is a valuable tool for presenting complex issues to audience members so they can understand them based on the schema and constructs they already possess (Scheufele & Tewksbury, 2007).

Valkenburg, Semetko, and Vreese (1999) identified four common article frames. The *conflict* frame highlights the tension between individuals, groups, or institutions. The *human interest* frame brings an individual's perspective or emotional angle to the presentation of an event, issue, or problem. The *responsibility* frame presents an issue in such a way as to attribute responsibility, positively or negatively, to a group, organization, or institution. Lastly, the *economic consequences* frame focuses on how an individual, group, organization, country, or region will be affected economically by an issue or event.

The issue of antibiotic and hormone use is especially salient in the poultry industry, where, like other agricultural sectors, consumer opinions of antibiotics and hormones effect consumer purchasing behavior (Brewer & Rojas, 2007; Hwang et al., 2005; USDA, 2014). Often, what consumers do know about agricultural processes they primarily glean from media (Malone et al., 2000; Reisner, 2005), and newspapers are a form of media readily available to communities from which they learn about agricultural practices in their area and across the country (Reisner, 2005; Reisner & Walter, 1994). Newspapers, as well as other media outlets, often provide information about issues through the lenses of agenda-setting and framing (McCombs & Shaw, 1972; Scheufele & Tewksbury, 2007). The way journalists portray agricultural issues may be based more on their understanding of how to make the story into an article than on their understanding of an agricultural practice (Reisner, 2005). Consumers are now more removed from the farm than ever because of urbanization and technology (Leising, Pense, & Igo, 2000), thus they are more willing to accept a journalist's account of an agricultural issue as expert opinion because of their lack of understanding.

Because the public (consumers) gains most of its knowledge of the use of antibiotics and hormones in the poultry industry from media (Kuykendall, 2010; Panach, 2007), there is a need

to examine the messaging to identify and determine the extent of agenda setting and framing present, both of which have the potential to change consumer behavior by influencing what consumers think about and how they think about it. The importance of newspapers in communicating agricultural material makes newspapers articles an appropriate context to study messaging about antibiotics and hormones (Reisner, 2005). A better understanding will lead to recommendations for agricultural communicators who struggle with a public that does not adequately understand the poultry production processes that provide consumers with an inexpensive source of protein (Poultry Federation, 2014).

Purpose and Objectives

The purpose of this study was to assess the content of three national newspapers about antibiotic and hormone use in poultry production for key messaging so that recommendations can be made to improve media coverage of antibiotic and hormone use in poultry production. There were two objectives that guided the study:

1. Describe article types (news, feature, or editorial), focus (antibiotics, hormones, or both), and frames used in three national newspapers' coverage of antibiotic and hormone use in poultry production;
2. Identify emergent themes in three national newspapers' coverage of antibiotic and hormone use in poultry production.

Methodology

This study utilized content analysis to objectively, systematically, and quantitatively describe the overall content of communication. Weber (1990) defined content analysis as a research method that utilizes a set of procedures to make valid inferences from text, and the inferences drawn from content analysis can be about the sender(s) of the message, the message

itself, or the audience. The data analyzed were the text of three national newspapers' stories in print pertaining to antibiotic and hormone use in poultry production.

The population of articles for this study included news articles, feature stories, and editorial/opinion pieces from three selected national newspapers; the New York Times, USA Today, and the Wall Street Journal. These newspapers were selected based on their reach and readership, specifically selecting the largest newspapers nationally. Only full-length articles were analyzed, and articles written earlier than 1994 were not included in this study. This 20-year time span was selected because it was thought adequate to identify trends in media coverage, changes in poultry production antibiotic/hormone use methods, and increases in consumer concern about food production processes (Brewer & Rojas, 2007; Gustafson & Bowen, 1997).

The population for these three newspapers was determined by searching Lexis Nexis Academic (New York Times and USA Today) and ProQuest (Wall Street Journal) using the search phrase "antibiotic! OR hormone! w/5 chicken OR poultry" for Lexis Nexis and the search phrase "(antibiotic OR hormone) NEAR/5 (chicken OR poultry)" for ProQuest. Using these search terms narrowed findings to articles with the words "antibiotics" or "hormones" within five words of the words "chicken" or "poultry". The initial population searches were completed on 9 January 2015, and returned 316 articles. A sample size of 174 articles was calculated as being sufficient to achieve a 95% confidence level and a 5% confidence interval (Creative Research Systems, 2012).

The sample size for each newspaper was determined based on the each newspaper's proportion of total articles in the population. Thus, 57% (n = 99) of the articles were from The New York Times; 16% (n = 28) were from USA Today, and 27% (n = 47) were from the Wall Street Journal. Articles were further stratified by year based on the percentage each year

contributed to the population of articles. To ensure that a random selection was made, the article titles and year of publication for the entire population of articles were input into a Microsoft Excel spreadsheet, and the randomization function was used to assign each article a random number. The articles were then filtered in ascending order by year and randomization number using the filter function in Excel, and the specified frequency for each year was chosen from the filtered list. To acquire and store articles, the researcher downloaded and saved electronic versions (Microsoft Word) of the selected articles from Lexis Nexis and ProQuest.

During data collection, it became apparent that some articles fit the search criteria but, when analyzed more closely, did not fit the context or scope of the research. It was not possible to narrow the search terms any further and attain a more precise population, so each article was examined by the researchers to determine if the article met the required study criteria; (1) the article was a true journalistic article (i.e., not a news briefs); (2) the article specifically fit within the context of poultry production and/or (3) the article related to poultry production in a broad sense. Thirty-five articles did not meet one or more of these criteria and were deleted from the sample, leaving 139 articles for further analysis.

To guide the content analysis used in this research, as well as to maintain consistency in evaluation, a code sheet was developed by the researchers. The first question of the code sheet assesses the type of article being analyzed, namely, whether the article was a news, feature, or editorial piece. The type of article was determined based on characteristics of the writing. News stories were characterized as such when they followed the inverted pyramid format and were focused on timely, newsworthy topics. Feature stories were named as such when written using block format and were focused on human interest or entertaining aspects of a situation. Editorial pieces were characterized as such when they were letters to the editor or opinion pieces.

The second question was created to assess the frame of the article, namely, conflict, economic consequences, human interest, responsibility, or inconclusive/multiple (Valkenburg et al., 1999). Article frame was determined by matching the article to the best definition of the four frames noted by Valkenburg and colleagues (1997). If an article exhibited more than one frame it was labeled multiple, and if a frame was not exhibited the article was labeled inconclusive. The third question assessed whether the article focused on antibiotics, hormones, or both.

Prior to data analysis inter- and intra-coder reliability was addressed. To ensure inter-coder reliability the lead researcher and the researcher's committee chair selected five articles from the population and analyzed each of the articles separately. After both coders had completed coding one article, percent agreement was calculated using hand calculations, and the coders compared analyses and reconciled differences through negotiating (Weber, 1990). This was repeated for each article until all five had been analyzed. Typically, an agreement level of 80% is acceptable for inter-coder reliability (McMillan & Schumacher, 2010), and in this instance the two coders' agreement level was between 83.3% and 98.1% when coding the five articles together. Because the lead researcher and committee chair calculated agreement levels greater than 80% on the five articles, the lead researcher completed the coding singlehandedly. Intra-coder reliability was accounted for by the creation and use of a code sheet during analysis, which ensured coding was conducted similarly for each article. To ensure validity for the qualitative portion of this content analysis, the researcher engaged in prolonged and persistent field work, reported findings with low-inference descriptors, and sought agreement on emergent themes present with the committee chair prior to reporting findings. The use of code sheets to analyze the articles also serves as an audit trail of the research.

The content analysis methodology used in this research incorporated both quantitative and qualitative components. Quantitative data was gathered and analyzed for article type, article focus, and article frame; these constructs were analyzed for frequencies using Microsoft Excel.

The qualitative portion of this research dealt with categorizing emergent themes gathered regarding key messaging about antibiotic/hormone use in poultry production. Using keywords in context (KWIC) analysis, the researcher analyzed each article to determine messaging about antibiotic/hormone use in poultry production, which were reported as short phrases on the code sheet. Additionally, the researcher used the comments feature in Microsoft Word to highlight keywords and phrases that supported the messaging derived from the article. The phrases entered into the code sheet for each article were input into an Excel spreadsheet. Utilizing the spreadsheet and following the constant comparative method (Lincoln & Guba, 1985), similar phrases used to describe messaging about antibiotic/hormone use in poultry production were grouped together as emergent themes. The occurrences of each of these themes were then reported as frequencies.

Results and Findings

Over one-half of the articles analyzed were news articles (56.8%), followed by feature articles (27.3%); only 15.8% of the total articles were editorial pieces (Table 1). USA Today and the New York Times had higher percentages of editorial pieces about antibiotic/hormone use in poultry production (22.2% and 21.3%, respectively) than the Wall Street Journal (2.4%). The Wall Street Journal ran a higher percentage (68.3%) of news articles about antibiotic/hormone use in poultry production than either of the other two outlets (53.8% New York Times; 44.4% USA Today).

Overall, a majority (77.7%) of articles focused on antibiotics. A small percentage of the

total sample of articles dealt directly with hormones as their focus (8.6%), and 13.7% focused on both antibiotics and hormones in poultry production. The Wall Street Journal and USA Today both had higher percentages of articles about only hormones (17.1% and 11.1%, respectively) than articles that were about both antibiotics and hormones (7.3% and 0%, respectively). The most prevalent frame for the full sample was the human interest frame (27.3%), followed by the responsibility (21.6%) and conflict frames (18.7%). The Wall Street Journal used the economic consequences frame in the largest percentage (29.3%) of its stories; conversely, both USA Today and the New York Times used this frame in the smallest percentage of their stories with identifiable frames (at 0.0% and 5.0%, respectively).

Table 1

Article Types, Focus of Articles, and Frame of Articles

	Sample (N = 139)		New York Times (n = 80)		USA Today (n = 18)		Wall Street Journal (n = 41)	
	f	%	*f*	%	*f*	%	*f*	%
Article Type								
News	79	56.8	43	53.8	8	44.4	28	68.3
Feature	38	27.3	20	25.0	6	33.3	12	29.3
Editorial	22	15.8	17	21.2	4	22.2	1	2.4
Focus of Article								
Antibiotics	108	77.7	61	76.3	16	88.9	31	75.6
Hormones	12	8.6	3	3.7	2	11.1	7	17.1
Both	19	13.7	16	20.0	0	0.0	3	7.3
Frame of Article								
Conflict	26	18.7	12	15.0	4	22.2	10	24.4
Economic consequences	16	11.5	4	5.0	0	0.0	12	29.3
Human interest	38	27.3	24	30.0	4	22.2	10	24.4
Responsibility	30	21.6	20	25.0	5	27.8	5	12.2
Inconclusive	6	4.3	4	5.0	0	0.0	2	4.8
Multiple	23	16.5	16	20.0	5	27.8	2	4.8

Each article was analyzed for emergent themes to determine types of messages being delivered about antibiotic or hormone use in poultry production. Five emergent themes were

identified and the majority of articles contained at least one, if not more, of these themes. The emergent themes were: 1) *consumer awareness of and concern for antibiotic/hormone use in poultry production*; 2) *the role of antibiotic use in poultry production in increased levels of antibiotic-resistant bacteria*; 3) *regulation of antibiotic use in poultry production*; 4) *purpose of antibiotic/hormone use in poultry production*; and 5) *transparency of antibiotic use poultry production practices*. For the USA Today and the New York Times, antibiotic resistance (61.1% and 43.8%, respectively was the most frequently identified emergent theme; consumer concern was the most frequent (51.2%) emerging theme. The transparency of practices emerging theme appeared in the smallest percentage of articles, both overall and within each newspaper. Table 2 includes emergent theme frequencies and percentages for the full sample and individual outlets.

Table 2

Emergent Themes about Antibiotic and Hormone Use in Poultry Production

	Full Sample (N = 139)		New York Times (n = 80)		USA Today (n = 18)		Wall Street Journal (n = 41)	
	f	%	*f*	%	*f*	%	*f*	%
Theme								
Consumer concern	57	41.0	31	38.8	5	27.8	21	51.2
Antibiotic resistance contribution	56	40.3	35	43.8	11	61.1	10	24.4
Regulation	50	36.0	28	35.0	9	50.0	13	31.7
Purpose of antibiotic/hormone use	45	32.4	26	32.5	7	38.9	12	29.3
Transparency of practices	19	13.7	12	15.0	2	11.1	5	12.2

Theme 1: Consumer awareness of and concern for antibiotic/hormone use in poultry production.

The most prevalent emergent theme found in the sample of articles was *consumer awareness of and concern for antibiotic/hormone use in poultry production* (41.0%, n = 57). This theme was found in 38.8% (n = 31) of articles in the New York Times, 27.8% (n = 5) of

articles in USA Today, and 51.2% (n = 21) of articles in the Wall Street Journal. Keywords that denoted this theme included "antibiotic-free, consumers, consumer demand, cuisine, hormone-free, and increased demand." Articles that displayed this theme typically implied that consumers are or should be aware of the use of antibiotics or hormones in the poultry they purchase. An article from USA Today embodied this aspect of the theme: "Everyone said the antibiotic-free chicken was doomed to fail, Shaich says. They said it was too expensive and too difficult for consumers to understand the value of paying more. Wrong" (Horovitz, 2009, p. 1B). Additionally, these articles implied that consumers should desire poultry raised without antibiotics or hormones more than poultry raised with antibiotics or hormones. Oftentimes, articles with this emergent theme pointed to the superior quality of poultry raised without antibiotics or hormones as the primary reason why consumers are or should desire antibiotic- or hormone-free poultry. The superior quality was based on the health benefits of poultry raised without antibiotics or hormones or on the culinary benefits of using antibiotic- and hormone-free chicken. Both of these topics are exemplified in this quote from a New York Times article:

> The fans of free-range champion the bird's wholesome diet, which generally includes no hormones or antibiotics. They also praise its old-fashioned chicken flavor and its character, which is another way of saying toughness. Such people are willing to pay up to three times more per pound for taste, nostalgia and the possibility of a more healthful meal. (O'Neill, 1996, p. 83)

Another context involved in this theme is the portrayal of antibiotic- and hormone-free poultry as more natural than poultry raised with antibiotics and hormones. This aspect of the theme was listed as another reason why consumers are or should be aware of antibiotic and hormone use in poultry production. An example of this aspect can be found in this section from an article in the New York Times:

> Chipotle believed it had the right message already in its emphasis on more natural food. The company had shifted to more naturally grown produce and to beef, pork and chicken produced without antibiotics. It then set a goal of trying to make its customers more aware of sustainable ways to farm. (Olson, 2012, p. 2)

Theme 2: The role of antibiotic use in poultry production in increased levels of antibiotic-resistant bacteria.

The consumer awareness theme was followed closely in prevalence by *the role of antibiotic use in poultry production in increased levels of antibiotic-resistant bacteria* (40.3%, *n* = 56). This theme was found in 43.8% (*n* = 35) of articles in the New York Times, 61.1% (*n* = 11) of articles in USA Today, and 24.4% (*n* = 10) of articles in the Wall Street Journal. Keywords that denoted this theme included "antibiotic-resistant, bacteria, fluoroquinolones, human diseases/illnesses, immune, and nontherapeutic use." When this theme was present in articles the writing evoked the idea that the use of antibiotics in poultry production contributed to increased levels of antibiotic-resistant bacteria in the U.S. The theme can be seen in this article from USA Today:

> The government wants meat and poultry producers to stop giving antibiotics to their animals to make them grow faster. The reason: Dangerous bacteria that can kill people have been growing resistant to the drugs, which can leave humans at risk of getting infections that can't be controlled. (Weise, 2012, p. 3A)

When an article exhibited this theme the writing attributed responsibility for the increase in antibiotic resistance primarily to the use of antibiotics in poultry production instead of the overuse of antibiotics in human medicine. This aspect of the theme can be seen in this article from the New York Times: "The Union of Concerned Scientists has estimated that as much as 70 percent of antibiotics used in the United States is given to healthy chickens, pigs and cattle to encourage their growth or to prevent illnesses" (Harris, 2009, p. 18).

While this theme was prevalent, some articles acknowledged that measures for the amount of antibiotics used in poultry production were in conflict between agriculture and non-agriculture groups. An article from USA Today that referenced the Union of Concerned Scientists estimate of 70% also noted: "The report's estimate is far higher than the 17.8 million pounds of antibiotics used in livestock that was reported a year ago by the Animal Health Institute, which represents veterinary drug companies" (Manning, 2001, p. 8D). Despite the theme pointing to the role of antibiotic use in poultry production as a cause for antibiotic-resistant bacteria, some articles highlighted the dearth of scientific information about the subject. One article from USA Today stated:

> The FDA in 1978 proposed removing penicillin and tetracycline from the list of antibiotics approved for nontherapeutic use, but the effort was thwarted by Congress, which cited a review by the National Academy of Sciences that found the potential hazards to human health were "neither proven nor disproven". (Manning, 1999, p. 6D)

Theme 3: Regulation of antibiotic use in poultry production.

The third emergent theme identified in this study was *regulation of antibiotic use in poultry production* (36.0%, $n = 50$). This theme was found in 35.0% ($n = 28$) of articles in the New York Times, 50.0% ($n = 9$) of articles in USA Today, and 31.7% ($n = 13$) of articles in the Wall Street Journal. Keywords that denoted this theme included "banning, Food and Drug Administration, and government." When this theme was found in an article it typically highlighted current regulation practices or pointed toward the need for regulation of antibiotic use in poultry production. The presence of this theme often coincided with the presence of *the role of antibiotic use in poultry production in increased levels of antibiotic-resistant bacteria*. Essentially, articles with this theme called for the regulation of antibiotic use in poultry production because the negative effects these practices have on human health and wellbeing.

This section of an article from the New York Times depicted this aspect of the theme: “The government proposes to ban two antibiotics given to poultry, citing evidence that their use is causing people to become ill from drug-resistant bacteria” (AP, 2000, p. 32). Often, articles that exhibited this theme pointed toward the need for more regulation of antibiotic use in poultry production. Some articles cited scientific sources that called for more regulation, as seen in this editorial piece in the New York Times: “Last month, the New England Journal of Medicine reported that drug-resistant bacteria were present in meat purchased at supermarkets in the Washington, D.C., area. An accompanying editorial recommended the use of nontherapeutic antibiotics in farm animals be prohibited” (Silbergeld & Walker, 2001, p. 23). Sometimes the articles cited non-agriculture groups that called for more strict regulation of antibiotics in poultry production. This section of an editorial from USA Today was written by the executive director of the Animal Legal Defense Fund:

> This potential nightmare scenario is precisely why the Animal Legal Defense Fund recently submitted a first-of-its-kind legal petition asking the U.S. Department of Agriculture to protect animals and consumers by mandating proper labels on meat and poultry products derived from animals given antibiotics. (Blank & Wells, 2013, p. 9A)

Articles that exhibited this theme sometimes referenced legislation or government oversight that dealt with antibiotic use in poultry production. This excerpt from a Wall Street Journal article highlights a ban of an antibiotic in 2005:

> Fearing that the animal drug Baytril – used to fight infections in chickens – could pose health risks to humans, the Food and Drug Administration decided to ban its use in poultry. The decision yesterday to restrict the Bayer AG antibiotic, which takes effect Sept. 12, marks the first time that the agency has ended the use of an animal drug because of worries that it could lead to antibiotic-resistant pathogens in humans. (Matthews & Goldfarb, 2005, p. B.1)

Articles that mentioned legislation or government oversight often criticized governmental agencies for not acting quickly or purposefully enough, as noted in this excerpt from a USA Today article: "At a hearing this week, a congressional committee will consider legislation that would help phase out the excessive use of antibiotics in animals. Government would do well to move ahead before new superbugs emerge" (USA Today, 2010, p. 8A). Articles that exhibited a call for increased regulation also placed little faith in producers to change antibiotic use tactics without the institution of some regulation other than self-regulation. The article from USA Today goes on to say:

> The history of such calls for self-regulation shouldn't make anyone optimistic that food producers will act on their own. Giving animals antibiotics in their feed makes them grow bigger more quickly, which cuts producers' costs. As long as producers can claim that the evidence of harm to humans is murky, they're not likely to voluntarily raise their cost of doing business. (USA Today, 2010, p. 8A)

Theme 4: Purpose of antibiotic/hormone use in poultry production.

The fourth theme that emerged from the sample of articles about antibiotic and hormone use in poultry production was *purpose of antibiotic/hormone use in poultry production* (32.4%, *n* = 45). This theme was found in 32.5% (*n* = 26) of articles in the New York Times, 38.9% (*n* = 7) of articles in USA Today, and 29.3% (*n* = 12) of articles in the Wall Street Journal. Keywords that denoted this theme included "nontherapeutic, promote growth, and treat or prevent disease." Articles that exhibited this theme provided readers with a definition of the purpose of antibiotic or hormone use in poultry production. Very few articles dealt with the purpose of the use of hormones in poultry production. But there was conflict between the articles that were written about hormone use; one side can be seen in this article from the Wall Street Journal:

> The fact is, no poultry sold in the U.S. has any hormones added to it. The use of added or artificial hormones isn't allowed in the production of chickens, turkeys, eggs or other poultry in this country. The notion that poultry producers give the

> animals hormones is a myth. If consumers are looking for "hormone-free" chicken, they could look at any brand in any store. (Lobb, 2006, p. A.15)

The conflicting viewpoint can be seen in another article from the Wall Street Journal:

> And oh, that bird! Big as a fox terrier, dumb as a post (turkeys don't know enough to come in out of the rain and can, in effect, kill themselves from exposure if not forced to take shelter). They put battery chickens to shame, in size, in hormone consumption. (Sokolov, 2007, p. W.1)

The majority of articles with this theme were focused on the purpose of antibiotic use in poultry production. The role of antibiotics in poultry production fell under one of three classifications: 1) to prevent or treat disease, 2) to promote growth, or 3) both. Some articles with this theme characterized the purpose of antibiotic use in poultry production as solely for the prevention or treatment of disease, as seen in this Wall Street Journal article excerpt:

> Ron Phillips, a spokesman for the Animal Health Institute in the U.S., said antibiotics use in the American poultry and livestock industry, when administered properly, are key in keeping the animals disease free and an important part of meat production. (Murphy, 2012, p. B.7)

This article from the Wall Street Journal characterized the purpose as for both reasons: "Livestock owners feed millions of pounds of antibiotics such as penicillin each year to cattle, hogs, chickens and turkeys to prevent disease and promote rapid growth" (Tomson, 2011, p. D.1). Other articles with this theme represented the purpose of antibiotic use in poultry production as solely for growth promotion, such as this section of a New York Times article: "About 80 percent of all antibiotics used in agriculture, roughly one-third of all the antibiotics used in the United States, are fed to livestock and poultry to promote growth, not to treat illness" (Goldburg, 1999, p. 26).

Theme 5: Transparency of antibiotic use in poultry production practices.

The fifth emergent theme embodied in the selected articles was *transparency of antibiotic use in poultry production practices* (13.7%, *n* = 19). This theme was found in 15.0% (*n* = 12) of articles in the New York Times, 11.1% (*n* = 2) of articles in USA Today, and 12.2% (*n* = 5) of articles in the Wall Street Journal. Keywords that denoted the presence of this theme included "estimates, monitor, reluctant, and skeptical." Those articles that exhibited this theme primarily indicated there is a lack of transparency about antibiotic use in poultry production. This was evident in articles that referenced different measures of the amount of antibiotics used in poultry production offered by agriculture and non-agriculture groups. In this excerpt from a New York Times article, data was referenced from the Union of Concerned Scientists as reporting differing amounts than agricultural groups: "A public interest group warned that antibiotics are being used on farm animals much more heavily than the drug and livestock industries have reported" (Grady, 2001, p. 2). One article from the New York Times made reference to the lack of any government monitoring system that would provide accurate measurements of antibiotic use: "The government does not monitor antibiotic use and the companies are often reluctant to publish details or label their products" (Barboza & Day, 2003, p. 1). The latter half of the previous quote also exemplifies another aspect of this theme; namely, poultry producers were often held responsible for the lack of transparency surrounding this issue.

Conclusions and Discussion

The most prevalent frame used in the articles assessed in this research was the human interest frame (27.3%), followed by the responsibility (21.6%) and conflict frames (18.7%). Framing is used by journalists to construct messages and is the basis for the way these media outlets caused readers to define *how* they think about antibiotic and hormone use in poultry production (Scheufele & Tewksbury, 2007). With this in mind, the three outlets represented the

most articles under the human interest frame, meaning they influenced readers to think about antibiotic or hormone use in poultry production through an emotional perspective (Valkenburg et al., 1997). The responsibility framed articles attributed responsibility to a group, organization, or institution, thus leading readers to think that antibiotic and hormone use in poultry production—and the issues surrounding it—are the responsibility of some group (Valkenburg et al., 1997). Finally, the articles framed under conflict led the readers to see the tension between groups, which in the case of this research were consumers, government, integrators, non-agricultural groups, and poultry producers (Valkenburg et al., 1997). Collectively, the characterization of these three frames in over half of the articles analyzed influence the audience (Scheufele & Tewksbury, 2007) to understand that antibiotic and hormone use in poultry production is an issue that should be viewed emotionally, with responsibility for issues attributed to one or more groups, who may or may not be in conflict with each other.

The first emergent theme, *consumer awareness of and concern for antibiotic/hormone use in poultry production*, coincides with previous research, which shows that consumers were concerned about the use of antibiotics and hormones in food production (Hwang et al., 2005). With the idea that newspapers focus on producing readers, not necessarily news, as their business model (Conboy & Steel, 2008), the fact *consumer awareness of and concern for antibiotic/hormone use in poultry production* was a prevalent theme is understandable. As research by Hwang and colleagues (2005) demonstrated, consumers are aware of and concerned with the use of antibiotics and hormones in poultry production, thus the New York Times, USA Today, and the Wall Street Journal tailored their news to the audience. Essentially, the prevalence of this theme informed readers that antibiotic and hormone use in poultry production

is something consumers should be aware of and concerned for, and the content of this messaging implied that consumers should be wary of the use of antibiotics and hormones in poultry.

The second emergent theme was *the role of antibiotic use in poultry production in increased levels of antibiotic-resistant bacteria*. As Gustafson and Bowen (1997) noted, the general public is mostly concerned with the question of whether or not antibiotic use in poultry production contributes to increased antibiotic-resistant bacteria that could affect humans. Again, the emphasis these three media outlets placed on this theme, due to its importance to readers, point toward their agenda-setting power. While the emphasis of this theme informed readers *what* to think about, the fact that these articles pointed toward nontherapeutic uses (i.e. growth-promotion) as the primary cause for increased antibiotic-resistant bacteria informed the readers *how* to think about this issue. This theme also highlighted the conflict between agricultural and non-agricultural measures of the quantity of antibiotics used in poultry production, which served to exacerbate the distrust in poultry production methods readers incurred from reading the articles (Bharad et al., 2010). The fact that articles with this theme referenced both agricultural and non-agricultural research about this issue likely leaves readers unsure of how to evaluate implications of the science and of what the best course of action is based on the results (Malone et al., 2000).

The third emergent theme that represented key messaging was *regulation of antibiotic use in poultry production*. This theme, which emphasized the need for regulation of antibiotic use in poultry production, sets an agenda for readers to consider the implementation of these stricter regulations. The effects of this agenda-setting function can even been seen in the articles over the course of time analyzed, as this theme's context evolved from calling for stricter regulation to referencing legislation or government oversight banning the use of an antibiotic in

poultry production in 2005. Additionally, this theme carried a subtheme: *European regulation of antibiotic use in poultry production.* Journalists write based on their perception of what are the most important aspects of a situation to include in the story (Reisner, 2005), and the presence of this subtheme points to the idea that some reporters find it important to reference the more progressive (i.e. stricter) regulation of antibiotics in poultry production in European countries when setting the agenda for increased regulation in the U.S.

The fourth emergent theme was *purpose of antibiotic/hormone use in poultry production*. This theme highlighted the three outlets' agenda-setting capacity to inform readers of the use of antibiotics and hormones in poultry production; by placing emphasis on this issue the articles increased consumer distrust in the purpose of antibiotic use in poultry production (Scheufele & Tewksbury, 2007). Hormones were represented in this theme less frequently than antibiotics, but conflicting information was present in this theme regarding hormones as some articles cited the illegality of their use (USDA, 2014) and others pointed to the higher quality of hormone-free poultry. The antibiotics portion of this theme was conflicting as well, either noting the purpose as therapeutic only, nontherapeutic only, or a combination of both. The portrayal, and thus framing, of the purpose of antibiotic use was dependent largely on the context of the article and what the journalist understood to be the most important aspects of the situation (Reisner, 2005).

The final emergent theme was *transparency of antibiotic use in poultry production practices*. The crux of the transparency issue set forth as an agenda by these media outlets is the lack of consistent data representing actual antibiotic use in poultry production. Again, the presence of this agenda fuels consumer distrust of agricultural practices (Scheufele & Tewksbury, 2007). As a part of this theme, poultry producers were held directly responsible for

the lack of transparency, which could be attributed to the lack of complete and adequate coverage of this issue (Reisner & Walter, 1994).

Recommendations and Implications

The results of this study point to the need for improved agricultural communications practices including a deeper understanding of consumer concerns and awareness, increased transparency in coverage of the antibiotic and hormone use practices of poultry producers, and stronger relationships with communicators outside of the agricultural discipline. The recommendations for public relations in the poultry industry include increased transparency surrounding the purpose of antibiotic and hormone use in poultry production and the role of antibiotic use in poultry production and improved relations with media sources outside of agriculture. Finally, recommendations for future research include a focus on determining best practices to increase agricultural entities' relations with media outside of agriculture and on examining the effects of media's coverage of antibiotic and hormone use in poultry production and subsequent consumer behavior.

