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Interactions between the Protein Industry and Blogs: An analysis of Content and Perceptions

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Interactions between the Protein Industry and Blogs:
An analysis of Content and Perceptions

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Abstract

This thesis contains two articles that describe and characterize the use of the social media platform of blogging in the context of the animal agriculture and protein industry. The first article used content analysis to analyze blog posts and look for themes throughout the posts. This study included 37 posts from ten authors and resulted in four recurrent themes. The major themes were *environment*, *consumption of protein*, *alternative protein source,* and *alternative dieting*. The tones regarding these themes were both negative and positive toward the protein industry.

The second article used hand-coding to look for themes and similarities concerning flow of information between interviews with blog authors. Six interviews were conducted, two of whom were authors from the first study. All of the bloggers had neutral and/or positive experiences when researching information or taking part in the flow of information. The nature of interactions between bloggers and protein industry representatives took place mostly electronically, as blog authors served as information mediators to the public.

Though the views expressed through blog posts and interviews are not holistically representative of the entire U.S. protein and animal agriculture industry, readers are encouraged to apply this research however they see fit. Industry representatives are encouraged to engage in honest, transparent communication with blog authors, as well as with consumers.

Acknowledgments

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Chapter One: Introduction

Need for the Study

Animal agriculture, also referred to as the protein industry, is an evolving industry (Loboguerrero et al., 2018). The newest challenge is producing more food products with fewer farmers. A shift in the number of farmers has lessened the impact of communications coming directly from farmers and producers (Statista, 2018). This means that the public receives its information concerning the protein industry and animal agriculture not from a direct source, such as a production facility or farmer, but through media such as Facebook, Twitter, corporate websites, and blogs (Shearer, 2018). Technological advances have enabled consumers to receive news from multiple outlets, with blogs as a reliable source still growing amongst consumers. Bloggers are perceived to be more trustworthy than the news media, and have become the communication industry's critics (Sweetser, Porter, Chung, & Kim, 2008). Journalists also see blogs as having more credibility than in the past (Sweetser et al., 2008), with the number growing each year of modern journalists gaining information from blogs.

The agriculture industry has increased pressure to provide food for an ever-growing world population, with the number of farms decreasing from just over 2.06 million to 2.04 million within the last year (Statista, 2018). Transparency within the industry is at the forefront of the consumer's mind. The average consumers want to know where their food is produced, what it was fed, how it was harvested, and if any supplements were used at any point within the production process (Beulens, Broens, Folstar, & Hofstede, 2005). With increased pressure for transparency on the producer, having a relationship with the media is becoming more important for production agriculturalists—especially within the animal agriculture and protein industry. Journalists see themselves as mediators of information for the general public, and blogging

journalists, or bloggers, are no different. Journalists also see themselves as gatekeepers of information, and will often reference blogs for information about a beat they may be unfamiliar with (Sweetser et al., 2008). They will adjust the angles and frames of stories to set an agenda (McCombs, Shaw, & Weaver, 1997), and release information when they see it appropriate—otherwise known as gatekeeping (Lariscy, Avery, Sweetser, & Howes, 2009).

A blog uses text, pictures, video and audio to present information to its readers. Specific characteristics of high-quality blogs are ubiquitous accessibility, ease of use, openness, collaboration and interactivity, and social linkage (Ferentinos, Koutsouris, Costopoulou, & Ntaliani, 2013). However, these characteristics are not seen consistently across all blogging platforms. While combinations of these characteristics are noticed across platforms, the characteristics identified by Ferentinos et al. (2013) typically serve as the foundation for creating social network opportunities through blogs.

Statement of the Problem

AAAE National Research Agenda Priority 1: Public and Policy Maker Understanding of Agriculture and Natural Resources (Roberts, Harder, & Brashears, 2016) states that it is important for agricultural educators, including communicators, to ensure the public and policy makers of the U.S. understand the nature of agriculture and natural resources available. The use of blogs and the interactions between protein industry representatives and bloggers relate directly to the AAAE's first research priority.

