

8-2013

Visual and Linguistic Influences on Public Perceptions of Swine Confinement

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Visual and Linguistic Influences on Public Perceptions
of Swine Confinement

Visual and Linguistic Influences on Public Perceptions
of Swine Confinement

A thesis submitted in partial fulfillment
of the requirements for the degree of
Master of Science in Agricultural and Extension Education

by

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Bachelor of Science in Animal Science, 2011

August 2013
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This thesis is approved for recommendation to the Graduate Council.

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ABSTRACT

This study was designed to analyze the visual and linguistic characteristics of online (YouTube) videos and electronic newspapers, identifying relationships with positive, negative, and neutral attitudes toward swine confinement.

This study followed a content analysis design. Two coders, trained to an acceptable level of agreement ($\kappa = .68$), examined online videos and electronic newspapers, assessing linguistic and visual images used in relation to attitudes toward swine confinement. A series of search terms deemed suitable for this study's objectives were employed in multiple search engines, and 48 articles and 157 videos were coded for content.

Results from this study showed that certain *confinement* and *animal* terminology had strong relationships with negative and positive attitudes toward swine confinement. When used in articles, the *confinement* term *crate* had a significant relationship with negative attitudes toward swine confinement. When the *confinement* term *stall* was used in videos, a relationship was observed with positive attitudes toward swine confinement. When the *animal* term *pig* was used in articles, a relationship with positive attitudes toward swine confinement was observed. When the *animal* terms *pig* and *piglet* were used in videos, a relationship was seen with negative attitudes toward swine confinement. Elements of visual imagery also displayed the ability to resonant with an audience, exhibiting a relationship with certain attitudes toward swine confinement. There was no statistically significant relationship between the gender of the individual delivering the message in online videos and the videos' attitudes toward confinement, but the presence of a person increased the modality of media and therefore is likely to appeal better to audiences, regardless of the message or position. Increased modality was observed in a large amount of online videos and was associated with negative and neutral attitudes toward

swine confinement. As a result of message framing in the videos, both *farm* and *outdoor* settings were most closely associated with negative attitudes toward confinement.

Recommendations were made to agricultural producers and communicators with respect to future research aspirations. Increasing producers' and agricultural communicators' level of awareness and transparency is the most crucial recommendation for decreasing the knowledge gap between producers and consumers. Improved internal and external communications within the agriculture industry also is a key recommendation for agricultural communicators, encouraging them to assume a more active role when producing and disseminating messages. Recommendations for future research focused on the ability to expand knowledge and strategies from previously conducted research.

ACKNOWLEDGMENTS

I saved this part of my master's thesis for last, mainly because it is difficult to think about all the people I have to thank for all of the opportunities made available to me. Not planning to even obtain a master's degree initially, there was a strong hesitation and lack of desire to write a thesis. While many have said it before me, this is by far one of my proudest accomplishments.

First, I would like to thank my mom. She's not afraid to point out my flaws, but is always pushing me to achieve more. She is the reason I am self-motivated and refuse to pass up the next challenge. The tears in her eyes and words "I'm so proud of you," never meant more than when they come from her. My accomplishments and success are a direct reflection of the time and effort my parents have put in raising me. I wouldn't be where I am today without my family's constant support.

Second, I would like to thank my professors at the University of Arkansas. Dr. Leslie Edgar and Mrs. Casandra Cox have been vital to my success. They endure my long-winded conversations and still motivate me to do more. Obtaining a fraction of their knowledge will provide me with a lifetime of success. Thank you both for taking the time to guide me through my master's degree and setting time aside to talk with me, no matter how busy you are. I believe I have used Skype with my professors more than anyone else.

Lastly, I must thank my advisor, Dr. Jefferson Davis Miller. He has been my biggest critic, but in the most nurturing way possible. He has pushed me to become a better writer, researcher and professional. He always made "Arthur time", no matter whom he was speaking with, even if I had to forcefully push my way into his office. I have not only thought of him as an advisor, but also a mentor. Thanks for everything Dr. Jefferson!

My education and experiences acquired at the University of Arkansas have made me a confident and knowledgeable graduate. I look forward to the next group of influential people in my life and will always remember those in the past. Thank you to everyone else I did not mention — you know who you are!

TABLE OF CONTENTS

I. INTRODUCTION	1
A. Background	1
Swine industry.	1
Consumer Demand.....	2
Media’s Role	2
Controlling Messages.....	2
B. Overview of Literature.....	3
Industry Struggle.....	3
Visual Influences.	4
How Words Work.....	5
C. Problem Statement	6
D. Purpose of the Study	7
E. Research Objectives.....	9
F. Definitions.....	9
G. Limitations	11
H. Delimitation	11
II. CONCEPTUAL AND THEORETICAL FRAMEWORK.....	12
A. Swine Industry in American Agriculture.....	12
Current Disconnect	12
Growing Trends	13
B. Animal Welfare.....	13
The Foundation	13
Ballot Initiatives.....	14
C. Mass Media and Communications.....	15
Discovering Media.....	15
Internal and External Communication	16
D. Visual Imagery.....	17
Developing Senses	17
Misconceptions	18
E. Linguistic Use.....	19

Power of Words	19
Perception of Words	20
Regaining Trust.....	22
F. Theoretical Framework.....	22
Gatekeeping	23
Framing.....	24
Semiotics.....	25
III. METHODOLOGY	28
A. Problem Statement.....	28
B. Research Objectives.....	29
C. Design of the Study.....	29
D. Publication and Videos	30
E. Instrumentation and Data Collection	33
F. Data Analysis	35
G. Reliability.....	35
H. Validity	38
I. Research Objective One.....	41
Electronic Newspapers.....	41
J. Research Objective Two	54
Online Videos	54
K. Key Findings.....	58
V. CONCLUSIONS/RECOMMENDATIONS.....	59
A. Conclusions, Implications, and Recommendations	59
B. Research Objective One.....	59
Electronic Newspapers.....	60
Online Videos	65
C. Research Objective Two.....	72
Online Videos	72
D. Recommendations for Agriculture Producers.....	78
E. Recommendations for Agricultural Communicators and Educators	79
F. Recommendations for Future Research	82
VI. REFERENCES	84
VII. APPENDIX A.....	93

VIII. APPENDIX B	95
IX. APPENDIX C	97
X. APPENDIX D	98
XI. APPENDIX E	99

LIST OF FIGURES

Figure	Page
1. Theoretical Model	23
2. Ogden and Richards Triangle of Meaning Model	27
3. Intercoder Reliability Report	37
4. Theoretical Model (Revised)	80

LIST OF TABLES

Table	Page
1. Search Terms	31
2. Cohen's Kappa Agreement Scales	38
3. Characteristics Analyzed in Mediums	40
4. Publication vs. Confinement (Article)	42
5. Type vs. Confinement (Article)	43
6. Length vs. Confinement (Article)	44
7. Cited Sources vs. Confinement (Article)	45
8. Production Agriculture vs. Confinement (Article)	45
9. Appeal Type vs. Confinement (Article)	46
10. <i>Animal</i> Terminology vs. Confinement (Article)	47
11. <i>Confinement</i> Terminology vs. Confinement (Article)	48
12. Type vs. Confinement (Video)	49
13. Length vs. Confinement (Video)	50
14. Production Agriculture vs. Confinement (Video)	51
15. Appeal Type vs. Confinement (Video)	52
16. <i>Animal</i> Terminology vs. Confinement (Video)	53
17. <i>Confinement</i> Terminology vs. Confinement (Video)	53
18. Gender vs. Confinement (Video)	55
19. Music & Text vs. Confinement (Video)	56
20. Setting vs. Confinement (Video)	57

I. INTRODUCTION

Background

Swine industry.

In 2007 there were 30,546 swine operations in the U.S., which was a decrease from 2.2 million in 1950 (Damron, 2006; USDA-NASS, 2007). While the number of farms has steadily decreased in the United States (U.S.), there has been an increase in the number of animals per farm. In 2003, 88% of swine operations had 1,000 or more head. Pig-to-finish operations, on average, produced 4,500 head in 2004; hog-finishing operations produced, on average, 7,000 head annually. Large single-phase operations have become more popular in the swine industry, as they are more efficient and a lower production cost for farmers. Consolidation of farms is expected to continue, with the swine industry seeing continued growth of large operations, leaving little room for smaller swine operations (Damron, 2006; Key & McBride, 2007).

With a 70% decline in the number of swine operations, and more pigs owned by fewer people, the swine industry faces new problems. Concern by the consumer has gone beyond the size of farms; a new focus of public communication for the industry includes environmental factors, animal welfare, and pork prices (Key & McBride, 2007). With approximately 20% of the U.S. population living in rural areas in 2000, and less than 1% of the population living on farms, the gap between producers and consumers has steadily increased (Dimitri, Effland, & Conklin, 2005; Lusk & Norwood, 2011). As this gap increases, the consumer will have less knowledge of why certain practices are used, and will increasingly question the pork industry's actions.

Consumer Demand.

A recent example of consumers' influence on agricultural production has been the demand from the McDonald's corporation that producers growing pork for its suppliers are required to phase out gestation crates. This demand by McDonald's is part of a recent movement designed to eliminate the use of gestation crates for housing pregnant sows. Many leading pork distributors have followed suit, including Smithfield and Hormel foods (Lartonda, 2012). With the welfare of sows in consideration for consumers, and the longevity of the industry for producers at risk, the pork industry is required to comply with consumer demands (Lartonda, 2012).

Media's Role.

Mass media has steadily grown in power over the years, extending its reach to "create publics, define issues, provide common terms of reference and thus allocate attention and power" (Littlejohn, 1992, p. 341). Marketing and public relations professionals in the agriculture industry are not the same as the general media, but they do create and distribute external media content for their audiences in several ways (e.g. magazines, videos, print, and television advertisements, etc.). These agricultural media efforts affect consumer audiences, sometimes portraying and even inadvertently defining what rural life should be (Maddox, 2001). General media also has the power to "affect and reflect the culture of society" through messages (Littlejohn, 1992, p. 341). With this strong effect on readers and viewers, the pork industry must be conscious of the external media distributed to readers seeking information.

Controlling Messages.

The explanation of how messages are disseminated is explained briefly through gatekeeping, framing and semiotics theories. These theories explain how messages are created

and received. Gatekeeping explains how mass media content is prioritized and how newsworthy information is reported, affecting what the public knows about certain topics (Littlejohn, 1992). Influence on how an audience perceives messages is applied by mass media through framing (Scheufele & Tewsbury, 2007). Framing explains how news writers connect with readers to best represent the intended organization or industry in the news media (Entman, 1993). Focusing on signs and messages, semiotics helps explain how symbols are created and the ways the audience will interpret them. Semiology highlights the fact that time and thought must be used to deliver messages to an audience properly, or else unintended messages can be sent.

Overview of Literature

Industry Struggle.

The demographics of agricultural production in the U.S. have changed significantly since the beginning of the 20th century. The industry previously employed nearly half of the workforce and produced essential commodities for the U.S., which contributed to the overall growth of the economy (Dimitri et al., 2005). Dimitri et al. (2005) reported that as the industry increased its output of products, it has allowed “consumers to spend an increasingly smaller portion of their income on food” (p. 2). With a more efficient agricultural sector, many people moved to nonfarm occupations, which reduced the number of people involved in agriculture occupations (Dimitri et al., 2005). While the cost of operating a farm increases, and consumers pay less for food, maintaining profit becomes a larger concern in production agriculture. To reduce costs, farmers are finding new ways to manage farms that have become 67% larger while using less manual labor. With no increase in the amount of land being farmed, stocking density has turned into a common solution to maximize profit, but the decrease in space is normally more than any animal would prefer (Lusk & Norwood, 2011). Stocking density refers to the

number of animals kept in a fixed amount of space (Lusk & Norwood, 2011). This change in confinement practices has raised animal welfare concerns, and these concerns have caught the attention of advocate groups like the Humane Society of the United States (HSUS) and National Pork Producers, who are against and for modern livestock farming practices in general, respectively (Norwood & Lusk, 2011).

As consumers have become increasingly interested in how their food is raised, and as their perceptions have begun to affect marketing strategies, advocacy involvement in modern livestock farming has increased. Protective of not only their food, consumers have begun to question environmental issues, food purity, and animal welfare (Dimitri et al., 2005). With increased visibility, farms as well as agricultural and food-related businesses, must learn to control how they are perceived and be mindful that content in publications equally represents their image (Goodwin & Rhoades, 2010).

Visual Influences.

Electronic and print media (e.g. magazines, newspapers, YouTube, etc.) efforts typically have two important intended goals: to deliver a message and create a reader/viewer response. Communicators' decisions regarding visual imagery and linguistic choices are key in affecting message delivery and reader/viewer response. In particular, interpretation of images is impacted greatly by cultural influence. Whether images are viewed in a book, print advertisement, or in a television news report, they are composed of complex messages that have relevant meaning intended for a specific culture. The term *culture*, expands beyond the general concept of a country's borders and encompasses a persons ethnicity, gender, age, sexual orientation, geographical orientation, social economic situation, and physical disability (Lester, 2005). Individuals outside the culture envisioned by the communicator are often unable to understand

these messages, ultimately leading some audience to the conclusion that there is no purpose to the message (Lester, 2005). As the agriculture industry produces external media efforts, images must be recognizable to the reader, allowing readers to make associations from their own meaningful experiences. For example, the traditional farmer, with his bib overalls, flannel shirt, and baseball cap, is a recognizable image that is associated with the trustworthiness of the rural farming culture (Rhoades & Irani, 2006). Rhoades and Irani (2006) suggest this ideology plays “on the image of rural America, bringing the idea of simplicity, hard work and trustworthiness to the viewer’s mind” (p. 26). Images dominate the brain’s ability to create perceptions about a subject when combined with text. Therefore, readers/viewers must actively concentrate on the visual subject matter (when available) to better understand the meaning of the overall messages in a media effort (Barry, 1997; Lester 1995).

How Words Work.

Words, as opposed to visual images, are linear, in that each word follows the other. In our daily lives, we see everything with our eyes, but our conscious thoughts are mostly framed with words (Lester, 2005). While images and words are individually powerful in conveying messages, when equally combined, they serve as one of the strongest forms of communication (Lester, 2005). “Consumers have predisposed attitudes toward particular terminology,” (Wansick & Kim, 2001, p. 18) and people become suspicious and apprehensive when they see images and messages that carry certain connotations, such as *best management practices*. Similar words have been associated with failure and distrust over the years (Goodwin, Chiarelli, & Irani, 2011, p.25). Goodwin et al. (2011) found that while every consumer and reader would like to hear favorable messages to describe the livestock industry, messages such as “committed to producing the best quality product” have only resulted in skepticism. As consumers become

protective over land, environment, and animal welfare, images used in publications must take the same considerations into account (Dimitri et al., 2005). Images that display rolling hills, dirt roads, and trees elicit freedom and openness, allowing the reader to “feel the serenity of the image,” noted Rhoades and Irani (2006). Images such as these, which are accompanied by messages that promote preservation and natural resources, appeal to the reader and promote positive feelings. Wide-open green pastures are favored more by the consumer than animals in cages (Goodwin et al., 2011). These considerations need to be factored in with the representation of the agriculture industry as a whole by those making decisions about images used in print and electronic media.

Problem Statement

American agriculture has been in a state of flux for the last 25 years, and modern agriculture is no longer the traditional “yesteryear’s small family farm” (Damron, 2006, p. 740; Dimitri et al., 2005). Still characterized as being honest and hard-working people with good family values, traditional farmers were viewed differently before current *factory* farming existed. Traditional methods of farming were generally associated with good husbandry, where the animal and farmers’ interest closely resembled one another (Damron, 2006; Rhoades & Irani, 2006). As farm sizes grow larger, and as technology is further integrated into swine production, the most efficient farmers will see the highest profits. One of the most discussed issues in the agricultural industry recently—practices regarding swine confinement—relates mostly to the trade-off between animal welfare and cost. Cost refers to, and affects, producers, consumers, the economy, and food resources (Norwood & Lusk, 2011). The cost of producing food does not resonate in the mind of the consumer; only the price on the shelf makes a recognizable connection.

Farmers feed the world, and they do this by implementing the best practices to maintain “scarce resources” within their control (Norwood & Lusk, 2011, p. 201). Norwood and Lusk (2011) made a valid point about how consumers actually control production practices. “No one person can say exactly how hogs, chickens, and cows should be raised and at what price they should be sold at: consumers and producers ultimately decide price”, state Norwood and Lusk (p. 201). Animal welfare controversies have contributed to one of the longest and most difficult social issues in the past quarter century. Animal welfare debates have not only affected policy initiatives, but they have also created “emotional rhetoric and ill will” amongst people (Damron, 2005, p. 737). As the public better understands the efficiency of production agriculture, consumers commonly accuse farmers of being inhumane, and farmers accuse consumers of being ignorant, which creates the current controversy (Norwood & Lusk, 2011).

As emotions rise, consumers and producers both defend their beliefs and actions. This study sought to observe how internal and external communications about swine confinement practices have been disseminated and what visual imagery and linguistic use was associated with various attitudes toward swine confinement. For this study, *swine confinement* was specific, but not limited to, *gestation crates*, as this was one of the most controversial issues in current media. This allowed the researchers to analyze all media referencing swine confinement. There is limited research on methods to communicate these messages; thus, this study strives to identify strategies to better represent the swine industry in media.

Purpose of the Study

As humans, we engage in communication daily, exchanging ideas and messages with others around us. Our ability to communicate effectively separates us from other animals (Littlejohn, 1992, p. 3). Humans evaluate messages and attempt to assign meaning and

usefulness to the content. Groups in both the academic and private sectors, like parent-teacher associations and public relation firms, make efforts to regulate and monitor content in media. These efforts allow organizations to see how policy and social issues are being treated and represented in media today (Littlejohn, 1992; Wimmer & Dominick, 2006, p. 151).