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Prince Farming at Home: A Social Semiotic Analysis of *The Bachelor*'s Depiction of Modern Agricultural Production and Rural Life

Research Paper – Graduate Student-Led

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Abstract

Season 19 of ABC's popular reality dating show *The Bachelor* follows Iowa farmer Chris Soules in his search for love. Reality television has been shown to alter viewers' perceptions of reality by presenting producer- and editor-manipulated scenarios as 'real' to unsuspecting audiences. Previous research on agriculture and rural life in reality television programming demonstrated that negative or outdated stereotypes of farms and farmers abound in this popular medium. The researchers sought to determine how *The Bachelor* depicted Soules's background and agribusiness career. A social-semiotic discourse analysis of the program revealed that later episodes, which focused on Soules's farm, family, and final decision, presented agriculture in a constructive way, presenting positive stereotypes of farm families as tight-knit, values-driven, and hard-working. Realistic images of crop harvesting and views of modern farming operations support the conclusion that the show improved in the realism of its agricultural content. Cosmetic stereotypes, including plaid-and-denim wardrobes and country-themed décor, had less impact in later episodes, as well.

Introduction

In 2001, television changed forever with the advent of a new genre of program: the reality dating show. *The Bachelor*, a competition in which attractive young women compete for the affections of the titular single man, debuted on ABC and averaged 10.7 million viewers in its first season (USA Today, 2002). According to *Vanity Fair* reporter Mark Seal,

> *The Bachelor* was a reality revolution, ushering a soap-opera concept into prime time…*The Bachelor* triumphed with a 17 share in the 18-to-49 demographic during a time period in which ABC had previously been doing 7 at most. The *Bachelor* franchise is now ABC's highest-rated show in the 18-to-49 demographic (Seal, 2003, para. 103-105).

The show's combination of staged contests, romantic interludes, and high drama proved such an audience draw that *The Bachelor* has remained on air since 2002. Season 19, which premiered in early 2015, found 30 contestants vying for the heart of Iowa farmer Chris Soules.

Soules's appearance on *The Bachelor* was a departure for the show. Host Chris Harrison regarded Soules as a "diamond in the rough from middle America who more than ever needs the show to find his wife" rather than a slick city-dweller with ample opportunity to find true love (Barney, 2014, para. 5). Pop-culture blogger Brandy Zadrozny (2014) of *The Daily Beast* was disappointed in the show's new star, writing, "ABC's strange choice to take the franchise on a family values tour now is an opportunity missed…Watching actual farming might be more exciting. Still there could be a bright spot in such a dull choice. ABC now has to find 25 women who both want to be on a reality show and say they're open to moving to the smallest town ever and becoming a farmer's wife" (para. 7-11).

Agriculture advocates, however, greeted Soules's participation with cautious optimism. He had been a visible presence at agricultural promotional events, including the Iowa State Fair, since his appearance on *The Bachelorette* (D'Zurilla, 2014). Clair McLafferty of MyFarmLife.com called Soules "something of an ambassador for agriculture" (McLafferty, n.d., para. 1), while Soules himself revealed that "[his] hope is that [doing this] will have a positive impact on how people think of farmers and [his] home state" (para. 5). In an interview with the *Des Moines Register*, Soules said, "I think I've been able to bring to light that agriculture is not big, corporate farming. It's families running operations that are very complex" (Eller, 2015, para. 9). Still, some experts worried that the show would feed into 'hayseed' stereotypes of farmers in bib overalls found in agriculture's prior reality-television depictions (Eller, 2015).

Previous research investigating *The Bachelor* Season 19 ([Author] & [Author], in review) found that early episodes of the show exploited long-standing stereotypes of farming and farmers. Both positive and negative stereotypes were perpetuated: Soules was often described as hard-working, kind, and genuine, while his female companions adhered to less agreeable depictions of rural individuals, often using the word "country" as a descriptor for aggressive, uncouth behavior. The purpose of this study was to continue the line of inquiry investigating the show's representation of agriculture, farmers, and rural Midwestern life.

Conceptual Framework

This study, like its predecessor, incorporates social construction of reality (Gamson, Croteau, Hoynes, & Sasson, 1992; Adoni & Mane, 1984; Gerbner & Gross, 1976) and social learning theory, which states that learning is a cognitive process which can occur through social interactions and observations, (Riddle, 2010; Wright, et al., 1995; Fiske & Taylor, 1991) as

pillars of its conceptual framework. This framework also includes a brief overview of the reality television (RTV) genre as it pertains to the aforementioned theories and concepts.

Reality Television (RTV) and 'Authentic' Television

In the 1990s, television shows that chronicled the lives of real people first hit American airwaves: Programs like *America's Most Wanted* and *Cops* were among the first to be classified as RTV (Cavender & Bond-Maupin, 1993). Today, the term "reality television" comprises a variety of television programming, including game shows, documentaries, and nonfiction dramas (Nabi, Biely, Morgan, & Stitt, 2003; Egbert & Belcher, 2012, p. 409; Mittell, 2004). Nabi et al. (2003) defined RTV programs as those that are filmed off-set in living or working environments, without scripts, in a narrative context for viewer entertainment.

Beyond their obvious structural differences, RTV shows like *The Bachelor*, *Survivor*, and *The Real Housewives* share one particularly key characteristic:

> What unites understandings of these shows within a single conceptual category is not their setting, format, or subject matter. Nor is it the perception that the shows are "real" in the sense that they present real life as most people experience it. Rather, audiences define these shows in terms of a focus on real people playing themselves (Hall, 2009, p. 516).

Reality television, unlike scripted programming, claims to portray individuals behaving naturally, or as they would outside the RTV context. Authenticity, the act or quality of being of undisputed origin or genuine, RTV programming differs from fictional television shows in its "fixation on 'authentic' personalities, situations, problems, and narratives" (Beck, Hellmueller, & Aeschbacher, 2012, p. 6). As Kerrigan (2011) indicates, the 'realities' contained in these

programs are held to be authentic, but reality shows are cast by producers, edited for maximum entertainment value, and contain contrived scenarios.

The unscripted nature of RTV programs may mislead viewers into believing that all interactions are true-to-life and presented without interference from writers, directors, and producers: "Because the programs are not scripted and do not employ directors, per se, viewers may draw conclusions about the competitions as if contestants were unaware that anyone was watching, let alone filming" (Denham & Jones, 2008, p. 80). Hall (2009) found that RTV viewers' perceptions that they learned something from the shows they watch correlate positively with the perceived authenticity of the *cast members*, whether or not the viewers believe that the shows' content was manipulated by producers. These programs' attempts at authentically depicting human activity dovetail into the concept of the social construction of reality.

Social Construction of Reality and Simulacra

The concept that reality is not 'real' but is instead constructed by individuals' own perceptions first gained traction in the 1970s (Gerbner & Gross, 1976). According to Adoni and Mane (1984), social reality occurs on three levels: *objective reality*, *symbolic reality*, and *subjective reality*. *Objective reality* is the 'real' reality in which mankind exists; *symbolic reality* constitutes the expression of objective reality in the form of cultural artifacts like art and literature. *Subjective reality* combines the two into a lens through which the individual perceives the world around him- or herself.

Subjective social reality is influenced by external forces, including mass media (Riddle, 2010). For example, Riddle (2010) found that prolonged exposure to graphically violent television content increases viewers' estimates of the societal prevalence of brutality, crime, and immorality. Similarly, watching weight-loss programs like *The Biggest Loser* exacerbated

viewers' negative attitudes toward overweight individuals and perpetuated stereotypes of obesity, including the notion that obesity is a personal choice (Domoff, Hinman, Koball, Storfer-Isser, Carhart, Baid, & Carels, 2012). Domoff et al. concluded that the show's focus on personal responsibility and lifestyle decisions negated environmental triggers for obesity.

The 'realness' of social reality is often at odds with what Gamson et al. (1992) describe as *simulacra*, substitutions "for a reality that has no foundation in experience" (p. 374). Gamson and his colleagues borrowed the phrase from French cultural philosopher Jean Baudrillard (2009), who wrote that simulations "[mask] and [pervert] a basic reality" (p. 412). Reality television, by its very nature a simulation of real life and real experiences, represents a distilled form of symbolic reality in which nearly every element—including the participants—is carefully selected for maximum entertainment: "[Recent] formats of the genre can rather be seen as 'televisual arenas of formatted environments in which the more traditional observational rhetoric of documentary jostles for space with the discourses of display and performance'" (Beck, Hellmueller, & Aeschbacher, 2012, p. 5; Holmes & Jermyn, 2004).

Purpose of the Study

Season 19 of *The Bachelor* provided millions of viewers with the opportunity to follow a farmer on his journey to find love. The episodes that showed Chris Soules's farm and scenes of rural Iowa—Episodes 8 and 12—had a combined viewership of 18.651 million households. Episodes 8 and 12 also had a greater viewership than other episodes that featured agriculturally related tasks or themes (Episodes 1, 2, and 3) (Table 1).

Table 1

The Bachelor Season 19 viewership information (TV Series Finale, 2015)

Day	Date	Episode	18-49 Demo (%)	Viewers (Mil)
Monday	01/05/2015	19-01	2.24	7.763
Monday	01/12/2015	19-02	1.77	6.480
Monday	01/19/2015	19-03	2.15	7.605
Monday	02/16/2015	19-08	2.55	8.969
Monday	03/09/2015	19-12	2.69	9.682

The purpose of this study was to explore the *symbolic social reality* of agriculture as it is portrayed to the general public in popular mass media. There are over 318 million people in the United States, less than two percent of this population is directly involved in agricultural production, and research has shown that mass media play a role in shaping the general public's perception of the agricultural industry through books, television, and film series (EPA's Ag Center, 2012; W. K. Kellogg Foundation, 2002). Because of the connection between perceptions of agriculture and popular media, and *The Bachelor*'s high viewership ratings, the researchers contend that it is important to know and understand what agricultural imagery, stereotypes, and information was shown to the general public through this particular RTV program. This study is intended as an overarching examination of agricultural images and themes in late Season 19 episodes and is a follow-up study to research that analyzed early Season 19 episodes on their depictions of and attendant attitudes toward agricultural and rural agrarian lifestyles. Four research questions were developed to guide the researchers in this study:

RQ1: How do Episodes 8 and 12 of *The Bachelor* Season 19 depict agriculture and rural life?

RQ2: How are traditional stereotypes of agriculture and rural life represented in these episodes?

RQ3: What overarching themes were depicted in these episodes?

RQ4: How do the images presented in later episodes of *The Bachelor* Season 19 differ from the first three episodes and propaganda trailers?

Method

Text Selection

The researchers conducted a social-semiotic discourse analysis of episodes from Season 19 of *The Bachelor*. Following a review of all 13 episodes of Season 19, the research team selected two texts that contained images of Chris Soules's family farm and rural Iowa for examination: Episode 8 and Episode 12 (Table 2). The content was accessed during both live television broadcasts and on iTunes. Episode information, including airdates, duration, and viewership ratings, was recorded.

Social Semiotics and Discourse Analysis

Social semiotics is a researcher-focused form of content analysis that allows the researcher to situate texts within a specific sociocultural context while taking into account the researcher's own perspective as an element of the interpretive act (Chandler, 2007; Van Leeuwen, 2005; Iedema, 2001). Social semiotic codes classify and frame relationships among meanings, their realizations, and their contexts as viewed through the lens of the researcher (Thibault, 1991; Bernstein, 1981). Discourse analysis (Krippendorff, 2004) examines how texts reproduce or describe social phenomena.

Table 2

Details and Summaries of Selected Texts from The Bachelor *Season 19*

Title[a]	**Length**[b]	**Summary**[a]	**Purpose**
"Week 7: Iowa"	1:24:00	Chris puts a difficult, heart-wrenching week behind him, but tough decisions remain as the episode begins with the cocktail party in Deadwood, South Dakota, and Chris sends home an easygoing, carefree bachelorette. The lucky remaining women accompany Chris to his home state of Iowa, where they get a sneak peek of what life with the Bachelor might be like. Jade snares her second one-on-one date and the chance to visit Chris's hometown of Arlington, Iowa. Another one-on-one date with Whitney to Des Moines had the couple celebrating love in photos, but then she is grilled by Chris's best friends. What will be their verdict? The rest of the women decide to take their own road trip to Arlington, Chris's hometown, and they are in for a reality check. How will they react to the town being that small? One woman shares a dark secret she has been keeping from Chris, but when will Chris, himself, find out? A high stakes group date pits two frontrunners against an underdog with the winner of the date rose automatically getting a hometown date. It all culminates with one jealous woman confronting Chris in a devastating meltdown.	Season 19 Episode 8
"Week 10: Finale"	1:25:00	Viewers will watch along with a studio audience as Chris Soules' journey to find love comes to its astonishing conclusion. The Bachelor prepares to make on of the most difficult choices of his life, having narrowed down the field to two women - Becca and Whitney – both of whom he is falling in love with. Will Chris get down on one knee and propose to one of these women and make a life with her in Arlington, Iowa? Who—if anyone—does a confused Chris, after much soul-searching, see as the woman of his dreams and his future wife? Will he leave single or with the love of his life?	Season 19 Episode 12

[a]*Official titles and summaries for each episode were taken from iTunes.*
[b]*Episode length is based on runtimes without traditional television commercials.*

In this study, the researchers undertook a close reading of the two selected episodes of *The Bachelor* Season 19. Close reading involves taking detailed notes and reflexively

questioning the critic's interpretation of narrative, thematic, and stylistic features during the review (More, n.d.). Before beginning the review, the researchers established a codebook of elements to examine, including the appearance of livestock, crops, farm equipment, and the participants' wardrobes. Dialogue and music were noted and transcribed. Special attention was paid to agricultural stereotypes identified in prior research (W.K. Kellogg Foundation, 2002; Ruth, Lundy, & Park, 2005; Specht, 2013).

Periodic crosschecks were conducted throughout the coding process to ensure study dependability (Lincoln & Guba, 1985). Following their initial individual analyses, the researchers discussed their findings and defined themes that emerged from the data. Thick description and direct transcriptions are included in the findings to support the transferability of the study's outcomes and conclusions.

Contextualization. Social-semiotic discourse analysis relies on the disclosure of the researchers' experiences with and beliefs and attitudes toward the subject matter (McKee, 2001). The researchers used their personal experiences with agriculture to inform their analysis of agricultural imagery and themes. Both researchers were raised in rural areas on farms: one on a small dairy farm, the other on a large grain operation. Both earned Bachelors of Science degrees in agriculture from land-grant institutions, and each holds at least one advanced degree in a social-scientific agricultural field.

Findings

RQ1: Depictions of Agriculture and Rural Life in *The Bachelor* Episodes 8 and 12

In Episodes 8 and 12, Chris takes three contestants—Jade, Whitney and Becca—to his hometown of Arlington, Iowa, and to his family's farm. He gives each of the women a tour of

the farm, where viewers are able to see the inner workings of a modern grain operation. He shows them his farmland (*Figure 1*), stating that he owns "like, 800 acres" and that owning land is a passion of his. Chris also tells Whitney, and by consequence the viewers of *The Bachelor*, that "some of the happiest moments of my life [are] harvesting and doing things [on the farm]."

Figure 1. Chris shows Jade his farmland near Arlington, Iowa, in Episode 8 of *The Bachelor*.

In addition to Chris's proclamations, the images of his family's farm speak volumes about what modern agriculture looks like in 2015. There are several aerial views of his parents' farmstead that show the progress agriculture has embraced over the years, as iconic red barns from the 1800s are replaced with new Morton barns with plenty of storage room for shop equipment, semis, grain trailers, combines, and a plethora of other farming implements. A tower grain dryer, propane tank, and a large grain bin storage facility are shown dominating the screen at the Soules' farm (*Figure 2*). Incorporating images of modern farms and agricultural practices is an improvement for the entertainment industry, which has previously favored dated agricultural imagery (Specht, 2013).

Figure 2. The Soules farmstead shows viewers a modern grain facility, complete with a propane tank and tower dryer. The farm also shows their machinery storage barn and shop equipment.

In addition to showing off the physical characteristics of the land and buildings on the Soules farm, Chris also provides viewers with a ride in a John Deere S680 combine. Chris explains to finalist Whitney how a combine works and how his family transports the grain from the combine to their grain drying facility at his parents' home (*Figure 3*).

Figure 1. Chris explains to Whitney what is involved to harvest corn by giving her a ride in a John Deere S680 combine. Chris's father assists in the job by operating John Deere 8420 tractor and the grain cart.

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> CHRIS: We're harvesting corn. It's [the combine] taking and pulling that plant down through there, and poppin' the ear off, and it's goin' back here [the hopper]—this is what the end result is.
>
> WHITNEY: Oh my God! This is awesome! What's your Dad doing in the other one [the grain cart]?
>
> CHRIS: I dump this into him.
>
> WHITNEY: Then what does he do with it?
>
> CHRIS: We take it back to Mom and Dad's. So this will go and be dried.
>
> WHITNEY: It's insane. I never in a million years—if you ask me what went into this, would I have thought all of this.

RQ2: Traditional Stereotypes of Agriculture and Rural Life in Episodes 8 and 12

In the first three episodes of Season 19 of *The Bachelor*, agriculture was represented as being "country" and possessing traditional values. "Country" implied "an aggressive, uncouth nature and a lack of civility toward other challengers" as well as the appearance of plaid shirts, Daisy Duke-like shorts, and cowboy boots ([Author] & [Author], in review, p. 12). Chris was made to seem as though he exemplified family values, hard work ethics, and a "heritage of high quality farmers."

In Episodes 8 and 12, the presented stereotypes take a different approach. The depiction of Arlington, Iowa, and the contestants' reactions to the town, reinforced the Kellogg Foundation's findings about American's beliefs that rural communities are "plagued by a lack of opportunities, including access to cultural activities" (W. K. Kellogg Foundation, 2002, p. 1). Arlington resembles a ghost town with a downtown deserted because every business has closed its doors. During her visit, Becca tells Chris's family she was surprised at how small the community was, and if she were to become Chris's wife and move to Arlington, she would tell

her family “don’t text me, send letters” so she would be able to socialize at the local post office on the weekends.

Other rural stereotypes abound in later *The Bachelor* episodes. One prominent stereotype in Episode 8 was that everyone knows everyone in a small town. Chris takes Jade to his high school’s Friday night football game, where the couple has to slowly make their way through the crowd of people wanting to talk to Chris. Also at the football game, the marching band performs the halftime show by playing the “Star Spangled Banner.” Not all of the students wear their marching band uniforms: Some are clad football uniforms and several others sport blue jeans and jackets. One student playing the saxophone is shown in a jacket with the FFA emblem (*Figure 4*). This gives the impression that everyone in the community is involved in agriculture, no matter their age.

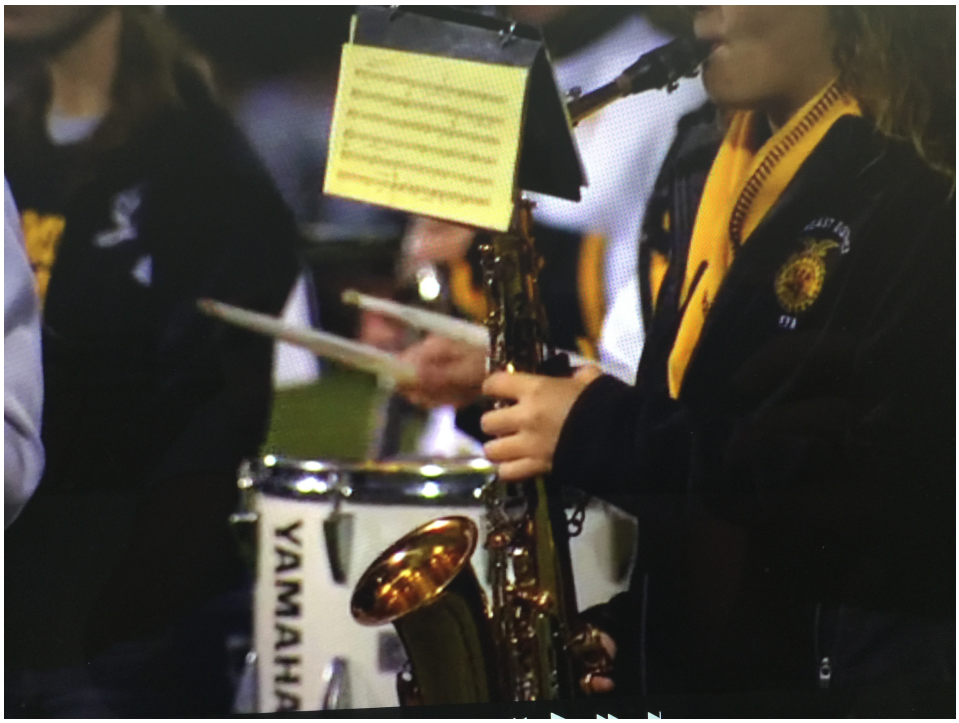

Figure 4. A student at Chris Soules’s high school plays the saxophone while wearing an FFA jacket in Episode 8 of *The Bachelor* Season 19.

RQ3: Overarching Themes Depicted in Episodes 8 and 12 of *The Bachelor*

Family values are a major source of discussion among the contestants, Chris, and Chris's family. The women on the show all express a desire to have children:

> WHITNEY: You have raised an amazing, amazing man.
>
> CHRIS'S MOM: He's going to be a great husband and a great dad, he really is.
>
> WHITNEY: I see him there. And being here makes it feel even more real.

Becca tells Chris that "family for me is so important and I feel a lot of pressure at this point" to settle down, while Whitney is ready to start a family despite Arlington's drawbacks:

> WHITNEY: Moving to Arlington is going to be an adjustment, but I also know that I'm in love with Chris, so I think for me it just means I need to have a lot of babies.

Chris and his family all want his fiancée to be willing to live an agricultural lifestyle and to be content living in Arlington on the family's farm. Chris desires for agriculture to be something that not only pays the bills to support his future family, but also is a passion to pass down to his children. A farming lifestyle is not like a regular job: Farming has no official starting or quitting time, is frequently dirty, and requires all members of the family to participate. Chris and his family try to convey this to the final two contestants through conversations and showing them the farm. When Chris expresses concern to his parents that his future wife will not want to move to Arlington, his mother advises one of the contestants: "Along with that 'special,' is someone who's willing to participate in his life, and be here." Later, Chris confronts Becca about her lack of enthusiasm:

CHRIS: Do you really see a real future for us? I mean, can you—can you really see yourself with me and do you see yourself being able to be a part of the small-town life that I have? Does it make you scared? Does it make you excited?

Another theme that was constant throughout the farm visits was the fashion statements made by the contestants, Chris, and his family. Plaid shirts and plaid shirtdresses appear to be a requirement by all individuals when they are on a farm or in a rural area shown on *The Bachelor* (*Figure 5*). (Unlike in earlier episodes, however, the ladies eschew denim shorts for leggings, tights, and jeans.) Another commonality among contestants Jade, Whitney, and Becca is their penchant for wearing inappropriate high-heeled booties to all farm functions, including walking through corn and soybean stubble to check on cattle. It is evident from the attire of some of the *Bachelor* cast members that it is reality *television* and not reality, as such clothing choices would not be practical in a real-life setting.

Figure 5. Contestant Whitney discusses meeting Chris's family during the Season 19 finale.

RQ4: Comparing *The Bachelor* Episodes and Trailers

Season 19 of *The Bachelor* is overrun with images connected to agriculture. Lush farmland, animals in pastures, and picturesque farmsteads dot the landscape of the Iowa farms that appear in numerous aerial views throughout the televised journey to find Chris Soules's fiancée. Earlier episodes of Season 19 showed agricultural stereotypes, many of which are repetitive throughout modern television programming: American Gothic recreations, using agriculture as a comedy crutch, and for suggestive farm-themed pick-up lines ([Author] & [Author], in review). Earlier episodes were also set in urban areas. However, in Episodes 8 and 12, agriculture takes a turn from the viewpoint of Hollywood to more of the reality of what life is like in a modern, rural American farming town (*Figure 6*).

Figure 2. Arlington, Iowa, is Chris Soules's hometown. The community has a population of just over 400.

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Despite the show's commitment to showing the contestants and the audience the 'reality' of farm life in Arlington, some of the agricultural content in the later episodes appears staged for maximum "country" effect. The proposal scene in the season finale takes place at an old homestead, complete with red barn, horses, antique automobiles, and artfully arranged straw

bales (*Figure 7*). The PVC fencing is clearly temporary, as are the interior decorations that turn an aging farm building into a chapel (Figure 8).

Figure 7. The finale proposal scene takes place in a well-decorated barn on the Soules family property.

Figure 8. The inside of the barn, with its ornate decorative window frames, stained glass, and chandeliers, resembles a chapel.

Discussion

Depictions of agriculture and rural life vary widely in Season 19 of *The Bachelor.* Early episodes incorporate broad stereotypes of farmers to elicit bawdy humor, humiliate contestants, and position star Chris Soules as "Prince Farming." The first three episodes of the season contained depictions of agriculture which were meant to mock rural people for the purpose of low grade humor, draw connections to American Gothic, and to set the stage that 'country' means to be uncultured and to wear cowboy boots with all attire. Later episodes, though still somewhat reliant on traditional portrayals of agriculture, introduce modern, large-scale crop production to television audiences. While Episodes 8 and 12 still contain stereotypes and some inappropriate depictions of life on a rural American farm, the representations of agriculture became more accurate as Season 19 progressed.

Episodes 8 and 12 transport viewers to a working farm in rural Iowa and offer some insight into how a farm operates. The Soules family farm, overseen by Chris's father and operated by Chris and his brothers-in-law, is representative of such large operations, according to the USDA ERS: "Large U.S. farms are frequently run by extended families, with multiple owner-managers specializing in different parts of the farm business" (McDonald, 2014, para. 3). Chris clearly states that owning land is a passion for his family and himself, which is representative of common views throughout the agricultural community, wherein long-term land ownership is a point of pride (Nickerson, Morehart, Kuethe, Beckman, Ifft, & Williams, 2012; Bureau of the Census, 1993).

Most large U.S. farms produce a primary crop and specialize in one or two stages of production (McDonald, 2014). The Soules farm primarily raises corn and soybeans, as demonstrated in the finale (although the farm's enterprises also include cattle). According to the National Corn Growers Association, there are over 90 million acres of corn planted in the United

States annually; over 13.7 million of those acres of corn are planted in Iowa alone (National Corn Growers Association, 2015). Corn is a cash commodity, which generated a corn crop value of $51.9 billion in 2014, and is used in many products ranging from corn sweeteners to ethanol (National Corn Growers Association, 2015). Chris explains how a combine works and how his family transports the grain from the combine to their grain drying facility at his parent's home. This slice-of-life sequence is a far cry from the bikini tractor race of Episode 2.

Rural stereotypes are humanized in Episodes 8 and 12 through interactions with the Soules family. Family values—including loyalty, sacrifice, and the importance of a family legacy—are common desires expressed by the contestants, Chris, and his family. Arlington's small size is seemingly mitigated by close proximity to the large extended Soules family, and the interest Chris's parents and sisters show in his romantic choices speak to both the lack of amusements in the area and the close-knit nature of their clan. While some of the contestants—namely Becca and Jade—seem mildly put off by the family's interference, overall the family's interactions are viewed in a positive light. That Chris's parents and siblings are articulate also helps tear down perceptions of farmers as uneducated and backwoods (Ruth, Lundy, & Park, 2005; Specht, 2013).

Other stereotypes presented in the season's later episodes are largely cosmetic. The remaining contestants default to plaid and denim clothing, seemingly in an effort to fit in with the Soules family, many of whom are similarly dressed. The men of the extended Soules family avoid 'traditional' work wear, such as overalls and straw hats, appearing instead in dark jeans, button-down shirts, and pullovers. Though the overly adorned barn in the season's closing moments was clearly manipulated by set designers, its interior echoes the décor of Chris's parents' home, seen in the background of talking-head segments.

Social construction of reality and social learning theory played a role in the findings because several of the themes discovered in these particular episodes have been previously found in earlier episodes, as well as other entertainment media. The repeated use of these themes in entertainment, even entrainment not classified as RTV, shows how the image of agriculture is perpetuated as a cultural identity.

Implications and Recommendations

Though *The Bachelor* Season 19 started out with troubling imagery and stereotyping of farmers and rural America, the show's later episodes that included agricultural content helped moderate any damage incurred. Episodes 8 and 12 were among the highest-rated of the season, indicating that more viewers were treated to positive portrayals of agriculture than cartoonish ones. A glowing appraisal of Chris's business ventures by eventual winner Whitney could go a long way toward mitigating negative perceptions of large-scale agriculture as environmentally harmful, dirty, or profit-seeking. Whitney's enthusiasm for Chris's agrarian lifestyle may sway viewers of a similar demographic (well-educated, professional, urban or suburban) to view agriculture in a more positive manner.

This study and its predecessors have largely focused on televised agriculture-related pogromming, rather than on audience response to that programming. A key recommendation for researchers is to study audience reactions to *The Bachelor*, specifically those elements related to rural individuals and food and fiber production. The researchers responsible for this study plan to investigate social media responses to *The Bachelor* episodes, but further audience analysis would be beneficial for agricultural social scientists and communicators alike.

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Associating Importance with Behavior:
Providing Direction for Water Conservation Communication

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Abstract

This study identified differences in characteristics of High Water Users (HWUs) based on their perceived importance of plentiful water and their engagement in water conservation behaviors. Differences in the characteristics of high water users based on the level of importance they associated with plentiful water and their engagement in water conservation behaviors were identified. Communication needs and interests of HWUs were also identified. The Situational Theory of Publics (STP) was applied to explore why HWUs might perceive plentiful water to be important but may not feel personally responsible and may perceive barriers to changing their behaviors. Significant differences were found in terms of gender and race between the four primary groups of respondents identified (High Importance/High Engagement, Low Importance/High Engagement, Low Importance/Low Engagement and High Importance/Low Engagement). The High Importance/Low Engagement group was identified as an important and potentially high impact public for communicators.