Policy makers and the public are directly affected by mediated communications, including blogs and microblogs, otherwise known as Twitter posts (Shapiro & Hemphill, 2016). Although sources of media have changed over time, blogs now fill a need as an information

source for not only policy makers, but also for journalists. Collaborations between journalists and government staff members subsequently lead to policy change (Shapiro & Hemphill, 2016).

This research also aligned with AAAE National Research Agenda Priority 2: New Technologies, Practices and Products Adoption Decisions, specifically in identifying the potential knowledge gap and biases that consumers have concerning the protein industry and its practices (Roberts, Harder, & Brashears, 2016). Blogging is a relatively new technology. Little research pertaining to the interactions between the food industry and individuals who blog about food or the food industry, specifically with the protein industry is available (Moore, 2015).

Purpose and Research Questions

Moore (2015, p. 126) stated, "There is very little research on how agricultural communicators are using blogs and other forms of social media to create these relationships with targeted publics." This research attempted to identify through a content analysis if a knowledge gap concerning the protein industry exists. Filling the potential knowledge gap concerning the protein industry was the overall focus that guided the research taking place in both parts of the study.

The research questions asked in order to achieve the study's purpose were:

1. How is the concept of the protein industry represented in the selected blog posts?

2. What are the themes in the selected blog posts concerning the protein industry?

3. What are the tonal characteristics of the selected blog posts concerning the protein industry?

The second part of the study strove to identify the flow of information between bloggers and their information sources. Determining the interactions between the bloggers and the protein

industry, in order to fill the knowledge gap between industry and media representatives, was the guiding research purpose behind designing the semi-structured interview protocol.

The research questions asked in order to achieve this study's purpose were:

1. How do bloggers who write about the protein industry get their information?

2. How does that flow of information take place?

3. What are bloggers' perceptions of their sources' attitudes toward requests for information?

Limitations

The study focuses on an aspect of a much larger industry effort to educate consumers about protein. Content found on blog posts is not a holistic, encompassing representation of the blogger's thoughts concerning the protein industry. The content analyzed may not be generalizable outside of the blogs that were part of this study or outside of the U.S. protein industry. However, other researchers are encouraged to expand upon and use this research as they see fit.

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Chapter Two: A content analysis of blog narratives

Introduction

In the last decade, agricultural communicators have become more familiar with blogging as a public relations and public education tool. Rhoades and Aue (2010) stated that agriculture has started to understand and utilize this technology for their audiences. Previous studies concerning agricultural blogs have focused on crop commodities or agricultural industries as a whole rather than the relationships between target audiences and a specified agricultural industry, such as the protein industry (Moore, 2015). Agricultural communicators should research the use of blogs as a communication tool and investigate the interactions surrounding blogging.

This begs the question—do agriculturalists see the importance of having a relationship with the media, specifically bloggers? The interactions between the food industry and bloggers should be analyzed to determine the effectiveness of communication tactics with bloggers.

Consumers want transparency when it concerns their food, especially their protein sources. Journalists and the general public consider blogs more credible than traditional news sources (Sweetser, Porter, Chung, & Kim, 2008). Thus, the use of internet media and the volume of content has grown exponentially, inundating consumers with information in which they are interested. While media is often considered the point of miscommunication concerning agricultural practices, it can also be used as a more accurate and transparent source of information if properly used by agriculturists (Guy, Avraham, Carmel, Ur, Jacovi, & Ronen, 2013).

Framework

Agenda setting, framing and gatekeeping theories help explain how public perceptions are affected through journalistic media—including that of blogs. Agenda setting concerns story selection; framing focuses on the way journalists or bloggers present the study, so tone and angle selection; gatekeeping emphasizes the role the media plays in what stories are chosen and how they are told. Though closely related, each of these theories is separate. Though content analysis is a methodology, it is important to understand the background and development of the method. Content analysis is a qualitative form of researching a wide range of text (Hsieh & Shannon, 2005).