The problem arising in modern agriculture is that people do not have the “comfort level” with current livestock production practices (Damron, 2005, p. 740). Consumer concern with animal welfare not only influences change in consumers’ own behaviors, but also in the behaviors of those around them. People with strong convictions force their beliefs and attitudes onto others and sometimes are successful in affecting public policy (Norwood & Lusk, 2011). Advocacy groups have become powerful on this issue and are vocal through many media and avenues (Norwood & Lusk, 2011). As the agricultural industry begins to decrease the knowledge gap between the producers and consumers, messages delivered through various mediums must go beyond knowledge boundaries to translate meaningful and useful information to the public (Goodwin et al., 2011; Tushman & Katz, 1980).

In order to compete in terms of communicating with consumers, the swine industry might be best served by emulating the concepts associated with the organic foods industry, which has successfully captured the idea of beauty in its messaging. According to Abby Rinne, who serves as the affiliate and industry relations manager for U.S. Farmers and Ranchers Alliance (USFRA), by emulating this concept and idea of cleanliness, the swine industry could establish the same connection with public perception of the swine industry (A. Rinne, personal communication, March 27, 2012).

Following this approach desired by the USFRA, the purpose of this study was to define what linguistic and visual imagery is associated with various attitudes toward swine

confinement. This study was intended to emulate Goodwin and Rhoades' (2011) study in Ohio to begin working toward a generalized understanding of semiotics, with regards to linguistic and visual imagery used to represent the pork industry. This study also was intended to provide aid to those individuals in the swine industry who are responsible for image development, branding, issue management, and advocacy. Research-based information provided by this study may be used to create basic strategic communication decisions. By addressing these communications issues, the industry has a chance to influence the gatekeepers, who can reach consumers with important messages about swine production practices, who will, in turn, continue to develop their opinions through media and word of mouth.

Research Objectives

1. Analyze terminology and other important rhetorical characteristics used to describe the swine industry and its practices in online videos and electronic newspapers to determine which are associated with a positive, negative, and neutral attitude toward swine confinement.
2. Analyze visual imagery used to describe the swine industry and its practices in online videos to determine which are associated with a positive, negative, and neutral attitude toward swine confinement.

Definitions

Boolean Operators: AND and OR operators (Lee, Kin, Kim, & Lee)

Confinement: Concrete and cable enclosures (Damron, 2006, p. 740)

Culture: Ethnicity, economic situation, place of work, gender, age, sexual orientation, physical disability, gender, age, geographical orientation and many aspects of a person's life (Lester, 2005, p. 63).

Electronic Newspaper: A remote access newspaper (Library of Congress, 2004).

Farrow: In swine, the term used to indicate giving birth (Damron, 2006, p.785).

Farrowing Crate: A penning system which has an area for the sow and areas for the pigs (Schinckel, 2008).

Framing: How the media choose to portray what they cover (Wimmer & Dominick, 2003, p. 462).

Gatekeeping: A metaphor to describe the process by which selections are made in media work, especially decisions regarding whether or not to allow particular news reports to pass through the “gates” of a news medium into the new channels (McQuail, 2005, p. 308).

Gestation Crate: Metal crates that house female breeding stock in individually confined areas during an animal’s 4-month pregnancy (Tonsor, Wolf, & Olynk, 2009, p. 492)

Modality: Use of text, graphics, sound and video on a single communication platform (Kioussis & Dimitrova, 2004, p. 9).

Outdoor Setting: A setting other than on a farm (i.e. parks, public outdoor area, open fields not on a farm, etc.)

Semiology: The science of “sign systems” or “signification.” Originally founded in the study of general linguistics by Ferdinand de Saussure (year?), it was developed into a method for the systematic analysis and interpretation of all symbolic texts. Systems of signs are organized within larger cultural and ideological systems that ultimately determine meaning. A key element of semiology is the idea that any (meaningful) sign (of any kind) has a conceptual element that carries meaning as well as physical manifestation (word, image, etc.) (McQuail, 2005, p. 567).

Single-phase: Specializing in a single phase of production (i.e. feeder operations, finishing operations, farrowing operations, etc.) (Key & McBride, 2007, p. 1)

Sow: Female pig that has given birth (Damron, 2006, p. 795).

Stocking density: The amount of animals kept in a fixed amount of space (Lusk & Norwood, 2011, pp. 464-465)

Tone: Style or manner of expression in speaking or writing (Merriam-Webster.com, 2012).

Operationally, for this study, tone was characterized as positive, negative, or neutral with respect to the concept of traditional confinement practices and with respect production agriculture in general.

Limitations

Limitations of this study include the qualitative design, which cannot be generalized on any level. “Content analysis also limits the ability of generalizing and prediction of the effects of content on an audience” (Wimmer & Dominick, 2003, p. 144). Limitations are also specific to a study’s framework; categories and definitions are limits for each individual study (Wimmer & Dominick, 2003). The electronic retrieval of YouTube videos and electronic newspapers also serves as another limitation for this study due to many videos and articles being at the risk of removal from the Internet at any time.

Delimitation

The researcher chose to delimit the content analysis of the electronic newspapers used in this study. For the purpose of this study, data from electronic newspapers was collected to observe and describe patterns consistent with attitudes toward swine confinement in pork and non-pork publications. For this reason, this study limits the ability to make any comparison between the two categories of publications.

II. CONCEPTUAL AND THEORETICAL FRAMEWORK

Swine Industry in American Agriculture

Current Disconnect.

Much of the current struggle in American agriculture is to keep up with the changing pace, since many policies were previously designed for a time in agriculture that no longer exists (Dimitri et al., 2005). Lusk and Norwood (2011) explained the situation with production and demand: “never in a time have so few people fed so many” (p. 1). With only 1% of humans working on farms, a steady gap increases between the modern livestock industry and the consumer (Lusk & Norwood, 2011). As this gap increases, the views of the consumer and the producer become increasingly different (Goodwin & Rhoades, 2010).

This disconnect between the producer and the consumer relates to a lack of involvement in agriculture and preconceived notions that modern industrial farming is similar to what consumers remember from children’s story-book farms (Norwood & Lusk, 2011). Many people are only familiar with farms they have seen depicted in children’s books (Norwood & Lusk, 2011). While there are now fewer people involved in production agriculture, Lusk and Norwood (2011) suggested that people have begun to renew their interest in food. More people have started to grow their own food and visit farmers’ markets, connecting more to how their food is produced. In American culture, many people have become more conscious of health and environmental issues, which requires the industry to pay attention to the environmental impact of agriculture and food industry (Dimitri et al., 2005). At one point, the public conversations about agriculture was focused primarily on how the agriculture industry was affecting the soil; however, the focus has changed to include water and air quality, landscape protection, food purity, and animal welfare (Dimitri et al., 2005). As consumers begin to influence the

agriculture industry, the humane treatment of “food animals” rates high in the general public’s opinion, and an increase of ballot initiatives and policy changes will affect the agriculture sector (Dimitri et al., 2005; Goodwin & Rhoades, 2010; Lusk & Norwood, 2011).

Growing Trends.

In 2005, operations with 5,000 or more swine represented 50% of the industry (Key & McBride, 2007). In efforts to reduce costs, while increasing productivity, many farmers have reduced to a single production phase operation. This method accounted for 40% of swine operations in 2004, an increase from 19% in 1992. With less than 25% of farmers relying on farming as their sole income, many have resorted to more efficient operations (Key & McBride, 2007). Taking into consideration land, barn size, and labor, farmers have found stocking density to be economically beneficial. Economically ideal solutions, like concentrated swine operations, introduce potential environmental risks on local communities, which have been occasionally referred to as a nuisance impact (Key & McBride, 2007). As small swine operations dwindle, and large operations set the standard, the industry faces increased visibility. A solution to an economic problem creates a welfare and environmental problem, which then creates a profitability problem (Norwood & Lusk, 2011).

Animal Welfare

The Foundation.

The first animal welfare group was created in 1824 in Great Britain. This group is now recognized as the Royal Society for the Prevention of Cruelty of Animals (RSPCA). The first advocacy group in the United States was not assembled until 1866, when the American Society for the Prevention of Cruelty to Animals (ASPCA) was officially recognized (Lusk & Norwood,

2011, pp. 35-36). Immediately springing into action, the ASPCA began reinforcing current animal protection laws, which affected farms and farm animals. Farmer “transportation methods” was one of the first animal protection concerns the ASPCA targeted. This was followed by efforts to address *slaughter methods*. When the *slaughter method* initiative was found to have many loopholes, enforcement became very difficult and ultimately failed. In 1877, the American Humane Association (AHA) was created to protect children and animals. AHA immediately picked up where the ASPCA left off and began to work with the livestock industry to improve animal welfare. Considered a somewhat moderate animal protection group, AHA’s corruption in covering up certain livestock practices led to four of its officers leaving the group. These four individuals created a group that is now known as the Humane Society of the United States (HSUS), which has been labeled as the leading and most influential animal welfare group today (Lusk & Norwood, 2011, pp. 35-36).

Ballot Initiatives.

As animal right groups push ballot initiatives and use the courtroom to affect current practices. As a result, activists groups, farmers, and consumers play out the animal welfare debate in ballot boxes (Norwood & Lusk, 2011). As society raises animal welfare and environmental concerns, the industry has begun to feel the pressure to defend itself (Key & McBride, 2007). Many consumers have begun to base their opinions of the agriculture industry on hearsay or things they have read in publications (Goodwin & Rhoades, 2010). The increase in productivity, in relation to the expansion of swine operations, suggests that this will be an ongoing trend (Key & McBride, 2007). This trend can only be affected by the change in laws governing the agriculture industry, which could potentially affect the industry as a whole as the public becomes increasingly involved (Key & McBride, 2007).

Many people now believe that animals are much like humans, where they “can feel pain, think, and possibly have feelings” (Goodwin & Rhoades, 2010, p. 3). Goodwin and Rhoades (2010) predicted that as people begin to place animals on the same level as humans, there will be more concern focusing on the push for animal protection. As the industry experiences market and consumer influence, larger farmers will set the standard for swine operations (Dimitri et al., 2005). In response, publications must promote positive images of the industry’s environmental impact and animal welfare to maintain public support.

Mass Media and Communications

Discovering Media.

Miller, Annou, & Wailes (2003) established that “mass media plays an important role in the publics’ attitude towards agriculture” (p. 29). Because education and communication play a significant role in the acceptance of agriculture to the public, methods in communicating messages should be supported by a well-developed communication plan (Miller et al., 2003). With modern mass communication resources, people are able to access information quickly from virtually anywhere on the globe (Littlejohn, 1992, p. 341); therefore, mass media is often used by organizations to disperse messages to large groups (Littlejohn, 1992). Defined as the “use of text, graphics, sound, and video on a single communication platform” (p. 9), Kiouisis and Dimitrova (2004) emphasize the importance of modality serving as a central factor in shaping viewers perceptions and as a key component when constructing online media. Increased modality has the potential to affect perceived credibility, affording greater information completeness (Kiouisis & Dimitrova, 2004).

A component of modality, music plays a role in many persuasive communication situations. Serving as background music in department stores, coffee shops, cafes, etc., music

has been used to create pleasant shopping experiences (Xu & Sundar, 2011). Affecting three dimensions of emotional reactions, music affects the emotional reaction to pleasure, arousal, and dominance. Arousal particularly refers to how the environment stimulates individuals and the residual excitation that carries onto the next stimulus (Xu & Sundar, 2011). Once excitation occurs, time will pass before the effects decay and this excitation amplifies the audience's physiological response to other stimuli around them. This effect still persists even after the stimulus has been removed, illustrating how music contributes to delivering messages (Xu & Sundar, 2011).

In order to obtain information, consumers must use external sources, and in order for organizations to keep up with a rapidly changing environment, effective communication serves as the foundation of modern organizations (Parsons & Urbanski, 2012, p. 155; Tushman & Katz, 1980, p. 1072). The agriculture industry has become increasingly aware of the information gap between consumers and producers, sparking a movement for all involved in the agriculture sector to serve as industry advocates. This movement represents an effort to increase awareness about modern agriculture and build relationships with the community (Goodwin et al., 2011).

Internal and External Communication.

Parsons and Urbanski (2012) noted that “effective communication can complement successful interpersonal work relationships as well as both internal and external communication practices” (p. 155). In order for the agriculture industry to communicate externally, it must first learn to communicate more effectively internally. When organizations have poor internal and external communication, the organization becomes dysfunctional (Parsons & Urbanski, 2012, p. 157). Whether the agriculture industry realizes it or not, each person in the industry serves a role in public relations. Each member of the agriculture industry serves as a public relations

practitioner every time he or she interacts with publics outside the industry, further emphasizing how critical communication is (Parsons & Urbanski, 2012, p. 156; Rhee & Kim, 2009, p. 3). To prevent dysfunctional internal communications, organizations must adapt well to the changes in environment. This, in turn, promotes better performance (Parsons & Urbanski, 2012, p. 155). Even though people's actions and choices are regulated in organizations, "their actions produce social structure and social change" (Parsons & Urbanski, 2012, p. 156). Individuals are often more influential on peers than media (Littlejohn, 1992).

In addition to improving internal communications, control of external communications often has a positive effect on organizational structure as well, leading to the development of a strong organizational culture (Parsons & Urbanski, 2012). Controlled external communications should focus on effective messages, which ensures that the intended message is delivered to the consumer (Goodwin et al. 2011). One of the most difficult parts of communicating to the consumer is moving beyond the communication boundaries that often exist when the communicator and recipient do not have the same knowledge. Gatekeepers serve to remove communication boundaries and translate messages that are useful and meaningful (Tushman & Katz, 1908). Gatekeepers serve a vital role in the industry because of their ability to encode messages, selections of shaping, timing and display (Kahle & Kim, 2006). Messages can be controlled through the presence or absence of certain words and images, which has the power to control the interpretation of organizational messages (Goodwin et al., 2011, p. 23).

Visual Imagery

Developing Senses.

From the time we are born, images become part of the way we process things around us. Before we are able to read and write, we make associations with everything around us through

images (Lester, 2005). When readers and viewers store images and their meanings in their minds, the ability to recall those memories will help create new meanings with every new piece of information they encounter throughout their life. The goal of visual communication is to create powerful images that the reader/viewer will remember and to encourage each readers/viewers mind to use them (Lester, 2005, p. 7). In order for readers/viewers to use images, they must select and isolate an image. This initiates the process of creating meanings and making associations. To select an image is more than merely looking. In selecting an image, the reader systematically begins to analyze it, resulting in the opportunity for the mind to begin storing information for long-term retrieval. Meanings are created when images become stored, and as a result of this deeper processing are more likely to become part of a person's long-term memory.

Society has become “visually mediated” (Lester, 2005, p. 415), which means that understandings of media content comes from pictures, not words. Visual images are used to help portray messages, and people's social class and cultures help define the meaning of these images. While photographs are used as visual components in mass media, if not used properly, they can communicate inaccurate information (Edgar & Rutherford, 2012). Therefore, to avoid communicating inaccurately or unintentionally, deep thought must go into the selection of images being communicated through mass media. This type of strategic selection of images can help keep visual communications efforts from backfiring (Lester, 2005).

Misconceptions.

Many readers/viewers of agricultural media have a pre-conceived notion of what rural life is like. These stereotypes place hardworking men in the fields and supportive women standing by their husband's side. By confirming this relationship, readers have a connection

linked with the publication and the products. This connection is one that most people associate with the agriculture industry as a whole, where a red barn, white picket fence, and green pastures define the industry (Rhoades & Irani, 2006). General media has shaped this image in reader's minds through publications, movies, and television programs (Rhoades & Irani, 2006). When the consumers' "romanticized notions" meet modern industrial agriculture, a sense of distrust can be created (Norwood & Lusk, 2011). The agriculture industry has come a long way to remove such stereotypes and reduce this knowledge gap; however, it is expected to continue to be a constant battle (Goodwin & Rhoades, 2010; Rhoades & Irani, 2006).

Images are a powerful method of communication in any publication; readers are looking for reassurance within an image. With the important role visual images play in today's mediated society, it is essential to take inventory of what these images are portraying and saying about rural culture and ideologies" (Rhoades & Irani, 2006, p. 11). This is especially important when addressing non-farming audiences. A certain level of respect is granted by consumers to farmers, given that they are seen as hard working and trustworthy in the reader's/viewer's mind (Rhoades & Irani, 2006). These characteristics can then transferred to the agricultural organizations and companies and to the agriculture industry as a whole, as mass media assists in connecting the positive character virtues of farmers to the organizations that support them.

Linguistic Use

Power of Words.

While images are used to represent a message and to help readers/viewers think more deeply about a message, words, of course, are typically the primary basis for delivering the message to readers. Terminology in reference to new or complex information can elicit positive, neutral, and negative responses; therefore, word choice is a major consideration in print media

(Miller et al., 2003). As consumers have grown interest in “environmentally friendly production practices” and have pushed more for an organic and specialized type of product to be produced, they have certainly influenced the direction of the industry in today’s market (Dimitri et al., 2005, p. 7). This influence has also affected the connotations of words and phrases connected with agriculture, which can then have an effect on the tone of written messages.

Tone is not a precise measurement, but rather a combination of many variables. Variables such as verb usage, tense, images, colors, etc., act together to create a desired message tone (Hyde, 2001). The desire to create a proper tone helps define the communicator’s intentions regarding word and image choice, as the communicator strives for a desired response by his or her reader.

Perception of Words.

Certain phrases like *stewards of the land*, *preservation of natural resources*, and *sustainable growth* have elicited a favorable response from readers of agriculture-related narrative (Goodwin et al., 2011). These types of phrases help reinforce natural resources, relating agricultural practices with what the consumer believes to be important and essential. Meanings must already be present when associations are made in communicative acts, indicating “an ideal mode of existence independent of an individual language user” (Tylén, Fusaroli, Bundgaard & Østergaard, 2013, p. 40)

This concept of affecting tone through terminology is especially important to agricultural communicators when they are seeking to promote the positive aspects of agricultural livestock production. While many U.S. farmers raise crops, the United States Department of Agriculture reported there were 90.8 million cattle (USDA-NASS, Cattle, 2012), 64.9 million swine (USDA-NASS, Quarterly Hogs and Pigs, 2012) 339,698 million *layer* chickens in 2012 (USDA-NASS,

2013). These livestock producers are responsible for the care and safety of animals; the responsibility of the land has also been bestowed upon them. Because livestock producers, like all other types of farmers, carry the title of *Stewards of the Land*, consumers place the responsibility of land use and care in the farmer's hands (Goodwin et al., 2011, p. 26).