Associating Importance with Behavior: Providing Direction for Water Conservation Communication

Introduction

Water has been, and will continue to be, one of the single most critical elements to a productive society (Young & Dhanda, 2013). Without sufficient water resources it is impossible to sustain life, therefore the active monitoring, management, and engagement in water related endeavors is paramount (Morris, 1995). However, despite the necessity for water the indifference, obliviousness, and apathy of the general public in water related issues has been observed (Lamm, Lamm, & Carter, In Press-a).

As a fungible resource water may serve a multitude of purposes: potable, recreation, natural habitat, agriculture, industry, or aesthetics (Chiras, 2009). However, use within each particular category may result in a deficiency within another; for example, water used for aesthetic, or landscaping purposes, may become non-potable until going through the necessary reclamation process. Such conflicts over use are starting to emerge with greater frequency, especially in geographies where water is beginning to be viewed as a finite resource (Barnett, 2007).

In Florida one of the largest conflicts centers around competing and diverging interests related to the restoration of the Everglades (Carter, 2004). Those in favor of returning the Everglades to a more natural environment express concerns of the water quantity needs of the agricultural industry upstream, as well as questionable water quality associated with post-agricultural use (Carter, 2004). From the agriculturalists perspective, their adherence to best management practices and net contribution to cleaning the Everglades tends to go unnoticed. “Farmers have spent an estimated $200 million implementing the improved practices, including fertilizer controls, water management and soil conservation” (Salisbury, 2015, para. 13).

A similar conflict has emerged between public water consumption and competing interests. Within [state] public water demands are expected to grow by 29% over the next 20 years ([state] Department of Environmental Protection, 2013). Based on 2005 data Marella (2013) found public consumption in [state] already accounted for 52% of fresh groundwater and 13% of fresh surface water withdrawals. Based on estimates by the United States Environmental Protection Agency (USEPA, 2014) the average United States household consumes more than 300 gallons of water a day with 30% going for outdoor uses. The implication of these estimates is that a larger number of individuals are going to be competing for the same limited water resources ([state], 2013; USEPA, 2014). Additionally, the volume of water directed to outdoor endeavors, specifically, aesthetic and landscaping, are expected to increase dramatically (Haley, Dukes, & Miller, 2007; Marella, 2013).

One recommendation to mitigate the potential consequences of water resources directed at outdoor water use, particularly for landscaping purposes, has been to identify individuals that tend to use an excessive amount of water for such purposes and focus educational initiatives at behavior change within this group (Monaghan, Ott, Wilber, Gouldthorpe, & Racevskis, 2013). According to Monaghan et al. (2013) individuals in [state] that use an excessive amount of water, classified as High Water Users (HWUs), have a tendency to share similar characteristics. This recommendation is consistent with research that has found that similarities in individual characteristics can have a significant bearing on communication channel preferences (Lamm, Rumble, Carter, & Lamm, In Press-b).

Despite previous efforts to provide educational materials to the general public through the [state] Extension service (Greene, 2010; Lee, Tansel, & Balbin, 2013) knowledge gaps related to water issues have continued to persist (Lamm et al., In Press-a). Two of the National Research

Agenda (Doerfert, 2011) priority areas are germane to the study of HWUs and their preferred educational channels. First, priority area one focuses on public and policy maker understanding of agriculture and natural resources (Doerfert, 2011). As a natural resource, water is essential to all elements of life. Consequently a study directed at better understanding and classifying HWUs may serve as a benchmark to the public, as well as policy makers, regarding the use of water for outdoor, urban landscaping purposes as well as engagement in water conservation behaviors. Secondly, priority area five emphasizes efficient and effective agricultural education programs. Understanding the needs and preferences of an audience is paramount in providing the most effective educational experiences possible (Doerfert, 2011). A study which empirically analyzes channel preferences may have significant bearing on recommended educational intervention strategies and may ultimately influence individual knowledge and behavior (Lamm et al., In Press-b).

Theoretical Foundation

In the context of natural resource issues like water management, groups of citizens can be identified that have shared characteristics or demographics with regard to the issue at hand. These groups can be described as publics. “Publics develop around issues that affect them because they have a similar problem, they recognize that problem, and they organize to do something about the problem” (Lee & Rodriguez, 2006, p. 5). Researchers have long sought to categorize and describe publics in terms of how and why they seek out information for problem solving. Within the Situational Theory of Publics (STP) framework, publics are categorized based on how they respond to problems and their communicative behavior. STP also examines the cognitive, attitudinal and behavioral effects of communication messages (Grunig, 1997, 2003).

According to STP, three independent variables can be measured to explain and predict communication behaviors in a particular situation: problem recognition, involvement recognition, and constraint recognition. Problem recognition refers to an individual's cognitive perception of discrepancy between a held expectation and an observed reality (Kim & Grunig, 2011). For agricultural communicators, there are many examples of societal issues that are not perceived as problems by some individuals. For example, a city may have areas designated as food deserts lacking access to healthy food options. For many citizens and leaders in that city, however, lack of awareness and information may preclude them from perceiving food deserts as an issue for their city. They do not recognize a problem. Kim and Grunig (2011) distinguish between perceptual problems and cognitive problems, defining "problem recognition as one's perception that something is missing (perceptual problem) and that there is no immediately applicable solution to it (cognitive problem)" (p. 128).

Involvement recognition stems from an abundance of social psychological research on the concept of involvement related to attitudes and information processing. As an example, within the Elaboration Likelihood Model of Persuasion involvement is an important variable influencing the amount of cognitive processing individuals will devote to a communication message. Grunig (1997) defined level of involvement as "the extent to which people connect themselves with a situation" (p. 10). Low involvement tends to result in more passive communication behavior, defined by Grunig (1976) as information processing. Higher involvement results in more active communication behavior or information seeking (Grunig, 1976). According to Grunig (1983), publics will express concern about environmental issues when they are unwilling to seek out information to learn more about the problem. At issue in these instances is personal involvement. If they perceive an environmental problem to be of

personal concern, they are more likely to seek out information (Major, 1993).

While involvement recognition comes from the field of social psychology, Grunig's (1989) concept of constraint recognition is rooted in economics and management science. It is, however, analogous to Bandura's (1977) social psychological concept of personal efficacy. According to Grunig (1997), constraint recognition occurs when "people perceive that there are obstacles in a situation that limit their ability to do anything about the situation" (p. 10). Even when problem recognition and perceived involvement are high, individuals are not likely to engage in information seeking or process if they perceived significant restraints (Ramanadhan & Viswanath, 2006).

Residents' landscape water conservation practices are influenced by constraints in the form of Homeowners' Association (HOAs) membership and the presence of water restrictions. HOAs typically elect their leadership, regulate activities, and provide services to their residents and "are quickly becoming the most common and fastest growing units of local governance in the United States" (McCabe, 2005, p. 404). Residents of HOAs "are contractually obliged to follow the rules and regulations" (Turner & Ibes, 2013, p. 1168) specified in an HOA's covenants, codes, and restrictions (CCRs). In 2012, [State] was reported to have 46,000 HOAs, which makes up the largest percentage (14.2%) of the country's growing numbers of HOAs (Foundation for Community Association Research, 2012). In a recent study of [State] residents, 66% indicated they resided in an HOA (Odera & Lamm, 2015).

HOAs generally prioritize landscape aesthetics despite their potential to contribute to water conservation (Cook, Hall, & Larson, 2011; Dyckman, 2008). Many HOA CCRs require specific combinations of plant species, turfgrass coverage, and quality of turfgrass, which affects landscape water consumption (Turner & Ibes, 2013). Additionally, both perceived and codified

social norms within HOAs shape individuals' landscape water use practices (Cook et al., 2011; Larson & Bruman, 2014). HOA CCRs paired with the pressure to conform to a neighborhood norm have been identified as barriers to environmentally responsible landscaping practices (Cook et al., 2011; Hansen de Chapman, Sanagorski, Monaghan, Lewis, & Momol, 2014).

While residing within an HOA is recognized as a local driver for residential landscape practices, the presence of water restrictions is recognized as a broader-scale constraint, which may be imposed by counties or municipalities (Cook et al., 2011). Water restrictions are one of the most common water conservation strategies (Survis & Root, 2012), yet reports on effectiveness have been mixed. Restrictions may be voluntary or mandatory, and are often prescribed as allowable irrigation days, times, and durations (Kenny, Klein, & Clark, 2004). Water restrictions may also detail rules for different watering methods and sources, such as hand watering with a hose or using reclaimed water (Kenny et al., 2004). Ozan and Alsharif's (2012) study on water restrictions and compliance demonstrated that stringent water restrictions actually increased water usage. Additionally, people who had received water usage citations during water restrictions increased their usage more that those who did not (Ozan & Alsharif, 2012). Survis and Root (2012) found that individuals may substantially waste water through irrigation despite compliance with water restrictions. This loss of potential water savings may be attributed to a perceived obligation to water during a resident's allowable days (Kenny et al. 2004). Both HOA membership and water restrictions represent constraints to water conservation practices.

The cognitive effort needed to evaluate communication messages is a limited resource for consumers who are bombarded with messages each day and can serve as an additional constraint for individuals presented with water conservation communication. Effective communicators can use audience data to determine which individuals are most likely to actively attend to their

message. Depending on an individual's problem recognition, involvement recognition and constraint recognition related to an issue, they acquire information about the issue either actively (information seeking) or passively (information processing) (Grunig, 1997). Information seeking is premeditated and involves an individual actively looking about their environment for messages about a topic. Information processing is the "unplanned discovery of a message, followed by continued processing of it" (Clarke & Kline, 1974, p. 233). Information seekers often rely on interpersonal discussion and specialized booklets or pamphlets (Clarke & Kline, 1974). They are more likely to look for media sources developed to provide problem-specific information. This could also include issue-related websites. Information processers rely more on mass media for information. While they're not seeking issue-related information, they may stumble upon it through exposure to mass media. Through the use of STP, high water users can be better understood, and therefore more easily communicated with, by examining how problem recognition, involvement recognition and constraint recognition related to water conservation impacts information processing and information seeking.

Purpose and Objectives

The purpose of this study was to gain a deeper understanding of high water users based on their problem recognition that plentiful water is important, level of involvement in water conservation behaviors, and constraint recognition related to HOA membership and being required to abide by water restrictions so that specific communication needs can be met when encouraging adoption of water conservation behaviors. The study was guided by the following objectives:

1. Identify differences in characteristics of high water users based on the level of importance they associated with plentiful water and engagement in water conservation

behaviors within the landscape.

2. Determine if the level of importance associated with plentiful water and engagement in water conservations behaviors within the landscape is associated with HOA membership and being required to abide by water restrictions.
3. Identify the communication needs of high water users based on the level of importance they associate with plentiful water and engagement in water conservations behaviors within the landscape.

Methods

This study used an online survey research design to address the research objectives. The population of interest was high water users in the state of [State] age 18 or older. A high water user was defined as living in specific counties within the state, having an irrigated landscape and hiring an outside landscaping company to manage their landscape. Previous literature has identified individuals with these characteristics as consuming an unusually high amount of water to ensure they have a green, lush home landscape (Davis & Dukes, 2014; Huang, Lamm, & Dukes, 2015). The study was limited to [State] because water has been identified as the top issue facing the agricultural and natural resource sector despite it being surrounded by water on three sides and having an extensive spring system. The state is also currently undergoing a strategic restructure of their extension system where enhancing and protecting water quality, quantity and supply has emerged as one of the priority initiatives.

The survey instrument was researcher adapted with items based on the 2012 RBC Canadian Water Attitudes Study (Patterson, 2012). For this study, the original instrument was adapted to fit a [State] audience and researcher-developed questions specific to learning interests and communication preferences were added. Since the research is part of a larger study, five

sections of the survey instrument were germane to the findings in this study: importance of plentiful water, self reported engagement in water conservation behaviors, interest in water-focused learning experiences, communication preferences, and demographics. Once the instrument was developed an expert panel ensured content and face validity. The expert panel included the [Center] Director, the Director of the [Institute], the Director of the [Center], and an evaluation specialist with expertise in survey design.

First, respondents were asked to indicate the level of importance they associated with seven items related to plentiful water on a five point Likert-type scale ranging from 1 = *Not at all important*, 2 = *Slightly important*, 3 = *Fairly important*, 4 = *Highly important*, and 5 = *Extremely important*. Responses to the seven items were averaged to create an overall measure of importance of plentiful water score. Reliability was calculated *ex post facto* resulting in a Chronbach's alpha coefficient of .79 deemed to be reliable. The overall mean score for the index was a 3.67 (*SD* = .60) indicating the respondents, on average, perceived plentiful water as highly important but there was a diverse level of response.

Next, respondents were asked to indicate if they had engaged in six specific water behaviors related to the protection of water when using it in the home landscape. If they marked they had engaged in the specific method they were given a point. The points were then summed to create an overall water conservation behavior score that could range from zero to six with a zero indicating they did not engage in any of the behaviors and a six indicating they engaged in all of the behaviors. The overall mean score was a 4.01 (*SD* = 1.43).

Respondents were also asked whether or not they were a part of an HOA and if they currently had to abide by any water restrictions for their lawn. Communication needs were measured in two ways. First, respondents were asked to indicate the types of learning

opportunities they would most likely take advantage of to learn more about water topics. Respondents were presented with 11 options and asked to check all that apply. Second, respondents were asked to indicate which of 14 subject matter areas they would be most interested in learning more about. Respondents were presented with 14 options and asked to check all that apply. Finally, respondents identified their sex, education level, race, ethnicity, age, annual household income, and political affiliation.

In order to categorize the respondents, both the importance of plentiful water index score and engagement in water conservation behavior scores were transformed into z scores. The z scores were used to classify the respondents in to one of four groups: (a) positive importance of plentiful water z score and positive water conservation behavior z score (+I+WC), (b) negative importance of plentiful water z score and positive water conservation behavior z score (-I+WC), (c) negative importance of plentiful water z score and negative water conservation behavior z score (-I-WC), and (d) positive importance of plentiful water z score and negative water conservation behavior z score (+I-WC). Chi-square tests were used to determine if significant differences existed between the four groups on the variables of interest.

A non-probability opt in sample was obtained using a public opinion survey research company, Qualtrics. Non-probability samples are commonly used in public opinion research to make population estimates (Baker et al., 2013) and in this case was the best way to reach the population of interest: high water users. Although there are limitations in being able to generalize non-probability samples, they have been shown to yield results as good as, or even better than, probability-based samples (Abate, 2008; Twyman, 2008; Vavreck & Rivers, 2008).

Qualtrics sent a link to the developed instrument to 3,493 [State] residents representative of the state population based on the 2010 Census data. Only residents who answered they were

residents of [State], lived in specific counties within the state, had a home landscape they were responsible for maintaining that used an irrigation system and that reported hiring an outside landscaping company to maintain their landscape (classifying them as high water users) were allowed to participate. As a result, 932 responses were obtained representing a 26.7% participation rate. To compensate for potential exclusion, selection, and non-participation biases that tend to be limitations of using a non-probability sample, quotas established *a priori* were implemented (Baker et al., 2013).

Results

Differences in characteristics of high water users based on level of importance of plentiful water and engagement in water conservation behaviors - To identify differences in characteristics of respondents based on the level of importance they associate with plentiful water and their engagement in water conservation behaviors, both the importance of plentiful water index score and engagement in water conservation behavior scores were transformed into z scores. The z scores were then used to classify the respondents in to one of four groups for further data analysis. The four groups were respondents who had a (a) positive importance of plentiful water z score and positive water conservation behavior z score (+I+WC), (b) negative importance of plentiful water z score and positive water conservation behavior z score (-I+WC), (c) negative importance of plentiful water z score and negative water conservation behavior z score (-I-WC), and (d) positive importance of plentiful water z score and negative water conservation behavior z score (+I-WC). The distribution of respondents based on their z scores can be seen in Figure 1.

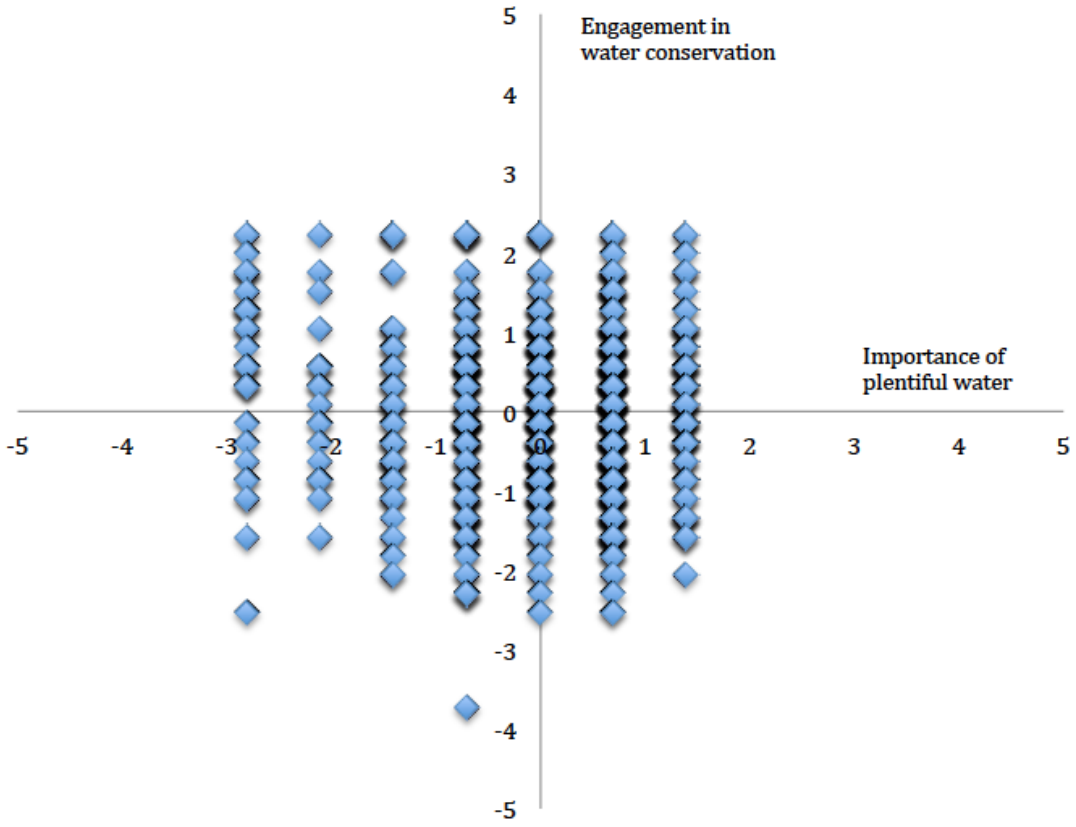

Figure 1. Distribution of groups based on water conservation behaviors and importance of plentiful water z scores

Overall, when identifying the characteristics of the high water user respondents, there was an even gender split (Table 1). The majority was Caucasian/White (Non–Hispanic), had at least a four-year college degree, was older and had an annual family income of more than $75,000 a year. In terms of political affiliations, all were present but the largest group was Republican (37.1%).

Chi-square tests were conducted to compare the demographic characteristics of the four groups. Differences in sex were significant ($X^2 = 8.07$; $p < .05$). The +I-WC group exhibited more males than the other three groups and the +I+WC group had the least. Differences in the number reporting being Hispanic ($X^2 = 13.28$; $p < .01$) was also significant with the +I-WC group exhibiting more Hispanic respondents than the other three groups and the –I+WC the least.

The Caucasian/White race indicator was also significant ($X^2 = 7.90$; $p < .05$) with the –I+WC group having the most Caucasian/White respondents and the +I-WC having the least.

Table 1
Demographic characteristics of high water users overall and in groups

	Overall ($N = 932$) %	+I+WC ($n = 222$) %	-I+WC ($n = 195$) %	-I-WC ($n = 252$) %	+I-WC ($n = 253$) %
Sex*					
Male	48.1	41.0	47.2	49.2	53.4
Female	51.9	59.0	52.8	50.8	46.6
Race					
African American	4.4	4.5	3.1	4.4	5.1
Asian	1.5	1.4	0.0	1.6	2.4
Caucasian/White*	93.5	93.7	97.4	93.3	90.9
Native American	.5	0	1.0	0.0	0.8
Hispanic Ethnicity**	6.8	5.4	3.6	5.6	11.5
Age					
18 - 39	12.1	11.7	9.7	10.7	15.8
40 - 49	11.6	10.8	14.4	7.9	14.2
50 - 59	20.2	18.5	19.5	23.8	18.6
60 - 69	33.5	35.6	33.3	35.3	29.6
70 - 79	20.2	22.1	20.0	19.4	19.4
80 years and older	2.5	1.4	3.1	2.8	2.4
Annual Household Income					
$50,000 to $74,999	26.2	28.4	26.2	29.0	20.9
$75,000 to $149,999	49.5	80.0	51.8	49.6	48.2
$150,000 to $249,999	17.9	15.8	14.9	16.3	23.3
$250,000 or more	6.4	5.9	7.2	5.2	7.5
Education					
High school diploma	5.9	10.4	3.6	4.4	5.1
Some college education	16.4	18.5	13.3	16.3	17.4
2 year college degree	10.1	11.3	10.3	7.9	11.1
4 year college degree	38.1	35.6	38.5	42.9	35.6
Graduate degree	29.4	24.3	34.4	28.2	30.8
Political Affiliation					
Republican	37.1	43.7	33.8	35.3	35.6
Democrat	30.2	26.6	29.7	32.1	32.0
Independent	22.6	19.8	28.2	21.4	21.3
Non Affiliated	9.0	9.0	6.7	9.9	10.3
Other	1.1	.9	1.5	1.2	0.8

Note. *$p < .05$; **$p < .01$.

HOA membership and requirements regarding water restrictions - Respondents were asked

to indicate whether or not they currently resided in an HOA and if they were currently required to abide by water restrictions for their lawn. The overall results, as well as the results by group, can be seen in Table 2. The –I-WC group exhibited the lowest level of respondents currently residing in HOAs and the lowest number required to abide by water restrictions for their lawn. The +I+WC group had the most respondents reporting they were required to abide by water restrictions for their lawn. Chi-square tests were conducted to determine if the four groups differed. The results indicated there were significant differences between the four groups in terms of currently residing in an HOA ($X^2 = 7.76$; $p < .05$) and being required to abide by water restrictions for their lawn ($X^2 = 10.63$; $p < .01$).

Table 2
HOA membership and requirements regarding water restrictions

	Overall ($N = 932$) %	+I+WC ($n = 222$) %	-I+WC ($n = 195$) %	-I-WC ($n = 252$) %	+I-WC ($n = 253$) %
Currently residing in an HOA*	70.4	74.3	74.9	64.7	68.8
Currently required to abide by water restrictions for their lawn**	74.6	79.3	77.9	67.5	75.5

Note. *$p < .05$; **$p < .01$.

Communication needs - Types of communication needs of the respondents were identified by asking respondents to indicate which of 11 learning opportunities they would most likely take advantage of to learn more about water topics (Table 3). Respondents were allowed to check all that apply. A "none of the above" option was also offered. Overall, respondents were most interested in visiting a web site to learn more about water topics, followed by reading printed fact sheets, bulletins or brochures. When examining groups, the –I-WC group was the least interested of the four groups in visiting a website and the –I+WC was least interested of the four groups in reading printed materials. The +I-WC group was more interested in watching TV coverage to

learn about water than the other groups. A series of Chi-square tests were run comparing the results from the four groups to determine if differences existed. Differences in interest in watching TV coverage were significant ($X^2 = 7.72$; $p < .05$) with the +I-WC group indicating the highest level of interest in this form of communication.

Table 3
Types of communication needs of high water users overall and in groups

	Overall ($N = 932$) %	+I+WC ($n = 222$) %	-I+WC ($n = 195$) %	-I-WC ($n = 252$) %	+I-WC ($n = 253$) %
Visit a web site	72.6	73.0	77.9	67.5	74.3
Read printed fact sheets, bulletins or brochures	50.4	52.3	45.1	51.6	51.8
Watch TV coverage*	47.5	45.9	48.7	41.3	53.4
Read a newspaper article or series	41.4	45.9	37.4	39.7	43.1
Watch a video	30.2	30.2	34.4	26.2	30.4
Attend a fair or festival	20.2	24.8	14.9	19.0	21.7
Attend a short course or workshop	19.5	17.6	15.4	21.0	23.7
Look at a demonstration or display	18.7	16.7	16.9	17.1	23.3
Take part in a one-time volunteer activity	14.7	13.1	12.3	14.7	18.6
Attend a seminar or conference	11.5	13.5	9.2	11.5	11.5
Get trained for a regular volunteer position	5.5	6.3	4.1	5.6	5.9

Note. *$p < .05$.

Subject of communication needs of the respondents were identified by asking respondents to indicate which of 14 water topics they would be most interested in learning about (Table 4). Respondents were allowed to check all that apply. A “none of the above” option was also offered. Overall, respondents were most interested in home and garden landscaping ideas for yards. When examining groups, the –I+WC group was the most interested in landscaping ideas of the four groups and the –I-WC was least interested. A series of Chi-square tests were run comparing the results from the four groups to determine if differences existed. Differences in

interest in learning about irrigation management were significant ($X^2 = 10.70$; $p < .01$) with the -I-WC group indicating the lowest level of interest and the +I-WC indicating the highest. Differences in interest in fish and wildlife water needs were also significant ($X^2 = 11.77$; $p < .01$) with the +I+WC indicating the lowest level of interest and the +I-WC indicating the highest. Differences in interest in learning about private well protection and interest in learning about watershed protection were also significant.

Table 4
Subject of communication needs of high water users overall and in groups

	Overall ($N = 932$) %	+I+WC ($n = 222$) %	-I+WC ($n = 195$) %	-I-WC ($n = 252$) %	+I-WC ($n = 253$) %
Home and garden landscaping ideas for yards	51.0	54.5	54.9	47.6	47.8
Irrigation management**	22.4	22.5	22.6	16.7	28.9
Fertilizer and pesticide management	21.9	23.9	24.6	16.3	23.7
Community actions concerning water issues	20.3	20.7	14.9	21.4	22.9
Water policy and economics	19.7	18.9	19.5	19.0	21.3
Fish and wildlife water needs**	18.9	12.2	19.5	19.0	24.5
Landscape buffers	17.7	16.2	21.0	16.7	17.0
Shoreline cleanup	17.0	14.4	18.5	16.3	19.0
Restoring fish and aquatic habitat	16.6	14.9	20.5	13.9	18.2
Septic system management	11.7	12.2	6.7	12.7	14.6
Private well protection**	10.1	8.1	6.7	9.1	15.8
Watershed management**	10.0	5.0	7.7	11.1	15.0
Watershed restoration	9.8	6.8	8.2	9.9	13.4
Forest management and water issues	9.4	9.0	8.2	8.7	11.1

Note. *$p < .05$.

Conclusions

This study identified differences in characteristics of HWUs based on their perceived importance of plentiful water and their engagement in water conservation behaviors. Four

primary groups of respondents were identified: High Importance/High Engagement, Low Importance/High Engagement, Low Importance/Low Engagement and High Importance/Low Engagement. These groups were significantly different in terms of gender and race. For respondents who perceived plentiful water to be of high importance, men reported significantly less engagement in water conservation than women. Likewise, for Hispanic HWUs respondents who perceived plentiful water to be of high importance, they reported significantly less engagement in water conservation than respondents of other ethnicities.

HOA membership does appear to impact perceived importance of plentiful water and their engagement in water conservation behaviors. High Importance/High Engagement Respondents were significantly more likely to reside in an HOA and to be required to abide by water restrictions for their lawn than other respondents. In terms of communication needs, websites were the overall preferred communication channel for all audiences, while High Importance/Low Engagement respondents demonstrated a significantly greater preference for TV coverage than other respondents. In terms of subject interests, all of the respondents were most interested in home and garden landscaping ideas for yards. High Importance/Low Engagement respondents, however, were significantly more interested in irrigation management, fish and wildlife water needs, private well protection and watershed management than the other respondents.

Implications and Recommendations

As communicators seek to promote water conservation behaviors, it is essential to understand consumers' attitudes and behaviors. Communicators seeking to understand HWUs must identify their unique characteristics and communication channel preferences in order to develop effective communications content and programs. This study reveals that HWUs'

behavior does not always correspond with perceived importance of water conservation. Situational Theory of Publics (STP) provides a framework for understanding why HWUs might perceive water conservation to be important (problem recognition) but may not feel personally responsible (involvement recognition) and may perceive barriers to changing their behaviors (constraint recognition). STP is especially useful in identifying publics with high potential for communication impact. In this case, communicators should consider targeting messages to male HWUs who perceive plentiful water to be of high importance but are not engaging in water conservation behaviors. Another group with potential for communication impact is HWUs with a Hispanic ethnicity indicating that some communication messages may be more effective if they are translated into Spanish. Communicators should also consider focusing some of their efforts on High Importance/Low Engagement respondents. This group has distinct communication preferences (TV) and subject interests (irrigation management, fish and wildlife water needs, private well protection and watershed management than the other respondents). A communication program targeted toward this group could result in measurable impact for increasing water conservation behaviors among HWUs.

Future research with this audience could further extend the application of STP, measuring and describing other perceived constraints that keep citizens who value plentiful water from adopting water conservation behaviors. In addition, a qualitative approach targeting high importance/low engagement respondents could be used to further discuss how perceived constraints are limiting engagement and how they can be overcome through communication campaigns. Lastly, communication materials could be made based on these recommendations and tested to determine their level of effectiveness.

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Public Knowledge and Trust Perceptions for Organizations that Communicate about Agriculture and Natural Resources

Abstract

The public lacks knowledge and connectedness to agriculture and natural resources in the United States, leading to a need for effective communications from agricultural and natural resources organizations. Trust is an integral component of communications, but it is not well understood how the public trusts the various organizations communicating agricultural and natural resources issues. The types of organizations include non-profit organization, for-profit organizations, and governmental organizations. A survey was conducted of a nationally representative sample to assess the public's awareness, knowledge, and trust of organizations and their communications. The highest number of respondents was aware and knowledgeable of governmental organizations, except for Extension. Communications from non-profit organizations tended to be trusted the most compared to for-profit organizations and governmental organizations, except for Extension. Respondents' trust of the non-profit organizations was typically higher than for-profit organizations and governmental organizations, except for Extension. The relationship between trust of an organization and trust of its communications were statistically significant for all organizations, while relationships between trust of an organization and knowledge of an organization were typically negligible and not statistically significant. For-profit organizations and governmental organizations should work to improve the public's trust. Extension should seek to improve the public's awareness and knowledge given the level of trust the respondents had for the organization. Future research should address what factors are influencing the public's trust in organizations and organizations' communications.

Keywords: Trust, Organizations, Agriculture, Natural Resources, Communications

Introduction and Literature Review

A commonly accepted problem facing agriculture in the United States is the lack of knowledge and awareness members of the public have for agricultural and natural resources issues, making it difficult for individuals to make informed decisions (Frick, Birkenholz, & Machtmes, 1995; Meischen & Trexler, 2003). This problem is exacerbated by the low percentage of the population directly involved in agriculture. There are an estimated 3.2 million farmers operating 2.1 million farms in the U.S. (USDA, 2012) out of a total population of 308 million (U.S. Census Bureau, 2011). With so few people directly involved in agriculture, there has been an assertion that is not feasible to expect the public to make informed decisions about agricultural issues (Powell & Agnew, 2011).

A logical solution to solving the problem of the public lacking knowledge of agricultural issues would be informing the public through media coverage. This solution is problematic because media coverage of agricultural issues is scarce (Stringer & Thompson, 1999), and the news coverage that does occur is often negative and reactive to adverse events (American Farm Bureau Federation & Philip Morris, n.d.; Graves, 2005). This leads to negative and inaccurate public perceptions of agriculture (Duncan & Broyles, 2006; Goodwin, Chiarelli, & Irani, 2011).

The organizations directly involved in agricultural and natural resource issues offer another possible avenue to improve the public's awareness and knowledge. Organizations are one of the primary sources of information regarding agriculture and the environment that consumers utilize to educate themselves on current affairs (Jones, 1990). To be effective, organizations need to provide information perceived as trustworthy to help individuals form opinions in an informed manner.

Agriculture has been changing rapidly over the past century. Industrialization has aided the development of technologies that have led to a larger population being fed and sustained by fewer agricultural operations (Hogberg et al., 2005). To help consumers understand production and change in the agricultural industry, agricultural communicators must collect data on how to better inform the public, which would allow them to develop attitudes and opinions based on facts.

Organizations offer a means of communication with members of the public to help individuals reach informed opinions and decisions. Even if an individual is uninformed or misinformed, they may still pass judgment and make decisions (Brossard & Nisbet, 2006), therefore it is imperative for organizations to effectively communicate information when members of the public are formulating opinions.

Organizations from a variety of perspectives communicate with the public about key issues related to agriculture and natural resources. The issues include but are not limited to agriculture, the environment, animal welfare, food safety, and nutrition. The organizations range from governmental organizations like the United States Department of Agriculture (USDA) and United States Environmental Protection Agency (EPA), to for-profit organizations like Monsanto and DuPont, and non-profit organizations on both sides of the ideological aisle like American Farm Bureau Federation and the Humane Society of the United States (HSUS). All of these organizations have the potential to impact public perceptions of agricultural and environmental issues.

This study consisted of a survey to address awareness, knowledge, and trust members of the public have for organizations communicating about agricultural and natural resources issues. The organizations represented included governmental, non-profit, and for-profit organizations.

The organizations also represented a variety of perspectives. The specific emphasis of this study was trust of the organizations.

Trust

Trust is integral to effective communication. Trust has been a topic of research for multiple dimensions of study, including but not limited to management, psychology, philosophy, economics, marketing, and industry (Paliszkiewicz & Koohang, 2013; Schoorman, Mayer, & Davis, 2007). Trust is not an easy construct to define, which has been an ongoing issue (Rawlins, 2008; Schoorman et al., 2007). A variety of terms have been used related to trust, including dependability, faithfulness, honesty, integrity, honor, responsibility, competence, vulnerability, goodwill, openness, and loyalty (Costigan, Itler, & Berman, 1998; Rawlins, 2008; Rosanas & Velilla, 2003; Schoorman et al., 2007).

This study used Rawlins's (2008) operational definition of trust, which is the willingness for a person to be vulnerable based on the confidence that the other party will display competence, goodwill, and integrity, which act as subconstructs of trust. The Schoorman et al. (2007) definition of trust used similar subconstructs: ability, benevolence, and integrity.

Why trust is important

Trust plays an imperative role in the success of organizations (Steier, 2001). Lubell (2007) stated trust was "the foundation for effective social, economic, and political life" (p. 237). An organization must be predictable and reliable in their actions to reduce uncertainty, which helps enable trust (Tschannen-Moran & Hoy, 2000).

The importance of the audience's trust of the communicator has been recognized for millennia, dating back to Aristotle's *Rhetoric*, which used logos, pathos, and ethos as the supporting structure for effective persuasion (West & Turner, 2007). Logos is the logic of the

argument. Pathos is the emotional aspect of the argument. Ethos is the perceived intelligence, character, and goodwill of the communicator, which are similar to the terms Rawlins (2008) uses to describe trust. The basic idea of ethos is that the audience is more likely to believe a message from a communicator they trust (West & Turner, 2007). For an organization to be able to communicate effectively with the public, trust is a necessary component.

How trust develops is important. Research has shown that trust can occur without any history of interaction, but that trust is fragile (Kim, Dirks, & Cooper, 2009). A better option for organizations is trust that is based on a history of positive experiences. This history of positive experiences can act as a shield that can help an organization survive a crisis that could otherwise damage public perception (Grunig, Grunig, & Dozier, 2002). A common case study is the Tylenol incident of the 1980s that led to seven deaths, but Tylenol was able to maintain positive public perception in the long run because of history of positive experiences the public had with the organization (de Chernatony, 2001), in addition to the organization's response to the crisis (Lundgren & McMakin, 2004). Members of the public scrutinize organizations' communications, including public relations efforts, to determine trustworthiness (Schnackenberg & Tomlinson, 2014).

Building trust is an integral component for organizations as they try to build relationships with members of the public (Kang & Hustved, 2014). In the individual-organization relationship, it is generally believed the individual expects the organization to keep its promises and act in favor of individual's best interest (Kang & Hustved, 2014). Acceptance and openness will result from the initial development of trust (Rempel, Holmes, & Zanna, 1985). These factors contribute to close-interactions of the developing parties. A loss of trust or lack of trust development in a relationship will affect how the members of public perceive an organization.

Of note in this study is that different types of organizations will be addressed: non-profit, for-profit, and governmental. There has been some research addressing differences in trust and credibility between the organizations, though that research typically only addresses two types of organizations at a time, not all three. Auger (2011) studied the differences in trust between non-profit and for-profit organizations and found non-profit organizations are given a higher level of trust compared to for-profit organizations when both are exhibiting transparency, but non-profit organizations received lower level of trust than for-profit organizations when both lack transparency; in other words, non-profit organizations are held to a higher level of standards than for-profit organizations. Irani, Sinclair, and O'Malley (2001) found that governmental organizations were trusted by members of the public more to communicate about biotechnology than for-profit organizations. Contrary to the Irani et al. findings, Ruth (2015) found no statistically significant differences in source credibility between governmental and for-profit organizations for communicating about genetically modified food, with both sets of groups being evaluated neutrally by the study's participants.

In general, it is worth noting the public is increasingly distrustful of organizations that are expected to provide objective knowledge. Over the past 35 years, the public has become increasingly distrustful of government organizations (Birkland, 2011). On a similar note, Brossard and Nisbet (2007) found that members of the public did not rely on knowledge to form their opinions toward agricultural biotechnology; individuals instead relied on trust of science-related organizations to shape their opinions.

Purpose and Objectives

Kallendorf and Kallendorf stated, "a rhetorician need not actually be a good person, but must only be perceived as one" (1985, p. 42). Along those same lines for agricultural

communications, the organizations viewed as the most trustworthy by members of the public are more likely to be successful, even if the organizations are not actually trustworthy. Similarly trustworthy organizations are unlikely to be successful if members of the public do not view the organizations as trustworthy. It is important for agricultural communicators to understand which organizations members of the public view as trustworthy to understand which organizations will be the most successful when communicating about agricultural and natural resources issues.

Understanding differences between perceptions of types of organizations is also important. Comparisons of trust between non-profit and for-profit organizations are rare (Auger, 2011), much less comparing non-profit, for-profit, and governmental organizations, which are all involved in the communication of key agricultural and natural resources issues.

The purpose of this study was to seek a more comprehensive understanding of the public's knowledge and trust of organizations that communicate about agriculture and natural resources topics. The objectives guiding this study were

1. Describe the public's awareness and knowledge of organizations that communicate about agriculture and natural resources,
2. Describe the public's trust of organizations' communications about agricultural and natural resources topics,
3. Describe the public's trust of agricultural and natural resources organizations, and
4. Describe the relationship between the public's trust of these organizations and trust of the organizations' communications, as well as between the public's trust of the organizations and the public's knowledge of the organizations.

Methods

To achieve the objectives of this study, a nationally representative quantitative survey was conducted online through Qualtrics. Qualtrics was also used as a third-party surveying organization to access an online panel of respondents. Nonprobability quota sampling was used to ensure respondents were representative of the national population based on sex, race, and Hispanic/Latino status results from the 2010 U.S. Census. Nonprobability sampling is being increasingly used as probability samples that depend on phone and internet samples are lacking complete coverage and receive poor response rates (Dillman, Smyth, & Christian, 2014). One thousand and ninety-three people started the survey, and there were 524 respondents after filtering out ineligible respondents (e.g., under 18 or not U.S. residents) and incomplete responses.

An expert panel consisting of faculty members in colleges of agriculture from three universities reviewed the instrument to help ensure its validity. Their expertise included agricultural communications and evaluation. Two cognitive interviews were also conducted to allow individuals not involved in the study to complete the questionnaire and provide feedback on usability of the questionnaire and ability to appropriately respond to the questions.

Respondents provided their awareness, knowledge, and trust of 16 organizations. These organizations were selected to represent different types of organizations (i.e., governmental, non-profit, and for-profit), including organizations that would have different perspectives on key agricultural and natural resources issues. The governmental organizations were the U.S. Department of Agriculture (USDA), U.S. Food and Drug Administration (FDA), U.S. Environmental Protection Agency (EPA), and Cooperative Extension Service. The non-profit organizations were U.S. Farmers and Ranchers Alliance, American Farm Bureau Federation,

People for the Ethical Treatment of Animals (PETA), Humane Society of the United States (HSUS), Center for Food Integrity, Sierra Club, Greenpeace, Environmental Working Group, and World Wildlife Fund (WWF). The for-profit organizations were Monsanto, DuPont, and Syngenta. The expert panel reviewed the list to ensure key organizations were represented, and two organizations were added to the list based on their recommendations.

The questionnaire addressed respondents' awareness of the organizations, knowledge of the organizations, trust of the organizations, and trust of communications from the organizations. Randomization was used within each section to avoid any biases that may occur based on the order respondents answered questions about each organization.

Respondents' options for awareness were either they had heard of an organization or they had not heard of an organization. For the remainder of the questionnaire, respondents only answered questions for organizations they were aware of. For the next section, respondents indicated their level of knowledge of the organizations they were aware of on a 5-point scale, ranging from *not at all knowledgeable* to *extremely knowledgeable*. If a respondent had no knowledge of an organization, they no longer saw questions about that organization. These question filters were put in place to minimize the cognitive load on respondents and were based on feedback from the cognitive interviews. The number of respondents who answered questions about each organization is listed in the tables in the results section.

In the next section, respondents indicated how much they trusted or distrusted communications from the organizations they were aware and knowledgeable of regarding five topics: agriculture, the environment, animal welfare, food safety, and nutrition. This section used a 5-point scale ranging from *distrust* to *trust*, with an option for respondents to report they were not familiar with communications about the specific topic from the organization. The final

component addressed respondents' trust of each organization. This was addressed through 15 semantic differential items based on Rawlins's (2008) definition of trust and its three subconstructs: competence, goodwill, and integrity. Each subconstruct had five items. For competence, the bipolar items were unreliable/reliable, incompetent/competent, not dependable/dependable, not confident/confident, and incapable/capable. For goodwill, the items were not beneficial/beneficial, not compassionate/compassionate, selfish/unselfish, not charitable/charitable, and disrespectful/respectful. The items for integrity were dishonest/honest, unfair/fair, unethical/ethical, immoral/moral, and closed off/open. Reverse coding was used for beneficial, competent, open, compassionate, and unselfish items to mitigate directional biases in responses.

Post-hoc reliability was addressed using Cronbach's alpha. For the five-item scales addressing respondents' trust of communications from the organizations, reliability was above .85 for each organization. For the 15-item scales assessing respondents' trust of the organizations, reliability was above .88 for each organization. Reliability scores of at least .80 are considered ideal (Norcini, 1999).

For objective 1, frequencies were used to report results. For objectives 2 and 3, means were reported. For objective 4, a Pearson's product-moment correlation was used to describe the relationship between trust of an organization and trust of an organization's communications. Kendall's tau was used to describe the relationship between trust of an organization and knowledge of the organization. Kendall's tau was used because the knowledge question was ordinal and the distribution of responses was non-normal (Field, 2013).

Results

Objective 1: Describe the public's awareness and knowledge of organizations that communicate about agriculture and natural resources

Table 1 shows the public's awareness and knowledge of the organizations in the study. Respondents had the highest levels of awareness for governmental organizations, with the exception of Cooperative Extension, which only 26.0% of respondents were aware of. Syngenta had the lowest level of awareness (14.1%). World Wildlife Fund (WWF; 81.1%) and People for the Ethical Treatment of Animals (PETA; 79.8%) were the non-profit organizations respondents were most aware of, while Environmental Working Group (EWG; 22.7%) and the Center for Food Integrity (CFI; 17.6%) had the lowest levels of awareness. For the overall number of respondents, FDA (n = 213), USDA (n = 178), and EPA (n = 161) had the most respondents who were either moderately or extremely knowledgeable of the organization, while CFI (n = 51), Extension (n = 45), and Syngenta (n = 33) had the least. When filtering out respondents who were not aware of the respective organizations, CFI (44.6%), Syngenta (44.6%), and EWG (43.7%) had the highest percent of respondents who were moderately or extremely knowledgeable of the organization, while American Farm Bureau (AFB; 29.7%), DuPont (27.0%), and Sierra Club (26.8%) had the least.

Objective 2: Describe the public's trust of organizations' communications about agricultural and natural resources topics

Table 2 shows respondents' level of trust for each organization's communications about agriculture, the environment, animal welfare, food safety, and nutrition. No organizations were completely distrusted, though DuPont (M = 3.20) and Monsanto (M = 2.70) had neutral evaluations of trust for their communications overall. Extension (M = 4.15), CFI (M = 4.14), and EWG (M = 4.13) had the highest levels of trust in their communications. For the individual

topics, Extension (M = 4.27) was trusted the most to communicate about agriculture, EWG (M = 4.26) was trusted the most to communicate about the environment, WWF (M = 4.32) was trusted the most to communicate about animal welfare, EWG (M = 4.19) was trusted the most to communicate about food safety, and CFI (M = 4.11) was trusted the most to communicate about nutrition.

Objective 3: Describe the public's trust of agricultural and natural resources organizations

Table 3 shows respondents' level of trust for each organization. The Humane Society of the United States (HSUS; M = 4.01), WWF (M = 3.98), and EWG (M = 3.77) had the highest levels of overall trust, while DuPont (M = 3.28), Syngenta (M = 3.18), and Monsanto (M = 2.89) had the lowest levels of trust, though these were still neutral on the 5-point scale used in the study. In the scope of all of the organizations addressed in the study, respondents trusted the non-profit organizations more than for-profit and governmental organizations, with the exception of Extension (M = 3.72). In general, respondents rated competence the highest of the trust subconstructs, while goodwill tended to be rated the lowest.

Table 1

*Respondents' Awareness and Knowledge of the Agricultural and Natural Resources Organizations by Percentage (*N = *524)*

Organization	Respondents Aware of Organization	Not at all knowledgeable	Slightly knowledgeable	Somewhat knowledgeable	Moderately knowledgeable	Extremely knowledgeable
FDA	94.3% (494)	6.3 %(31)	24.7% (122)	25.9% (128)	28.1% (139)	15.0% (74)
USDA	91.4% (479)	8.6 %(41)	27.8% (133)	26.5% (127)	25.9% (124)	11.3% (54)
EPA	87.3% (458)	11.1% (51)	26.4% (121)	27.3% (125)	21.6% (99)	13.5% (62)
WWF	81.1% (425)	14.4% (61)	28.9% (123)	24.0% (102)	22.6% (96)	10.1% (43)
PETA	79.8% (418)	12.4% (52)	24.2% (101)	26.1% (109)	26.1% (109)	11.2% (47)
DuPont	76.9% (403)	22.6% (91)	29.8% (120)	20.6% (83)	17.6% (71)	9.4% (38)
Greenpeace	75.8% (397)	15.6% (62)	29.2% (116)	24.7% (98)	18.9% (75)	11.6% (46)
HSUS	73.3% (384)	10.7% (41)	21.6% (83)	28.4% (109)	25.3% (97)	14.1% (54)
Sierra Club	64.1% (336)	22.6% (76)	26.2% (88)	24.4% (82)	16.4% (55)	10.4% (35)
Monsanto	51.7% (271)	18.5% (50)	26.6% (72)	22.9% (62)	21.0% (57)	11.1% (30)
AFB	43.7% (229)	22.7% (52)	27.9% (64)	19.7% (45)	19.2% (44)	10.5% (24)
Farmers & Ranchers	30.0% (157)	18.5% (29)	22.3% (35)	24.2% (38)	21.0% (33)	14.9% (22)
Extension	26.0% (136)	18.4% (25)	26.5% (36)	22.1% (30)	17.6% (24)	15.4% (21)
EWG	22.7% (119)	15.1% (18)	23.5% (28)	17.6% (21)	29.4% (35)	14.3% (17)
CFI	17.6% (92)	17.4% (16)	19.6% (18)	18.5% (17)	28.3% (36)	16.3% (15)
Syngenta	14.1% (74)	17.6% (13)	21.6% (13)	16.2% (12)	24.3% (18)	20.3% (15)

Table 2

Respondents' Mean Levels of Trust of the Organizations' Communications by Topic

	Agriculture	Environment	Animal Welfare	Food Safety	Nutrition	Overall Communication[a]
Extension (*n* = 111)	4.27	4.15	4.10	4.10	4.05	4.15
CFI (*n* = 76)	4.11	4.08	4.04	4.16	4.11	4.14
EWG (*n* = 101)	4.15	4.26	4.11	4.19	4.02	4.13
Farmers & Ranchers (*n* = 128)	4.07	3.99	4.08	3.99	3.96	4.02
HSUS (*n* = 343)	4.18	3.99	4.30	3.77	3.67	3.95
AFB (*n* = 177)	4.11	4.01	3.88	3.88	3.95	3.95
WWF (*n* = 364)	4.12	4.10	4.32	3.71	3.65	3.94
USDA (*n* = 438)	3.94	3.79	3.60	3.85	3.84	3.79
Sierra Club (*n* = 260)	3.87	3.94	4.01	3.62	3.55	3.78
EPA (*n* = 408)	3.89	3.91	3.71	3.74	3.52	3.75
Syngenta (*n* = 61)	3.76	3.63	3.73	3.64	3.70	3.74
Greenpeace (*n* = 335)	3.78	3.92	3.85	3.63	3.56	3.74
FDA (*n* = 463)	3.78	3.64	3.56	3.88	3.84	3.73
PETA (*n* = 366)	3.64	3.62	3.85	3.46	3.38	3.58
DuPont (*n* = 312)	3.34	3.19	3.14	3.14	3.14	3.20
Monsanto (*n* = 221)	2.82	2.77	2.79	2.72	2.67	2.70

Note. Scale was 1 = *Distrust*, 2 = *Slightly distrust*, 3 = *Neither trust nor distrust*, 4 = *Slightly trust*, 5 = *Trust.*

[a]Calculated by averaging the means of each communication topic.

Table 3

Respondents' Mean Levels of Trust for the Organizations

	Integrity	Competence	Goodwill	Overall Trust
HSUS (*n* = 343)	4.03	4.03	3.98	4.01
WWF (*n* = 364)	4.00	3.98	3.97	3.98
EWG (*n* = 101)	3.86	3.86	3.60	3.77
Extension (*n* = 111)	3.75	3.79	3.61	3.72
AFB (*n* = 177)	3.73	3.74	3.58	3.69
Sierra Club (*n* = 260)	3.71	3.71	3.63	3.68
Greenpeace (*n* = 335)	3.67	3.67	3.61	3.64
Farmers & Ranchers (*n* = 128)	3.67	3.71	3.50	3.63
CFI (*n* = 76)	3.73	3.72	3.42	3.62
EPA (*n* = 407)	3.57	3.61	3.39	3.52
USDA (*n* = 438)	3.53	3.60	3.38	3.50
PETA (*n* = 366)	3.40	3.53	3.42	3.45
FDA (*n* = 463)	3.42	3.52	3.28	3.41
DuPont (*n* = 312)	3.17	3.50	3.17	3.28
Syngenta (*n* = 61)	3.23	3.27	3.03	3.18
Monsanto (*n* = 221)	2.72	3.22	2.73	2.89

Note. Semantic differential items ranged from 1 = *Dishonest, Unfair, Immoral*, etc., to 5 = *Honest, Fair, Moral*, etc.

Objective 4: Describe the relationship between the public's trust of these organizations and trust of the organizations' communications, and as well as between the public's trust of the organizations and the public's knowledge of the organizations.

The relationships between trust of an organization and trust of its communications were statistically significant for every organization in the study (Table 4). Using Davis's (1971; as cited in Miller, 1998) descriptors for relationship strength, six of the relationships were very high, with the relationships being strongest for Monsanto (r = .86), PETA (r = .77), and EPA (r = .74). The three weakest relationships were moderate in strength, which were for Extension (r = .48), CFI (r = .45), and EWG (r = .37). The remaining seven were substantial. The relationships between trust of the organization and knowledge of the organization were not as strong. Only six of the correlations were statistically significant, with those relationships being low in strength. The organizations with statistically significant relationships between trust and knowledge of the organization were for Syngenta (r_τ = .25), Sierra Club (r_τ = .17), PETA (r_τ = .13), Greenpeace (r_τ = .15), WWF (r_τ = .12), and HSUS (r_τ = .12). The relationships for the remaining organizations were negligible in strength.

Table 4
The Relationship between Trust of an Organization and Trust of an Organization's Communications, and the Relationship between Trust of an Organization and Knowledge of the Organization.

Trust of Organization[a]	Trust of Organization's Communications[b]	Knowledge of Organization[c]
Monsanto (*n* = 221)	.86*	.04
PETA (*n* = 366)	.77*	.13*
EPA (*n* = 407)	.74*	.02
Greenpeace (*n* = 335)	.74*	.15*
DuPont (*n* = 312)	.72*	.08
USDA (*n* = 438)	.70*	.06
Sierra (*n* = 260)	.69*	.17*
FDA (*n* = 463)	.69*	.05
Syngenta (*n* = 61)	.67*	.25*
WWF (*n* = 364)	.63*	.12*
HSUS (*n* = 343)	.59*	.12*
Farmers & Ranchers (*n* = 128)	.55*	.04
AFB (*n* = 177)	.55*	-.02
Extension (*n* = 111)	.48*	.03
CFI (*n* = 76)	.45*	.10
EWG (*n* = 101)	.37*	-.03

[a] Semantic differential items ranged from 1 = *Dishonest, Unfair, Immoral*, etc., to 5 = *Honest, Fair, Moral*, etc.
[b]Scale was 1 = *Distrust*, 2 = *Slightly distrust*, 3 = *Neither trust nor distrust*, 4 = *Slightly trust*, 5 = *Trust.*
[c]Scale was 1 = *Not at all knowledgeable*, 2 = *Slightly knowledgeable*, 3 = *Somewhat knowledgeable*, 4 = *Moderately knowledgeable*, 5 = *Extremely knowledgeable*

Conclusions

Individuals are known to make decisions about agricultural and natural resource issues, whether informed or misinformed on the topics (Brossard & Nisbet, 2006). Therefore, it is important to understand not only what organizations are communicating about these topics, but how well these organizations are known and trusted by the public. To gain this understanding this study explored how well organizations, from a variety of perspectives, were known and trusted.

The results showed that respondents were most aware and knowledgeable of governmental organizations, particularly the FDA, USDA, and EPA. However, trust in the

communication of these organizations was neutral to slightly positive, and overall trust was also neutral for the governmental organizations. The neutral evaluation fit with the neutral evaluation of government source credibility in the Ruth (2015) study results regarding genetically modified food. This may indicate that the history of interactions the respondents have had with these government entities had not always been favorable as possible, which potentially decreased the trust in the organizations (Kim et al., 2009). Extension, while also a government organization, did not have high awareness among the respondents. Those who were aware and knowledgeable of Extension indicated that Extension's communications were among of the most trustworthy, especially when communicating about agriculture. It is possible that when communicating Extension was able to reduce uncertainty and provide predictable and reliable actions, more so than their other government counterparts (Tschannen-Moren & Hoy, 2000). This may be due to the more personal and localized services offered by Extension.

Aside from Extension, communication from non-profit organizations was the most trusted, which is similar to the Auger (2011) results indicating a halo effect for non-profit organizations when no negative information is available about the organizations. When looking at specific communication topics, the Environmental Working Group's communication was the most trusted on topics of the environment and food safety; Communication from the World Wildlife Federation was most trusted on the topic of animal welfare; Lastly, when thinking about nutrition, respondents trusted communication from the Center for Food Integrity the most. Additionally, those organizations with overall trust in communication scores representing *slightly trust* or higher were all non-profit organizations, with the exception Extension. Aside from PETA, all non-profit organizations ranked higher in overall trust than the for-profit organizations and governmental organizations, except Extension. The higher levels of trust

among non-profit organizations may be reflective of organizational structure of non-profit organizations. Non-profit organizations operate either on charitable support or through the support of their members or communities. The ultimate success of a non-profit relies on their ability to keep promises and act in favor of their supporters' best interests (Kang & Hustved, 2014). The lower levels of trust in for-profit organizations compared to government organizations and non-profit organizations is consistent with the results of Irani et al. (2001) and Auger (2011), but not with the results of Ruth (2015), which indicated comparable levels of source credibility between government and for-profit organizations.

The relationships between trust of the communication and overall trust of the organization were found to be substantial to high for the majority of organizations. Interestingly, the three organizations whose communications were trusted the most (Extension, CFI, EWF) were found to have the weakest relationships between trust of the communication and overall trust. West and Turner (2007) indicated that individuals are more likely to believe communication from an organization they trust.

Overall, the results of this study indicate that knowledge is not enough to affect trust of a source. Even though agricultural knowledge is assumed to make informed decisions (Frick et al., 1995; Meischen & Trexler, 2003; Powell & Agnew, 2011), knowledge does not appear to have a strong link to trust of the organizations that are communicating about agricultural and natural resources issues based on the results of this study. Trust of that organization, however, does appear to be linked to trust of the organization's communications. This is important in cases where the members of the public do not actively engage in agricultural and natural resources issues and instead rely on their trust of science-related organizations to help shape their opinions and decisions (Brossard & Nisbet, 2007). Even if an organization is not actually trustworthy,

members of the public who perceive the organization to be trustworthy are still susceptible to allowing the organization to shape the individuals' opinions. Ideally, members of the public would be informed about all agricultural and natural resources issues affecting their lives, but pragmatically individuals will continue to depend on sources of information they trust to help shape their opinions and decisions. This study took a step toward understanding which organizations members of the public are likely to believe regarding agricultural and natural resources issues.

Recommendations

As the agricultural industry continues to struggle with a lack of knowledge and awareness members of the public have for agricultural and natural resources issues, it is important that the awareness, knowledge, and trust of organizations communicating about agricultural and natural resource issues continue to be assessed (Frick et al., 1995; Meischen & Trexler, 2003). By understanding levels of awareness, knowledge, and trust the industry can better understand how to improve communications and consumer understanding in the future.

Efforts should specifically be made to improve the awareness and knowledge of Extension. Extension was found to be highly trusted among those who were aware and knowledgeable of the organization. While knowledge was not a good indicator of trust, a complete lack of knowledge and awareness would prevent trust in an organization because members of the public will not even know the organization exists. With high levels of trust, Extension is well positioned to communicate to the public about agricultural and natural resource topics and issues from a research perspective. State Extension services should work to identify how they can best reach the public audiences in their states who are currently being missed.

For-profit organizations and government organizations, aside from Extension, tended to have lower levels of trust than non-profit organizations. Government organizations should work to improve trust among the public through consistent and reliable actions. Government organizations are well positioned to reach a lot of people with information about agricultural and natural resource topics because of their high levels of awareness, but to do so successfully trust must first be improved. For-profit organizations should also consider their role in educating the public about agriculture and natural resource topics. Some for-profit organizations, such as Monsanto, DuPont, and Syngenta, may not consider the general public to be part of their target audience. However, members of the public have the ability to influence the organizations through policy-related behaviors, such as voting, and personal purchasing decisions.

The scope of this study limited the number of organizations that could be included. Future research should address additional organizations involved in communicating about agricultural and natural resources issues. Additionally, a qualitative study may be beneficial to gather a greater understanding of what is influencing respondents' perceptions of trust in relation to agricultural and natural resource organizations. From an organizational perspective, completing a case study of an organization undergoing a concerted effort to increase trust among the public is also recommended.