While visual images of rolling hills and open pastures elicit feelings of freedom and openness, allowing the reader to feel the serenity provided by the image, carefully chosen words can also create similar feelings. Phrases like *wide-open green pastures* helps reinforce that sense of serenity and creates an aesthetically pleasing image to the reader through the description those words provide (Dimitri et al., 2005; Goodwin et al., 2011). Other phrases like *sustainable growth*, places thoughts of looking into the future toward good things to come. From an agriculture industry perspective, consumers need to be reminded and the agriculture industry as a whole needs to reinforce that advancements in agricultural production promote “life to go on; we sustain and we keep going” (Goodwin et al., 2011, p. 26).

After World War II, technological advancements began to advance at a rapid pace. At the same time, many farms were using animal power for daily operations on the farm, which quickly switched over to mechanically powered machinery. This aided in the efficient production of many crops and became a routine by the late 1960's. This also led to “advances in plant and animal breeding” which introduced chemical fertilizers and pesticides. Eventually this led to genetically modified products (GMPs) (Dimitri et al., 2005, p. 6). While this became an efficient and quicker method of farming, genetically modified products have received strong opposition from consumers, creating certain health and environmental fears (Lassoued & Giannakas, 2010). Consumers prefer messages that instill confidence that their food is safe and

consumers prefer to know if crops are grown with pesticides or if organic means were used (Goodwin et al., 2011).

Regaining Trust.

To improve consumer trust in the farmers and in the agriculture industry, phrases such as *committed to producing the best quality product* and *quality food begins with quality care*, need to be avoided. These phrases, according to Goodwin et al. (2011), have frequently been overused with consumers, causing skepticism about products and the agricultural industry. Some consumers prefer the industry to prove these messages, rather than just using them mindlessly as *catch phrases*. In addition, Miller et al. (2003) found that terms like *genetically engineered* caused participants to question quality of life, further connecting the use of certain terminology with message tone (p. 30). Miller et al. (2003) found messages that were either positive or neutral-tones were more likely to be published in regional news and national trade publications (p. 37). So, it follows that the industry must find ways to first deliver a favorable or neutral-toned message through the *gatekeeper*, allowing the intended messages to reach its target audience with purposefully selected terminology. Messages must be chosen wisely and used correctly. Otherwise, an adverse effect may occur in the publications used to represent the industry.

Theoretical Framework

Gatekeeping, framing, and semiotics guided this study's theoretical framework. Primarily influenced by the theory of semiotics, Figure 1 shows how the theories work very closely to create and deliver a message to an audience.

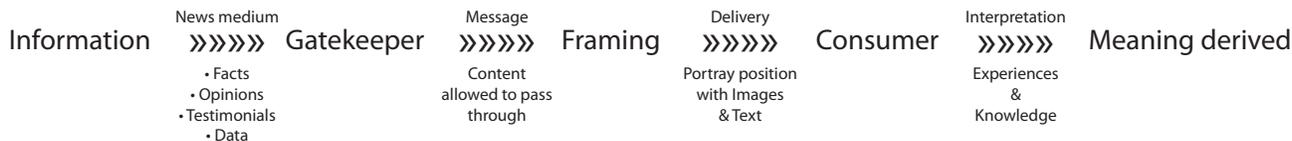


Figure 1. Theoretical model demonstrating the interrelationship between gatekeeping, framing, and semiotics.

Gatekeeping.

The gatekeeping theory primarily serves to explain the control of the information permitted to pass through the “gates” of mass media. Media gatekeepers have the power to give or withhold access to information (McQuail, 2005, p. 308). Editors, television producers, government agencies, publishers, companies, and organizations use gatekeeping. With this regulation on content, gatekeepers of various media can choose to exclude or include certain information based on the intended message desired for the audience. Journalistic writing and advertising are prime examples of mediums with gatekeepers who selectively choose to use certain content to promote certain messages. While journalists control subject matter, issues, and information in their messages, advertisers regulate visual elements like scenery, background color, and font sizes and color to govern their message (Khale & Kim, 2006). In contrast to journalistic use of gatekeeping, there are companies and organizations that use gatekeeping to manipulate audiences for marketing or political purposes (Littlejohn, 1992; McQuail, 2005).

When boundaries are created between an organization and its audience, the gatekeeper serves as the mediator and translates understandable and meaningful messages to its audience. Often, organizations and their audiences do not have the same knowledge or technical language (Tushman & Katz, 1980). With only 1% of the population living on farms and 20% of the

population living in rural areas, the agriculture industry's general audience is likely to have limited knowledge of agricultural terminology and practices (Dimitri et al., 2005; Lusk & Norwood, 2011). While gatekeeping can be used as a helpful tool to create strategies to reach an audience, gatekeeping is also "prone to bias and distortion" (Tushman & Katz, 1980, p. 1073). For example, newspaper editors select news to be reported upon and then choose to portray the overall story using various angles with a focus on various themes. This leads to the concept of framing, which serves as a key concept behind the salience of news and mass media messaging.

Framing.

Framing, the method in which information is presented, describes how media gatekeepers take readers into account when selecting content; it is a system designed at times to isolate items of fact (McQuail, 2005). Images, videography, words, and phrases are tools used in framing to "define problems, diagnose causes, make moral judgments and suggest remedies" (McQuail, 2005, p. 378). While the inclusion of certain words brings on certain meaning, the exclusion of some words also can have a similar effect. Messages are framed to fit an audience's schema as well as to fit the purpose of the communicator. The reader also comes with "pre-existing frames, influences by previous social cues, which will direct their thinking, attitude, and behavior in response to the message" (Goodwin et al., 2011, p. 23). In most instances, it is almost impossible for some news gatekeepers to remove their personal beliefs from their framing decisions, which ultimately results in some bias.

While some bias may be unintentional, sometimes framing is entirely intentional, accommodating the persuasive purposes of some mediums (McQuail, 2005). A 2000 study by Whitaker and Dyer compared framing in agricultural publication with a mainstream news source to analyze framing methods used in a food safety crisis. This study found that agricultural

articles tended to frame their message by quoting agricultural sources, while the regular news source chose to frame their message by quoting activist based sources (Goodwin et al. 2011, p.23; Whitaker & Dyer, 2000). In effect, the gatekeepers with the agricultural news publication framed the news more positively toward agriculture, while the mainstream news publication gatekeepers chose to frame the news more negatively toward the agriculture industry.

Semiotics.

Regardless of their intended audiences and purposes, publications use both words and images to convey an intended meaning. This meaning is intended to reach the reader, thus the theory of semiology plays a role in framing theory as well (McQuail, 2005). Semiology is the “science of sign systems” or “significance,” which was originally derived from de Saussure (McQuail, 2005, pp. 346, 567). Originally founded under the study of linguistics, McQuail stated, semiology can be defined as:

A method for systematic analysis and interpretation of all symbolic texts. Systems of signs are organized within a larger cultural and ideological systems that ultimately determine meaning. A key element of semiology is the idea that any (meaningful) sign (of any kind) has a conceptual element that carries meaning as well as physical manifestation (word, image, etc.) (p. 567).

By producing, conveying, and interpreting messages from images and text, semiotics focuses on how the reader will digest the new mediums used in publications. Content-driven, semiotic analysis focuses on assessing individual perception of visual images and assigning meaning to objects we see daily (Edgar & Rutherford, 2012). Saussure described processes of signification in two elements of the sign. “The physical element (word, image, sound) the signifier and used the term *signified* refer to the mental concept invoked by a physical sign in a given language code” (McQuail, 2005, p. 346). The significance set between a physical signifier

is set by the rules of culture and is something learned within a community. “An image is a visual form, which takes on meaning through the perception and interpretation of the viewer” (Edgar & Rutherford, 2012, p. 5). The culture of the readers has a set meaning for different physical objects (i.e., word and images) and can be interpreted in various ways (McQuail, 2005).

Littlejohn (1992) noted Charles Saunders Peirces—known as the father of modern semiotics—and his idea of semiosis, which describes a “triadic relationship between three elements—a sign, an object and a meaning” (p. 64). Using Ogden and Richards’ Triangle of Meaning Model (Figure 2), Littlejohn (1992) further explained Peirces’ three elements: The sign represents the object, or referent, in the mind of an interpreter. Peirce referred to the representation of an object by a sign as the interpretant. For example, the word “dog” is associated, in your mind, with a certain animal. The word is not the animal, and the association you make (the interpretant) between the word and the animal is yet a third element in the system. All three elements are required together in an irreducible triad in order for meaning to arise (p. 64).

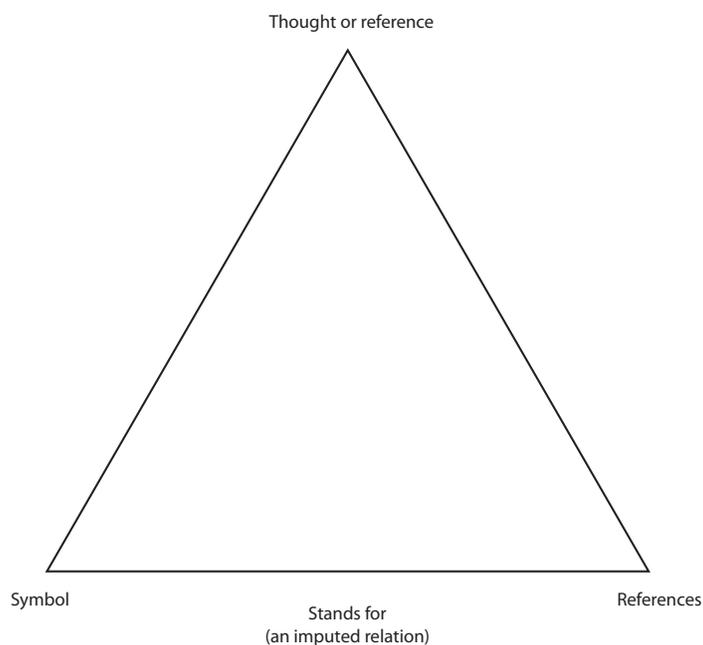


Figure 2. Ogden and Richards Triangle of Meaning Model.

So, it follows that the audience will interpret the images and terminology used by the industry and derive a meaning that has been learned through the course of experiences within the reader's life (Edgar & Rutherford, 2012). While the reader creates meanings with material they come in contact with, framing and gatekeeping control the information that reaches the audience before meaning can be ascribed to the content.

Long before the audience has a chance to view information, controls are set on how and what information is passed. The goal of this study is to identify linguistic and visual imagery related to the swine industry in external and internal media. This study also seeks to establish whether or not gatekeeping and framing methods are conforming to the audience's cultural norms and if the intended message is being delivered from the swine industry's perspective.

III. METHODOLOGY

Problem Statement

American agriculture has been in a state of flux for the last 25 years, and modern agriculture is no longer the traditional “yesteryear’s small family farm” (Damron, 2006, p. 740; Dimitri et al., 2005). Still characterized as being honest and hard working people with good family values, traditional farmers were viewed differently before current *factory* farming existed. Traditional methods of farming were generally associated with good husbandry, where the animal and farmers interest closely resembled one another (Damron, 2006; Rhoades & Irani, 2006). As farm sizes grow larger, and as technology is further integrated into swine production, the most efficient farmers will see the highest profits. One of the most discussed issues in the agricultural industry recently—practices regarding swine confinement—relates mostly to the trade-off between animal welfare and cost. Cost refers to and affects producers, consumers, the economy, and food resources (Norwood & Lusk, 2011). The cost of producing food does not resonate in the mind of the consumer; only the price on the shelf makes a recognizable connection.

Farmers feed the world, and they do this by implementing the best practices to maintain “scarce resources” within their control (Norwood & Lusk, 2011, p. 201). Norwood and Lusk (2011) made a valid point about how consumers actually control production practices. “No one person can say exactly how hogs, chickens, and cows should be raised and at what price they should be sold at: consumers and producers ultimately decide price”, state Norwood and Lusk (p. 201). Animal welfare controversies have contributed to one of the longest and most difficult social issues in the past quarter century. Animal welfare debates have not only affected policy initiatives, but they have also created “emotional rhetoric and ill will” amongst people (Damron,

2005, p. 737). As the public better understands the efficiency of production agricultural, consumers commonly accuse farmers of being inhumane, and farmers accuse consumers of being ignorant, which creates the current controversy (Norwood & Lusk, 2011).

As emotions rise, consumers and producers both defend their beliefs and actions. This study sought to observe how internal and external communications about swine confinement practices has been disseminated and what visual imagery and linguistic use was associated with various attitudes toward swine confinement. For this study, *swine confinement* was specific but not limited to *gestation crates*, as this was one of the most controversial issues in current media. This allowed the researchers to analyze all media referencing swine confinement. There is limited research on methods to communicate these messages; thus, this study strives to identify strategies to better represent the swine industry in media.

Research Objectives

1. Analyze terminology and other important rhetorical characteristics used to describe the swine industry and its practices in online videos and electronic newspapers to determine which are associated with a positive, negative and neutral attitude toward swine confinement.
2. Analyze visual imagery used to describe the swine industry and its practices in online videos to determine which are associated with a positive, negative and neutral attitude toward swine confinement.

Design of the Study

Modeling a similar study by Goodwin and Rhoades (2011) and Rhoades and Ellis (2010), this study used a content analysis design. This study analyzed the content of online videos available through YouTube and purposively selected electronic newspapers, examining the

relationship between attitudes toward swine confinement and the linguistic and visual content. Content analysis is “a method of studying and analyzing communication in a systematic, objective, and quantitative manner for the purpose of measuring variables” (Wimmer & Dominick, 2003, p. 141). As the process of understanding symbols and messages in mass media has become more popular, content analysis has been used to examine communication efforts ranging from films to marketing publications (Wimmer & Dominick, 2003). Ary, Jacobs, Razavieh, and Sorenson (2006) stated that content and document analysis are often used to analyze videos and computer files. This study adapted an online coding sheet and coding guide from Goodwin and Rhoades (2011) to analyze a purposively selected group of YouTube videos. An additional coding sheet was designed for electronic newspapers; terminology-coding cards were also designed for both online videos and electronic newspapers. Microsoft Excel and Statistical Analysis Software (SAS) 9.2 were used to calculate and determine frequencies, percentages, chi-square values, and probability values. Analysis of variance (ANOVA) in SAS 9.2 was used to identify relationships between medium content and length. Probability values (*p*-values) were used to determine significance of relationships between various characteristics in print articles and videos and the messages’ attitudes toward swine confinement.

Publication and Videos

In 2012, increased awareness was drawn to pork production as major industry players (i.e., McDonald’s, Smithfield Foods, etc.) considered requiring its pork producers to institute production changes to meet consumer and market demands. Strong media coverage from the opposition questioned certain industry practices, and the issue was debated in both trade publications and mainstream media. For this reason, the researcher chose to analyze online

videos and electronic newspapers that represented mainstream media and pork industry trade publications. This study consisted of two content analysis phases to analyze each medium.

In phase I, 194 YouTube videos were retrieved using the search term *gestation crate*, and 157 videos were deemed relevant for analysis in this study. Each coder reviewed the video sample before and during coding, and videos not consistent with the study’s objectives were eliminated. A filter was set on video results, which prevented individual channels from showing up in search results. With time considerations and variations in the topic of videos in channels, both coders agreed to eliminate viewing video channels. A series of terms (Table 1) were used to search for the largest sample of YouTube videos relevant to swine confinement, which were specific but not limited to *gestation crates*. These terms used for this study were synonymous with *animal* and *confinement*. Two additional terms were added: *gestation crates* and *farrowing crates*. These were deemed relevant to swine confinement terminology based on terminology observed in past media content. Web search engines are all unique in how they work (Chu & Rosenthal, 1996), and the YouTube search engine did not allow the researcher to use complex search terms or strings, so the search was kept relatively simple (i.e. Boolean operators).

Table 1

Search Terms Employed for Online videos and electronic newspapers

<u>Animal Term</u>	<u>Confinement Term</u>	<u>Current Topics</u>
Pig	Crate	Gestation Crates
Hog	Cage	Farrowing Crates
Swine	Pen	

Phase II consisted of analyzing electronic newspapers from four well-known sources. This study focused on four mass-circulated and national electronic newspapers — *National Hog Farmer*, *New York Times*, *The Washington Post* and *Pork Network* — to prevent regional bias. Circulation for *Pork Network* and *National Hog Farmer* exceed 18,000 issues in 2013 (J. Alumbaugh, personal communication, July, 8, 2013; D. Miller, personal communication, July 9, 2013). *Pork Network* and *National Hog Farmer* were identified by the U.S. Pork Center of Excellence (2013) as two of the top 10 swine resources and publications. Average weekly circulation for non-trade publications was 582,866 (*The Washington Post*) and 2,093,873 (*The New York Times*) (Alliance for Audited Media, 2013; J. Alvarez, personal communication, July, 17, 2013). A complex search string derived from the terms in Table 1 was used to locate all articles sources except for those in *Pork Network*, which did not have a search engine capable of using this method. Using the article database Lexis Nexis Academic, 12 articles from three sources were retrieved. Lexis Nexis did not have access to *Pork Network* articles, so the researcher was required to retrieve articles directly from the *Pork Network* website.

First, a search filter was set in the advance search engine of Lexis Nexis to search for articles in *The Washington Post* and *The New York Times*. These two publications produced the most articles; therefore, these were the two non-trade publications selected to be analyzed. The filter parameters were set to search articles that were major world publications as article type and newspapers as article category. Twelve articles were selected from each of the four electronic newspapers, as this was deemed the most efficient sample size (Lacy, Robinson & Riffe, 1995; Riffe, Lacy & Drager, 1996). A total of 788 articles were initially retrieved from the general web search; 49 articles were retrieved from the *New York Times* and 45 articles from *The Washington Post*. Twelve articles were selected, at random, from both sources using a random

number generator (True Random Number Service, 2012). Second, a basic search was used in Lexis Nexis to search for articles specifically in the *National Hog Farmer*. A total of 715 articles were initially retrieved and 12 articles were selected, at random, using a random number generator (random.org). Lastly, a search was conducted within archived articles on the *Pork Network* website using the search term *gestation crates*. All combinations of terms in Table 1 were used in the *Pork Network* search engine; *gestation crates* resulted in the most articles retrieved (184 articles). Twelve articles were retrieved using the same random number generator as both previous searches (True Random Number Service, 2012). The focus was primarily, but not limited to, hard news, editorials and feature stories. A total of 48 articles were coded for this study, 12 from each source used. After analyzing sample sizes of 6, 12, 18, 24, and 48 issues of newspapers, Stempel (1952) found that sample sizes beyond 12 issues failed to significantly improve sampling accuracy; therefore, sampling 12 issues proved to be the most efficient and optimum sample size among newspapers and magazine articles (Lacy, Robinson & Riffe, 1995; Riffe, Lacy & Drager, 1996).

Instrumentation and Data Collection

Instrumentation for this study consisted of two coding sheets, two terminology cards, and a coding guide. One coding sheet and terminology card was specific to online videos (YouTube) and the other coding sheet and terminology card were specifically tailored for electronic newspapers. Two coders were used to analyze online videos in this study. One coder was an agricultural communications graduate student with a bachelor's degree in animal science and the other coder was a professor in agricultural communications with experience in the agriculture industry. Adapted from the Goodwin and Rhoades (2011) study, the researcher used a previously well-designed coding sheet for online videos. This coding sheet was adapted from

Rhoades and Ellis (2010) and was validated by Goodwin and Rhoades (2010). Standardized sheets were developed to streamline the coding process and closely followed the objectives for this study (Appendix A) (Wimmer & Dominick, 2003). From this coding sheet, the researcher developed a similar version for electronic newspapers (Appendix B). Terminology coding cards were created to fit the objectives of this study—one for online videos (Appendix C) and one for electronic newspapers (Appendix D). A coding guide (Appendix E) was also adapted from Goodwin and Rhoades (2011), and was tailored to fit online videos and electronic newspapers. Hard copy coding sheets were used in this study to allow coders to focus on electronic and print media while minimizing unforeseen complications (Goodwin & Rhoades, 2011).

Coding sheets were designed with a simplistic check mark system, further supporting a simple, standardized format (Wimmer & Dominick, 2003). Beyond general video and article information (i.e., title, author, views, rating, length, etc.), coding sheets aimed to assess factors specific to this study's objectives. In general, the coding sheets addressed the organization distributing the media, the terminology and tones used to deliver messages, the visual imagery used to deliver the message(s), the validity of the message(s), appeals used in message(s), and the position of the organization producing the media.

In Phase I, the researcher generated the population of videos using the search term for online videos, and this list was printed. One hundred ninety-four videos were retrieved initially. The researcher then visually inspected each video to ensure the content was relevant to the objectives of this study. If a video seemed to be questionable in content, the video was viewed in its entirety and deemed valid or invalid. One hundred and fifty-seven videos were deemed valid and were coded by two different coders using the coding sheet and terminology card. In phase II, the researcher located the population of articles and randomly selected 12 articles from each

source. Each article was viewed to ensure relevance and dismissed if they did not follow the objectives of this study. One coder, using a coding sheet and terminology card, coded all articles.

Data Analysis

All data from the coding sheets was collected and analyzed in Microsoft Excel. Consistent with the studies objectives, certain characteristics were selected from each coding sheet to observe patterns. Frequencies and percentages were calculated between each characteristic and attitude toward swine confinement to determine if a relationship existed. Chi-square and probability values were then calculated to confirm whether the relationship observed were significant. An effective method for analyzing this data is “through the use of open-coding and identification of common responses” (Goodwin & Rhoades, 2011, p. 10) and through the constant comparative method of qualitative analysis (Creswell, 2007). ANOVAs were run in Statistical Analysis Software (SAS) 9.2; this was used to determine if there was a significant relationship between attitudes toward swine confinement and article and video lengths. Findings were reported as emergent themes and were supported by a preponderance of data collected through the coding sheets.

Reliability

A study is deemed reliable “when repeated measurement of the same material results in similar decisions or conclusions” and plays a vital role in content analysis (Wimmer & Dominick, 2003, p. 156). Prior to analyzing media, instructions, coding sheets, terminology cards, and coding guides were reviewed during training. With this training, intercoder reliability was increased and methodological problems were significantly reduced (Thomsen, Longstreth & Miller, 2003) (Wimmer & Dominick, 2003). Intercoder reliability refers to the “levels of agreement among independent coders who code the same content using the same coding

instrument” (Wimmer & Dominick, 2003, p. 156). Since human coders are variable, intercoder reliability must be assessed in content analysis studies (Craig, 1981). During training, three videos and three articles were coded to examine content and changes made to coding sheets, terminology cards, coding guide, and instructions to eliminate confusion and increase intercoder reliability (Thomsen et al., 2003). It was recommended that 5-7% of the study sample be tested to ensure reliability (Kaid & Wadsworth, 1989). Once instruments were tested for content, a pilot study was conducted on a random sample of 10 YouTube videos to determine intercoder reliability. Only one person coded online newspaper articles, so a pilot study to check for intercoder reliability was not necessary. Cohen’s Kappa and percent agreement were calculated to determine intercoder reliability, which assesses agreement for nominal scales.

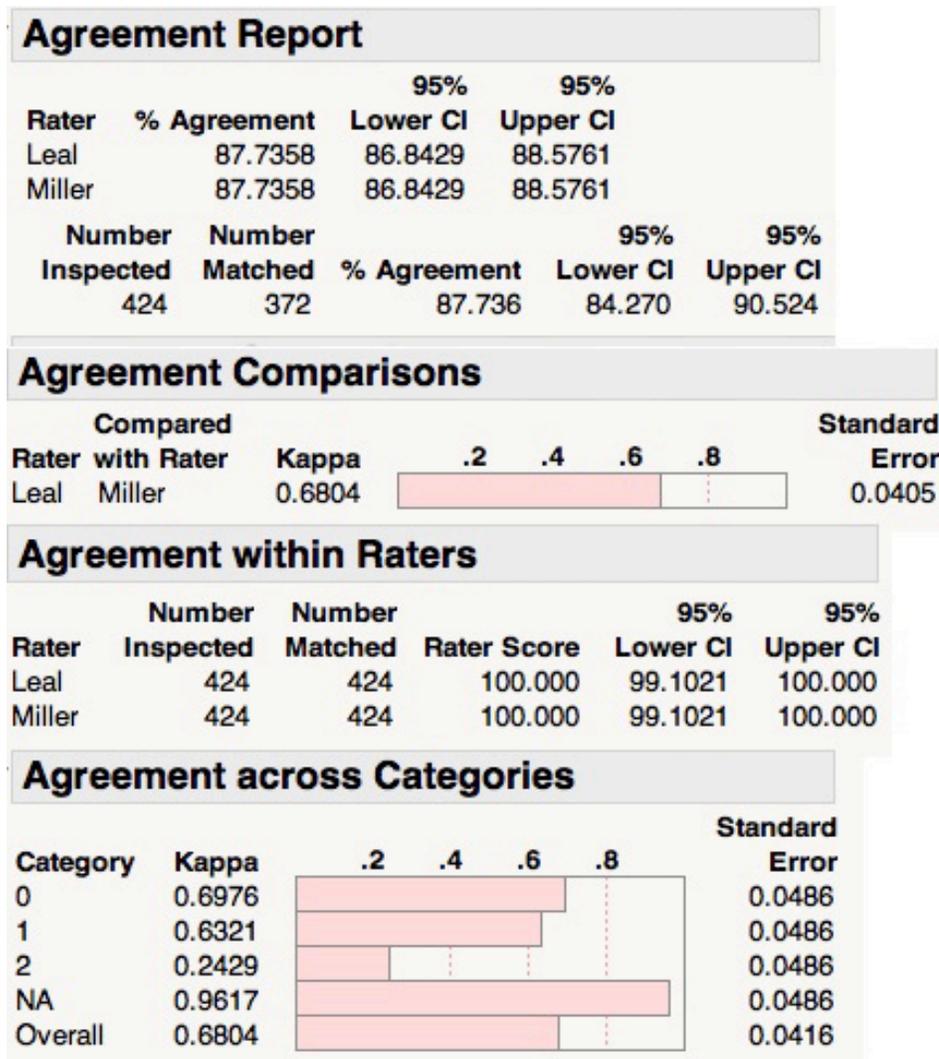


Figure 3. Inter-coder reliability report.

Inter-coder reliability results are shown in Figure 3. A percent agreement of 87.74% was obtained, corresponding with the 83% agreement by chance that is required for a suitable reliability score for coding decisions (Abrams & Meyers, 2009; Craig, 1981). A Cohen's Kappa score of .68 was calculated, which is determined to be a substantial level of agreement. Landis and Koch (1977, p. 165) characterized Cohen's Kappa agreement scales, which are displayed in Table 2.

Table 2

Cohen's Kappa Agreement Scales

<u>Kappa Statistic</u>	<u>Strength of Agreement</u>
<0.00	Poor
0.00-0.20	Slight
0.21-0.40	Fair
0.41-0.60	Moderate
0.61-0.80	Substantial
0.81-1.00	Almost Perfect

Validity

Defined as “the degree to which an instrument actually measures what it is set out to measure” (Wimmer & Dominick, 2003, p. 159), validity serves to further confirm proper methods and interpretation of results. Utilizing similar coding sheets as Goodwin and Rhoades (2011), similar forms of the instruments for this study have been used in previously published works, meeting face validity criteria (Rhoades & Ellis, 2010). Face validity “assumes that an instrument adequately measures what it purports to measure if the categories are rigidly and satisfactorily defined and if the procedures of the analysis have been adequately conducted” (Wimmer & Dominick, p. 160, 2003). Therefore, each instrument was closely reviewed to ensure it followed the objectives of this study.

In phase 1, a pre-test was conducted, where both coders examined three YouTube videos for coder training and instrument testing. Coders analyzed the sub-sample of videos and then consulted with one another to familiarize themselves with the coding sheets and terminology

cards. This detected poorly defined areas being evaluated (Wimmer & Dominick, 2003). With each correction, changes were made to the coding sheets, and terminology was reworded, removed, and replaced by other terms deemed relevant to the study. The coding guide adapted from Goodwin and Rhoades (2011) was also modified to fit this studies coders and objectives. Phase II consisted of analyzing three articles, which followed the same training process as phase I. Any question(s) outside the study's objectives were reviewed and eliminated to further increase validity when necessary.

As with the Goodwin and Rhoades (2011) study, experimenter effect served as another risk, potentially compromising validity. Experimenter effect is a “threat to internal validity referring to the unintentional effect that the researcher may have in an experiment” (Ary, Jacobs, & Sorenson, 2010, p. 641). With an equal amount of experience, training, and understanding of each research objective, the coders' threat to internal validity and experimenter effect was accounted for and reduced. The coding guide also served as another method to help reduce experimenter effect, allowing both coders the ability to refer to a standardized resource that clarified complex concepts, which were identified during training. With the necessary steps in place to reduce experimenter effect, intercoder reliability further substantiated the validity of this study (Goodwin & Rhoades, 2011).

IV. RESULTS

Chapter IV presents the findings from this study. Results are presented with each research objective in the form of frequencies and percentages, which were recorded to track patterns of occurrence in both articles and online videos, with multiple characteristics taken into consideration (Table 3).

Table 3

Characteristics analyzed in online videos and electronic newspapers

<u>Online Videos</u>	<u>Electronic Newspapers</u>
Video Type	Length of Article
Length of Video	Cited Sources
Attitude Toward Production Agriculture	Attitude toward Production Agriculture
Appeal Type	Appeal Type
Animal Terminology	Animal Terminology
Confinement Terminology	Confinement Terminology
Gender	
Music & Text	
Setting	

As the frequencies of characteristics were compared in order to seek relationships, chi-square and probability values (*p*-values) were calculated to determine whether the relationships observed were significant or were likely to have occurred by chance. Significance for all data sets was set *a priori* at $p < .05$.

The following objectives guided the data analysis.

1. Analyze terminology and other important rhetorical characteristics used to describe the swine industry and its practices, in online videos and electronic newspapers, to determine which are associated with a positive, negative and neutral attitude toward swine confinement.
2. Analyze visual imagery used to describe the swine industry and its practices, in online videos, to determine which are associated with a positive, negative and neutral attitude toward swine confinement.

Research objective one was divided into two sections, the first addresses electronic newspapers, and the second addresses online videos. Section one contains the results from the content analysis of the four electronic newspapers in the study, noting characteristics and terminology found in the articles with relation to the articles' attitudes toward swine confinement. Section two contains the results of the content analysis of the online videos in the study, noting the same characteristics and terminology observed in electronic newspapers, with consideration of the videos' attitudes toward swine confinement.

Research objective two focuses on observed relationships between visual images and attitudes toward swine confinement used in online videos.

RO1: Analyze terminology and other important rhetorical characteristics used to describe the swine industry and its practices, in online videos and electronic newspapers, to determine which are associated with a positive, negative and neutral attitude toward swine confinement.

Electronic Newspapers.

Objective one aimed to analyze terminology and important rhetorical characteristics in electronic newspapers. Of the articles coded in this study ($N = 48$), 17 were negative toward swine confinement, 7 were positive, and 24 were neutral. Characteristics in Table 3 were

analyzed to identify factors that might have influenced the articles' attitudes toward confinement. The analysis of terminology was divided into two categories. Category one included words related to animal terminology in relation to attitudes toward swine confinement. Category two included relationship between confinement terminology and attitude toward swine confinement. Table 4 demonstrates relationships between the types of publications examined and their articles' attitudes toward swine confinement.

Table 4

Relationship Between Attitude Toward Swine Confinement and Publication Type

Attitude	<u>The Washington Post</u>		<u>The New York Times</u>		<u>Pork Network</u>		<u>National Hog Farmer</u>	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Negative	4	33	3	25	9	75	1	8
Positive	0	0	3	25	2	17	2	17
Neutral	8	67	6	50	1	8	9	75

Note. $\chi^2 = .45, p = .01$

Table 4 displays the overall attitude for each article analyzed in trade and non-trade publications. While it may be assumed that trade publications might only produce articles and messages positive toward swine confinement, results refute this assumption. Seventy-five percent of the articles analyzed in *Pork Network* were negative toward swine confinement. IN comparison, 75% of articles in *National Hog Farmer*, 67% of articles in *The Washington Post*, and 50% of the articles in *The New York Times* showed strong relationships with neutral attitudes toward swine confinement ($p = .01$)

Article information.

Each article was coded to identify the relationship between the type of article and its attitude toward swine confinement (Table 5). Three types of articles were recorded (Table 5), and a *p*-value of .02 confirms a notable relationship between article type and attitude toward swine confinement.

Table 5

Relationship Between Article Type and Attitude Toward Swine Confinement

Attitude	<u>Editorial</u>		<u>Feature</u>		<u>News</u>	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Negative	5	62.5	1	7.7	11	40.7
Positive	0	0	1	7.7	6	22.2
Neutral	3	37.5	11	84.6	10	37

Note. $\chi^2 = .76, p = .02$

All three article types in Table 5 expressed a noteworthy relationship with attitude toward swine confinement. Editorial articles tended to be negative toward swine confinement (62.5%), and no editorials were positive toward confinement. There was also a strong relationship observed between feature stories and neutral attitudes toward swine confinement (84.6%). Among news stories, 40.7% were negative toward swine confinement, 37% were neutral, and only 22% were positive.

The length of the article narrative was another characteristic coded for each article. The number of words in each article was recorded and compared with the article's attitude toward confinement. Table 6 displays the average article length for articles that were negative, positive,

and neutral toward swine confinement. Though there were apparent differences among mean lengths, the differences were not statistically significant at the $p < .05$ level.

Table 6

Impact of Attitude Toward Swine Confinement on Length of Article (N =48)

Attitude	Article Length		
	<i>n</i>	<i>M</i> (words)	<i>SD</i> (words)
Negative	17	703	607
Positive	7	979	557
Neutral	24	1101	836

Note. ANOVA: F Value (2, 45) = 1.49; $p = .24$

The average lengths for negative, positive, and neutral articles, respectively, were 703, 979, and 1101 words. The difference in average lengths between negative and neutral articles was nearly 400 words, but the mean length of neutral articles was affected by a few very lengthy outliers, one with 3732 words.

Each article was coded for the presence of cited sources, and the relationship between citations and articles' attitudes toward swine confinement (Table 7). While there was no statistically significant relationship ($p = .1$), there were apparent differences worth mentioning.

Table 7

Relationship Between Articles Citing Sources and Attitude Toward Swine Confinement

Attitude	Cited Sources	
	<i>f</i>	%
Negative	14	82
Positive	6	86
Neutral	15	63

Note. $\chi^2 = 4.21, p = .1$

The articles that were positive (86%) and negative (83%) toward swine confinement cited sources more frequently than the neutral articles (63%).

Attitudes and appeals.

Researchers coded each article to identify relationships between the attitude toward swine confinement and the attitude toward production agriculture. No statistically significant relationship was observed, $p = .59$; however, certain findings were worth mentioning.

Table 8

Relationship Between Articles' Attitude Toward Production Agriculture and Attitude Toward Swine Confinement

Attitude	Negative Production Ag		Positive Production Ag		Neutral Production Ag	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Negative	2	50	1	14.3	14	37.8
Positive	0	0	2	28.6	5	13.5
Neutral	2	50	4	57.1	18	48.6

Note. $\chi^2 = .5.03, p = .59$

Table 8 shows that 57.1 % of the articles that were neutral toward swine confinement had a positive attitude toward production agriculture. However, only 28.6% of articles that were positive toward swine confinement also were positive toward production agriculture. It is also worth mentioning that 50% of articles coded as negative as well as 50% of the neutral articles displayed a negative attitude toward production agriculture.

Table 9 shows there was no considerable statistical relationship between type of appeal and attitude toward swine confinement ($p = .82$). While only small differences in frequencies were apparent, a few appeal types recorded did showed noteworthy results.