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More Than Just Green

Abstract

Marketing ability is limiting the profitability and expansion of Kansas garden centers which spend the majority of advertising dollars on traditional media. However, social media is a free or low-cost advertising platform that can be an effective method for not only understanding consumers but also developing profitable relationships that produce loyal customers and brand advocates. The purpose of this qualitative study was to explore the strategies and experiences of stakeholders of mid-western garden centers as they use social media to market. Findings from eight in-depth interviews indicate garden center stakeholders believe they are practicing relationship marketing through their e-newsletter and Facebook accounts. However, strategic planning is limited to an e-newsletter, their marketing efforts show characteristics of one-way communication, and strategic measurement is absent which could be hindering the formation of profitable relationships and stagnating return on investment. Owners, employees, and customers all place high importance on educational content shared via social networks, but garden center employees and owners approach educational content as a sales tool instead of a relationship management technique and ignore the needs and desires of their customers. It was recommended garden center owners and employees implement relationship marketing techniques based upon strategic measurement and planning to increase the quality of their educational content and produce loyal brand advocates.

Keywords: Relationship marketing, social media marketing, green industry, qualitative

More than just green: A qualitative study about online relationship marketing in the green industry

Introduction

One factor limiting the expansion of garden centers and nurseries within the Great Plains region, which includes Kansas, is marketing. Garden centers spend the majority of advertising dollars, 4.6% of total sales (Hodges et al., 2011), on Yellow Pages and print media (Behe, Dennis, Hall, Hodges, & Brumfield, 2008; Ekanem et al., 2000), but different market segments require different marketing efforts and mass media advertising is expensive and lacks the impact of word of mouth (WOM). Marketing campaigns via new media are free or lower-cost, and if used correctly, could lead to further promotion. The role of social media in a company's overall communications program can have significant business results if implemented correctly; furthermore, it can be used to accomplish three goals: building awareness, increasing sales, and building loyalty (Castronovo & Huang, 2012; Paine, 2011). Social media allows companies to communicate directly with a target audience while allowing customers to communicate with other customers. For this reason, social media is considered a hybrid-marketing tool (Mangold & Faulds, 2009) through which businesses gather essential information about consumers to differentiate and market products while reducing advertising expenditures (Bolataeva & Cata, 2011). Such benefits can be "especially advantageous for smaller to medium-sized firms in the consumer products and services industry, which oftentimes lack the resources necessary for employing traditional forms of advertising" (Castronovo & Huang, 2012, p. 117).

Measuring the Impact of Social Media Campaigns

The long-term impacts of a social-media marketing program are not always immediately measureable (Yu et al., 2011), because it consists of multiple channels with many influences (Fagerstrom & Ghina, 2010). Measurement tools have been slowly advancing (Duncan, 2010) to

measure the ability of social media to generate positive buzz, increased awareness, increased sales, or increased loyalty (Castronovo & Huang, 2012). The current benchmark for measuring generated buzz and awareness on social media is engagement, which is generally viewed as "a visitor taking some action beyond viewing or reading...commenting, registering, downloading, retweeting, and so on" (Paine, 2011, p. 60). The level of engagement on social media indicates the consumers' level of interest in the online presence of the organization. Therefore, engagement is an important first step in building a relationship between customers and a brand (Paine, 2011). Tracking and measuring engagement levels can help identify if businesses are listening to customers or simply communicating in a one-way dialogue (Paine, 2011).

Relationship Management Theory

The theoretical principles of relationship management theory served as a platform for this study. Building upon Grunig's (1992) work on Excellence in Public Relations, Ledingham and Bruning (2000) recommend organizations approach public relations as a two-way symmetrical approach "that emphasizes building and maintaining relationships" (p. 65). In 2003, Ledingham further developed a framework for public relations that incorporated four key relational perspectives: 1) recognizing the pivotal role relationships play in public relationships; 2) viewing public relations as management of relationships; 3) identifying various types of public relationships with organizations and its influential characteristics; and 4) the construction of models for organization-public relationships that leave room for relationships, their processes, and the positive and negative consequences of those relationships.

Measuring the Relationship on Social Media

Relationship marketing encompasses multiple stakeholders and refers to the "long-term, cost-effective exchange relationships with [stakeholders]" (Boone & Kurtz, 2013, p. 18). Social

networking sites are paramount for forming and maintaining customer relationships (Waters, Burnett, Lamm, & Lucas, 2009), and can build "loyal, mutually-beneficial relationships with both new and existing customers" (Boone & Kurtz, 2013, p. 346). Developing relationships and creating brand advocates should be the primary objective of social-media marketing (Young, 2014). Measurement of key components of consumer relationships includes the ability to influence each other, trust and integrity, satisfaction, mutually beneficial, symbiotic relationships, and a concern for each other's wellbeing. Symbiotic relationships built upon a shared concern for each party is the pinnacle of relationship marketing and measurement tools must be enacted in order to obtain this level of relationship with consumers (Pain, 2011).

Purpose of the Study and Research Questions

Relationship management theory and social media has been broadly studied, but there is a gap in the literature pertaining to social-media strategy and the green industry. The purpose of this study is to explore the strategies and experiences of stakeholders of mid-western garden centers as they use social media to market their businesses. The following research questions guided this study:

RQ1: What new media strategies are being implemented in the marketing of garden centers?

RQ2: What are stakeholder perceptions regarding customer interaction with new-media content?

Methods

The method of data collection for this exploratory, qualitative study was in-depth, semi-structured interviews, because they are an effective method for gaining an increased understanding regarding a participant's experiences (deMarrais, 2004). In-depth interviews, by

nature, allow the researcher a framework or structure to conduct the interview with the freedom to explore relevant issues to the participant (Legard, Keegan, & Ward, 2003). Based upon the recommendations of Creswell (2007), Flick (2009), and Krueger (1998) the interviews were guided by the following principles: lasting 60-90 minutes in length; consisting of open-ended questions; using increased in specificity as the interview progressed; and following the opening, introductory, transition, key, and ending principles. Questions were initially broad in scope and narrow in specificity, because a researcher "should ask unstructured questions first and introduce incr3eased structuring only later during the interview to prevent the interviewer's frame of reference being imposed on the interviewee's viewpoints" (Flick, 2009, p. 151). All questions and designed prompts were evaluated and approved by a panel of expert for face validity.

A purposively-selected list of 23 garden centers was generated by a state Extension specialist with expert knowledge of existing Kansas garden centers. Facebook engagement rate was used to identify high performing and low performing garden centers on Facebook. In order to accurately measure and compare the engagement rate of one Facebook page to another, Smitha's (2013) formula was used which is: engagement = (likes + comments + shares) / total fans. The engagement rates were averaged over the previous sixty days and metro and non-metro garden centers were ranked from highest to lowest. This resulted in a sample of four garden centers with one metro and one non-metro garden center performing average in Facebook marketing and one metro and one non-metro garden center performing poorly on Facebook.

Eight interviews were conducted with six participants being employees or owners and two participants consisting of garden center customers. The participants at each garden center included the owner and the employee most responsible for social media content. After the interviews, participating garden centers were asked to make a Facebook post to recruit volunteers

for the study. Participating customers were compensated for their time with a $25 gift card to the garden center paid for by the research team. Three of the four garden center employees posted the invited on the garden center Facebook account. One metro and one non-metro participant responded and participated in the study.

Interviews were transcribed by the researcher and a professor's assistant and were entered into NVivo10 for coding and analysis. Glaser's (1965) constant comparative method assisted in categorizing participating responses into relevant major themes. The constant-comparative method allows the researcher to identify themes that occur in a theoretical fashion and to develop in a natural way from the participants' responses. In this way, the researcher becomes the research instrument by using his or her direct experience with the interviews to identify appropriate commonalities between responses (Flick, 2009).

Credibility, reliability, and transferability are essential components of a qualitative study, and the onus is on the researcher to demonstrate the findings result from data and not subjectivities (Shenton, 2003). All interviews were recorded and transcribed by the research team. All participants were debriefed by a researcher to ensure written data was synonymous with participant perception. Although in-depth interviews can yield rich and meaningful data in exploring the experiences of participants, caution should be used in generalizing the findings beyond the specific units of analysis under specific situations in which they were observed (Flick, 2009) which can be transferred to similar businesses. IRB approval was given for the study, and participants were assigned pseudonyms to protect their identity.

Findings

RQ1: What New Media Strategies are Being Implemented in the Marketing of Garden Centers?

Participants were asked questions pertaining to the thought process, planning, and scheduling of marketing content. Participant responses yielded the following themes: 1) New-media marketing focuses on building relationships and providing educational content. 2) Strategic planning is limited to e-newsletters

New-media marketing focuses on building relationships and providing educational content.

A desire for relationships.

Participants from every garden center identified some desire to use new media to foster meaningful relationships with customers that would translate into increased profit potential. Brad spoke of how he tries to leverage a personal tone through the e-newsletter. "I think it's more effective when content is not just a bunch of bullet points or descriptions…When it's kind of connected with somebody on a personal level…people connect more with [people] than they do a bunch of features." Carl also expressed a desire to step away from traditional advertising and tell human interest stories in an attempt to build a relationship and said, "Telling personal stories sets us apart from the competition or at least the big box stores."

In regards to how new media can help develop relationships with her customer base, Annie mentioned, "there's a loyalty that you can build. They feel like we're here and we're available to help." Andy had similar sentiments and said, "You've got to reach the person in a way that they know you truly care about their success."

Don't sell. Build a relationship.

Most garden center participants agreed trying to directly sell to the consumer through new media was not a beneficial practice and should, in most cases, be avoided. Brad said, "A business trying to sell stuff [on Facebook] is in the way. That's not what their account is for…I don't know that I'm going to see [Facebook] being used a lot more [for business]. Diana

mentioned personal posts "do better than when I try to sell something…every time I try to sell something I get slapped down. Stay away from direct selling…Encourage people to come in."

Carl also views his marketing efforts as a relationship management tool and said, "it's trying to build a connection and build a relationship…You can do that one-on-one with a person or through social media." Chris said, "if it's something I would consider an advertisement, I wouldn't expect much engagement with customers."

E-newsletters are the medium for relationships.

Participants at three of the four garden centers preferred e-newsletters for building relationships with customers. The one garden center employee that did not mention an e-newsletter did not have one. Chris and Carl mentioned relationships are more effectively built through the e-newsletter than through social media platforms like Facebook. Carl said, "You need to be doing an e-news and just tell stories."

Market to the consumer through educational and valuable content.

All stakeholders identified the value of content is the most important aspect of any post and all content should provide value to the customer. Andy mentioned the necessity of valuable content and said, "There's no substitute for [good content]…People won't give you their email if they think you're just going to send advertising to them." Annie alluded to the concept that good content has the end result of educating the consumer. "Ultimate success," she says, "would be for customers to be informed about what we have and what to do."

Participants hoped educating customers will produce a profitable relationship. Brad said, "We don't [educated the consumer] for the sake of education. The only reason we're [educating them] is to make money. Not trying to sound greedy, but we're not Extension." Chris mentioned he tries to, "provide information to customers. If we've got an unexpected frost coming…or bag

worms are starting to hatch…trying to relay that information to people." Diana posts "things you should be doing with gardening."

Strategic planning limited to the e-newsletter.

E-newsletter strategic planning.

All participants who used an e-newsletter believed it was an integral part of their marketing strategy. Brad stated, "We talk about [the newsletter] as a group and try to come up with an outline…[that] will do something for business." Chris spoke of a consistent release strategy and stated, "E-news goes out on Wednesday. [We're] trying to stay fresh in the customer's mind about the upcoming weekend. I think if we go earlier than that, they get forgotten about by the weekend." Annie mentioned she uses more strategy in regards to her e-newsletter than on her Facebook posts, saying, "I do have a lot more strategy that goes into my newsletters than into my Facebook posts."

Social media posting is reactionary and lacks strategic planning.

All stakeholders identified a lack of strategy and viewed social media as reactionary in nature with little-to-no strategic planning needed. Brad mentioned, "Social media…needs to be spontaneous." Although Annie identified she spent considerable time evaluating the analytics of her e-newsletter she mentioned, "There isn't a process [for social media]. Most of the [postings] aren't strategized." Chris said, "We really don't have a well-defined strategy" and Andy said, "there's no strategic planning. Diana mentioned, "there is no strategy." When asked about an editorial calendar she replied, "What's that?"

Garden centers are not learning from customers online.

All participants identified communication with customers and fostering a relationship through Facebook or the e-newsletter as vital to differentiating their business from large retailers.

However, participants could not identify specific examples regarding what they have learned about their customers. Annie said, "I've really never sat down and thought about what I learn about my customers online." Brad, Chris, and Andy had similar responses. When asked what he has learned about his customers from Web 2.0, Brad replied "nothing."

RQ2: What are Stakeholder Perceptions Regarding Customer Interaction with New-Media Content?

In order to assess this research question, garden center employees and owners were asked about customer interaction via new media. Additionally, two garden center customers were asked about their experiences with the garden centers on new media. These responses were combined and the following themes emerged: 1) Customers interact with garden centers by sharing their experiences and engaging with content; 2) Customers desire meaningful, relevant, and educational content; 3) Customers gather information from variety of sources and reward expertise with loyalty.

Customers interact by sharing their experiences and engaging with content.

Customers share positive experiences with garden centers and friends

Both customers mentioned a history of praising the garden center for great customer service by creating a post on the wall of the garden center. Donna said, "I shared a post before when I first liked them…When we were in the middle of doing our lawn and they had been very helpful." Cassie recalled one particularly hot day visiting the garden center and said, "I got exceptional customer service one day…I wrote on [the Facebook page] an atta-boy."

Participants at half of the garden centers mentioned customers will often post on the Facebook page when they have either a positive or negative experience. Diana alluded to how customers will leave positive feedback when they are either happy with the quality of a purchased product or with the level of customer support they received. She said, "people will

comment about the great service. So, I'm getting feedback from the customer on what my level of service is." Annie also identified customers will post praise when products perform well, saying, "I remember one of our customers posted pictures of her limelight hydrangeas that were doing super amazing and looked awesome."

Customers are selective with engagement.

Both customers identified specific intentions regarding how they engage with posts. Donna stated, "The only reason I shared [the post] to someone's page was they were doing what we were doing. [I said] Check this out, it may help you too…I believe they bought it." Cassie mentioned she would share a post, "if it's something that is a pretty good deal I'll share that." She also said, "if the page had something on there about drought resistant flowers, I'd share that with people because it's just good information to have."

Both customers also identified several reasons for commenting on posts. Donna said, "my husband commented [on a post]. They were doing a give-away or something like that. He commented on it and said I should do it." Cassie mentioned commenting on Facebook posts helps her feel like she is part of the community and only does so "when I have something worthy to say."

Customers desire meaningful, educational content and expect occasional advertisements.

Educational content.

Participants at all the garden centers and both customers mentioned a desire for educational content. Andy mentioned a perceived strength of the new media of the garden center is that he "can help you be successful because we know this plant will work." Annie also mentioned a positive viewpoint of the educational content posted on new media and said, "I think people enjoy the educational part of it." Brad views new media, mainly the e-newsletter, as

a way to disseminate educational content and views it as, “a great opportunity for us to educate people online.”

The customers also identified a desire for meaningful content that either educational or relational in nature. Speaking of the e-newsletter, Cassie state, “[Carl] gives value and reason for things that he’s doing. Rather than just here’s the new plants…come in and buy them. He tells you where to grow them, how to grow them, and what they’re good for.” Although Donna describes her use of Facebook as, “mostly like the Yellow Pages,” she did mention she would value educational content and she would, “Spend more time looking at it.”

Selling is acceptable.

While all of the employees and owners were hesitant to directly post advertisements or sale information on their Facebook page, the two customers desired some level of advertising. Cassie spoke of advertising on Facebook and said, “it’s perfectly ok for [garden centers] to advertise the time is running out on our half price daisy sales and leave it at that. There’s a difference between delivering information and having a 4x6 [mailer].” Donna also mentioned the desire to see some forms of advertising and said, “a little would be good. A lot of it I might skip over, but it would be nice to see it…just don’t blow up my news feed.”

Customers are actively searching for information and reward it loyalty.

Helpful sales staff produce customer loyalty.

Speaking of her experience at the garden center, Cassie stated, “I haven’t talked to one person who couldn’t answer all of my questions. When you go to Wal-Mart, they can’t even spell flower…Social media got me in the door, but the people [and their service] kept me there.” She added, “if you’re going to pay more to support a local merchant…Having that person explain how to care for it, what to look for, is huge.” Donna also identified that the

knowledgeable staff were the reason she only visits Diana's garden center, saying "[We visit] because of Diana. Every time we've gone in there she's been able to answer our questions or send us in the right direction."

Seeking and searching for information.

Although customers want to visit the garden for specific questions, the two customer participants indicated they will use online tools such as Pinterest, Google, and email. Describing how she would find information related to gardening, Cassie stated, "I'll email Carl." And even though Donna mentioned she believes she gets better help when she visits the garden center to ask questions, she prefers the Internet. She described how she is trying to find information about how to grow herbs for the spring, "I start with Pinterest. It used to be Google, and now it's just Pinterest. Pinterest is organized in a way that makes sense in my head. It's obviously, not everything is true. It sends you to a lot of good blogs."

Conclusion, Discussion, Recommendations

Stakeholders believed they were involved in a relationship to produce loyalty and separate the family-owned businesses from big-box stores that are coming into their town and threatening the store. Participants believed e-newsletters were the ideal medium to create meaningful customer relationships and loyalty which is supposed by the work of Young (2014). Loyalty is one byproduct of effective relationship marketing, and these efforts align with the findings of Ledingham and Bruning (2000). Yet garden centers in this study are not tracking this perceived loyalty and therefore cannot measure it. As such, they are not allowing the customer to give vital feedback or stay involved which is pivotal to garden centers (Hodges et al., 2011) and is key to relationship marketing (Paine, 2011).

Garden center owners and employees mentioned providing educational content to consumers through the e-newsletter or through social media. Customers desired educational or relevant content, and creating such content could increase engagement or interest in the posts. This aligns with Paine (2011) who said customers have many marketing channels to choose from and will reject messages depending on if they find it useful, interesting, or relevant.

Owners and employees identified content is usually written with the specific intent to sell a product in the store instead of being created to fill the needs of a consumer. Although nothing is inherently wrong with this approach, this could be why relationships seem stagnated in the lurking or casual engagement stage and not yielding the profits the garden centers owners or employees are hoping for. Stakeholders are not identifying and delivering the educational content consumers want to see which could also be the reason for a low engagement level on Facebook. This could be further evidence that the garden centers are actually participating in a one-way asymmetrical communication style and not a two-way symmetrical communication style that is used when seeking to develop a relationship.

Absent Strategies

Paine (2011) stated business or communication goals related to new-media marketing should focus on increasing sales, increasing engagement, and/or improving the relationship of stakeholders. Garden center employees seemed to only focus on increasing sales. However, the sales which Paine mention are long-term and result from increased WOM marketing and increased brand loyalty derived from meaningful relationships. Therefore, even though garden centers had one key aspect of business objectives, stakeholders were wrongly focusing on immediate and direct sales even though they had no way to track this at the point of sale station.

In order to understand success in new-media marketing, the revenue and the relationship with consumers must be continuously measured (Paine, 2011). However, employees lacked the ability to perform in-depth analytics in regards to Facebook or other new media comments or likes nor did they identify what types of posts work best or days or times to post. Although they understood pictures received the most engagement, they weren't actively measuring the trends of photos. This lack of analytics could be hindering the potential for successful new-media marketing campaigns because engagement is a key indicator of interest in a brand and online activities (Paine, 2011).

Garden center employees indicated they are not creating measurement programs or methods to learn about the needs, desires, and interests of their customers. This lack of customer research goes against the recommendations of Boone and Kurtz (2013) that state businesses should view Facebook as a data collection instrument that gives them valuable tools for target marketing. Additionally, stakeholders that are not learning about customers will never know what customers find to be relevant (Paine, 2011). Since a key aspect of new media is learning about customers in order to further differentiate products and services and develop deeper relationships (Bolataeva & Cata, 2011), garden centers are missing a key opportunity to engage. The lack of engagement measurement and data mining is possibly hurting garden center sales and loyalty.

Participants indicated there was no long-term vision or effort to link social media to existing marketing campaigns on traditional media. This inability to draft a social media strategy contrasts the work and recommendations of Hanna, Rohm, and Crittenden (2011), Paine (2011), and Young (2014) which recommend a company clearly identify a strategy regarding what it desires to share and contribute to the customer before it can be profitable. Stakeholders identified

they did not see social media to be profitable. However, businesses should not expect results from their social media marketing efforts until they develop a clear strategy for making it profitable.

Employees and owners believed social media should be spontaneous and not driven by a specific, planned strategy. Unlike traditional media, social media can be posted at any time with minimal financial cost or resources. Since the resources required to post to new media is minimal and no direct competition exists, it could be possible that participants do not feel a need to strategically plan something that is so readily available to them and free. However, garden center employees and owners are not competing for an advance time slot for a radio or back page advertisement through the newspaper, they are competing with a highly-selective audience that can tune out social media messages because, as Paine (2011) states, there are many channels available to them.

Although participants stated they are using relationship marketing principles, they are not dedicated to learning about the customer and are stagnating the development of more profitable relationships. Since relationship management needs to have an active consideration for the customer, garden center efforts contrast the work of Blanchard (2011) which stated in order to develop close customer ties and understand how to build a relationship, marketers must understand the preferences and behaviors of consumers. The practice of relationship marketing identified by the participants focused on telling personal stories which not actively listening to target markets at any stage of the process which can help improve product offerings and customer experience (Paine, 2011). This provides further support for the idea that employees are lacking the strategy required to move the customer along the engagement continuum. It appears

garden centers, through online marketing, are stuck on the casual intensity of engagement which is where most relationships end (Paine, 2011).

The garden center employees offered no indication of using social media to become a benefit to the customer, yet their aim was to develop a loyal customer base. In doing so, the relationships were not built on a foundation of exchange. This contrasts the recommendations of Boone and Kurtz (2013).

Perceptions Regarding Customer Interaction with New-Media Content

Garden center employees and customers said fans interact with garden centers on Facebook. Specifically, this is accomplished by sharing positive experiences on the page when they are either delighted with the level of customer service they receive or with the performance of the products they purchase. Customers also share posts when content is relevant to others in their social network. This desire to share relevant content adds to the findings of Kietzmann et al. (2012) who stated users interact with one another by sharing content. However, garden centers are not strategically planning content or seeking out consumer preferences. Therefore, despite Facebook, users' desires to share content with other users, the lack of relevant content that is meeting consumers' needs could be why garden centers are not seeing the engagement they originally anticipated. In regards to the type of educational content consumers are looking for from garden centers, they preferred relevant and brief videos. This aligns with the findings of Yu et al. (2011) which stated video is more enticing for new media users.

Customers desire meaningful and relevant content and are actively searching for more information. If consumers find information through personalized contacts at the garden center, they will reward that source with long-term customer loyalty. Customers identified the first place they search for education content on gardening is the Internet, specifically Google and Pinterest.

While previous generations turned to the YellowBooks to look for stores, modern-day consumers are searching for information online through various search engines and social media like Pinterest (Constantinindes, Lorenzo-Romero, & Gomez-Boria, 2008). Even though more and more garden center consumers are going online to find more information, garden centers did not mention advertising on Google, using ad words, or adapting the social media pages to increase searchability. This could be a potential issue for the garden centers in the future as larger commercial operations introduce strategic social media marketing campaigns.

Although Facebook users approach Facebook from a relational standpoint (Boone & Kurtz, 2013), customers identified they wanted to see some relevant advertisements. However, garden centers believed customers did not want to see any form of advertisement and identified a decreased engagement when they did try to sell. This could be because they are not actively listening to what consumers are wanted or identifying the online times they are active.

Garden center owners seem to be spending time and resources on new media because they identified it fills a need based upon a false perception of what the media can do. They indicated a lack of trust in social media which could hinder their desire to invest it. Since new media requires considerable time investments and some allocated resources, it is not surprise that garden centers believed social media is unfruitful. However, continuing to use a marketing channel in a matter, and an objective, that is not designed for will only further frustrate stakeholders, use more time, and hinder them from allocating those resources in other areas like customer service or other forms of marketing. There were no clear differences between the perceptions of metro and non-metro garden center employees, owners, or customers in regards to how they perceive customer interaction via new-media channels.

Businesses and organizations should focus on building meaningful relationships with public stakeholders. The emphasis of relationship management theory is on building relationships will all relevant stakeholders and "is based less on successful business performance and more on demonstrated commitment to and support of community" (Ledingham & Bruning, 2000, p. 138). This study adds to the body of literature by concluding a disregard for relationship management strategies can stagnate the development of profitable relationships with online consumers.

Recommendations for Practitioners

Several recommendations are offered to garden center employees and owners based on these findings. Since more and more customers are looking at garden centers online for their purchases (Behe et al., 2008), garden center stakeholders should consider using principles of relationship management and offering customers an exchange relationship in order to move them along the engagement continuum. The exchange relationship is a key aspect of relationship marketing and this allows the garden center to learn from the customer. By listening to and learning from the customer, employees and owners will be able to better understand customer desires and needs. Understanding customer desires will allow garden center employees and owners to improve the quality of educational content being shared via new media. The more valuable a business' content is on social media, the more helpful and beneficial its online presence may seem. Linking the helpful garden center that excels at customer service and delivering customer delight to a social media account could increase WOM marketing which has been shown to be profitable and, in turn, may help garden centers generate more revenue from social media.

Recommendations for Social Media Marketers

It is recommended social-media marketers strategically plan posts or campaigns, in advance, the same way they do other forms of successful traditional advertising like radio, newspaper, and television. Additionally, it is recommended practitioners view strategic planning and measurement as bound to one another and unable to be separated, because they maintain a cyclical cause and effect relationship necessary for online marketers. This study also recommends measurement be considered a vital and integrated part of strategy, especially in regards to relationship marketing. Measurement should be conducted in order to move the customer to the loyalty phase of customer engagement and to an advocacy level of relationships. This study recommends a slow, methodical use of social media that is focused on collecting relevant data in order to actively build meaningful relationships that facilitate WOM marketing and customer loyalty. It is recommended communicators not view a sale as the ultimate determinant of success of social-media marketing but the presence of loyal, brand advocate relationships.

Agricultural communications professionals should understand limited resources may exist for the proper implementation of new-media marketing and any such position may, at best, be split among other responsibilities within the organization. Therefore, this study suggests organizations allocate time during leadership meetings to address new-media marketing strategies and how it can be integrated into the daily operations of the business or organization. It is also recommended that, through shared leadership meetings, daily or weekly tasks related to new-media marketing be assigned to relevant stakeholders to make sure social-media is not an afterthought but instead what Mangold and Faulds (2009) identify as a hybrid marketing element.

Recommendations for Teachers and Instructors

Faculty should focus on fostering an accurate understanding of the strengths and weaknesses of social-media marketing for agricultural businesses or organizations. In doing so, faculty will ensure students transitioning into the industry will have sufficient knowledge to create social-media campaigns with the proper objectives. Secondly, faculty should focus on communicating how to create specific social media objectives for a business or organization. Objectives should focus on three measurable characteristics of social media as offered by Pain (2011) and include profit, reputation, and relationship. More emphasis should be place upon the necessity of accurate and in-depth measurement approaches for social media that extend beyond the basic metrics of likes, comments, clicks, and shares. Students must be well-versed in analyzing trends and correlations that give insight into behavior and preferences. Students must be equipped with knowledge and understanding that measurement is not an afterthought of social-media marketing but an integrated, essential, and all-encompassing strategy that guides all objectives, strategies, and tactics, and is never finished.

Future research should focus on consumers' perceptions and preferences in regards to new media. Since educational and relevant content is paramount to consumers, this study recommends research be conducted to identify what content non-metro garden center customers desire. This study also recommends research be conducted that identifies what aspects of relationship marketing are resonating with the consumer. Additionally, future research should be conducted on how the level of consumer relationships affects buying behavior. In addition to measuring the relationship of consumers who follow local businesses on social media, future research should also identify which new media platforms are yielding the greatest return on investment in regards to increased sales, increased reputation, and increased relationships.

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Eastern United States Consumers' Purchasing Intent of Florida Strawberries

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Abstract

Florida strawberry producers have been facing an increase in competition from imported Mexico strawberries in recent years. Local consumers prefer Florida strawberries, but are unaware of the growing season. Additionally, 80% of the product is exported to consumers east of the Mississippi River, who likely do not know when Florida strawberries are available. The purpose of this study was to explore eastern United States consumers' purchasing intent of Florida strawberries in order to develop communication and marketing strategies for Florida strawberries in a competitive market. The Theory of Planned Behavior (TPB) guided the research, and focus groups were conducted in North Carolina, Tennessee, Ohio, Massachusetts, and New York. Participants had positive attitudes toward purchasing Florida strawberries, and past experiences and interactions with others influenced their purchasing intent. Many participants felt that they had little behavioral control over purchasing Florida strawberries, but their purchasing intent was still moderately high. Other strawberry attributes were more important than growing location for purchasing intent. There were regional differences for intent, and states with neutral attitudes and limited behavioral control had lower intent to purchase Florida strawberries in the future. Agricultural communicators and strawberry producers can increase purchasing intent by increasing perceived behavioral control. Making the growing location easily visible on the strawberry labels will make it easier for consumers to purchase the product. Facilitating personal experiences between consumers and Florida strawberries will increase perceived behavioral control, create positive subjective norms, and consumers will develop positive associations with the products.