Table 9

Relationship Between Appeal Type and Attitude Toward Swine Confinement in Articles

Attitude	<u>Ethical</u>		<u>Logic</u>		<u>Gain-Loss</u>		<u>Informative</u>		<u>Empathy</u>		<u>Social</u>	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Negative	7	37	17	35	7	35	17	35	6	35	13	62
Positive	5	26	7	15	3	15	7	15	2	12	2	10
Neutral	7	37	24	50	10	50	24	50	9	53	6	29

Note. $\chi^2 = 11.38, p = .82$

Social modeling seemed to show the strongest relationship with attitudes toward swine confinement. Among the articles exhibiting a social modeling appeal type, 62% of those displayed a negative attitude toward swine confinement; whereas, only 29% neutral and 10% positive attitudes used this appeal type. Articles displaying an informative appeal type also displayed neutral attitudes toward swine confinement (50%), where negative (35%) and positive (15%) attitudes used this appeal type slightly less. Articles that used a logical appeal type

showed the same relationship as informative appeals, with 50% of the articles using a neutral attitude, 35% using a negative attitude and 15% using a positive attitude toward swine confinement. In articles coded as using an empathy appeal type, 53% were seen in relation to neutral attitudes toward swine confinement and only 35% in negative and 12% in positive attitudes.

Terminology.

Each article was coded for usage of *animal* and *confinement* terminology. Results below indicate a statistically significant relationship between *animal* and *confinement* terms in relation to attitude toward swine confinement; *p*-values indicated in each table confirm this relationship.

Table 10

Relationship Between Attitude Toward Swine Confinement and Animal Terminology Used in Articles

Attitude	<u>Pig</u>		<u>Sow</u>		<u>Hog</u>	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Negative	62	17	57	15	19	8
Positive	63	17	78	21	62	26
Neutral	244	66	237	64	158	66

Note. $\chi^2 = .44, p = .005$

Table 10 represents the most frequent terminology used to refer to *animals* in electronic newspapers. All three terms in Table 10 showed a notable relationship with neutral attitudes toward swine confinement; where as, attitudes positive and negative toward swine confinement used animal terminology minimally.

Table 11

Relationship Between Attitude Toward Swine Confinement and Confinement Terminology Used in Articles

Attitude	<u>Crate</u>		<u>Pen</u>		<u>Stalls</u>	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Negative	62	58	16	13	34	35
Positive	19	18	48	40	19	20
Neutral	26	24	55	46	44	45

Note. $\chi^2 = .00024, p = .001$

Table 11 displays usage of confinement terminology in articles with relation to attitudes toward swine confinement. Fifty eight percent of the articles containing the term *crate* were negative toward swine confinement, while only 18% were positive and 24% were neutral. Articles containing the term *pen* were mostly positive (40%) and neutral (46%) toward swine confinement.

Online Videos.

Of the online videos coded in this study ($N = 157$), 81 were negative toward swine confinement, 22 were positive, and 54 were neutral. These characteristics were compared with a multitude of other characteristics to identify factors that might have influenced the articles' attitude toward confinement. The analysis of terminology was divided into two categories. Category one included words related to *animal* terminology in relation to attitude toward swine confinement. Category two included relationship between *confinement* terminology and attitude toward swine confinement.

Video information.

Similar to articles, each video was coded for type, with relation to attitude toward swine confinement (Table 12). Table 12 displays the significant relationships observed in video type and attitudes toward swine confinement ($p = .001$).

Table 12

Relationship Between Attitude Toward Swine Confinement and Video Type (N = 157)

Attitude	<u>Promotional</u>		<u>Educational</u>		<u>News</u>	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Negative	57	62	7	16	22	67
Positive	7	8	14	33	3	9
Neutral	28	30	22	51	8	24

Note. $\chi^2 = .02, p = .001$

A large majority (62%) of the promotional videos were negative toward confinement, as were a large majority (67%) of the news videos. In contrast, only 7% of the promotional videos and 9% of the news videos took a positive stance toward swine confinement. Meanwhile, a majority (51%) of the educational videos were neutral toward swine confinement, and 33% were positive.

Relatively small differences in video length existed across videos with negative, positive and neutral attitudes toward swine confinement (Table 13). Though the variance was noticeable, it was not statistically significant ($p = .92$).

Table 13

Relationship Between Attitude Toward Swine Confinement and Length of Video (N =157)

Attitude	<i>n</i>	<u>Video Length</u>	
		<i>M</i> (min)	<i>SD</i> (min)
Negative	81	4.03	3.96
Positive	22	3.78	2:80
Neutral	54	4.18	3:23

Note. ANOVA: F Value (2, 154) = .09; p = .92

Videos that were positive toward swine confinement were the shortest (3:47), while the neutral videos were the longest (4:11).

Attitudes and appeals.

A statistically significant relationship ($p = .001$) was observed between attitude toward swine confinement and attitude toward production agriculture in the videos. Table 14 demonstrates these relationships.

Table 14

Relationship Between Attitude Toward Production Agriculture and Attitude Toward Swine Confinement in Videos

Attitude	<u>Negative Production Ag</u>		<u>Positive Production Ag</u>		<u>Neutral Production Ag</u>	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Negative	47	83.9	1	2.9	33	49.3
Positive	2	3.6	17	50	3	4.5
Neutral	7	12.5	16	47.1	31	46.3

Note. $\chi^2 = 2.5^{21}$, $p = .001$

Videos coded with attitudes negative toward production, also commonly displayed negative attitudes toward confinement (83.9%), and only 3.6% showed a positive attitude towards swine confinement. As expected, a larger number of videos that displayed a positive stance toward production agriculture (50%) also showed a positive attitude toward swine confinement. However, only 4.5% of the videos that took a neutral position on production agriculture were positive toward swine confinement.

Table 15 shows a significant relationship identified in videos coded for appeal types used and attitude toward swine confinement. Among the six appeal types listed in Table 15, four showed a significant relationship ($p = .02$) with attitude toward confinement.

Table 15

Relationship Between Appeal Type and Attitude Toward Swine Confinement in Videos

Attitude	<u>Ethical</u>		<u>Empathy</u>		<u>Logic</u>		<u>Gain-Loss</u>		<u>Informative</u>		<u>Social</u>	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Negative	51	71	60	72	66	52	44	71	69	51	48	62
Positive	8	11	5	6	21	17	6	10	22	16	12	15
Neutral	13	18	18	22	40	31	12	19	43	32	18	23

Note. $\chi^2 = 7.30, p = .02$

Seventy-two percent of videos coded as using empathy appeals had a negative attitude towards swine confinement; in contrast, only 6% of videos coded at using empathy appeals displayed a positive attitude towards swine confinement. Videos coded as using gain-loss appeals also had a noteworthy relationship with a negative attitude toward swine confinement (71%); whereas only 10% of the videos coded as using gain-loss appeals exhibited positive attitudes towards swine confinement. Seventy-one percent of videos that were coded as using social modeling appeals were coded as having a negative attitude towards swine confinement; videos with positive (15%) and neutral (23%) attitudes towards swine confinement appeared to have limited uses of this appeal type.

Terminology.

Each video was coded for usage of *animal* and *confinement* terminology. Percentages of usage for each term, with relation to each attitude, were calculated in videos. Results in Table 16 indicate a significant relationship between *animal* and *confinement* terms in relation to attitude toward swine confinement; *p*-values indicated in each table confirm this relationship.

Table 16

Relationship Between Attitude Toward Swine Confinement and Animal Terminology Used in Videos

Attitude	<u>Pig</u>		<u>Sow</u>		<u>Piglet</u>	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Negative	375	66	159	38	52	63
Positive	36	6	116	28	5	6
Neutral	161	28	144	34	25	30

Note. $\chi^2 = 4.76^{-6}$, $p = .001$

Videos that used the term *pig*, were found to have a strong relationship with negative attitudes (66%) toward swine confinement, while only 28% of neutral articles and 6% of positive videos chose to use this term. When articles chose to use the term *piglet*, 63% of the time these videos displayed negative attitudes toward swine confinement; whereas, neutral (30%) and positive (6%) attitudes chose to use this term far less.

Table 17

Relationship Between Attitude Toward Swine Confinement and Confinement Terminology Used in Videos

Attitude	<u>Crate</u>		<u>Pen</u>		<u>Stalls</u>	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Negative	232	75	13	13	4	3
Positive	40	13	19	19	57	40
Neutral	36	12	68	68	25	18

Note. $\chi^2 = 1.6^{-14}$, $p = .001$

Online videos showed a strong relationship between *confinement* terms and attitudes toward swine confinement. The term *crate* was found to have the strongest relationships, when used in videos, with negative (75%) attitudes toward swine confinement and both positive (13%) and neutral (12%) attitudes used this term conservatively. When the term *pen* was used in videos, it showed a strong relationship with neutral (68%) attitudes toward swine confinement, but was not used very often in positive (19%) and negative (13%) attitude videos. While videos that used the term *stall* was limited, it is worth noting that 40% of those videos displayed a positive attitude toward swine confinement, but only 3% exhibited a negative attitude.

RO2: Analyze visual imagery used to describe the swine industry and its practices, in online videos, to determine which are associated with a positive, negative and neutral attitude towards swine confinement.

Online Videos.

The second objective of this study was designed to establish relationships with visual imagery and attitudes toward swine confinement. Only videos could be coded for visual imagery; all electronic articles were retrieved from a secondary source, and no visual images were associated with them.

Gender.

This study also sought to determine if there was a relationship between the gender of the individual delivering the message, and the stance toward swine confinement in each video. Table 18 shows that there was a significant correlation between the two characteristics ($p = .001$).

Table 18

Relationship Between Attitude Toward Swine Confinement and Gender of Individual Delivering Message in Videos

Attitude	<u>Male</u>		<u>Female</u>		<u>Both</u>		<u>None</u>	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Negative	26	53.1	21	48.8	23	74.2	11	32.4
Positive	6	12.2	7	16.3	4	12.9	5	14.7
Neutral	17	34.7	15	34.8	4	12.9	18	52.9

Note. $\chi^2 = .84, p = .001$

Videos that were coded as negative toward swine confinement used a combination of different genders when delivering its message. Videos that chose to use both *male and female* when delivering its message, were also found to display a negative (74.2%) attitude toward swine confinement, while 12.9% were positive and the same percentage were neutral. Videos that used *male* (53.1%) and *female* (48.8%) narrators, also displayed a noteworthy relationship with negative attitudes toward swine confinement. It is worth mentioning the videos that were positive toward swine confinement had fewer people in general delivering their messages.

Music and text.

Another characteristic observed was whether or not the video used music and text while delivering its message. No statistically significant relationship was established in this correlation, but there were interesting findings.

Table 19

Relationship Between Attitude Toward Swine Confinement and Use of Text and Music in Videos

Attitude	<u>Music Only</u>		<u>Music & Text</u>		<u>Text Only</u>		<u>None</u>	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Negative	2	13.3	22	55	21	58.3	36	54.5
Positive	3	20	4	10	4	11.1	11	16.7
Neutral	10	66.7	14	35	11	30.6	19	28.8

Note. $\chi^2 = 4.87, p = .06$

Among the videos coded as using *music only* were mostly neutral toward swine confinement (66.7%). Videos using *music and text* and *text only* contained negative attitudes toward swine confinement 55 and 58.3 percent of the time. Videos that included the least amount of text and music when were most often positive toward swine confinement (Table 19).

Setting.

The last visual characteristic that each video was coded for was setting in relation to attitude toward swine confinement. Two out of the three categories coded showed a significant relationship, as shown in Table 20 ($p = .001$).

Table 20

Relationship Between Attitude Toward Swine Confinement and Setting in Videos

Attitude	<u>Farm</u>		<u>Outdoors</u>		<u>Other</u>	
	<i>f</i>	%	<i>f</i>	%	<i>f</i>	%
Negative	45	69	33	70	12	46
Positive	19	29	1	2	3	12
Neutral	1	2	13	28	11	42

Note. $\chi^2 = .86, p = .001$

Table 20 shows that 69% of the videos that were shot primarily at a *farm setting* displayed a negative attitude toward swine confinement, while only 29% of the videos were positive. Among the videos that used an *outdoor setting* (i.e., parks, public outdoor area, open fields not on a farm), 70% were negative toward swine confinement and only 2% were positive.

In summary, this study used descriptive statistics (means, percentages and frequencies) to establish patterns in the 48 electronic newspapers and 157 online videos (YouTube) that were coded. Chi-square and probability values (*p*-values) were also used to determine whether or not the relationships observed in the video and article content were statistically significant. The data analysis provided insight to characteristics, terminology, and visual imagery that were associated with certain attitudes toward swine confinement. While there were many significant correlations between the characteristics observed in the content analysis of the videos and articles, there were also many instances where no significant relationships were found. Many notable connections were identified, providing some insight into how messages are created in media, both textually and visually. While data collection was being conducted, both coders noticed less frequent

presence of videos that were positive toward swine confinement than were negative; this raised many questions that will be discussed in the next chapter.

Key Findings

- Editorial articles tended to be negative toward swine confinement.
- Feature stories showed a relationship with neutral attitudes toward swine confinement.
- When used in articles, the three most frequently used *animal* terms exhibited a relationship with neutral attitudes toward swine confinement.
- When used in articles, crate had a relationship with negative attitudes toward swine confinement.
- When used in articles, pen had a relationship with neutral and positive attitudes toward swine confinement.
- When used in online videos, pig and piglets were associated with negative attitudes toward swine confinement.
- When used in online videos, crate was associated with negative attitudes toward swine confinement.
- When used in online videos, stall was associated with positive attitudes toward swine confinement.
- There was no preference in the gender of the person delivering the message in online videos, but the presence of a person appeared to be more appealing.
- Increased modality was observed in a large amount of online videos, and was associated with negative and neutral attitudes toward swine confinement.
- Multiple settings can be used to represent one particular attitude toward swine confinement.

V. CONCLUSIONS/RECOMMENDATIONS

Conclusions, Implications, and Recommendations

This study sought to analyze mass media efforts about swine confinement dispersed to internal and external audiences, with special attention to the linguistic and visual imagery used in all mediums examined. An in-depth interpretation of the results from the previous chapter will be presented, followed by implications and recommendations for the agriculture industry and agricultural communication practitioners as well as for researchers who intend to further research this topic.

RO1: Analyze terminology and other important rhetorical characteristics used to describe the swine industry and its practices, in online videos and electronic newspapers, to determine which are associated with a positive, negative, and neutral attitude toward swine confinement.

This study analyzed 48 articles from four reputable electronic newspapers: *The Washington Post*, *The New York Times*, *National Hog Farmer*, and *Pork Network*. This study also examined 157 online videos from YouTube, which was ranked second on the 1,000 most visited websites in 2011 (Google, 2011). Mass communication efforts, such as the ones that were examined, are used by organizations to transmit messages through media to large audiences, affording the ability to allocate attention and power to the individuals and groups responsible for the efforts (Littlejohn, 1992, p. 341). Electronic newspaper articles and YouTube videos were examined for linguistic usage and characteristics in relation to attitudes toward swine confinement.

Electronic Newspapers.

Article information.

The analysis of each publication and their attitude toward swine confinement produced results that might refute normal expectations. Non-trade publications appeared to display a more neutral stance toward swine confinement when publishing articles. Sixty-seven percent of articles from the *The New York Times* and 50% of articles from *The Washington Post* exhibited a neutral attitude toward swine confinement when publishing articles. In contrast, 75% of articles from *Pork Network* displayed negative attitudes toward swine confinement. The *National Hog Farmer* expressed neutral attitudes toward swine confinement in 75% of the articles it published. Gatekeeping and framing work together in how messages are perceived (semiotics), which was illustrated in the publications and their attitude toward swine confinement.

These results suggest that the publication and specific attitude toward swine confinement have little relationship; though a better understanding of how messages are created can be better explained from the findings. With a focus on the range of subject matter, issues, and information in news media, deciding what news makes the “cut” has been described as one of the most impressive parts of journalism (gatekeeping) (Khale & Kim, 2006). The analysis of publications and their attitude toward swine confinement show a primarily neutral stance, but *Pork Network* articles show a slant toward negative attitudes toward swine confinement. Informing an audience primarily related to the pork industry, *Pork Network* articles analyzed were addressing the changes that are affecting the whole industry. The information dispersed to readers is just as important as their perceptions of the context, which can be the most difficult to predict. In the current media, swine confinement appears to have negative connotation and will affect any mention of it in media. Though, by framing content around the audience member,

miscommunication can potentially be reduced (McQuails, 2005). No definitive conclusion can be made from these results, but this serves as a prime example that each medium can, and do, frame events differently. How and what information is delivered in news mediums is dependent on a combination of cultural meanings, political factors, and public opinions (Khale & Kim, 2006; McQuails, 2005).

Findings related to article types (editorial, news, and feature) proved to be meaningful with regard to attitudes toward swine confinement and shed some light on how information on this topic is being framed by mass media gatekeepers. Framing is a term in mass media theory that describes the process of presenting information, and taking the audience into account. Framing is often designed to isolate items of fact (McQuail, 2005). In the present study, editorial articles were found to be primarily negative toward swine confinement (62.5%), as 0% of the editorials displayed positive attitudes toward swine confinement. Editorial articles, by definition, are opinionated regarding their topics and are one of many avenues gatekeepers have to frame news (Dictionary.com, 2013, McQuail, 2005). Bell (1991) stated that journalists and editors produce stories, not articles, and that these stories are filled with viewpoints, values, and structure. News articles are factual, having minimal opinion, and include the journalistic convention of attributed quotes (Dictionary.com, 2013). Forty-percent of news articles were coded as negative toward swine confinement and 22% were positive toward swine confinement. While attitudes that were negative toward swine confinement were more frequently observed in editorial and news stories, it can be concluded that articles positive toward swine confinement typically focus on facts over opinion when delivering its message.

The data shows that news stories were the most common article type. The results also show that articles reflecting positive attitudes toward swine confinement were minimally

represented in this study ($n = 7$), and articles that were negative toward swine confinement ($n = 17$) were more prevalent. Articles with neutral attitudes toward swine confinement did have the highest presence ($n = 24$), suggesting that across the four publications, coverage tended to be somewhat balanced and neutral in terms of attitude toward swine confinement.

Eighty-six percent of the positive and 82% of the negative articles cited sources, which is common practice for journalists to ensure credibility and ethical reporting. Bell (1991) explained that journalists often rely on people's accounts of events and frequently use written and spoken input for stories. Feature stories typically are a report of a person or event, which contain less opinion, and would explain a more neutral stance when the focus is heavier on the personality of an individual rather than on a controversial issue (Dictionary.com, 2013). In this study, feature stories were found to be primarily associated with neutral (84.6%) attitudes toward swine confinement.

This study also examined length of articles (measured in number of words), which showed that neutral (1100 words) and positive (979 words) articles tended to be longer than negative (703 words) attitudes toward swine confinement. Though a statistically significant relationship was not observed, the differences are interesting nonetheless. These relationships allow for communicators to observe patterns in current media, providing the opportunity to make adjustments in how future messages might be framed. It might be concluded that articles displaying negative attitudes toward swine confinement only report one side of an issue, whereas positive and neutral attitudes toward swine confinement logically report the positive and negative sides to an issue. A longer article may be time consuming and more difficult to read for audiences. However, if writers are intentionally framing articles to be persuasive toward a

particular position, shorter articles might be more appealing for those whom they hope to persuade.

Attitudes and appeals.

Lester (2005), drawing from Aristotle, noted “effective persuasive arguments use factual arguments in a reasoned presentation and gain the attention of the audience through emotional means” (p. 73). Logical and informative appeal types showed a consistent amount of use in articles across each attitude type. When logical appeals were used, neutral (50%) attitudes used this appeal type the most, and negative (35%) and positive (15%) attitudes used this appeal type less often. Informative appeals types showed the same relationship. When informative appeal types were used in articles, neutral (50%) attitudes used this appeal type the most, but negative (35%) and positive (15%) attitudes chose not to use this appeal type as much. Articles using empathy appeal types seemed to be more prominent in neutral (53%) attitudes and used moderately in negative (35%) and positive (12%) attitudes. Emotionally persuasive arguments serve as a socially acceptable way of changing attitudes (Lester, 2005). This would suggest that the authors of these articles, from all sides of the issue, sought to consistently use the same methods to persuade and change the attitudes of their audience. While no definitive conclusion can be made, articles seemed to be consistent in appeal types when delivering their messages.

Among the many observations in this study, the relationship between attitudes toward swine confinement and production agriculture was of great interest. The findings were interesting, as articles with a negative attitude toward production agriculture were either negative (50%) or neutral (50%) toward swine confinement. In the case of this study, groups that expressed more extreme views seem to frame their message in a manner that reduced overly radical stances and appealing to a larger audience. This observation closely resembles Goodwin

and Rhoades' (2010) observations, where 56.3% of YouTube videos in that study were categorized in YouTube as Pets & Animals instead of Non-profits & Activism or News & Politics, which would have been more consistent with agendas. Organizations that are activist-like generally attempt to conceal their true identity and agenda to appeal to audiences (Goodwin & Rhoades, 2010) and sometimes take extremely radical positions. Over half of the articles that were positive toward production agriculture also exhibited a neutral attitude toward swine confinement (57.1%). In contrast, only 28.6% of the articles positive toward production agriculture also demonstrated positive attitudes toward swine confinement. While this relationship is not quite understood, articles that were positive towards production agriculture seemed to remain neutral when referring to swine confinement.

Terminology.

Linguistic usage served as a main objective for this study, focusing on terminology used to refer to the *animal* and *confinement* practice in newspaper articles. Results showed that each of the three most frequently used *animal* terms, when used in articles, had the strongest relationship with neutral attitudes toward swine confinement. In contrast, *confinement* terms showed significant relationships with multiple attitudes toward swine confinement. When the term *crate* was used, 58% of articles displayed negative attitudes toward swine confinement and only 18% of articles exhibited positive attitudes. The term *pen*, when used in articles, showed moderate relationships with positive (40%) and neutral (46%) attitudes toward swine confinement and limited use with negative (13%) attitudes. While no certainty can be concluded from these results, the term 'crate' can be associated with articles that are negative toward swine confinement.

News articles ($n = 27$) were the most frequently used type of article in this study, reporting factual information on current events. With animal welfare as a current concern in the swine industry, gestation crates have been the primary focus of animal protection groups (Dimitri et al. 2005, Lartonda, 2012). The concern does not focus on the animal itself, but rather the method in which it is confined. This might explain why the term “crate” was used more often in articles displaying negative attitudes toward swine confinement.

Online Videos.

Video information.

The source of videos served as another key method of understanding how messages were developed for audiences. Video type produced relevant findings, which allowed the researcher to report useful data. News videos (67%) and promotional videos (62%) had a strong relationship with negative attitudes toward swine confinement, respectively. When used, news videos (9%) and promotional videos (8%) showed minimal relationships with positive attitudes toward swine confinement. Videos with an educational approach appeared to have a higher occurrence with neutral (51%) and positive (33%) attitudes toward swine confinement. During data collection, both coders observed common patterns in news videos, which were further confirmed by the data in this study. News is biased and utilizes gatekeeping to exclude certain facts, but is still reaching larger audiences (Khale & Kim, 2006). This further establishes how effective gatekeeping can shape a message to cater a particular audience. Videos that display positive attitudes toward swine confinement are using an educational approach to reach its target audience, but viewers are “not actively looking to sites like YouTube for educational information” (Rhoades & Ellis, 2010, p. 173).

While many video developers are including educational components to their videos, the agricultural industry must incorporate methods that are reaching a larger audience (Rhoades & Ellis, 2010). News and entertainment videos tend to capture the audiences' attention, increasing sharing and delivery of messages (Madden, 2007; Rhoades & Ellis, 2010). While news is organized, it is often biased toward events and frames content in a way that facts are isolated (McQuail, 2005). When stories are received by news organizations, they are often received by sources that already have a "built in frame" (McQuail, 2005, p. 379). This supports the claim that all news will contain some bias, whether it is reported directly or indirectly.

Video length did not prove to show a significant relationship with attitudes toward swine confinement, but did shed light on important video considerations. The shortest videos (3:47) expressed positive attitudes toward swine confinement, while the neutral videos were the longest (4:11). With no significant difference in video length, a different tactic must be used to reach audiences. "Online videos are an area where the most messages are being produced and viewed" (Rhoades & Ellis, 2010, p. 164) and "an interlinked series of videos may have a great visibility than one longer, more inclusive video" (Rhoades & Ellis, 2010, p. 173). Therefore, shorter videos must be constructed to reach target audiences when they are created and posted to sites like YouTube.

Attitudes and appeals.

As we begin to give animals human characteristics (i.e. pain, thinking, feelings), there will be a greater push for animal protection (Goodwin & Rhoades, 2010). Coded for appeals, 72% of the videos displaying empathy appeal types were associated with negative attitudes toward swine confinement, while only 6% of positive attitudes used this appeal type. If viewers feel emotionally connected with a message, they are more likely to connect with the product or

cause (Nabi & Oliver, 2010). Goodwin and Rhoades' (2010) study looked at the "rational and emotional appeals used in a livestock production legislative campaign online" (p. 123). Results showed that the majority of videos used emotional appeals over logical appeals, which was consistent with results found in this study. Another study conducted by Brader (2006) found that emotional appeals were more common in advertisements than rational appeals. This further confirms that emotional appeals are a key element in framing a message in online videos, aiming to persuade viewers out of guilt or empathy.

When used, ethical appeal types showed a stronger relationship with negative (71%) attitudes than positive (11%) attitudes toward swine confinement. Gain-loss appeal types showed a similar relationship when used in online videos, as the correlation with negative (71%) attitudes was much stronger than positive (10%) attitudes toward swine confinement. Goodwin and Rhoades (2011) reported similar findings, in which there was limited use of logical appeals, but gain-loss appeals were used to portray fate of the animals if certain confinement practices continued. These results conclude that a combination of appeal types was commonly used in online videos with negative attitudes toward swine confinement. This also demonstrated a broader attempt at reaching various types of audiences, which "aims to elicit predominant meaning and a particular response" (Littlejohn, 1992, p. 346). While viewers usually understand the denotation of a message, media producers attempt to affect the connotation of a message. The connotation of a message is "based on synthetic inferences or extensions from denotation" (Littlejohn, 1992, p. 346). By using these central concepts of semiotics, media producers have the ability to make a negative connection with swine confinement and agriculture industry as a whole (Littlejohn, 1992).

This connection was also seen in the relationship between production agriculture and attitudes toward swine confinement. Among the videos coded, 83.9% of the videos displaying a negative attitude toward production agriculture also exhibited negative attitudes toward swine confinement. As expected, a high occurrence of positive attitudes toward production agriculture and swine confinement was observed; 50% of videos with positive attitudes toward production agriculture also displayed positive attitudes toward swine confinement. Interestingly enough, only 4.5% of the videos with attitudes positive toward production agriculture also displayed positive attitudes toward swine confinement. Videos that displayed neutral attitudes toward production agriculture, also displayed negative (49.3%) and neutral (46.3%) attitudes toward swine confinement; whereas only 4.5% of the videos that presented a neutral attitude toward production agriculture also exhibited positive attitudes toward swine confinement. These results suggest that videos with positive attitudes toward swine confinement consistently paired with attitudes positive toward production agriculture, abiding by patterns that are more predictable. Audiences are not completely predictable, and by using subjective news selections, the swine industry is no different than news media that follow a predictable pattern (Littlejohn, 1992; McQuail, 2005).

Terminology.

Terminology served as a main objective and key finding in online videos, displaying significant relationships with attitudes toward swine confinement. As powerful as images are in framing a message, a large number of textual devices can (also) perform these activities. Using certain words, phrases, and contextual references are just a few ways text can be used to frame a message. Using the same terminology descriptors, *animal* and *confinement* terms were coded for in online videos and produced interesting findings. Of the three most commonly used *animal*

terms, *pig*, *sow*, and *piglet*, 66% of the videos that used the term *pig*, also expressed negative attitudes toward swine confinement. In contrast, only 6% of the videos that used the term *pig* displayed a positive attitude toward swine confinement. These results appear to contradict the results in articles, which show the difference in terminology between the two mediums. This also shows that the media producer understands what content will elicit certain meanings in the culture of the audience (Littlejohn, 1992). The cultural audience for each medium is not consistent across the board, emphasizing the importance of understanding who the intended audience is.

The term *piglet*, when used in online videos, was presented 63% of the time in videos that were associated with negative attitudes toward swine confinement and only 6% of positive videos. Both coders observed the use of the term *piglet*, in conjunction with a maternal frame, which were prominent in online videos displaying negative attitudes toward swine confinement. Often, videos would include ‘mother’ or ‘baby’ with the term *piglet*, making a connection with maternal bonds. It can be concluded that a combination of terms were framed to make certain appeals to the audience, primarily using emotional and maternal connections. Our language system is a combination of interdependent terms obtaining meaning from the simultaneous presence of others, which illustrates framing by the inclusion and exclusion of certain words (Tylén, Fusaroli, Bundgaard & Østergaard, 2013, p. 40).

Video *confinement* results showed stronger relationships with attitudes toward swine confinement than articles. Seventy-five percent of videos using the term *crate* displayed negative attitudes toward swine confinement. In comparison, only 3% of the videos using the term *stall* exhibited negative attitudes toward swine confinement. However, 40% of the videos that used the term *stall* displayed positive attitudes toward swine confinement. This is quite

interesting, as these two terms are used interchangeably in legislation and even in other countries. There has been a clear communication error in how we have defined housing for pregnant sows and it has been consistently misused. The results of this study conclude that the term *crate* is used negatively toward swine confinement, which was evident from the videos watched in this study. Many animal protection groups would use the term *crate* constantly, referring to the housing of pregnant sows. Goodwin and Rhoades (2010) found that consumers believe there is no adequate amount of space to confine livestock, and based on consumer responses, there was limited knowledge on how livestock are generally housed.

State laws prohibiting the use of gestation crates are modeled after the first ballot initiative on the topic, passed in Florida in 2002. Since that time, several other states have passed similar ballot proposals, such as California's "Proposition 2", and other legislation outlawing the practice within their state borders (Goodwin & Rhoades, 2010). While this current study does not specifically address legal consequences, they are important to consider in light of the negative connotation that the media coverage and advertising have associated with certain words that refer to sow housing. This negative association was observed in this study, as online videos for terminology referring to *confinement* were seen to have a strong relationship with attitudes toward swine confinement.

Legislation in the United States has interchangeably used the terms *gestation stall* and *gestation crate* in reference to the housing of pregnant sows (Goodwin & Rhoades, 2010; National Pork Producers Council, n.d.). The European Union on the other hand, consistently refers to the housing of pregnant sows in *gestation stalls* and *farrowing crates* for its lactating sows (Barnett, Hemsworth, Cronin, Jongman, & Hutson, 2001). By definition, *crate* refers to "any completely enclosed boxlike packing or shipping" (Dictionary.com, 2013a), which has no

reference to confining an animal. The term *stall*, by definition, means “a compartment in a stable or shed for the accommodation of one animal” (Dictionary.com, 2013d). While the two words are used interchangeably, and consumer’s knowledge is limited on housing livestock, producers must be aware of what terms are associated with negative and positive attitudes toward swine confinement.

Summary.

Objective one in this study produced applicable and noteworthy findings. The source and type of article (editorial, news, and feature) played a large role in what, and how, the gatekeeper allowed information to pass through the “gates”. Opinionated articles (editorials) had a strong association with negative attitudes toward swine confinement. Feature articles took a more neutral stance toward swine confinement, and positive attitudes toward swine confinement seemed to have minimal overall presence. Specific *confinement* and *animal* terminology was associated with particular attitudes in videos. While these findings may not be generalizable, they display the significance in how words affect certain attitudes towards swine confinement. Particular combinations of words and appeals are used to frame messages being delivered, which are intended to elicit a certain response from viewers.

Results varied in objective one of this study between articles and online videos, as more extreme relationships were observed in online videos. While this may seem slightly contradictory, it’s worth mentioning the standards of each medium analyzed in this study. YouTube, like many online media outlets, is available to anyone with access to the Internet and a computer. These individuals also have the ability to produce and distribute messages, no matter what education or experience level they have. Online videos are among the most widely viewed media outlets, with a reported 57% of Internet users watching online videos (Madden, 2007;

Rhoades & Ellis, 2010). In contrast, *The New York Times* (2013) requires submissions of opinion-editorials to be screened and selected for print in their newspaper. With such different guidelines and availability to publish media, there will always be a difference between the content of different mediums.

The second notable difference between the two mediums in this study were the audiences. The most frequent online video users are young adults (76%) between the ages of 18-29 (Madden, 2007). Print and electronic newspaper audiences are primarily adults older than 35 (Newspaper Association of America, 2013). With contrasting audiences and standards, as seen in this study, each message used in a medium must fit the audience it is addressing; one communication plan is not suitable to deliver all external and internal mass media.

RO2: Analyze visual imagery used to describe the swine industry and its practices, in online videos, to determine which are associated with a positive, negative and neutral attitude toward swine confinement.

This study viewed 157 online videos (YouTube) to observe the visual imagery used in delivering messages to a general audience. Seventy-four percent of broadband users either view or download online videos and over 800,000,000 unique users visited YouTube in July 2011 (Google, 2011; Madden, 2007). Online videos were examined to note relationships between visual imagery and attitudes toward swine confinement.

Online Videos.

Gender.

This study found no particular preference in which gender was used in online videos, but found notable relationships. When both *male and females* delivered the message in a video, a strong relationship was found with videos displaying negative (74.2%) attitudes toward swine

confinement. When both genders were used to deliver messages, positive (12.9%) and neutral (12.9%) attitudes were minimally represented. While this study is unable to determine which gender promotes certain attitudes toward swine confinement, it can conclude that the presence of a person delivering the message might appeal more with viewers than no person at all. Madden (2007) reported that among the internet users who view and download online videos, 63% are male and 51% are female, which shows little difference in the gender of the audience. If both *male and female* are present, no matter how the viewer connects with the individual delivering the message, all methods of communicating an effective meaning are present.

When selecting what components will be used in creating a message, the person delivering the message is vital. The gender of the individual has the potential to utilize many methods of appealing to an audience. When audiences see a male delivering a message, they might refer back to the notion that men are hard-working and women assume the supportive role by the side of their husband (Rhoades & Irani, 2006). They may also view a female delivering a message and make an emotional or maternal connection, portraying a more gentle delivery (Goodwin & Rhoades, 2010). How the media producer chooses to portray their message will be depicted in the person chosen to deliver it.

Music and text.

Through the process of framing and semiotics, a combination of terminology, tone, and images will elicit a certain response from audiences, creating meanings from large cultural and ideological systems (McQuail, 2005; Miller, 2003). This study went a step further with terminology and assessed whether or not media used text and music to deliver its message through online videos. Music has long been a part of our cultural society, providing pleasant experiences for audiences as they shop or visit local grocery stores, cafés, etc. all around the

world (Xu & Sundar, 2011). Results in this study showed that music played a large role in delivering messages in online videos, serving as a powerful tool in media.

This study showed that 66.7% of videos that used *music only*, expressed neutral attitudes toward swine confinement, but was used conservatively by positive (20%) and negative (13.3%) attitudes toward swine confinement. When *music and text* were used, 55% the videos expressed negative attitudes toward swine confinement and only 10% of videos expressing positive attitudes used this combination. Videos using *text only* messages also indicated an increase in negative attitudes (58.3%) toward swine confinement, but minimal positive attitudes (11.1%) included *text* when delivering its message. While a combination of music and text were used in videos, 54.5% of online videos that made no use of *music or text* displayed negative attitudes. This study concluded that the combination of images, text, and music, aid in the successful delivery of messages; attitudes negative and neutral toward swine confinement are efficiently using these techniques.

Xu and Sundar (2011) explain that music has the ability to affect three dimensions of an individuals emotions; this study focused on the dimension of arousal. The use of music serves to arouse the experience of the listener, which takes time to decay once heard (Xu & Sundar, 2011). Increases in modality will certainly resonant messages longer and more efficiently to audiences. Brief exposure to music during the beginning of a video has the potential to produce residual excitation for the entire duration of a video. This residual excitation also amplifies the audiences' physiological response to other stimuli around them (Xu & Sundar, 2011). It can be suggested that when music and text is used in a message, an individual is more likely to be attentive for the entire video.