Key words: *local food, strawberries, theory of planned behavior, purchasing intent, marketing*

Introduction

Consumers have indicated a preference for local food, and the demand for locally grown produce has only increased over the past decade (Becot, Conner, Nelson, Buckwater, & Erickson, 2014; Conner, Colasanti, Ross, & Smalley, 2010; Jefferson-Moore, Robbins, Johnson, & Bradford, 2014). Local foods offer consumers functional and psychological benefits (Nie & Zepeda, 2011). Local foods are viewed as safe and healthy, but also appeal to consumers' emotions by promoting social fairness and conservation of farmland (Keeling-Bond, Thilmany, & Bond, 2009; Onozaka, Nurse, & McFadden, 2004). There has also been an increase in the branding of state agricultural products, such as Fresh from Florida, over recent years to promote locally grown products in out-of-state markets (Onken & Bernard, 2010). Typically, consumers prefer to purchase food grown as close as possible to where they live (Rumble & Roper, 2014), but this is not always an option depending on the growing season of the state (Becot et al., 2014; Conner et al., 2010; Jefferson-Moore et al., 2014). Floridians have agreed they would prefer to purchase Florida-grown strawberries labeled Fresh from Florida, and they have felt that Florida-grown strawberries were of fresher, higher quality compared to imported strawberries (Ruth & Rumble, 2015; Ruth, Rumble, & Settle, 2015). However, Floridians have not been aware of the strawberry growing season in Florida, which has made it difficult to market the fruit (Ruth et al., 2015). Because 80% of the strawberries grown in Florida have been shipped to cities residing to the east of the Mississippi River (Buchanan, 2013; S. Harrell, personal communication, January 24, 2015), there is a need to explore the awareness of Florida's strawberry season in states where the strawberries are distributed. Understanding eastern United States consumers' perceptions of Florida strawberries will help agricultural communicators to create brand awareness and increase demand for the product when it is in season.

California has been the largest producer of strawberries in the United States and produced over two billion pounds of strawberries in 2012 (United States Department of Agriculture-Economic Research Service [USDA-ERS], 2013). Unfortunately, recent drought has largely affected California, and the USDA-ERS (2015) has predicted it will decrease California's agricultural production and lead to increased prices in produce across the country. California may be the largest producer of domestic strawberries, but Florida's warm climate places the state as the number one producer of strawberries during winter months (Boriss, Brunke, Kreith, & Morgan, 2012). The Florida strawberry industry has produced 200 million pounds annually (Mossler, 2012) and contributed approximately $300 million to the state's economy each year (Florida Department of Agriculture and Consumer Services [FDACS], 2013). In recent years, there has been an influx of imported strawberries from Mexico during winter months (USDA-ERS, 2013; Wu, Guan, & Whidden, 2012). Florida's market share of strawberries has decreased, and local farmers have been faced with increased competition (Ohlemeier, 2013). Because the strawberry products hold little differences amongst them, agricultural communicators must determine ways to better promote Florida strawberries in a more competitive market to an audience who may not be aware the product is even available. The purpose of this study was to explore the purchasing intent of Florida strawberries by eastern United States consumers. This study aligns with a call for research to examine potential knowledge gaps that could interfere with communication promoting agricultural products (Doerfert, 2011).

Theoretical Framework

The theory of planned behavior (TPB) guided this study. Researchers have used the TPB to explain an individual's intention and behavior (Ajzen & Fishbein, 1980). According to the

theory, intention is a direct antecedent of a particular behavior. Subjective norms, attitude toward a behavior, and perceived control of the behavior all predict behavioral intent (Ajzen, 2011).

Within TPB, subjective norms describe the influence of an individual's surroundings on his/her intention or behavior. Subjective norms are considered a function of normative beliefs (Eagly & Chaiken, 1993) and describe the impact of social influence on an individual (Ajzen, 1988). Another factor in the TPB is the attitude toward the behavior. Perloff (2014) defined attitude as the "learned global evaluation of an object (person, place, or issue) that influences thought and action" (p. 71). Ajzen and Fishbein (1980) described the attitude toward a behavior as how favorable or unfavorable a person felt toward a behavior. Research has concluded that attitudes that are more favorable indicated a greater likeliness for a behavior to be performed. The final factor of the TPB influencing intention is perceived control of the behavior. An individual must perceive the behavior as something he/she can accomplish in order for intention to be established (Ajzen, 1988).

Researchers have used the TPB to guide a number of different studies related to agriculture and food production (Aertsens, Verbeke, Mondelaers, & Huylenbroek, 2009; Arvola, Lähteenmäki, & Tuorila, 1990; Holt, 2014; Sjoberg, Kim, & Reicks, 2008). Arvola et al. (1999) studied consumer intent to purchase novel cheeses. General attitudes and subjective norms were able to predict consumers' purchasing intent of cheese in general but were not able to predict intent to purchase novel cheese (cheese the respondents were not familiar with). This finding was consistent with previous research that prior experience increased the correlations between attitude and intended behavior (Arvola et al., 1999). Aertsens et al. (2009) also applied TPB to consumer purchasing intent of organic food. The researchers concluded that attitudes toward organic food, as well as perceived behavioral control and subjective norms influenced

consumption of organic food. Moral, or personal, norms were also identified as influencing consumption. Moral norms reflect an individual's belief that he or she is acting in a manner that is either right or wrong (Schwartz, 1973). Aertsens et al. (2009) suggested that moral norms be included in research that examines consumer consumption of organic food products and the TPB.

A study that looked at the purchasing intent of fruits and vegetables found that perceived behavioral control was the most important predictor of intentions (Sjoberg et al., 2008). In addition, attitudes toward consuming the produce was more important than subjective norms regarding the behavior. Holt (2014) examined how different media sources could predict consumers' purchasing intent of local food. The study supported TPB, indicating that attitude, subjective norms, and perceived behavioral control could predict behavioral intentions. When the media channel was controlled, respondents' prior experience with purchasing local food was predictive of their intent to purchase locally in the future (Holt, 2014).

Purpose and Objectives

The purpose of this study was to explore eastern United States consumers' purchasing intent of Florida strawberries. The following objectives guided this study:

1) Describe eastern United States consumers' attitudes, subjective norms, perceived behavioral control, and purchasing intent of Florida strawberries.
2) Explore regional differences between eastern United States consumers' attitudes, subjective norms, perceived behavioral control, and purchasing intent of Florida strawberries.

Methods

Qualitative methodology is often used in research when an issue requires exploration and researchers need to obtain thoughtful insight into a problem (Creswell, 2013). Focus groups were

used to fulfill the purpose of this research because there is a limited understanding of how eastern United States consumers perceive Florida strawberries (Powell, Single, & Lloyd, 1996). Focus groups have been a useful tool to allow participants to discuss ideas in a group setting (Morgan, 1988). This methodology can also collect a range of data quickly because focus groups consist of multiple participants. Additionally, participants' interaction with one another allows researchers to evaluate how commonly a group shares an attitude (Robinson, 1999). A disadvantage to using focus groups is that the findings are not generalizable to the population of interest (Robinson, 1999), but this study was more interested in gathering deeper insight into eastern United States consumers' purchasing intent of Florida strawberries than generalizing the results.

The population of interest was eastern United States strawberry consumers (east of the Mississippi River), and participants from the study were selected from five purposively selected states. These states represented five different geographic regions where Florida strawberries were shipped to for sale (New England, Middle Atlantic, South Atlantic, East South Central, and East North Central; S. Harrell, personal communication, January 24, 2015). Focus groups were conducted in Charlotte, North Carolina; Nashville, Tennessee; Columbus, Ohio; New York (Brooklyn), New York; and Boston, Massachusetts in March and April of 2015. Participants did not necessarily live in the cities of the focus groups and may have traveled from nearby towns. The focus groups in Nashville and Charlotte were completed in March, which was close to the peak of Florida's strawberry season. There were two focus groups conducted in each state (10 total). A pseudonym was assigned to each participant for anonymity in the reporting of the results.

A description of the focus group locations has been provided to add understanding to the context of the research and help with the transferability of the findings (Lincoln & Guba, 1985). All of the cities used for the focus groups were in urbanized areas of over 50,000 residents (U.S. Census Bureau, 2010). Charlotte, North Carolina has a population over one million people (U.S. Census Bureau, 2010), and North Carolina-grown strawberries are typically sold between early May and June (North Carolina Department of Agriculture and Consumer Services, 2015). Nashville, Tennessee is home to over 900,000 residents (U.S. Census Bureau, 2010). Tennessee's strawberry season is also short and typically lasts from May until June (Pick Tennessee Products, 2013). In Columbus, Columbus, the strawberry season is also in May and June (Our Ohio, 2015). Columbus has over one million residents (U.S. Census Bureau, 2010). New York, New York had the largest population with over 12 million people living in the area (U.S. Census Bureau, 2010). The New York strawberry season is a little shorter than the other states and falls between late-May and mid-June (Pick your Own, 2015b). The final city used for the focus groups was Boston, Massachusetts, which has a population of over four million (US Census Bureau, 2010). As in New York, Massachusetts produces strawberries for a few short weeks between May and June (Pick your Own, 2015a). North Carolina and Tennessee residents had conservative political ideologies (38.9% and 43.2% respectively), while residents in Ohio, New York, and Massachusetts had moderate political ideologies (37.3%, 35.8%, and 38.1%; Gallup, 2014). The majority of all five states' residents reported frequently eating produce. The highest percent of those frequently eating produce was in North Carolina (59.6%) and the lowest percentage was in Ohio (55.5%; Gallup, 2014). Research has also found that more chain food stores are located outside of inner-cites (Chung & Myers, 1999); New York has typically had few supermarkets, but a variety of bodegas (Gordon et al., 2011).

Each focus group consisted of four to 10 participants, with an average of eight participants per group. Kreugar (1998) recommended that focus groups use six to 12 participants; however, Greenbaum (2000) found that there were no significant differences in focus groups if only four to six participants were present. There were 75 participants total (n = 75) in this study. The majority were white (62.7%, n = 47) and female (58.7%, n = 44). Over 60% of the participants earned an annual income of less than $75,000 (62.7%, n = 47), and more than half were between the ages of 45 and 64 (56.0%, n = 42). There were a total 16 participants in the Charlotte, 17 in Nashville, 16 in Columbus, 12 in Brooklyn, and 14 in Boston (there were two focus groups in each state). The majority of participants in Charlotte (62.5%, n = 10), Brooklyn (66.7%, n = 8), and Boston (71.4%, n = 10) were female. In Nashville 58.8% (n = 10) were males, and 56.3% (n = 9) of the Columbus participants were male as well. The majority of participants in Charlotte (56.7%, n = 9), Nashville (73.7%, n = 14), Columbus (62.5%, n = 10), and Boston (71.4%, n = 10) were white; 60.0%, (n = 9) of the Brooklyn participants were African American. In Charlotte and Nashville, most of the participants earned between $25,000 and $74,999 annually (56.3%, n = 9 and 73.7%, n = 11 respectively) and were under the age of 55 (75.1%, n = 12 and 56.2%, n = 9 respectively). The majority of participants in Columbus earned more than $50,000 a year (60.0%, n = 9) and were under the age of 55 (68.8%, n = 11). Most of the participants in Brooklyn made less than $50,000 annually (58.3%, n = 7), and half of the participants were under the age of 55 (50.0%, n = 6). The largest proportion of Boston participants reported they earned less than $50,000 a year (53.9%, n = 7) and were between the ages of 45 and 64 (71.4%, n = 10).

Environmental triangulation was used to maximize the findings in the study by replicating the focus groups in five different states (Guion, Diehl, & McDonald, 2002).

Researchers use this type of triangulation to determine if findings remain the same in different environmental conditions. The various locations of the focus groups and the fact that not all of the focus groups were conducted during the peak of Florida's strawberry season could have influenced the results of this study (Guion et al., 2002). Additionally, the researchers used member checking to establish the credibility of the research by reading the initial conclusions back to the participants upon the conclusion of the focus groups. Thick, rich descriptions of the findings are provided with the results to aide in the transferability of the study (Lincoln & Guba, 1985). The focus groups were analyzed using a computer software, MAXQDA. Data was evaluated using a priori coding and guided by the TPB. This type of coding is used when a research question is focused and heavily guided by theory (Kuzel, 1999). Attitudes toward purchasing Florida strawberries, subjective norms, and perceived behavioral control of purchasing Florida strawberries were coded along with purchasing intent.

Results

Objective 1: Describe eastern United States consumers' attitudes, subjective norms, perceived behavioral control, and purchasing intent of Florida strawberries.

Attitude toward Behavior

Attitude toward the behavior was identified as participants' attitude toward purchasing Florida strawberries in general. Overall, participants identified a number of positive attributes of purchasing Florida strawberries, including taste and freshness. When discussing whether she would purchase Florida strawberries, Annie of Charlotte said, "I would feel like [Florida strawberries] were fresher, and I guess [they are]. I mean, if you have one to compare with [strawberries from somewhere else], they probably would have a better taste." Maggie from Boston agreed by saying, "The ones from Florida seem to be sweeter."

Participants also believed the strawberries would not have to travel as far to where they lived, and that this was a positive purchasing quality because the price would also be reduced. John from Columbus, best explained this attitude,

> I feel like [it would] be a smart idea for [stores] to sell Florida strawberries because I figure if [they are] getting them from California or from Mexico …, the cost of moving them would be a lot more than just from Florida.

Allen of Brooklyn also identified the distance as a positive attribute of purchasing Florida strawberries. He said he would purchase Florida strawberries because "[they are] going to be fresher because [they are] closer and they can drive them up in a day and a half." These quotes indicated that the distance the strawberries traveled was closely related to the participants' perceptions of price and freshness when purchasing strawberries. Overall, the participants expressed positive attitudes toward purchasing Florida strawberries.

Subjective Norms

Subjective norms for this research were classified as the influence of social interactions and social influences on the participants' intent to purchase Florida strawberries. A number of participants indicated that they would purchase Florida strawberries out of "loyalty to the east coast", as described by Meredith of Brooklyn. Participants also discussed social interactions with people they knew and how that influenced their perceptions of Florida strawberries. Jane from Columbus, explained,

> I do have a coworker who just recently moved here from Florida and I mentioned something about coming [to the focus group] tonight and she said oh, 'I hope they give you Florida strawberries to taste because [they are] really good.' So, [I have] heard really good things about Florida strawberries…So if I saw them, I would probably buy them.

A number of participants also discussed personal experiences they had with Florida strawberries. Frederick of Boston explained that he had been going to Florida for a number of years to visit family and they would pick Florida strawberries together so he "would just buy them for sentimental reasons." Another theme that developed throughout the focus groups was that as participants familiar with Florida strawberries described them to the rest of the group, the other participants began to form positive associations and indicated motivation to purchase in the future. In Boston, Sylvia said, "I am learning a lot tonight." Andy replied, "I never knew so much about strawberries," and Sylvia expressed that she was going to "go to the store now" to see if they were carrying Florida strawberries. Similarly in Brooklyn, Shauna said,

> This [focus group] has been very informative actually because [I have] never paid attention to [where strawberries are grown], I just know that I can go to the store and buy strawberries... [Now]I will pay attention [to where] my strawberries are sourced from.

Perceived Behavioral Control

Perceived behavioral control was defined as the participants' perceptions of whether or not they could actually purchase Florida strawberries in their local area. In every state, participants were concerned about the availability of the product in their stores. In Boston, Maggie said, "You know, you can only buy what [the store] has." Similarly in Nashville, Mark said, "Florida strawberries are not always available." Erik in Charlotte also explained, "[You are] at the mercy of the store, whatever the store carries …if Florida strawberries are] not there, [they are] not there."

Participants also believed they typically did not have the option to choose Florida strawberries or the packages were not clearly labeled with the growing location. Thomas of Boston said, "When I go to the store, [there are] only strawberries. [The label does not] say [they

are] from Mexico or Florida or California." In Charlotte, Angelica said, "Well, in some instances you may just have a choice of California or none. Or you may have the choice of Florida or none." Overall, participants indicated limited control over purchasing Florida strawberries due to the availability in the stores.

Purchasing Intent

Behavioral intent was described as the participants' intent to purchase Florida strawberries in the future. After being informed of the Florida's growing season, the majority of participants indicated they would look for Florida strawberries during the winter growing season. In Brooklyn, Chris explained, "It seems to me that we associate Florida with freshness and I would definitely buy strawberries from Florida." Anita agreed and said, "I would definitely buy strawberries from Florida." In Columbus, Carl said, "All things being equal, I would buy Florida [strawberries]."

Other participants' purchasing intent was more reliant on attributes aside from growing location. Ken of Nashville said, "I would certainly buy [Florida strawberries] over anything from Mexico or Guatemala or wherever. If I had a choice between California and Florida, it would probably come down to cost and the appearance of the product."

Tiffany of Columbus had a similar opinion,

> If I am given two packages and [they are] both American grown, [one is] California, [one is] Florida, and the prices are comparable, all bets are off because [I am] looking at the color of the berries, the firmness of the berries, the freshness of the berries.

These two previous quotes also showed that Florida strawberries were preferred over imported ones. In Nashville, Charlie said, "If [you are] standing there and one [strawberry package] says made in Mexico and the other one [says] Florida, [you are] naturally going to take

Florida." Vinnie of Columbus expressed similar thoughts and said that because Florida strawberries would not be "crossing any borders" he would prefer to purchase them.

Objective 2: Explore regional difference between eastern United States consumers' attitudes, subjective norms, perceived behavioral control, and purchasing intent of Florida strawberries.

Attitude toward Behavior

Even though participants held favorable attitudes toward purchasing Florida strawberries in general, participants in Boston and Brooklyn had a difficult time identifying positive or negative associations with purchasing the product. In Boston, Olivia, said, "I [do not] see any benefit to purchasing Florida strawberries." The rest of the participants indicated agreement but could not list any barriers to purchasing Florida strawberries either. Participants in Boston had similar attitudes and were unsure about the benefits or barriers to purchasing strawberries grown in Florida. When asked about purchasing Florida strawberries, Meredith said, "I [do not] have a feeling about [Florida strawberries]." Anita added, "Other than distance, I [cannot] think of any other benefits. Only because I [have not] really noticed where [strawberries] came from."

Participants' attitudes in Nashville slightly diverged from the overall sample as well. These participants were very familiar with Florida strawberries and were able to positively identify more tangible benefits to purchasing them, such as appearance and color. "The color of [Florida strawberries] is more vibrant", Byron explained for why he was likely to purchase Florida. Cecil responded by saying "Yeah, [they are] a deeper red."

Subjective Norms

There were some notable differences between the states' perceptions of subjective norms regarding purchasing Florida strawberries. Some of the northern states' participants brought up political issues as reasons for purchasing Florida strawberries over ones grown in California or

Mexico. Kayla of Boston said, "I have kind of a bias against California, so that would be my reason [for not purchasing from there]. I think their governance is out of control." Edward agreed and said, "Right now with the problems [they are] are having out in California with the drought….lack of water and all that, I would pick Florida over California."

When discussing why participants would prefer to purchase Florida strawberries to those from Mexico, labor regulations came up often in Columbus and Boston. In Columbus, Tiffany said, "I think of the workers [in Mexico] being paid five cents an hour, and that factors into my decision. [I am] starting to be more political on it." Lilly from Boston, had similar concerns for farm workers and explained that if Florida strawberry growers "could identify the ways in which workers were supported and the ways that farmers were paid for the strawberries" she would be more willing to purchase them. These political subjective norms were not prominent in Nashville, Brooklyn, or Charlotte.

Perceived Behavioral Control

The consensus by participants was that they had limited control over the availability of Florida strawberries in their local area for them to be able to purchase. However, Nashville and Charlotte participants had positive perceptions of behavioral control. Megan of Nashville said, "[The location is] marked on the packages. I know when [I am] buying Florida strawberries. [They are] available right now, when locally grown ones [are not], and [that is] my motivation for buying them." In Charlotte, Angelica added, "You can get Florida strawberries] in the winter", and Annie said, "You can get them fresh that part of the year."

Participants in Columbus were the only ones to indicate they had actual control over the availability of Florida strawberries in their area. Jackie explained, "You can request even certain items to be carried in a store, and I know that most of the grocery stores will try to accommodate

you if they get enough requests for things." Andy agreed, and said that sometimes "it comes down to the customers being willing to say, 'Hey, I would like this, I know [it is] available, why [do you not] have it?' [Store workers will] listen and take note and then take it to their superiors."

Purchasing Intent

Participants generally agreed they were likely to purchase Florida strawberries, but some still indicated their purchasing decision would rely on other factors as well. However, Boston participants expressed they had little intent to purchase Florida strawberries in the future. Thomas said, "It does not really matter where [strawberries] are from. I buy them on impulse and get them on sale. I [could not] really tell you the difference between California strawberries and Florida strawberries." Olivia agreed and said, "I buy [strawberries] on a whim. If it came from Florida, [it is] okay. If it came from California, [it is] okay. If it came from Mexico, [it is] okay." The rest of the participants in Boston shared the sentiment that they would not actively seek Florida strawberries or pay attention to the growing locations.

Discussion and Implications

Due to the recent rise in competition from imported strawberries, it was important to explore eastern United States consumers' perceptions and purchasing intent of Florida strawberries. Objective one found that participants had positive attitudes toward purchasing Florida strawberries. Participants' purchasing intent reflected their positive attitudes, and many participants used qualities associated with Florida strawberries to justify their intent to purchase in the future. Participants felt that Florida strawberries were fresh and of a high quality, which was consistent with prior research (Ruth & Rumble, 2015; Ruth et al., 2015). Participants also agreed their preference for Florida strawberries was related to the relatively shorter distance the

product had to travel compared to competitors. Subjective norms also appeared to influence intent to purchase (Eagly & Chaiken, 1993). A number of participants indicated that hearing about how great Florida strawberries were from their peers increased their likelihood to look for the product in stores. Additionally, participants with positive prior experiences with Florida strawberries agreed they were likely to purchase in the future. These participants said that the strawberries brought back happy memories, and they would purchase them for that feeling. This finding was consistent with prior literature that past experience was an important determinant of purchasing intent (Arvola et al., 1999; Holt, 2013).

While the attitudes and subjective norms of purchasing Florida strawberries were generally positive among the participants, different attitudes related to perceived behavioral control and purchasing intent emerged. The participants felt they had limited control over whether or not they could purchase Florida strawberries. Many said they had no control over whether their stores would sell them or if the growing location would be available/visible on the label. Because perceived behavioral control is directly related to intent to purchase (Ajzen, 1988; Sjoberg et al., 2008), participants would likely not have a strong purchasing intent for Florida strawberries. This finding was somewhat supported by the analysis of the participants' intent to purchase. The majority of participants agreed that they would look for Florida strawberries while shopping, but their actual purchases were contingent on attributes other than growing location. The most salient attribute was price. Participants agreed that they would purchase whichever strawberries were the cheapest and the best looking. Other participants indicated that they would always buy Florida strawberries over those imported from another country; however, this attitude was not consistent when compared to other domestic strawberries.

Regional differences in attitude, subjective norms, perceived behavioral control, and purchasing intent of Florida strawberries were described in objective two. Although the results cannot be generalized to all individuals in a specific region, understanding the characteristics of the participants in the focus groups and the cities of interest can help to better understand the results. Participants in Brooklyn and Boston had neutral attitudes toward Florida strawberries and could not identify many positive attributes. These focus group locations were urban and held within the cities of Brooklyn and Boston. The urban participants may be further removed from agriculture than those from the other cities. This divide could cause the participants to not actively think about where their food was grown. Additionally, the inner-city areas may not have chain grocery stores (Chung & Myers, 1999; Gordon et al., 2011), and the locally operated markets may not be willing to stock Florida strawberries. There is also the possibility that Florida strawberries did not reach the northern states in the same volume as southern states. Because the focus groups in these locations were conducted toward the end of Florida's strawberry season, the participants could have been less aware of the strawberries. The neutral attitudes toward the product may have been the result of limited experience with Florida strawberries. Nashville participants' attitudes also diverged from the general findings. These participants were able to identify specific quality attributes of Florida strawberries, such as color. Geographically, Nashville is closer to Florida than the other cities (aside from Charlotte). More of Florida strawberries may have reached the Nashville market, which would explain the participants' familiarity with the product. Additionally, the focus groups in Nashville were conducted during the height of Florida's strawberry season, and the participants may have been more aware of the product.

There were also differences with subjective norms as well. In Columbus and Boston, participants used political beliefs to guide their purchasing intent. The participants were also concerned for the social and economic welfare of the strawberry workers both in Mexico and in Florida. Many agreed that promoting the proper treatment of farm workers would encourage their future purchases of Florida strawberries. Columbus and Boston were both in states with moderate political beliefs. The other states (aside from New York) had residents that were more conservative. The presence of political subjective norms in Columbus and Boston could be the result of cultural and political differences between the states. These attitudes may also be more reflective or moral or personal norms, rather than subjective norms (Aertsens et al., 2009).

Even though most of the participants agreed that they had little control over the availability of Florida strawberries in their area, Charlotte and Nashville participants felt otherwise. These participants viewed the limited winter availability of Florida strawberries as an opportunity to purchase during their state's off season. North Carolina residents reported frequently eating produce more than the other states (Gallup, 2014), which may be the result of them feeling like they had control over purchasing produce since they saw it was available year round. This finding is reflective of the TPB, because perceived behavioral control is positively associated with behavioral intent (Holt, 2013; Sjoberg et al., 2008). Additionally, Columbus participants felt as though they could ask stores to start carrying Florida strawberries. Even though Ohio residents have reported not eating fresh produce as frequently as the other four states (Gallup, 2014), the study's participants exhibited a higher level of perceived of behavioral control for purchasing Florida strawberries.

Literature has concluded that perceived behavioral control of purchasing fruits and vegetables to be predictive of purchasing intent (Sjoberg et al., 2008). Boston participants

indicated that they would likely not pay any more attention to where their strawberries were grown and would focus on other attributes. The participants also expressed limited behavioral control over their strawberry purchases, which is likely why their purchasing intent was also low. Additionally, the Boston participants had neutral attitudes toward Florida strawberries, which may also explain their low intent to purchase in the future.

Recommendations

Personal experiences have been shown in prior literature, and this research, to have a positive impact on purchasing intent (Arvola et al., 1999; Holt, 2013). Florida agricultural communicators should work with extension agents in targeted markets to develop messages and educational programs to promote Florida strawberries and other locally grown produce. Personally framed messages may evoke more positive attitudes from consumers. In addition, promoting Florida strawberries at state fairs and in grocery stores through taste tests and cooking demonstrations could increase positive attitudes toward purchasing Florida strawberries. The personal experience with the product would create social norms and stronger attitudes surrounding Florida strawberries compared to simply seeing an advertisement. The personal interactions could also increase perceived behavioral control if consumers experience Florida strawberries in their local areas. Communicators and producers will need to increase perceived behavioral control for purchasing Florida strawberries if they want to increase consumers' purchasing intent (Ajzen, 1988; Sjoberg et al., 2008). Communicators could promote behavioral control by using a call to action at the end of messages or in advertisements. In areas where stores do not typically carry Florida strawberries, consumers should be encouraged to talk to local store managers and request them to start carrying the product.

Using a state brand, like Fresh from Florida, could help to reinforce the positive associations consumers had with Florida strawberries (Ruth & Rumble, 2015). Northern states may not be as familiar with the logo; however, simply making the growing location of the strawberries easily seen and visually appealing could increase positive perceptions. The easily visible growing location would also increase perceptions of behavioral control and signal consumers to the think about the growing location while in the store.

While the findings from this study cannot be generalized, they do illustrate likely regional differences associated with attitudes, subjective norms, perceived behavioral control, and purchasing intent of Florida strawberries. When producers are marketing in different regions of the United States, they should consider their audience. Since the participants in the northern cities did not appear as familiar with Florida strawberries, and did not indicate a strong intent to purchase in the future, strawberry producers should focus on creating an awareness campaign in these areas. Social media, television, newspaper, magazine advertisements, and transportation advertisements (e.g. subway ads, bus ads, and billboards) that focus on the positive attributes of Florida strawberries could help increase positive perceptions of the product in the northeast. If northern consumers are informed that Florida strawberries are sold during the winter months, consumers will likely feel as though they have more control over when they can purchase Florida strawberries. Even though subjective norms have not been considered the best predictors of purchasing intent (Sjoberg et al., 2008), they should still be considered when developing communication to promote Florida strawberries. Using a campaign that focuses on the fair treatment of farm workers could allow consumers to feel like they were engaging in a socially positive act and reinforce their moral norms, which would increase their purchasing intent

(Aertsens et al., 2009). Creating positive subjective norms would also support the psychological benefits consumers enjoy experiencing when they purchase local food (Nie & Zepeda, 2011).

The majority of states have to export their products to other locations and develop effective promotional strategies outside of their local markets. Distributors and producers should consider these findings when developing ways to promote their products outside of local markets. Increasing consumers' positive perceptions and perceived behavioral control of purchasing their product will help to increase purchasing intent. However, communication campaigns should differ geographically depending on product familiarity, political climate, and available resources.

Because this study used focus groups to fulfill the purpose, there are limitations to its implications. The data is not generalizable to the population, and a random sample survey of eastern United States strawberry consumers will be necessary to see if these finding are reflective of the population. Additionally, this study used self-reported responses. Participants may not have been truthful about their purchasing intent and behavior. Researchers could alleviate this limitation by collecting data at the point of purchase or observing different purchasing behaviors at grocery stores, street vendors, farmers markets, etc. Regional differences were observed regarding perceptions of Florida strawberries, so communication frames should be tested to determine if frames will have different influences depending on location or audience demographics. Based on the findings from this study, frames that should be explored include personal messages (subjective norms), availability of the season (perceived behavioral control), and freshness (attitude toward the behavior). This research could also be replicated with other state commodities, both in Florida and in other areas.

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Research

The Value of a YouTube Video: A Content Analysis of the Message Sensation Value of GMO Labeling Videos

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The Value of a YouTube Video: A Content Analysis of the Message Sensation Value of GMO Labeling Videos

Abstract

Since 2012, the term genetically modified organisms (GMO) has received immense attention generating media buzz, consumer protests, and political action. YouTube was one outlet used by individual users and political campaigns to broadcast the GMO debate, specifically associated with California's Proposition 37. The proposition would have required mandatory labeling of products that contained GMOs. The purpose of this study was to determine how specific messaging strategies were used on YouTube to propagate the Proposition 37 debate. This study draws on the principles of information processing and sensation seeking as well as the activation model of information exposure and message sensation value to take an initial step toward this understanding. The number of videos uploaded to the site merited a YouTube-generated channel, accumulating videos associated with the issue in a single channel. This channel was used to conduct a content analysis on a purposive sample of 162 videos. The study identified the message sensation value and social aspects of each video and the relationship between the two variables. Recommendations for future research and practice are provided.

Keywords: Genetically modified organisms, content analysis, message sensation value, YouTube, Proposition 37, consumer engagement

Introduction

Currently, more than 90% of U.S. corn, soybean, and cotton production is genetically modified, and an estimated of 75% of food purchased at the grocery store contain these ingredients (Center for Food Safety, 2015). Most Americans are aware that biotechnology is used in plant production; however, consensus on the favorability of the process is still up for debate (International Communication Council, 2014). The GMO debate has been around since the inception of the technology, but a 2012 ballot initiative in California created a media storm, which generated immense attention, consumer protests, and political action (Prakash, 2012). Battles between agricultural corporations and grassroots organizations on labeling requirements have ignited the interests of consumers and media outlets (Bain & Dandachi, 2014). Thirty states have introduced more than 70 bills to label genetically modified foods (Center for Food Safety, 2015). Among consumers, 60% are split between supporting and opposing food biotechnology, while 40% claim to not have an adequate amount of information to form an opinion, or are impartial to the process (International Communication Council, 2014). Like consumers, researchers' stances on GMOs vary from support, opposition, and neutral, citing nutritional improvements (Du and Rachul, 2012; Chow, Klein, & Laxminarayan, 2010), increased production (Du and Rachul, 2012; Dibden, Gibbs, & Cocklin, 2013), health concerns (Smith, 2010; Seralini et al., 2012) and lack of scientific information to form an adequate opinion (Premanandh, 2011).

With a significant proportion of agricultural production containing GMOs, the dissension surrounding labeling requirements can greatly alter the current agriculture system. The proper testing and labeling procedures required in mandatory labeling will lead to increased costs (Legislative Analyst's Office, 2012). In addition, while these labels on GMO products are

intended to provide objective information, the labels may be viewed as warning signs (Chrispeels, 2014). This consumer perception will decrease the demand for GM products, which will negatively impact those who produce these goods. The heightened requirements for GMO policy regulation may also disrupt future innovation of related technologies (Premanandh, 2010).

Consumers have easy access to information on the negative effects of GMOs provided by both scientist and activist organizations (Du & Rachul, 2012). However, additional information on the positive impacts of agricultural biotechnology is lacking. McHughen (2013) urged experts in science to supply the public with scientific knowledge in order to promote a healthy society. Agricultural communicators have a unique position, as they have knowledge in both social and agricultural sciences, providing them with the resources and abilities to reach an unaware populace. Recognizing new media outlets becomes paramount in effectively reaching audiences. Rhoades and Ellis (2010) advised agricultural communicators to look at YouTube as a medium to reach audience in a unique way.

The information available for consumers and how it is provided could drastically impact the outcome of initiatives to label GMOs. Therefore, it is important to understand how the construction of messages could lead to differences in message processing. The purpose of this study was to take an initial step toward this understanding by identify the message characteristics in YouTube videos about GMOs and their association with consumer engagement.

Literature Review

YouTube has exceeded cable networks in reaching 18- to 34-year-olds, even on mobile phones alone (YouTube, 2015). YouTube was created in 2005 and has rapidly become a routinely visited website for Internet users. Despite its young existence, the site has accumulated one billion users who view approximately four billion videos a day (Smith, 2015). The search

function of YouTube provides users with the ability to not only watch popular videos, but also search for particular topics using key terms, which return individual videos or channels. A key contributor to the site's success is the social functions, coupled with its simplistic user interface (Cheng, Liu, & Dale, 2008; 2013). Once a video is selected, users can share, like, or comment on videos engaging users in an online discourse (Susarla, Oh, & Tan, 2012). Many researchers have recognized YouTube's prevalence and have attempted to comprehend its many implications. For example, Pinto, Almeidda, and Goncalves (2013) researched why videos become viral and how to predict the popularity of YouTube videos. Pandey, Patni, Singh, Sood, and Singh (2010) studied how videos on YouTube can serve as an information source during a pandemic. Moreover, Meek (2012) examined how YouTube can foster social movements. YouTube's success and potential to shape public opinion with its unique features justifies attention from communicators (Yoo & Kim, 2012).

YouTube was one outlet used by individual users and political campaigns to broadcast the GMO debate in 2012. The amount of content uploaded during the onset of California's Proposition 37 merited a YouTube-generated channel, accumulating videos associated with the issue within a single channel for users to browse and gain information about the debate. Proposition 37 was described as the "first major policy attempt to transition from voluntary to mandatory labeling of GE foods in the United States" (McFadden & Lusk, 2013, p. 174). Although the ballot initiative was not successful, it increased exposure of the debate surrounding GMOs and labeling efforts.

Conceptual Framework

The framework for this study draws upon the principles of information processing and sensation seeking as well as the activation model of information exposure and message sensation

value. Rooted in psychological and biological research, Zuckerman (1979) explained it is normal for humans to engage in sensation seeking. Sensation seeking, or need for sensation, is "a trait defined by the need for varied, novel, and complex sensations and experiences and the willingness to take physical and social risk for the sake of such experience" (Zuckerman, 1979, p. 10). Zuckerman (1979) explained that there are two types of sensation seekers – high sensation seekers (HSS) and low sensation seekers (LSS). High sensation seekers "choose different stimuli as compared with those who do not have this desire to the same extent" (Zaleski, 1984, p. 610). For example, Zuckerman (1988) stated media preferences were consistently different between HSS and LSS. HSS favored media with more novel and complex sensations, whereas LSS tended towards less exciting content (Zuckerman, 1988). This implication led to further research to explore the influence of involving sensation seeking preferences and information exposure and processing.

Relating to Zuckerman's research on sensation seeking, Fiske and Maddi (1961) stated individuals have a comfortable level of activation. The level of activation will dictate an individual's behavior. Maddi (1968) developed this idea and said "whenever the level of activation actually being experienced is lower than this optimal level, the person will engage in behavior designed to increase activation" (p. 272). Reversely, when the activation level exceeds the comfort level, the person will behave in a way that will reduce the level of activation (Maddi, 1968). Based on these studies, Donohew, Palmgreen, and Duncan (1980) developed the activation model of information exposure.

The activation model of information exposure assumes people have varying levels of activation, or arousal, in which they operate (Donohew et al., 1980). It emphasizes individuals have cognitive and affective needs when approaching information (Donohew, Finn, & Christ,

1988). The primary focus of the model is the relationship between need for sensation and a message's ability to attract and maintain an individual's attention (Stephenson &Southwell, 2006).

It "contends that attention is a function primarily of the individual's level of need for stimulation" (Morgan et al., 2003, p. 514). An individual's perceived role is to proactively seek information that will meet his optimal level of activation and his experience will be based on if the optimal level is met (Donohew et al., 1980; Donohew et al., 1988). The activation model of information exposure is illustrated in Figure 1. First, an individual is exposed to a message. If the message produces arousal consistent with the individual's optimal level, exposure will continue and will result in positive affect (Donohew et al., 1980; Stephenson & Southwell, 2006). However, if the message produces arousal that exceeds or is inferior to an individual's optimal level, the result will be discontinued exposure and negative affect (Donohew et al., 1980; Stephenson & Southwell, 2006).

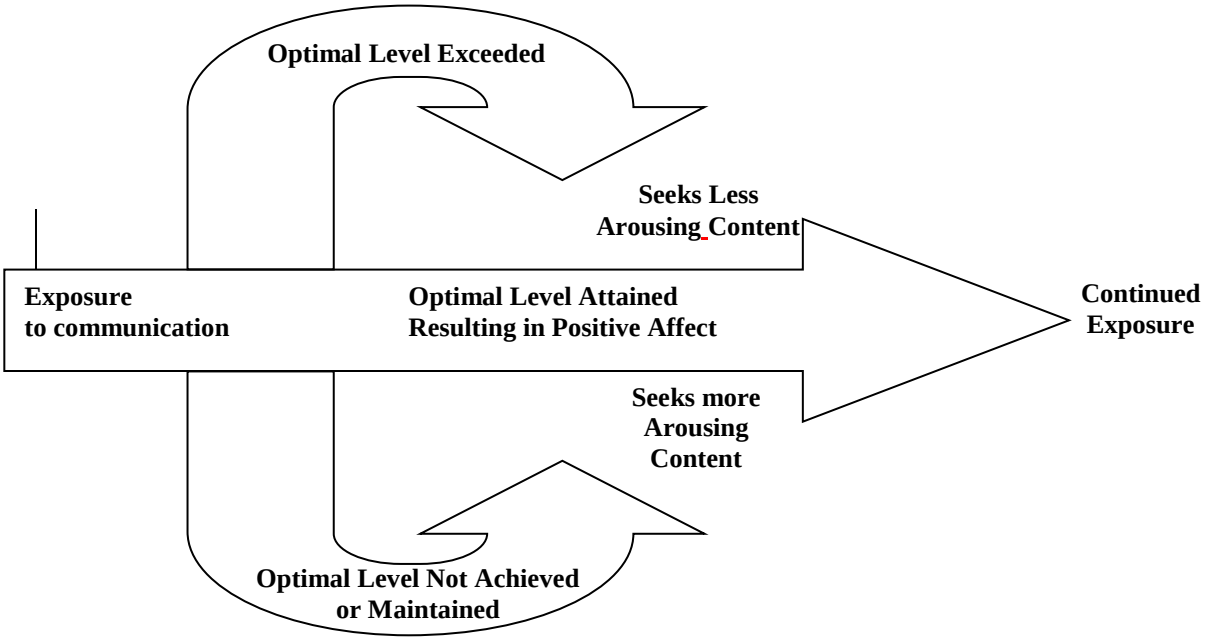

Figure 1. The activation model of information exposure. Source: Stephenson & Southwell, 2006

Morgan et al. (2003) stated if the information does not meet the activation level, individuals will look for another source of information. Zuckerman (1979) speculated if the certain optimal level is not met, cognitive functions in the brain suffer. When specifically looking at video messages, in addition to providing rich information, they also provide a context to assist in interpreting the verbal message (Donohew et al., 1988). For example, the visual elements allow the viewer to enjoy the pictorial elements even if the content of the message is irrelevant to them. Palmgreen et al. (1991) identified the need to develop messages that motivate attention and increase the processing of its content by using sensation-seeking level. Features such as cuts, sounds, and use of color can all contribute to the structure of a video message and increase message effectiveness (Morgan et al., 2003). This applies to the need to develop messages that will satisfy an individual's expectation and accommodate the cognitive abilities of sensation seekers. Donohew et al.'s (1980) activation model of information exposure helps conceptualize how message sensation value can be used to produce effective video messages.

Message sensation value can be defined as "the degree to which formal and content audio-visual features of a televised message elicit sensory, affective and arousal responses" (Palmgreen et al., 1991, p. 219). Morgan et al. (2003) indicated message sensation value focuses on the attributes of a message that can be manipulated by the video creator. These attributes can be divided into three dimensions: 1) video (number of cuts, special graphics, unusual color and slow motion), 2) audio (sound saturation, unusual sounds and music), and 3) content (use of narrative). The increased use of these attributes can create a higher message sensation value and increase the stimulation during information processing (Paek et al., 2010). According to Morgan et al. (2003), it is clear that greater attention, memory for, and liking of the message are linked to the use of certain message features such as cuts and edits, pacing, sound, use of color, use of

narrative, and incorporations of emotionally intense material. When developing video messages, it would seem very important for creators to have the ability to manage these cognitive influencers in order to facilitate higher impact of a message (Donohew et al., 1988).

Several studies in health communication have used message sensation value as a guideline for developing effective anti-drug public service announcements (Palmgreen et al. 1991; Morgan et al., 2003; Paek et al., 2010). Morgan et al. (2003) used message sensation value to identify certain message features that would enhance the message's ability to elicit sensory triggers, and influence affective and arousal responses. They found intense images, sound saturation, unexpected format, surprise or twist ending, and acting out the consequences of drug use were the most effective message features.

Paek et al. (2013) explored how favorable YouTube comments related to message sensation value, message appeals, producer type, and video views and ratings. Results showed YouTube's social contexts did affect the viewer's cognitive responses to the videos and message sensation value was a "significant and positive predictor of favorable viewer message-related thoughts" (p. 234). Another study linked message sensation value to communication about cancer risks. Stephenson and Southwell (2006) concluded the concept of sensation seeking is relevant to high-risk behavior associated with cancer and message sensation value could help reach inactive audiences. Paek et al. (2010) analyzed antismoking videos on YouTube. They found across their sample, message sensation value was relatively low, but those with high message sensation value provoked more views, ratings, and comments.

Purpose and Research Objectives

The purpose of this study was to determine how specific messaging strategies were used on YouTube to propagate the Proposition 37 debate. The researchers attempted to understand

and describe the potential for message sensation value to facilitate discourse about labeling GMOs. The following research questions guided the study:

1. What are the social aspects of YouTube videos about Proposition 37?
2. What is the message sensation value of YouTube videos about Proposition 37?
3. What relationship exists between social aspects and message sensation value of YouTube videos about Proposition 37?

Methodology

To answer the research questions, a quantitative content analysis of California's Proposition 37 YouTube videos was completed. According to Ary, Jacobs, Razavieh, and Sorensen (2006) visual materials such as films, television programs, and advertisements can be evaluated using content analysis. Although not specifically mentioned, the same methods can apply when analyzing YouTube videos.

To determine which videos would be selected for this study, an initial YouTube search was conducted using the term "California Proposition 37", which returned approximately 33,500 videos (YouTube, 2013). In order to create a manageable population of videos, researchers altered the search by applying the "channel" filter to the original search. This adjustment provided a list of relevant YouTube channels, one of which was an auto-generated channel specifically dedicated to the Proposition. The channel was established by YouTube, which used an algorithm to gather videos on popular topics (YouTube, 2013). In this case, the channel had 287 videos. A purposive sample was taken from this population based on the average video length, which was approximately 4 minutes (Cheng et al., 2013; Pew Research Journalism Project, 2012). Other criteria used to select the sample were relevance (did the video related to Proposition 37 or the GMO debate?), availability (were the videos available at data analysis?),

and format (did the videos have video content?). Therefore, 113 videos were omitted based on these qualifications, resulting in a sample of 162 videos.

A researcher-developed codebook aided researchers in analyzing the social aspects, message side, and message sensation value of the YouTube videos. The codebook utilized in this study had seven parts; however, this manuscript focuses only on the first three sections: social aspects, message side, and message sensation value. Prior to analyzing the videos, coders were trained and conducted a pilot reliability test using Krippendorff's alpha. The pilot test of 30 videos revealed that 16 of the 37 variables met the reliability of .70 or higher, which is acceptable for Krippendorff's alpha and exploratory research (Lombard et al., 2002). The coders removed or clarified the variables that did not meet reliability. The URLs were recorded in the codebook with the video title, video length, and the date the video was uploaded to YouTube. The social aspects of YouTube videos included the number of times the videos were viewed, viewer rating, and number of comments. These aspects were identified and recorded all at once prior to the coding process because these variables can change daily.

Two coders divided the remaining 132 videos evenly and proceeded to collect data using the revised codebook. Data were collected over a three-day period, with coders each analyzing 22 videos per day. Each video had a separate codebook designated to record information, which was later entered into a Microsoft Excel file.

Message side indicated whether the videos were in support, neutral, or opposition to passing mandatory labeling of GM products. The message sensation value (MSV) of each video was calculated by evaluating the number of cuts in each video along with the presence or absence of certain message characteristics. Values were summed across all variables creating an index from 0 (very low MSV) to 13 (high MSV). To determine the number of cuts, researchers

counted the number of times the camera angle was changed, or if the frame changed to a new graphic or photo. The message characteristics associated with message sensation value included special graphics, intense images, unusual color, slow motion, sound saturation, unusual sounds, music, and if the message was acted out. Table 1 provides definitions of the variables used to determine message sensation value. The descriptions were developed from existing literature (Morgan et al., 2003; Palmgreen et al., 2002; Paek et al., 2010). Additionally, figure 2 illustrates examples of intense images.

Table 1
Message Characteristics Associated With Message Sensation Value

Variable	Description
Visual	
Cuts	Record the number of times the camera cuts from one visual scene (entire frame) to the next. Do not included moving graphics as cuts.
Special visual effects	Anything beyond the range of human ability. Computer generated/ animated graphics.
Slow motion	The slowing of real-life action through technical intervention.
Unusual color	Unusual colors outside the range of colors normally perceived in real life. People in Black & White, washed out color, food with unrealistic colors.
Intense images	Intense or horrifying images including needles going into arms, decaying children, dead bodies.
Audio	
Sound saturation	Background sound throughout the video clip, including street noise or other sounds, rather than simply a person talking throughout the video clip.
Music	Music to accompany the dialogue or action of the video clip.
Sound effects	Unusual sounds (those that could not have occurred in real life) heard in the video clip, including gongs and other noises.
Content	
Acted out (vs. talking head)	Instead of being told about the hazard/safety of GMOs, viewers see actions corresponding to the point of the video clip.
Unexpected format	If images and messages are interchangeable with those in other videos, the format is expected.
Surprise/Twist ending	The presence of a climactic, shocking end to the video.

Note. Adapted from Morgan et al. (2003); Palmgreen et al. (2002); Paek et al. (2010)

Figure 2. Examples of Intense Images. Source: YouTube, 2013

Formal evaluation of reliability was conducted after coding was complete. Excluding videos in the pilot test subsample, the final reliability sample was randomly selected. Again, Krippendorff's alpha was calculated for all variables with the online ReCal2 0.1 program (Freelon, 2013). The final test revealed all variables had scores .70 or higher.

The researcher imported the data into SPSS® version 20.0 for analysis. The frequencies of the social aspects were calculated and reported. Message sensation value was calculated following the procedure Paek et al. (2013) outlined and the mean and standard deviation were reported. To answer research question three, correlational statistics were conducted to determine what relationships exist between social aspects and message sensation value of YouTube videos about Proposition 37. The Davis Conventions (1971) were used to describe the relationship strength between each variable: 0.01 – 0.09, a negligible relationship; 0.10 - 0.29, low; 0.30 – 0.49, moderate; 0.50 – 0.69, very high; and 1.00, a perfect relationship. An alpha level of .05 was set *a priori* to recognize levels of significance between variables.

Results

To describe the sample of Proposition 37 YouTube videos, the researcher evaluated which side of the proposition the video was promoting, the video length, and the date the video was uploaded to YouTube. Out of 162 videos sampled, 116 (71.6%) were in support of the proposition, 26 (16.1%) were against, and 20 (12.3%) were neutral to passing mandatory labeling of GM products. The video length was recorded with a minimum length of 15 seconds

and a maximum length of 4 minutes. The average video length was one minute and 40 seconds (SD = 1.00). All videos were uploaded to YouTube between July 1, 2012, and November 1, 2013. Majority of the videos were uploaded October 2012, the month prior to the election (*n* = 92, 56.8%). October 30, 2012 and November 2, 2012 had the most videos uploaded in one day (*n*= 9).

Research Question One

Research question one sought to determine the social aspects of YouTube videos about Proposition 37, which were the frequency of viewing, frequency of rating (positive and negative), if the video allowed comments or not, and the number of comments per video.

The video that was watched the least had a total of 9 views, whereas the video that had been watched the most had 620,039 views. There were multiple modes (14 views, 25 views, and 33 views) of three videos. The average view count was 8,612.44 (*SD* = 52,680.22). Although the majority of the videos allowed comments (*n* = 145, 89.5%), some videos did not have any (*n* = 17, 10.5%). The video with the most comments had 1,763. The average number of comments from the sample was 22.51 (*SD* = 140.65).

Another social aspect that was noted was the video rating. The video could be liked or disliked by viewers. The maximum number of likes a video received was 2,968. This means the video was positively rated, and favored by 2,968 viewers. The average positive rating was 58.93 (*SD* = 255.22). Viewers could also dislike a video. The maximum number of dislikes a video received was 87. The average negative rating was 2.79 (*SD* = 9.72). Table 2 presents the mean and standard deviation of each social aspect.

Table 2

Number of Video Views, Comments, and Ratings (N=162)

Social Aspect	*M*	*SD*
View Count	8,612.44	52,680.22
Number of Comments	22.51	140.65
Video Rating		
Positive	58.93	255.22
Negative	2.79	9.72

Research Question Two

Research question two was to determine the message sensation value of YouTube videos about Proposition 37. Message sensation value is formulated using the summation of 13 variables (Table 1). The most used message sensation value variable was music (n = 95, 56.2%), followed by sound saturation (n = 80, 49.4%). The surprise/twist ending variable was not present in any of the 162 videos. The average number of cuts per video was 11.11 (SD = 12.98). A full list of variables is listed in Table 3 along with the number of times they were represented in the sample.

Table 3

Frequency of Message Sensation Value Variables in YouTube Videos About Proposition 37 (N=162)

Variable	Frequency	Percent (%)	*M*	*SD*
Music	91	56.2		
Sound Saturation	80	49.4		
Visual Effects	41	25.3		
Unexpected Format	35	21.6		
Acted Out	26	16.0		
Sound Effects	24	14.8		
Unusual Color	16	9.9		
Intense Images	10	6.2		
Slow Motion	1	0.6		
Surprise/Twist ending	0	0.0		
Number of Cuts			11.11	12.98
0-4 cuts	78	48.2		
5-14 cuts	41	25.3		
More than 15 cuts	43	26.5		

Note. Coders could select multiple message characteristics; percentages do not equal 100%; however, number of cuts will equal 100%.

Overall, the message sensation value was low with the average MSV at 3.05 (*SD* = 2.05). The highest level of MSV was recorded at 9.0 representing 1.9% of the sample (*n* = 3). The largest group of videos (*n* = 36, 22.2%) had a MSV of 1.0. Table 4 displays the message sensation values and the number of videos corresponding with each value.

Table 4
Message Sensation Values of YouTube Videos About Proposition 37 (N=162)

	Frequency	Percent (%)	*M*	*SD*
MSV			3.05	2.05
0.0	9	5.6		
1.0	36	22.2		
2.0	32	19.7		
3.0	23	14.2		
4.0	23	14.2		
5.0	17	10.5		
6.0	12	7.4		
7.0	7	4.3		
8.0	0	0.0		
9.0	3	1.9		
Total	162	100.0		

Research Question Three

The relationships between social aspects and MSV were determined by the Pearson Product-Moment Correlation method. According to Davis (1971), values of .10 - .29 show a low relationship. The relationship between viewing frequency and MSV was low (*r* = .15). The relationship between positive ratings and MSV was low (*r* = .10). Negative ratings had a low correlation with MSV (*r* = .20), but was indicated as significant at alpha level .05. The relationship between number of comments and MSV was also a low (*r* = .17), but significant correlation. All social aspects in the sample are presented in Table 5.

Table 5

Relationships Between MSV, Viewing Frequency, Video Rating and Number of Comments (N = 162)

Variable	MSV (*r*)
Viewing Frequency	.15
Positive Video Rating	.10
Negative Video Rating	.20*
Number of Comments	.16*

Note. *p < .05.

Conclusions and Discussions

In order to describe the presence of Proposition 37 YouTube videos, data were collected using a researcher-developed code book. First, the sample was described by identifying if the videos supported, opposed, or was neutral to the proposition. Out of the 162 videos, 116 (71.6%) supported the proposition and wanted mandatory labeling of GM products to pass. This is consistent with polls leading up to the election indicating a majority of the public wanted the proposition to pass (McFadden & Lusk, 2013). The remaining videos were split fairly close with 26 (16.0%) against the proposition, and 20 (12.3%) neutral to the proposition.

The average video length was one minute and 40 seconds (*SD* = 1.00). This poses a limitation to the study since there are videos about Proposition 37 that fell outside the four minute time limit. Therefore, the average video length of this sample is inconsistent with prior research because of the sample criteria.

Research question one sought to determine the social aspects of YouTube videos about Proposition 37, which were the frequency of viewing, if the video was positively or negatively rated, if comments are allowed, and how many comments each video received. Because these values can change daily, the data were collected prior to watching the videos to prevent inconstant results between coders.

The least watched video had 9 views. Cheng et al. (2013) stated users will access their own videos several times after uploading to make sure it was done successfully. It is possible that some of the views were contributed by the uploader. The video with the most views had a drastically larger view count of 620,039 views. A possible explanation for this might be that viewers shared this video more frequently than other videos on Proposition 37. The average view count was 8,612.44 (*SD* = 52,680.22). This finding must be interpreted with caution because of the large range in the number of views (demonstrated by the standard deviation value), it does not necessarily provide an accurate representation of the sample. To help address this concern, the researcher found multiple modes (14 views, 25 views, and 33 views) of three videos. These results imply that though some videos in the sample reached a substantial number of viewers, many reached a much smaller audience size. This is consistent with YouTube statistics, where a small number of videos go viral. At first, this may be discouraging since majority of videos only reach a small audience. However, when views are aggregated across the platform, audience size can increase rapidly and considering the affordability of producing YouTube videos, it seems worthwhile to generate multiple videos that can reach multiple audience members.

The majority of the videos allowed comments (*n* = 145, 89.5%), while some videos did not have any (*n* = 17, 10.5%). It was intriguing to see some videos did not allow comments because the social aspect is a driving force behind YouTube's success (Cheng et al., 2008; 2013). However, it could be possible that the creator did not have time to manage the comment feature, or because the video content is controversial, the creators may be avoiding possible conflict. The video with the most comments had 1,763, but the average number of comments was 22.51 (*SD* = 140.65) indicating that most of the videos in the sample had much fewer comments. It seems

eliminating the comment feature would hinder the popularity and reach of a video. Even if comments are negative, it still gets the audience involved with the content. This could reveal valuable information to address in a future video, or directly through commenting back. The discourse opportunity available on the platform allows video producers a timely, and personal way to address the audience directly. This is one feature of social media platforms that traditional platforms lack.

Another social aspect was the video rating. In general, if ratings were present, the sample consisted of more positively rated videos. The results found that the average positive rating was 58.93 (*SD* = 255.22), while the average negative rating was 2.79 (*SD* = 9.72). The research does not clearly address the reason for these findings, but a potential explanation could be made using the activation model of information exposure. According to the model, an individual will discontinue use and look for another source of information if the content does not meet their optimal level of arousal. It could be possible that videos that individuals would have negatively rated were just stopped, and the individual clicked on another video because it did not meet his or her optimal arousal. Viewers may be more inclined to like videos, than to dislike videos.

Research question two was to determine the message sensation value of YouTube videos about Proposition 37. Overall, videos in the sample had a low message sensation value, with the average MSV at 3.05 (*SD* = 2.05). The highest level of MSV was recorded at 9.0. The present findings seem to be consistent with other research that found low levels of MSV in antismoking YouTube videos with the same maximum MSV (Paek et al., 2010). The most used MSV variable was music followed by sound saturation, which were also the most used variables in Paek et al. (2010). The surprise/twist ending variable was not present in any of the 162 videos. This implies that video creators did not dramatize the information by incorporating a climatic

ending to the videos. This finding presents an opportunity for future video creators, because the surprise/twist-ending feature was found to be one of the most effective MSV features in previous literature (Morgan et al., 2003). If incorporated, along with other message sensation value features, videos have the potential to be more effective in reaching audiences.

Research question three sought to determine the relationship between message sensation value and the social aspects of YouTube such as views, ratings, and comments. The results indicated a low, but significant relationship for both negative (r = .25) ratings and number of comments (r = .16). This finding could imply that YouTube videos with higher MSV motivate viewers to make their opinion of the video known, which reflects a possibility for MSV to impact a behavior of online video consumption. The ratings of videos have the potential to increase the number of views a video receives, thus increasing the reach of a single message. Although there were no other significant relationships, it would be interesting further analyze the relationships in a larger sample size.

Recommendations

This study provides a starting point for future studies to explore the MSV of topics in YouTube videos, specifically topics in agriculture. Future research regarding MSV needs to be conducted including the effects of MSV on audience perceptions such as conducting a qualitative content analysis on a similar video sample. By analyzing comments on videos, the researcher can identify certain commonalities among viewers. In addition, analyzing the content of the video itself in a qualitative fashion would provide a richer data set with examples of specific themes.

The next step would be to incorporate MSV in an experimental design to determine what, if any, impact this variable might have on an agricultural audience and further evaluate the

differences between high and low sensation seekers. Furthermore, additional research should be conducted to investigate the MSV of other agriculture issues on YouTube.

One limitation of this study is the sample size. It is very possible that videos that better represent the Proposition 37 on YouTube were missed using the user-generated channel. Limiting the sample to videos 4 minutes or shorter created a purposeful sample, making the data unable to be inferred to the entire population of Proposition 37 YouTube videos.

The findings of this study have a few important implications for future practice. First, it is obvious YouTube has numerous videos about agricultural issues – the keywords for this Proposition 37 alone returned more than 33,000 results. Therefore, there is a definite need for practitioners to use YouTube as a communications outlet. When creating YouTube content, practitioners should consider using the MSV variables as indicators of what aspects to include. Implementing MSV variables into video development will provide creative ways to reach diverse publics by targeting their need for sensation.