Kiousis and Dimitrova (2004) found that the modality of a message, defined as the “use of text, graphics, sound, and video on a single communication platform” (p. 9), increased perceived salience. This study analyzed the modality of web pages, which is comparable to the electronic analysis done in this study, as all communication channels were observed on websites. Kiousis and Dimitrova (2004) also found that positive impressions of web pages were increased when text, pictures, and video were present. “One of the strongest forms of communication is when words and images are combined in equal proportions” (Lester, 2005, p. 64).

Framing techniques like these take each aspect of creating and delivering a message to an audience and dominate topical issues and events. By increasing modality in mass media, agricultural communicators present the opportunity to reach larger audiences and maintain the viewer’s attention.

Setting.

Framing allows the media producer to control how the audience thinks about a subject, setting being one of the key elements in portraying a topic or issue. Pre-conceived notions of rural life not only affect how the audience will process a message, but also determine how the message will be framed (Rhoades & Ellis, 2010; Rhoades & Irani, 2006). Of the videos that used a *farm* setting, 69% displayed negative attitudes toward swine confinement in comparison to positive (29%) and neutral (2%) attitudes. In this study, videos using an *outdoor* setting also had a strong relationship with negative attitudes toward swine confinement; positive (2%) and neutral (28%) attitudes toward swine confinement used an *outdoor* setting less frequently.

It was quite interesting to find attitudes negative toward swine confinement dominating both *farm* and *outdoor* settings. During data collection, coders noted that many of the videos published by a particular activist group (Mercy For Animals) used an outdoor setting and

displayed negative attitudes toward swine confinement. Many of these videos were filmed outside in front of Wal-Mart stores all over the U.S. With a high presence of videos displaying negative attitudes toward swine confinement in this study, the data reflected these observations. With that being said, one might still expect to see positive attitudes toward swine confinement using more *farm* settings and negative using *outdoors* settings; based on the premise that the agriculture industry confines swine on farms and animal protection groups believe swine should be free-roaming in their natural setting. This shows that a variety of settings can be used and still represent one particular position towards swine confinement. Framing a message, no matter what the stance of the media producer, allows different aspects of semiotics (word, image, sign, etc.) to work in the mind of an audience and represent whatever the overall goal of the message is. Similar to Goodwin and Rhoades' (2010) assessment, communicators must build positive cultural connections with conventional housing and practices to gain public support for the swine industry.

A mere image of swine in a stall or crate has no cultural meaning to an audience and depicts no regular association of how animals are housed in the public's memory (Goodwin & Rhoades, 2010). Media producers can use this lack of knowledge on the audience's part and elicit a response against a particular housing type by display negative attitudes toward swine confinement. As mentioned above, negative attitudes toward swine confinement were very prevalent in this study ($n = 81$). While negative attitudes toward swine confinement had a stronger presence in the sample of online videos, researchers were able to observe how this attitude type utilizes various aspects of messages.

Summary.

Online videos reach an audience of 57% adults, 19% of adults on a typical day, making online videos one of the most sought out mediums in mass media (Madden, 2007; Rhoades & Ellis, 2010). Every aspect of visual imagery and linguistic use play a vital role in communicating messages. Visual imagery played a vital role in framing messages in online videos, illustrating how multiple visual frames increased the effectiveness of delivering messages. Increased modality allows messages to resonate and reach larger audiences. Gender of the individual delivering the message appeared to have no relationship with a particular attitude toward swine confinement. Though, messages framed with the presence of an individual appeared to be more appealing than no person at all. Setting provided another insight of how messages are being created and delivered. All framing components in a message will determine the particular view of a video, not the setting alone. Multiple settings have the ability to represent a particular view, showing how a combination of framing techniques aids in creating effective messages.

Similar to the Goodwin and Rhoades' (2010) study, there was an imbalance between positive and negative videos. The techniques and methods of creating sound messages using visual imagery are present, but there must be an increase in presence from the agricultural industry to outweigh the opposition. Proposition 2 legislation has passed in many states around the United States, and Goodwin and Rhoades (2010) made the same conclusion when submitting their analysis; positive must outweigh the negative or public opposition will continue for the agricultural industry.

Recommendations for Agriculture Producers

With changing issues and increased concern from the public on where their food comes from, the industry must take action (Norwood & Lusk, 2011). First, the agricultural industry must realize that while certain practices are approved, the industry must prepare for public opposition. The current issue is with the method in which swine are confined, and is controversial for many reasons. Now is the time to educate the public and provide a level of transparency. The public must be informed on why certain practices are used and how they help with modern livestock production. This must be done in a way that appeals to various audiences. While content in messages is very important, the lack of media presence is an even larger concern. Predominant media makes a difference in audience's lives, not the content of the message (Littlejohn, 1992). The answer is not to keep the media out, as this portrays that the industry has something to hide. The public might not agree with how modern livestock practices are conducted, but when informed, a level of consideration might result. This may reduce the surprise between conventional and traditional practices to the public.

Many of the videos that were negative toward swine confinement had two common themes. First, they addressed the confinement issue and the size of crates used for gestating sows. This will be an ongoing issue until legislation resolves it. Regardless, producers have little control over changing a worldwide practice. While this battle will be played in ballots and courtrooms, producers still have the chance to control how the public views modern/conventional livestock practices (Norwood & Lusk, 2011). Second, many videos connected confinement issues with animal abuse. Many times, undercover cameras were sent into operations where obvious abuse was being conducted. Regardless of whether or not gestation crates are bad or good, when associated with animal abuse, they have an increased

chance of being negatively received. Gestation crates are not contingent on animal abuse and vice versa. Unlike gestation crates, animal abuse is not a worldwide practice and should not be tolerated by producers. Producers need to manage employee actions and farm procedures. When internal communications and actions are dysfunctional, they have the potential to affect social structure and social change. Individual producers will be more influential on the public than media and this must be a conscious thought throughout the swine industry (Littlejohn, 1992; Parsons & Urbanski, 2012).

Goodwin and Rhoades (2010) found that the general public still holds positive perceptions of the agricultural industry and trust in farmers. With various messages being distributed in mass media, consumers are looking for confirmation that their food is safe for them and their families. If producers show the same concern in providing safe food, via humane methods, this may instill the trust that consumers still possess in the industry (Goodwin & Rhoades, 2010).

Recommendations for Agricultural Communicators and Educators

Agricultural communicators stand as the gatekeeper between the producer and the consumer. First, communicators need to address internal communications. The industry must be on the same page before messages can be disseminated externally. Consistent and unique messages show a unified and cohesive organization. How messages are portrayed externally is a direct reflection of how messages are managed internally. If multiple sources are delivering several messages to the public, then constant confusion may result.



Figure 4. Theoretical model (Revised) demonstrating the interrelationship between gatekeeping, framing, and semiotics.

Figure 4 displays the theoretical model guiding this study. While the original design was created more for journalistic media, this model has been updated to reflect how it reflects all mass media efforts. Serving as the gatekeeper, an individual selects the information to be disseminated to an audience. This model was also updated to reflect the first step in framing: deciding what medium to use. Considerations are made with regards to how the message will be distributed and what medium will most effectively deliver the intended message (i.e. article, magazine, video, advertisement, etc.). The gatekeeper, no matter what age or education level, will choose different opinions, quotes, and testimonials to use in a message. This individual will choose to frame their message with certain images and words to elicit a specific response and will select which medium most effectively conveys the overall message. Whether a baby pig is used in a video or a narrative accompanies a picture in an article, the gatekeeper will frame a message that appeals to the audience. The message will be delivered and the audience will use their own experiences and knowledge to derive a meaning (semiotics). With online videos serving as one of the most widely viewed media outlets, education and knowledge are not required to deliver messages (Madden, 2007). This also shows how likely information and mass media efforts can be distorted. Audiences pay attention to dominant media, reiterating the importance of increased presence. Following data collection and reporting the findings, the researcher better understood how Figure 1 could be improved and corrected to reflect how

information is disseminated. This improvement is reflected in Figure 4, which better represents how messages are created and distributed. The audience's cultural knowledge and experiences are the one element of the theoretical model that is difficult to control. The message may be framed for a certain audience, but the meaning derived is unpredictable and this is what drives communicators to improve their efforts in reaching audiences.

As agricultural communication students are taught in the classroom, education must step outside the box and find new and interesting ways to reach audiences; discover what elements work best. In the case of online videos, audiences enjoy humor and news, but only 22% are seeking educational outlets (Rhoades & Ellis, 2010). The public does not want to be "taught" something, they need to be engaged in mass media and educated at the same time. This presents a challenging task for communicators, as traditional efforts need to be revised and alternative methods need to be developed. Like the agricultural industry, the communication field is changing daily and so are the audiences it seeks to reach.

This study also established that editorial articles were associated with negative attitudes toward swine confinement and feature stories were associated with neutral attitudes toward swine confinement. Communicators are encouraged to be mindful of articles being disseminated, and no matter the source, messages can be created to represent many views and attitudes.

Research based information is being conducted to help communicators deliver effective messages, and practitioners must find alternative methods to increase mass media efforts. Establishing a presence in mass media (i.e. online videos) also presents the opportunity to increase credibility of messages produced (Rhoades & Ellis, 2010). This study supports Rhoades and Ellis' (2010) recommendation to increase media efforts to reach viewers, YouTube being

one of the most effective methods. Online videos are a popular media channel and afford the opportunity to not only reach those who access videos, but the individuals they share media with. By sharing media, communicators have the opportunity to spread messages to larger audiences.

Recommendations for Future Research

The content analysis design of this study and particular framework limits the ability to generalize the findings and characterize the effects of content on an audience (Wimmer & Dominick, 2003). Though, content analysis studies serve five main uses: describe communication content, testing hypothesis of message characteristics, comparing media content to the *real world*, assessing the image of particular groups in society and establishing a starting point for studies of media effects (Wimmer & Dominick, 2003). While this study sought to define what linguistic and visual imagery was associated with certain attitudes toward swine confinement, it also enabled the researcher to observe general content of the external media being disseminated.

This study was able to view content and describe the communication content representing the agricultural industry. While similar methods have been conducted in previous research with YouTube videos, the content analysis of electronic newspapers for the agricultural industry is less represented. Further research could help explore electronic newspapers and the content being distributed and provide results that are more definitive.

While the content analysis of media serves to provide valuable results, the objectives for this study could be used as a starting point to further explore perceptions and attitudes. This starting point is relatively new in content analysis and is termed as a “cultivation analysis” (Wimmer & Dominick, 2003, p. 143). This allows research to take common themes and dominant messages in the content analysis and conduct a separate study on an audience. Surveys

could be conducted to further confirm or refute the results in this study, allowing for the findings to be more generalized. Allowing the opportunity to collect the perceptions and attitudes of a sample population would be more representative of how media is actually being perceived by audiences.

There is a sizeable amount of research analyzing how, and by what means, to deliver messages to audiences. Practical application needs to be applied and research needs to confirm whether or not these methods are working to improve the image of the agricultural industry. Efforts should also be made to see how incorporating transparency would aid the knowledge-gap that exists between producers and consumers. Legislation, media, and opposition already exist; research needs to help communicators and producers effectively show their side of the story. This study only analyzed the surface of the data collected, but this study and many similar (Goodwin and Rhoades, 2010; Rhoades and Ellis 2010; Rhoades and Irani, 2006), are among the many studies that have the ability to be expanded on to increase communication knowledge and strategies.

VI. REFERENCES

- Abrams, K., & Meyers, C. (2009). From opposite corners: comparing persuasive message factors and frames in opposing organizations' websites. *Journal of Applied Communications*, 96(1), 54-67.
- Alliance for Audited Media. (2013). Total Circ. Retrieved from <http://abcas3.auditedmedia.com/ecirc/newstitlesearchus.asp>
- Ary, D., Jacobs, L. C., Razavieh, A., & Sorensen, C. (2006). *Introduction to Research in Education* (7th ed.) Canada: Thomson Wadsworth.
- Ary, D., Jacobs, L. C., & Sorensen, C. (2010). *Introduction to Research in Education* (8th Edition ed.). Belmont, California: Wadsworth.
- Barnett, J.L., Hemsworth, P. H., Cronin, G. M., Jongman, E. C., & Hutson, G. D. (2001). A review of the welfare issues for sows and piglets in relation to housing. *Australian Journal of Agricultural Research*, 52, 1-28.
- Barry, A.S. (1997). *Visual intelligence: Perceptions, image, and manipulation in visual communication*. Albany, NY: State University of New York Press.
- Bell, A. (1991). *The language of news media* (p. 186). Oxford: Blackwell.
- Bennett, W. (1996). An introduction to journalism norms and representations of politics. *Political Communication*, 13(4), 373-384.
- Brader, T. (2006). *Campaigning for hearts and minds: How emotional appeals in political ads work*. Chicago, IL: The University of Chicago Press.
- Chu, H., & Rosenthal, M. (1996). Search engines for the World Wide Web: A comparative study and evaluation methodology. *Proceedings of the American Society for Information Science*, 33, p. 127-135.

- Craig, R. T., (1981). Generalization of Scott's index of intercoder agreement. *Public Opinion Quarterly*, 45(2), 260-264.
- Creswell, J. W. (2007). *Qualitative Inquiry & Research Deign* (2nd ed.). New Delhi, Thousand Oaks, London: Sage Publications.
- Damron, W. S. (2006). *Introduction to Animal Science* (3rd ed.). Pearson Prentice Hall.
- Dictionary.com (2013a). Crate. Retrieved from <http://dictionary.reference.com/browse/crate?s=t>
- Dictionary.com (2013b). Editorial. Retrieved from <http://dictionary.reference.com/browse/editorial?s=t>
- Dictionary.com (2013c). Feature Story. Retrieved from <http://dictionary.reference.com/browse/feature+story>
- Dictionary.com (2013d). Stall. Retrieved from <http://dictionary.reference.com/browse/stall?s=t>
- Dimitri, C., Effland, A., & Conklin, N. (2005, June). *The 20th Century Transformation of U.S. Agriculture and Farm Policy*. Retrieved February 2012, from United States Department of Agriculture: <http://www.ers.usda.gov/publications/EIB3/eib3.pdf>
- Edgar, L. D., & Rutherford, T. (2012). A semiotic analysis of a Texas cooperative extension marketing packet. *Journal of Applied Communications*, 96(1), 15-28.
- Entman, R. M. (1993). Framing: Toward clarification of a fractured paradigm. *Journal of Communication*, 51-58. Retrieved from http://www.unc.edu/~fbaum/teaching/POLI891_Sp11/articles/J-Communication-1993-Entman.pdf
- Goodwin, J., Chiarelli, C., & Irani, T. (2011). Is perception reality? Improving agricultural messages by discovering how consumers perceived messages. *Journal of Applied Communications*, 95(3), 21-33. Retrieved from http://journalofappliedcommunications.org/images/stories/issues/2011/jac_v95_n3_article2.pdf

- Goodwin, J., & Rhoades, E. (2010). Animal Rights vs. Animal Welfare: Is Society able to distinguish the difference and make Informed Decisions on Animal Care Legislation? *SAAS Agricultural Communications*, (pp. 1-21). Orlando. Retrieved from https://docs.google.com/file/d/0ByMPE0q2YLYsOThlMDYzYjEtZWUxOC00MjRiLWFmNGMtZjA3NDQ3NDNjZWZz/edit?hl=en_US
- Goodwin, J., & Rhoades, E. B. (2011). Narrowing the Farm-to-Plate Knowledge Gap through Semiotics and the Study of Consumer Responses Regarding Livestock Images. *SAAS Agricultural Communications* (pp. 1-24). Corpus Christi: The Ohio State University.
- Google. (2011, July). *The 1000 most-visited sites on the web*. Retrieved June 15, 2013, from <http://www.google.com/adplanner/static/top1000/index.html>
- Hundley, C. (2012). Aesthetic qualities of websites and their effects on public perceptions of agricultural issues and organizations (Unpublished master's thesis). University of Arkansas, Fayetteville, AR
- Hyde, J. E. (2001). Decoding the codes: A content analysis of the news coverage of genetic cloning by three online news sites and three national daily newspapers, 1996 through 1998. School of Education (pp. 41-49). New York: New York University.
- Kahle, L. R., & Kim, C. H. (2006). *Creating Images and the Psychology of Marketing Communication*. Mahwah, New Jersey: Lawrence Erlbaum Associates.
- Kaid, L., & Wadsworth, A. J. (1989). Content analysis. In P. Emmert & L. Barker (Eds.) *Measurement of communication behavior*, (pp. 197-217). New York: Longman.
- Kerlinger, F. N. (2000). *Foundations of behavioral research* (4th ed.). New York: Holt, Rinehart & Winston.
- Key, N. D., & McBride, W. D. (2007). The changing economics of U.S. hog production. United States Department of Agriculture, 52. Retrieved from <http://ageconsearch.umn.edu/bitstream/6389/2/er070052.pdf>
- Kiousis, S., & Dimitrova, D. (2004). The differential impact of website content: Exploring the influence of source (Public relations vs. News), Modality, & participation on audience perceptions. *Conference papers – International Communication Association*, 1.