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Comparing Students' Writing Apprehension Scores in a Writing-Intensive Course: A Pre-Test Post-Test Design

Research Paper

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Comparing Students' Writing Apprehension Scores in a Writing-Intensive Course: A Pre-Test Post-Test Design

Abstract

Writing skills are one of the most important skills college graduates need to possess; however, college graduates struggle to complete written communications proficiently in the workforce. Previous researchers have explained that college instructors must understand the students' fears with writing in order to create effective writing curriculum. Writing apprehension has been described as one of the main factors hindering students' motivation to write and confidence to complete writing responsibilities. In the college setting, negative views toward writing cause low motivation to enroll in writing courses or take the course seriously; ultimately, writing apprehension causes students to not make writing a priority. Using the theoretical framework of self-efficacy, this paper sought to explore how a writing-intensive course changed a student's confidence or belief in their writing skills, and in turn, how the intensive writing course improved their writing apprehension. A two-phase, convergent parallel design mixed methods study was used to determine what change, if any, occurred during the writing-intensive course. The findings from this study showed writing apprehension, or avoidance-like attitudes, may be diminished in undergraduate students throughout the duration of a writing-intensive course. Recommendations for practitioners and future researcher are also provided.

Keywords: writing apprehension, writing-intensive courses, post-secondary students, agricultural communications, written communication

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Introduction

In an article published in *Forbes Magazine*, Leef (2013) compared college graduates to students who attended a music camp to learn a particular instrument, only to return without any of the skills necessary to perform the particular task. He explained:

> For many American students, college is like that music camp. They take lots of courses and study lots of stuff (or at least they seem to), but don't even learn how to use the English language well. You might think that would be a top priority, but actually it's not a priority at all. (Leef, 2013, para. 5)

Writing skills are one of the most important skills college graduates need to possess (Anderson, 2014; Lea & Street, 1998); however, graduates struggle to complete written communications proficiently in the workforce (Belkin, 2015; Leef, 2013). Depending on the chosen field, college graduates will spend at least 20% of their time writing various pieces of communication (Anderson, 2014). In addition to the amount of time graduates will spend writing, employers tend to look for candidates who have more developed writing skills and are more likely to hire, retain, or promote those who have higher writing skills (Anderson, 2014; Faigley, Daly, & Witte, 1981). Although employers are searching for recent graduates with high writing aptitudes, hiring managers and organizations often complain about the lack of effective written communication skills found in recent graduates (Selingo, 2012). Further, employers have complained about the inability of job candidates to write clearly (Leef, 2013). Legette and Jarvis (2015) explained that teachers must understand the students' fears with writing in order to create effective writing curriculum, specifically in an agricultural communications setting.

Writing apprehension (WA) is one of the main factors hindering students' motivation to write and confidence to complete writing responsibilities (Ahrens, 2014; Lea & Street, 1998).

WA, coined by Daly and Miller (1975), refers to the student's fear, anxiety and/or avoidance of writing in academic and professional settings (Daly & Miller, 1975). Daly (1978) reported apprehension of writing is a major factor in how an individual views writing situations both academically and professionally. In the college setting, negative views toward writing cause low motivation to enroll in writing courses or take the course seriously; ultimately, high WA causes students to not make writing a priority.

In an effort to help increase student writing skills as well as decrease WA, academic curriculum must be structured around communicating the importance of proper written communication (Lea & Street, 1998). Irlbeck and Akers (2009) found that agricultural communications students have been entering the workforce with low writing skills, and they recommended agricultural communications faculty conduct research to understand what improvements should be made to increase writing skills in students. Creating these writing skills in graduates will parallel the needs of employers.

Literature Review/Theoretical Framework

While some people enjoy writing, others despise the process and are usually uncomfortable, not confident, and even nervous, or apprehensive, of the writing process (Daly, 1978). Daly and Miller (1978) explained WA as the interrelation between attitudes, particularly apprehension about writing, and various other outcomes. In Daly's (1978) study, apprehension was described as a construct concerned "with a person's general tendencies to approach or avoid situations perceived to demand writing accompanied by some amount of evaluation" (p. 10). Daly and Miller (1975) noted apprehension was a major factor affecting students' performance on writing assignments.

To measure an individual's WA score, Daly and Miller (1975) developed an instrument with 26 Likert-type questions. Scores may range from 26 to 130 with a mean of 75 (*SD* = 15.37). Daly (1978) explained the meaning of the WA continuum. Individuals who score between 40 and 70 do not experience a significantly unusual level of WA. In fact, the closer an individual scores to the mean of 75, the better he or she feels about writing. To have the best motivation toward writing, individuals should have a moderate (near the mean of 75) WA score.

While it is necessary for writers and students to have some apprehension in order to take time and care to produce a quality writing piece, individuals possessing high WA (scores above 70) tend to write with a lower quality in both tone and mechanics than those possessing low WA (Daly, 1978; Faigley et al., 1981; Smith, 1984). Those individuals with high WA have been found to use writing mechanics poorly. Daly (1978) reported students who were unable to demonstrate correct writing mechanics such as grammar, spelling, and punctuation were unlikely to succeed in using correct mechanics and structure in writing assignments. Additionally, those who fail in writing assignments have learned to fear or even to avoid situations where writing is critiqued or evaluated (Daly, 1978). Individuals with very low WA scores (below 40) may find themselves unmotivated to carefully listen or read assignments, to carefully edit writing materials, or to remember criteria for assignments (Daly, 1978).

The theoretical framework of social cognitive theory was used to inform this study. According to Bandura (2012), social cognitive theory has explained how "human functioning is a product of the interplay of intrapersonal influences, the behavior individuals engage in, and the environmental forces that infringe upon them" (p. 11). Bandura (1995) noted a major component of the social cognitive theory was self-efficacy. The concept of self-efficacy can be used to explain how "beliefs people hold about their abilities and about the outcome of their efforts

powerfully influence the ways in which they will behave" (Pajares & Johnson, 1994, p. 313). Bandura's social cognitive theory attempts to explain how someone's behavior, or motivation toward an action, is shaped by their beliefs in their capabilities (Bandura, 1986; Pajares & Johnson, 1994).

A student's level of WA has a direct relationship with the student's perception, or belief, of his or her own writing skills (Daly & Wilson, 1983). Daly and Wilson (1983) identified WA as an indicator of an individual's general self-esteem level when performing a writing task. WA has been found to have a strong relationship with self-efficacy, and self-efficacy has previously been used to describe an individual's beliefs about their capabilities (Pajares & Johnson, 1994). Therefore, the more a student fears or has apprehension toward writing, the more likely the student will not have confidence in his or her capabilities as a writer (Pajares & Johnson, 1994).

Purpose and Research Questions

This study addresses research priority three of the American Association of Agricultural Educators' (AAAE) *National Research Agenda* to develop a sufficient scientific and professional workforce that addresses the challenges of the 21st century by creating "programs that develop the skills and competencies necessary to improve the communication and knowledge sharing effectiveness of all in the agriculture-related workforces of societies" (Doerfert, 2011, p. 9). Improved writing skills are a necessary skill in order for these individuals to effectively communicate about the agricultural industry; however, many students may struggle to make learning to write well a priority due to apprehension and avoidance. The purpose of this study was to describe the change in student WA scores before and after a one-semester writing-intensive course. The following research questions guided this study:

1. What were the students' WA scores at the beginning and end of the semester and how did they differ?
2. How did the students in each WA level describe their WA scores at the beginning of the semester?
3. How did the students describe the change in their WA scores as a result of the course?

Methods

A two-phase, convergent parallel design mixed methods study was used to determine what change, if any, occurred during the writing-intensive course. A researcher may use a convergent parallel mixed methods design to utilize both quantitative and qualitative data "to provide a comprehensive analysis of the research problem" (Creswell, 2013, p. 15). In this research design, both quantitative and qualitative data were collected independently and the data were integrated in the findings for deeper interpretation of the conclusions (Creswell, 2013; Creswell & Plano Clark, 2011). As seen in Table 1, there were two phases to the study. Each phase included quantitative and qualitative data collection. IRB approval was granted before data collection began.

Table 1
Qualitative and quantitative data collection in the two-phase, convergent parallel design

	Phase 1	**Phase 2**
Quantitative	Writing Apprehension Instrument Pre-Test	Writing Apprehension Instrument Post-Test
Qualitative	Initial Writing Apprehension Reflection	Changes in Writing Apprehension Reflection

Quantitative Design

The population for this study was 92 undergraduate students enrolled in a required writing course for College of Agricultural Sciences and Natural Resources majors at Texas Tech

University. To complete the convergent parallel design, the 92 students in the course completed the WAT-26 instrument (Daly & Miller, 1975) to determine their WA scores. The WAT-26 instrument was disseminated to students via Qualtrics at the beginning (first week of the semester) and the end (fifteenth week) of the semester. The participants were asked to indicate their level of agreement with 26 Likert-type statements (1 = *strongly disagree* and 5 = *strongly agree*) regarding attitude, avoidance, and feelings about writing (Daly & Miller, 1975a). Thirteen of the statements are deemed negative (e.g. I avoid writing.), while 13 of the statements are deemed positive (e.g. I enjoy writing.). The responses were collected and entered into SPSS® Statistics version 22.0 before calculating individual WA scores for both the pre-test and post-test.

To calculate the overall WA score for each student, the scores on negative writing apprehension (NWA) statements for the pre-test were added together for each student. Next, the scores on the positive writing apprehension (PWA) statements for the pre-test were added together for each student. Finally, Daly and Miller's (1978) formula was used to calculate the pre-test WA score: WA = 78 – NWA + PWA. This process was repeated to calculate the post-test WA score. Each student received a WA score ranging from 26 to 135 (Daly & Miller, 1975). Reliability was established *a priori* with a Cronbach's α of .92 (Daly & Miller, 1975). Students receiving a score below 59 were considered to have low WA, scores between 60 and 96 are considered to have moderate WA (the ideal WA score), and scores above 97 are considered to have high WA (Richmon, Wrench, & McCroskey, 2013). After calculation, student WA scores were disseminated to students for both the pre-test and post-test.

Qualitative Design

To complete the qualitative aspect of the mixed-method design, a qualitative phenomenological methodology (Creswell, 2012) was used to understand how the students' WA changed throughout the course. In this phenomenological study, the researcher studied the students' experience in the specific context of the writing-intensive course to understand how it impacted the students' level of WA. To create a useable research document, students in the course were asked to write a short paragraph about their reaction to their initial WA score (pre-test) and how their score related to their attitude toward writing. After the students received their final WA score at the end of the semester, they were asked to describe how their WA and attitude toward writing had changed, or not, during the semester. Because both pre- and post-self-reflections were assigned as a course assignments, the students were given a grade if they responded and were required to provide their name. After a grade was assigned for the students, the researcher/instructor marked out the name and assigned a pseudonym for an objective analysis.

To demonstrate trustworthiness of this phase of the research, the researcher used data triangulation and established credibility, transferability, and dependability of the qualitative data (Erlandson et al., 1993). Data triangulation involved the use of multiple data sources to improve the credibility of the study (Guion, Diehl, & McDonald, 2011). This research was part of a larger study that also included interviews, observations, questionnaires, and reflections, which provided validity checks across the data sources (Patton, 1999). Only the survey data and self-reflection data are reported in this manuscript. Credibility was ensured through prolonged engagement with the students and peer debriefing to develop quality reflection questions (Erlandson et al., 1993). Thick descriptions and purposive sampling help demonstrate transferability (Erlandson et al., 1993), which is the degree of how well findings can be

transferred to other settings, situations or participants (Lincoln & Guba, 1985). An audit trail and dependability audit were used to establish dependability – the ability for a replicated study to result in the same findings (Erlandson et al., 1993).

The student reflections were analyzed using the constant comparative method (Glaser & Strauss, 1967). The lead researcher (a doctoral student in agricultural communications who was also the course instructor) analyzed the data after final grades were assigned. Throughout the study, the researcher documented a "running account of the process of inquiry" in an audit trail (Erlandson et al., 1993, p. 34). The audit trial was used to detail theme formation, document organization, and researcher notes. An additional researcher approved the questions for self-reflection and confirmed the themes that emerged from the data analysis process (Erlandson et al., 1993). A complete description of the demographic breakdown of respondents can be found in Table 2. Demographic data were collected in the post-test survey instrument.

Table 2
Demographic of Respondents (*n = 86)*

Characteristic		*n*	%
Sex			
	Female	56	65.1
	Male	30	35.9
Classification			
	Freshman	26	30.2
	Sophomore	30	34.9
	Junior	22	25.6
	Senior	8	9.3
College Major			
	Agricultural and Applied Economics	15	17.4
	Interdisciplinary Agriculture	8	9.3
	Animal Science	55	63.9
	Crop and Soil Sciences	4	4.7
	Horticulture or Turf Grass Science	1	1.2
	Other	3	3.5

Findings

RQ1: What were the students' writing apprehension scores at the beginning and end of the semester and how did they differ?

After each student completed his or her initial WA test, each student was assigned a WA score. A score below 59 indicated a low WA score, a score between 60-90 indicated a moderate WA score, and a score above 90 indicated a high WA score. As seen in Table 2, the mean score for student pre-test WA was 77.17 (*SD* = 16.81) with a range of 26 to 126. Similar to the pre-test, after each student completed his or her post-WA test, each student was assigned a WA score. The students' post-test WA scores ranged from 38 to 107 with a mean of 69.13 (*SD* = 15.45). Sixty-one students (71.1% of students who completed both the pre and post-test survey, *n*= 85) experienced a decrease in the WA score throughout the semester. Table 3 displays the number of students in each WA category for the pre-test and post-test.

Table 3
Pre- and Post-Test Writing Apprehension Scores by Category

	Pre-Test		Post-Test	
WA Category	*n*	%	*n*	%
Low	12	13.49	21	24.42
Moderate	57	64.04	55	63.95
High	20	22.47	10	11.63
Total	89	100.00	86	100.00

* *Note:* low writing apprehension, score < 59; moderate writing apprehension, score 60-90; high writing apprehension, score > 91

This research question also sought to compare student's pre- and post- WA scores. The null hypothesis states that, in the population, there was not a significant difference between the mean of the initial WA score and the mean of the final WA score (H_1: $\mu_1 = \mu_2$). The alpha level was set at .05 *a priori.* A paired-samples t-test was conducted to compare the means of the pre- and post- WA tests of the students enrolled in ACOM 2302: Scientific Communications in

Agriculture and Natural Resources. There was a significant difference between the pre-test WA scores and post-test writing scores $t(84) = 4.42$, $p < .001$ (Table 4). Therefore, the null hypothesis was rejected in favor of the research hypothesis stating that there was a significant difference between initial and final WA scores.

Table 4
Paired Samples T-Test Comparing Initial and Final WA Scores

Writing Apprehension Test	*n*	*M*	*Mean Difference*	*t*	*SE*	*df*	*p*
Initial (Pre-Test)	89	77.17					
			9.07	4.42	2.05	83	.000*
Final (Post-Test)	86	69.13					

Note. *p < .05

RQ2: How did the students in each writing apprehension level describe their writing apprehension scores at the beginning of the semester?

As an assignment in the class, students were asked to complete a written reflection discussing their WA score and how their WA score reflected their attitude toward writing. Ninety initial student reflections were completed and submitted. Table 5 provides a summary of the emergent themes. All quotes provided in the narrative are verbatim from the transcript and may contain grammar, spelling, and punctuation errors. The counts may be different as students were self-reporting in their comments, and this may not have matched the pre-test scores.

Table 5
Summary of Emergent Themes Identified in Initial Writing Apprehension Score Reflections for Low, Moderate, and High Writing Score Participants

WA Score Category	Emergent Themes
Low	1) No fear toward writing 2) Lack of motivation
Moderate	1) Anxiety depends on certain factors 2) Organizing thoughts on paper is difficult 3) Lack confidence and motivation when writing. 4) Level of enjoyment when writing.
High	1) Writing Apprehension is multi-faceted. 2) Peer review causes anxiety. 3) Not interested in writing leads to more apprehension.

Low Writing Apprehension

In the initial self-reflection assignment, nine students indicated they had a low WA score (below 59). The following themes emerged in the reflections concerning students with low WA scores: *no fear toward writing* and *lack of motivation.* Initial WA scores are described in parenthesis next to the student's pseudonym.

No fear toward writing. Students explained their WA score reflected their lack of fear and/or anxiety toward writing. Randal (57) stated, "I am not fearful of writing or evaluation." Amy (49) explained, "This score shows that I have some interest in writing. I personally do not feel any apprehension to writing and enjoy writing about things I am interested in."

Lack of motivation. Students expressed how they lacked motivation to write. CJ (26) explained how his low WA score was due to his lack of motivation to check his work as he has no fear or anxiety toward writing. He reflected:

> This is the lowest apprehension bracket, meaning that I have virtually no fears or anxiety of writing. The negative side to this is that I tend to lack motivation to read over my work or double check grammar, spelling, and punctuation.

Cullen (54) explained how he enjoyed writing; however, he tended not to take the time necessary in his work. He wrote:

> The description for this score seems to be a good representation of my habits. I love writing (being an introvert) feel that I can better express myself in this silent form. However, I tend to lack motivation. I am a certain type of lazy, as I am not shy of hard work, but when it comes to this kind of extra curricular personal development I regretfully holdback. I am also a huge procrastinator, so when it comes to written assignments, I always wait until the last minute and end up putting forth a sloppy effort.

Moderate Writing Apprehension Score

In the initial reflection, 59 of the students indicated their WA scores were moderate (between 60 and 90). Students in this level of WA were the most comfortable with writing. However, students reflected upon various aspects that made them have some level of apprehension toward writing resulting in the emergent themes: *anxiety depends on certain factors, difficulty of organizing their thoughts on paper, lack of confidence, lack of motivation,* and *level of enjoyment when writing*. The following themes describe student reflection toward his or her moderate WA score:

Anxiety depends on certain factors. While some students explained that they did not fear writing, others explained their writing anxiety was due to fear toward specific assignments, instructors, or peer reviews. Several students in the moderate level did not fear writing. Buddy stated, "My writing apprehension score of 74 reinforces the fact that I have a healthy fear of writing, and it reminds me to pay attention to instruction and detail." Kash (78) noted, "This seems right in my opinion, I am never really too concerned about my writing."

Students indicated liking to write on their own; however, when asked to complete an assignment they became nervous. Terri (64) reflected, "I like to write on my own, but when I have to write an assignment, I get really anxious and nervous." Brady (69) noted an anxiety toward specific types of writing assignments:

> It [writing apprehension score] is dependent on the type of paper I am writing. I feel like this accurately describes my feelings for writing. When writing a research article or presentation I feel very comfortable writing, but when it comes to grammar and punctuation, I do not feel as comfortable. Professional papers that are expected to have spot on grammar and punctuation are not as easy for me.

Students indicated peer or instructor review of their assignments made them nervous about writing. Sydney (64) explained, "I think my apprehension comes from thinking about people reading my original ideas and words." Beth (69) wrote, "For the record, I am not a fan of peer review, mostly because they are my peers and they might or not have the same maturity level when it comes to taking classes." Dalton (74) reflected, "I do indeed become nervous when writing for graders I do not know, or haven't even met."

However, three students explained how they were not afraid of review. Parker (81) explained, "I do like to hear feedback on my writing because I like to know I am doing [the assignment] the right way."

Organizing thoughts on paper is difficult. Students shared that their WA was due to the difficulty of organizing their thoughts and ideas on paper. Stephanie (75) stated:

> I tested average in writing process which is because I have a little trouble organizing my ideas from mind to paper. I struggle to get started and organizing all of my thoughts together, but once I get started I know I can complete an assignment.

Mathew (82) had similar reflections:

> This [writing apprehension score] was quite accurate of a score in my opinion. I won't say that I have ever been a terrible writer but sometimes if I get too many ideas at once my paper can get very disorganized and unclear.

Lack confidence and motivation when writing. Students explained how their WA was due to their lack of confidence in their writing abilities. Cole (60) explained, "I am more confident in my speaking ability compared to my ability to write." Terri (64) reflected, "Some of the things that would make my score higher is my nervousness and lack of confidence when

writing for grammatical purposes. My punctuation. I tend to get really wordy or just throw in extra words." Rhett (78) explained, "I just don't have the motivation to write unless it's a topic that interests me."

Level of enjoyment when writing. Students shared how their moderate WA score was a direct reflection of whether or not they enjoyed writing. Mark (67) discussed his lack of enjoyment toward writing, "I believe accurately portrays my interest in writing. I do not really enjoy writing, but I do not avoid it when it comes up." Jeremy (70) reflected, "This score indicates that I am not apprehensive toward writing, however, it is not something that I necessarily enjoy." Kelsey (79) discussed, "I don't have a very strong interest in writing." Mackenzie reflected, "I scored a 78, and I believe this is accurate to the way I feel towards writing. Once I get down to it, I kind of enjoy it." Annalisa (75) commented, "I sometimes enjoy writing and look to it as a sort of outlet to express myself."

High Writing Apprehension Score

Sixteen of the students reported a high writing score (above 90) in their initial reflection assignments. Three themes emerged from the students who had high WA: *writing apprehension is multi-faceted, high anxiety or fear,* and *lack of interest.*

Writing Apprehension is Multi-faceted. Students who initially had a high WA score described multiple facets that attributed to their high score. Cynthia (115) discussed how she was extremely intimidated by writing due to a number of factors:

> After taking the test and going through all the questions, I believe that this test shows how intimidated I am by writing. I get nervous when it comes to writing and I fear going into a class that is mostly about writing or if it may have writing at all. When I write a paper for a class, I refuse to let anyone peer review it because I get nervous of what they might think. I never look forward to writing, and when I have to write, I feel that I will end up doing a terrible job.

Casey's (96) reflection also noted multiple factors,

> My writing apprehension score indicates my anxiety towards writing and being critiqued. I do not like writing very often, nor do I enjoy my writing to be critiqued by peers. I am not comfortable with my writing therefore, I do not enjoy it.

Peer review causes anxiety. In this theme, the students shared how writing anxiety affected them. Shelby (91) said, "My WA score accurately depicts my feelings toward writing. I scored a 91, meaning that I do experience a type of anxiety or stress in the environment." Brittani (100) explained her anxiety toward writing was so high it has caused her to not choose a career in writing:

> My score shows that I have a high anxiety with my writing and I will most likely not choose a career in writing which is true about me. I do not like to share my writings with others in fear of them judging my grammar and spelling.

Cody also discussed review and critique caused him to have anxiety when he explained, "I do not like to have my writing critiqued by others which unfortunately, I think is very true because I never really learned correct GSP [grammar, spelling, and punctuation] in grade school."

Not interested in writing leads to more apprehension. Students discussed how a high WA was due to a lack of interest and enjoyment. Some students explained how their lack of enjoyment was because they thought they were not good at writing. Kyle (94) said, "My writing apprehension score reflects the fact that I don't take much pleasure in writing." Blane (105) commented, "I scored a 105, and that means that I do not enjoy writing at all." Chance (108) continued the theme of lack of enjoyment: "My WA score reflects my interest writing. I scored 108. This score shows that I don't care much for writing and I have never been good at it."

RQ3: How did the students describe the change in their writing apprehension scores as a result of the course?

At the end of the semester, the students completed a WA post-test and received their scores. Seventy-nine students completed a reflection to describe how their WA changed

throughout the course. As Table 6 displays, the following themes emerged: *became more confident in writing, less fear or worry, awareness of writing skill, score did not reflect feelings toward writing, and no change in score.*

Table 6
Summary of Emergent Themes Identified in Final Writing Apprehension Score Reflections

Emergent Themes
1) Became more confident in writing
2) Awareness of writing skill
3) Score did not reflect feelings toward writing
4) No change in score

Became more confident in writing.

Sixty students said that they experienced a change in confidence in their writing, causing their score to change from the beginning to the end of the semester. Emily's score decreased 18 points and she said, "I feel more comfortable writing now, and I am willing to do more writing. I am also comfortable with people reviewing my writing." Corbin's score decreased from 97 to 64. He wrote:

> My confidence in writing increased and my fear of being evaluated decreased. I now feel confident in my writing know that I will be able to write professionally for my future careers.

This increased confidence was also expressed as less fear or worry toward writing. Cynthia, who had a WA change from 115 to 61, explained her change in fear regarding peer reviews:

> My anxiety about writing has improved, and I do not feel as nervous about writing as I did in the beginning of the semester. I believe I became more confident with my writing. I used to be afraid to turn in work especially having it peer reviewed. Now, I am not as afraid, and I do not get anxious about having others see my work.

Layne noted her lack of fear of writing and having her work read by others resulted in a decrease in score from 92 to 48. She explained:

> At the beginning of the semester, I did not like writing at all, mainly because I hated having people judge my writing. I was very nervous for this course, but wanted to become a better writer and do well in this class. My writing apprehension changed throughout the course by me become more confident in writing papers. I still am not in love with the idea of writing papers, but at least I won't be scared to do it in the future. I went from being terrified to being confident, and I'm so glad.

Knowledge of writing skills and mechanics decreased apprehension. In this sub-theme, students expressed how their WA changed because they became more aware of the writing skills and mechanics. London, who's score changed from a 74 to a 54, noted "I found that I am much more skilled in the business and scientific type writing involved in this course than typical essay writing. I was able to improve my ability to concisely write information." Cody, 95 to 65, shared, "As the course progressed, my writing apprehension did go down. I think this was due to actually learning all the proper GSP rules and being able to more confidently apply those."

Score did not reflect feelings toward writing.

Seven students commented that their final WA score was not representative of their feelings toward writing. The students explained how although the actual score showed they either increased or decreased, their scores were not necessarily representative of their feelings. Tate's score increased from 74 to 97, and he said:

> My score indicates that my WA increased throughout the semester. However, this is not accurate. Due to the examples in the course pack and the feedback on my writing, I became more confident as the semester progressed. I believe my writing began to flow better and contained fewer GSP [grammar, spelling, and punctuation] errors than it did at the beginning.

Savannah's score changed from a 63 to a 62. She noted: "My score is about the same since the beginning of the semester, but I do feel more confident. I don't think my score reflects my attitude toward writing." Garrett said his score change from 59 to 95 contradicted his feelings: "The survey says my WA got worse, but I don't feel like it did. I feel more confident in writing. I became much more detailed oriented and writing has become easier for me."

Mariella's score rose from a 69 to a 92; however, she felt the score was not an accurate representation of her feelings toward writing:

> I think it [WA] became higher because I became more aware of how I would have to use writing in this field. Before I assumed, I wouldn't have to. Now, I can see that I will have to use writing at some point and it just makes me a little more nervous from where it was before taking this course. I don't think it is a bad thing that my score went up, it just shows me that I care more.

No change in score

Nine students explained how their WA did not change throughout the semester. Tanner noted, "I do not feel that it has changed much (69 initial, 62 final)." Harlee stated,

> I remember back that I did not mind people critiquing my work, but I didn't like actually writing. This didn't change much from my current WA. My WA score barely changed because my views on writing barely changed.

Conclusions and Discussion

Higher education needs to prepare students to be able to proficiently write in the workforce (Belkin, 2015; Fiagley & Miller, 1982; Leef, 2014). While instructors in college classrooms might stress the importance of writing in a student's future career, students may show a lack of motivation or confidence to write as they fear and avoid the task (Lea & Street, 1998). Previous researchers indicated WA was a major factor when determining how an individual views writing situations both academically and professionally (Daly, 1978; McCroskey, 1977). The findings from this study showed WA, or avoidance-like attitudes, may be diminished in undergraduate students throughout the duration of a writing-intensive course in agricultural communications.

The theory of self-efficacy can be used to explain the differences between the students' initial and final WA scores. Statistically, there was a significant difference between the initial and final WA tests $t(84) = 4.42$, $p < .00$. In addition to this change, there was a narrowing of the

range of student scores. The student scores became closer to the mean or ideal WA score: initial (26 to 126), final (38 to 107). The students' self-reflections provided additional insight into how their WA scores changed throughout the semester. Similar to Pajares and Johnson's (1994) study, the emergent themes found in this study suggest students' WA had a strong relationship with self-efficacy.

An analysis of the students' beginning of the semester WA reflections revealed multiple themes for each category of WA: low, moderate, and high. Students with low WA indicated they had a no fear toward writing and a lack of motivation. Similar to Daly's (1978) study, these students explained how their low WA tended to make them procrastinate turning in assignments or editing their assignments. While these students were generally more confident with writing, their high confidence caused a lack of attention to detail and resulted in poor marks on their assignments. In the moderate WA score category, analysis of the data revealed four emergent themes: anxiety depends on certain factors, organizing thoughts on paper is difficult, lack confidence and motivation when writing, and level of enjoyment when writing. These students were consistent with Daly's (1978) explanation of attitudes within the moderate apprehension level because the student reflections indicated they were the most comfortable with writing; however, certain factors do exist that make them nervous about the writing process. In the moderate WA category, the students typically only feared one factor of writing; however, students with high WA discussed how multiple factors played a role apprehension. The analysis of data indicated the emergence of three themes: writing is multi-faceted, peer review causes anxiety, and not interested in writing leads to more apprehension. The students indicated these themes influenced their high WA at the beginning of the semester. These emergent themes were

similar to what other researchers have identified as factors describing high WA (Daly, 1978; Daly & Miller, 1975; Faigley et al., 1981; Smith, 1984).

As seen in research question three, completing a writing-intensive course helped to build students' confidence with writing. Previous researchers have compared WA to the idea of self-efficacy (Daly, 1978; Daly & Miller, 1975; Pajares & Johnson, 1994). Similar to the findings of previous researchers, the findings from this study indicated 60 students became more confident or comfortable with their writing, or rather, their level of self-efficacy toward writing increased. Because the WA construct dealt with the student's fear or avoidance of writing (Daly & Miller, 1977), the more comfortable the student becomes, such as through a writing course, the more likely the student will be to write in the future. This study demonstrated a student's enrollment in a writing-intensive course could help the student become more familiar, confident, and more willing to write in their future careers.

Although knowledge of mechanics and skills are necessary, students may not use the skills if they fear or avoid writing (Lea & Street, 1998). Because writing skills are the most important skills college graduates need to posses (Anderson, 2014; Lea & Street 1998), agricultural communications instructors should find innovative teaching methodologies to make students comfortable with writing such as challenging students to overcome their apprehension of writing. Additional research should be completed to determine what classroom activities and instructional techniques help to improve the students' confidence toward writing. Another study could also explore how WA impacts student performance on specific assignments and course grade.

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