- Lacy, S., Robinson, K., & Riffe, D. (1995). Sample size in content analysis of weekly newspapers. *Journalism and Mass Communication Quarterly*, 72(2), 336-345.
- Landis, J. R. & Koch, G. G. (1977). The measurement of observer agreement for categorical data. *Biometrics* 33(1), 159–174. doi:10.2307/2529310
- Lartonda, M. (2012, February 13). *McDonald's Asks Pork Distributors for Humane Reforms*. Retrieved April 7, 2012, from ABC News: <http://abcnews.go.com/blogs/business/2012/02/mcdonalds-asks-pork-distributors-for-humane-reforms/>
- Lassoued, R., & Giannakas, K. (2010). Economic effects of the consumer-oriented genetically modified products in markets with a labeling regime. *Journal of Agricultural Economics*, 61(3), 499-526. Retrieved from <http://onlinelibrary.wiley.com.library.uark.edu/doi/10.1111/j.1477-9552.2010.00253.x/pdf>
- Lee, J. H., Kin, W. Y., Kim, M. H., & Lee, Y. J. (1993). On the evaluation of Boolean operators in the extended Boolean retrieval framework. In R. Korfhage, E. Rasmussen, & P. Willett (Eds.), *SIGIR '93 of the 16th annual international ACM SIGIR conference on Research and development in information retrieval* (pp. 291-297). doi: 10.1145/160688.160741
- Lester, P. M. (1995). *Visual communications; Images with messages*. Belmont, CA: Wadsworth Publishing, 55-140.
- Lester, P. M. (2005). *Visual Communications: Images with Messages*. Belmont, CA: Wadsworth Publishing.
- Library of Congress. (2004). Newspapers. Retrieved February 25, 2013, from <http://www.loc.gov/acq/conser/mod33-18.pdf>
- Littlejohn, S. W. (1992). *Theories of Human Communication* (4th ed.). Belmont, California: Wadsworth Publishing Company.
- Lusk, J. L., & Norwood, F. B. (2011). Animal welfare economics. *Applied Economics Perspectives and Policy*, 33(4), 463-483. doi: 10.1093/aep/pper036

- Madden, M. (2007). *Online video*. Retrieved from Pew Internet & American Life Project website;
http://www.pewinternet.org/~media/Files/Reports/2007/PIP_Online_Video_2007.pdf.pdf
- Maddox, S. (2001). *Determining effective communication strategies for agricultural organizations to provide agricultural producers the knowledge necessary to promote change in the 21st century*. Doctoral Dissertation, NC State University Raleigh, NC.
- McQuail, D. (2005). *McQuail's Mass Communication Theory* (5th ed.). New Delhi, Thousand Oaks, London: Sage Publications.
- Merriam-Webster. (2012). Tone. Retrieved May 9, 2012, from <http://www.merriam-webster.com/dictionary/tone>
- Meyers, C., & Miller, J. D. (2006). Evaluating genetically modified food labels: A focus group study. *SAAS Agricultural Communications* (pp. 1-20). Orlando: University of Florida. Retrieved from: <http://agnews.tamu.edu/saas/2006/gm.pdf>
- Miller, J. D., Annou, M., & Wailes, E. J. (2003). Communicating Biotechnology: Relationships Between Tone, Issue, and Terminology in U.S. Print Media. *Journal of Applied Communications*, 87(3), 29-42.
- Nabi, R., & Oliver, M.B. (2010). Media effects. In C.R. Berger, M.E. Roloff, & D. Roskos-Ewoldsen, *Handbook of communication science* (2nd ed.) (pp. 255-272). Sage Publications Inc.
- National Pork Producers Council. (n.d.). Sow housing. Retrieved from <http://www.nppc.org/issues/animal-health-safety/sow-housing/>
- Newspaper Association of America (2013). Newspaper readership & audience by age and gender. Retrieved from <http://www.naa.org/trends-and-numbers/readership/age-and-gender.aspx>
- Norwood, F. B., & Lusk, L. L. (2011). *Compassion, by the pound: The economics of farm animal welfare*. Oxford, NY: Oxford University Press.

- Parsons, M., & Urbanski, S. (2012). Recognizing dysfunctional communications a means of improving organizational practices. *Online Journal of Communication & Media Technologies*, 2(4), 155-175.
- Rhee, Y., & Kim, J. (2009). Employees as boundary spanners: Predicting employees' external communication behavior through employee organization relationships. *Conference Papers – International Communication Association*, 1-28.
- Rhoades, E. B., & Ellis J. D. (2010). Food tube: coverage of food safety issues through video. *Journal Food Safety*, 30(1), 162-176
- Rhoades, E. B., & Irani, T. (2006). The stuff you need out here: A semiotic case study analysis of an agricultural company's advertisements. *Journal of Applied Communications*, 92(3-4). Retrieved from http://journalofappliedcommunications.org/images/stories/issues/2008/JACv92n3-4_analysis.pdf
- Riffe, D., Lacy, S., & Drager, M. W. (1996). Sample size in content analysis of weekly news magazines. *Journalism and Mass Communication Quarterly*, 73(3), 635-644.
- Scheufele, D. A., & Tewsbury, D. (2007). Framing, agenda setting, and priming: The evolution of three media effects models. *Journal of Communication*, 57(1), 9-20. Retrieved from http://www.scienzepolitiche.unimi.it/files/_ITA_/COM/3-Framing-AgendaSetting.pdf
- Schinckel, A. (2008). Gestation and Farrowing Crates for Pigs. Retrieved from <http://www.ansc.purdue.edu/faen/gest%20crates.html>
- Stempel, G. H. (1952). Sample size for classifying subject matter in dailies. *Journalism Quarterly*, 29, 333-334.
- The Food Institute. (2009, September). *Demographics of consumer food spending*. Elmwood Park. Retrieved from <https://staging.sju.edu/resources/libraries/campbell/researchguides/securefiles/Demographics2009.pdf>
- The New York Times. (2013). How to submit an article to the op-ed page. Retrieved from <http://www.nytimes.com/content/help/site/editorial/op-ed/op-ed.html>

Thomsen, M. R., Longsreth, M., & Miller, J. D. (2003). Media coverage of food irradiation. *Food Protection Trends*, 23(3), 243-251.

Tonsor, G. T., Wolf, C., & Olynk, N. (2009). Consumer voting and demand behavior regarding swine gestation crates. *Food Policy*, 34, 492-498. doi: 10.1016/j.bbr.2011.03.031

True Random Number Service. (2012). Retrieved from <http://www.random.org/>

Tushman, M. L., & Katz, R. (1980). External communication and project performance: An investigation into the role of gatekeepers. *Management Science*, 26(11), 1071-1085

Tylén, K., Fusaroli, R., Bundgaard, P.F., & Østergaard, S. (2013). Making sense together: A dynamical account of linguistic meaning-making. *Semiotica*, 194(1-4), 39-62. doi:10.1515/sem-2013-0021

USDA-NASS. (2007). *2007 census of agriculture: Hog and pig farming*. Retrieved February 2012, from United States Department of Agriculture: http://www.agcensus.usda.gov/Publications/2007/Online_Highlights/Fact_Sheets/Production/hogsandpigs.pdf

USDA-NASS. (2012, January 27). *Cattle*. Retrieved April 19, 2012, from United States Department of Agriculture: <http://usda01.library.cornell.edu/usda/current/Catt/Catt-01-27-2012.pdf>

USDA-NASS. (2013). *Chickens and eggs annual Summary*. Retrieved July 15, 2013, from United States Department of Agriculture: <http://usda01.library.cornell.edu/usda/current/ChickEgg/ChickEgg-02-27-2013.pdf>

USDA-NASS. (2012, March 1). *Quarterly hogs and pigs*. Retrieved April 19, 2012, from United States Department of Agriculture: <http://usda01.library.cornell.edu/usda/current/HogsPigs/HogsPigs-03-30-2012.pdf>

- USDA-NASS. (2012, January 1). *Sheeps and Goats*. Retrieved April 19, 2012, from United States Department of Agriculture:
<http://usda01.library.cornell.edu/usda/current/SheeGoat/SheeGoat-01-27-2012.pdf>
- U.S. Farmers Rancher Alliance. (2012). About USFRA. Retrieved from
<http://www.fooddialogues.com/about/what-are-the-food-dialogues/>
- U.S. Pork Center of Excellence. (2013). Swine Resources and Publications. Retrieved from
<http://www.usporkcenter.org/ResourcesAndOpportunities/656/SwineResourcesandPublications.aspx#.UeMmSWS4HWz>
- Wansink, B., & Kim, J. (2001). The marketing battle over genetically modified foods. False assumptions about consumer behavior. *American Behavioral Scientist*, 44(8), 17-18.
- Wimmer, R. D., & Dominick, J. R. (2003). Content Analysis. *Mass Media Research: An Introduction* (7th ed., pp. 140-162). Belmont, California; Wadsworth/Thomson Learning.
- Wimmer, R. D., & Dominick, J. R. (2006). Content Analysis. *Mass Media Research: An Introduction* (8th ed., pp. 149-174). Belmont, California; Wadsworth/Thomson Learning.
- Whitaker, B. K. & Dyer, J. E. (2000). Identifying sources of bias in agricultural news reporting. *Journal of Agricultural Education*, 41(4), 125-133. doi: 10.5032/jae.2000.04125
- Xu, Q., & Sundar, S. S. (2011). Lights, camera, music. Interaction! Interactive persuasion in e-commerce. *Conference Papers – International Communication Association*, 1-19.

APPENDICES

VII. APPENDIX A

YOUTUBE CODING SHEET

YouTube Analysis

Video Number _____

Title of Video: _____

Author of Video: _____

Length of Video: _____ Views of Video: _____

Video Category: _____ Video Rating: Likes _____ Dislikes _____

Video Sponsor:

Animal Rights Org Farming/Commodity Org Government Celebrity Other _____

Type of Video:

Promotional Educational News Other _____

How long has the video been online: _____

Comments:

No Yes How Many _____ Relevant Irrelevant

The segment is:

Positive towards production agriculture Negative towards production agriculture Neutral

The segment topic covers:

Farmers Animal Welfare Human Health Food

Animal Rights Environment Other _____

The video was: Animated Not-animated

Presence of celebrity's opinion:

No Yes

The message is delivered:

Voice only 1 person More than one person None

The age of the person/people delivering the message:

Young children Teens 20's-30's 40's-50's 60+ None

Ethnicity of person/people delivering the message

Caucasian Asian Black Hispanic Other None

The message is delivered by:

Male Female Both None

Presence of animals:

No Yes

Presence of children:

Yes No

The message uses:

Music only Music and text Text only None

The message makes reference to supporters:

No Yes

Includes an agricultural educational component:

No Yes Ex: _____ Educational component correct Yes No

Includes extremes examples:

No Yes Ex: _____

Provides misleading examples:

No Yes Ex: _____

The video cites sources:

No Yes Ex: _____

The setting of the video is:

Farm Outdoors Public Event Home Other _____

The types of appeals used by the messages:

Guilt Ethical Appeals Promise Empathy
 Humor Threat/Fear Pride Sex Logic

The types of persuasive appeals used by the messages:

Rhetorical Question Self-reference Gain-Loss Informative Social Irony

The message references giving human qualities to animals:

No Yes Ex: _____

The message promotes the family farm:

No Yes

The message compares farm animals to pets:

No Yes

The message mentions vegetarianism/veganism:

No Yes
 For production agriculture and promotes vegetarianism/veganism
 For production agriculture and claims to not be pressuring vegetarianism/veganism
 Against production agriculture

The message promotes a move to action:

No Yes Ex: _____

This segment is:

For swine confinement Against swine confinement Neutral

VIII. APPENDIX B
ELECTRONIC NEWSPAPER CODING SHEET

Print Analysis

Article Number _____

Title of Article: _____

Author of Article: _____

Length of Article: _____

Article Category: _____

Type of Article:

Editorial Feature News Other _____

When was article published: _____

The article is:

Positive towards production agriculture Negative towards production agriculture Neutral

The topic covered is:

Farmer Animal Welfare Human Health Food
 Animal Rights Environment Other _____

The message makes reference to supporters:

No Yes Ex: _____

Includes an agricultural educational component:

No Yes Ex: _____ Educational component correct Yes No

Includes extreme examples:

No Yes Ex: _____

Provides misleading examples:

No Yes Ex: _____

The article cites sources:

No Yes Ex: _____

The types of appeals used by the messages:

Guilt Ethical Appeals Promise Empathy
 Humor Threat/Fear Pride Sex Logic

The types of persuasive appeals used by the messages:

Rhetorical Question Self-reference Gain-Loss Informative Social Irony

The message references giving human qualities to animals:

No Yes Ex: _____

The message promotes the family farm:

No Yes

The message compares farm animals to pets:

No Yes

The message mentions vegetarianism/veganism:

No Yes

For production agriculture and promotes vegetarianism/veganism

For production agriculture and claims to not be pressuring vegetarianism/veganism

Against production agriculture

The message promotes a move to action:

No Yes Ex: _____

This article is:

For swine confinement Against swine confinement Neutral

IX. APPENDIX C

YOUTUBE TERMINOLOGY CARD

Terminology Card

Video Number _____

Animal

Pig _____
Swine _____
Sow _____
Piggy _____
Piglet _____
Boar _____
Barrow _____
Gilt _____
Mother _____
Newborn _____

Confinement

Crate _____
Pen _____
Cage _____
Box _____
Jail _____
Confinement _____
Stalls _____

X. APPENDIX D

ELECTRONIC NEWSPAPER TERMINOLOGY CARD

Terminology Card

Article Number _____

Animal

Pig _____
Swine _____
Sow _____
Piggy _____
Piglet _____
Boar _____
Barrow _____
Gilt _____
Mother _____
Newborn _____

Confinement

Crate _____
Pen _____
Cage _____
Box _____
Jail _____
Confinement _____
Stalls _____

XI. APPENDIX E

CODING GUIDE

Coding Guide

Video face value

Many organizations and companies producing the videos being coded are historically known to support certain views. All videos coded will be taken for the content presented and messages being delivered, with no reference to the producers previously known views or stance.

Editorial:

A newspaper article written by or on behalf of an editor that gives an opinion on a topical issue. Also including letters to the editor. (Dictionary.com, 2013b)

Feature Story:

A newspaper or magazine article or report of a person, event, an aspect of a major event, or the like, often having a personal slant and written in an individual style. (Dictionary.com, 2013c)

News

A story that emphasizes the facts, often written in inverted pyramid style. Opinion may be present, but in the form of attributed quotes.

Positive toward production agriculture

Makes suggestions that agriculture is “helping” or “providing” toward a cause (i.e. Cow production provides 200 tons of meat a year in the United States alone.)

Negative Toward production agriculture

Makes suggestions that agriculture is “harming” or “hurting” a particular cause (i.e. Swine farms are preventing pigs from being free and causing them to live in pain.)

When more than person is delivering the message:

- Select both ages
- Select both ethnicities
- Select both genders

When a narrator and an individual present in the video are delivering message:

- Select ‘more than one person’ delivering message

- Select age of individual actually seen only
- Select ethnicity of individual actually seen
- Select gender of both individuals

Animal Rights:

Giving rights to the animals. (i.e. Animals have the right to feel no pain, right to live cage free etc....)

Animal Welfare:

Treating animals properly without harm

Testimonials:

1. Positive - in favor of agriculture (i.e. I've seen the extent of disease and parasite problems that are present in non-factory farms)
2. Negative – against agriculture (i.e. I've seen these farms they are dark, dusty, and horrible. I saw these crates and they reminded me of coffins)

Makes reference to supporters:

I.E. “HSUS and PETA support this proposition” or the “Pork Producers oppose this proposition.”

Makes reference to notable figures that share the organizations views (i.e. Presidential candidate Al Gore shares our beliefs and has made it known that we should end gestation crates.)

Includes an Agricultural Educational component:

Reference to agricultural facts (i.e. currently XX billion animals are housed in factory farms).

Includes extreme examples:

Code YES if examples used include but are not limited to dead animals, not typical conditions, beating of animals, etc....

Provides misleading examples:

Codes YES if examples are given that imply that calves won't be taken away from their moms, depicts animals that won't be affected by the proposition (i.e. goats) or any other misleading example.

Video cites sources

YouTube:

Code YES if factual information or opinion are attributed to anyone other than the individual delivering the message. (i.e. According to the USDA, 6 million hogs are slaughtered every year... According to HSUS, 6 million pigs are slaughtered with out any cause.)

Print:

Code yes if statement or quote is attributed to anyone else not delivering the message. (i.e. a quote from another person)

Setting

- If there are multiple settings being used to deliver message, note all that apply
- If there are only images being shown, document the setting if images

Types of Appeals used by the message:

1. Guilt – “to have some feeling of failing at their own ideals or ethical principles” (i.e. it is wrong to treat animals inhumanely, to prevent inhumane treatment vote for prop 2)
2. Ethical Appeals – refers to a sources credibility (Lester, 2005) (i.e. according to this expert or long time resident, pigs are being mistreated in this area.)
3. Promise – assurance of “good physical outcomes for compliance” (i.e. If you vote for prop 2 these animal will no longer have to suffer).
4. Empathy – the ability to identify with and understand somebody else's feelings or difficulties (i.e. these animals can feel pain and it is so sad to think that we are responsible for their pain).
5. Humor – “heightened arousal, smiles, and laughter exhibited by an audience in response to a particular message.” (i.e. pig dancing, jokes, chicken making political jokes)
6. Threat/Fear – “illustrate undesirable consequences from certain behaviors” (i.e. if this proposition passes our food safety will be at risk of If this proposition doesn’t pass these animals will suffer and die) **or** “an emotional response to threats” (i.e. scared of food safety issues or the idea of animals suffering and dying)
7. Pride – the happy satisfied feeling somebody experiences when having or achieving something special that other people admire (I know that I’m doing the right thing by voting for proposition 2)
8. Sex – associated with sexual information (images, verbal elements, or both)
9. Logic – uses logic arguments to support claims or persuade individuals (i.e. history has shown time and again that animals were not born in cages and they should be free)

The types of logical appeals used by the message:

1. Rhetorical Question – “How would you feel if you were a pig”
2. Self-reference – “relating information to ones self” (I’m a vegan so we should not be raising animals to eat)
3. Gain-Loss – “focuses on desirable end states” (gain), “focuses on undesirable end states” (loss), (i.e. if you vote yes animals will no longer suffer)
4. Informative – increases audiences knowledge (factual, more than opinion)

5. Social Modeling – “This approach emphasizes modeling and portrayal of reinforcement of desirable behavior in messages in order both to teach relevant skills...and to increase self-efficacy or confidence in one’s ability to enact such behaviors (i.e. “Here’s what Brian Green’s doing, we applaud you”) (i.e. Lead by example)
6. Irony – “any statement that conveys meaning different from the one it professes to give...; a discrepancy exists between what the words say and what they mean.”

Promotes a move to action:

Tell people to spread the word, have a party, protest etc.