Theoretical Frameworks

The theories used to frame this study are agenda setting, framing, and gatekeeping. Each of these theories serves as a part of mediated communications, which is the idea that any news story, or for this purpose blog post, undergoes mediation by the author before being published for consumers.

Agenda Setting. Agenda setting focuses on story selection as stories are chosen by journalists. Agenda setting has grown to become a theory with two levels that examine how the coverage of the media influences public opinion about an issue or object in two ways, considered an initial level and a secondary level (McCombs, Shaw, & Weaver, 1997).

The media, including bloggers, determine what and how the public thinks about specific topics. The initial level of agenda setting is that the media has an agenda about an object or idea, and so does the public. The second level of agenda setting states that the media agenda includes attributes about the object and those attributes affect the public's thoughts about the object and the object's attributes. McCombs, Shaw, and Weaver posit that "agenda setting deals with the

importance of issues and problems; focusing deals with the definition of issues; and problems and evaluation deals with the creation of a climate of opinion" (1997, p. 5).

Framing. Andersen defined persuasion as, "a communication process in which the communicator seeks to elicit a desired response from his receiver" (1971, p. 6). Though closely related to agenda setting, framing focuses more on how issues are presented, rather than how they are selected to be written. The traditional view of agenda setting is that the media tells the public what to think about, while framing is that the media tells consumers how to think about an issue. Framing also encompasses the ways the media writes about public issues and hot topics for a specific audience (McCombs, Shaw & Weaver, 1997). Framing is a route of persuasion, and the number of communications that are persuasive have grown and travel more quickly than in the past (Perloff, 2003).

Gatekeeping. Shoemaker and Vos define gatekeeping as "the process of culling and crafting countless bits of information into the limited number of messages that reach people each day" (2009, p. 1). Gatekeeping is the epitome of the media's role as an information mediator to the public. This theory emphasizes the media's role of determining the information to be selected, as well as the nature and content of the information, because of each blogger's lens they use to cull and craft bits of information. Underlying theories of social change and stability account for gatekeeping, which help consumers determine their view of a specific topic, as well as the way consumers define their lives around the information they take from the written media as presented (Shoemaker & Vos, 2009).

The process of gatekeeping has cognitive effects on the public audience. Information that reporters and bloggers allow through the "gate" becomes a part of the audience's opinion

concerning a topic or issue. Framing, agenda setting, and gatekeeping are all closely aligned when considering the media's importance on relaying information to the public.

Conceptual Framework

Concepts are practical elements that support the frame of this study's design. Moore (2015) and Morris (2018) were able to successfully study blogs and social media while conceptualizing the theories of framing and social media, as well as interactivity theory.

Social Media. According to the Pew Research Center, up to 69% of U.S. adults utilize some form of social media, and, among those, millennials are the most frequent users (Shearer, 2018). Also, six out of 10 adults receive their news from a social media platform (Greenwood, Perrin, & Duggan, 2016). This makes social media, especially blogs and microblogs (e.g., Twitter and Instagram) a relatively new and important access point for the industry to use in its consumer education efforts. However, Morris (2018) found a dearth of microblogging efforts (Tweets) by protein companies about their animal welfare practices, even though research shows that consumers want more transparency. In a study looking at the use of social media in developing communication concerning livestock grazing in public areas, Barry (2014) found that using social media (Flickr) created a more open dialogue and brought forth concerns the public was feeling, but would not discuss in public forums or on a survey. Morrison (2015) researched the effectiveness of social media as a media relations tool utilized by agriculturists and found that commodity organizations rarely used social media as a relations tool.

Interactivity. Interactivity theory was originally posited by Rogers (1986) and explained the concept of computers conversing and interacting with the users. Due to the growth, expansion, and change of the Internet, Lui and Shurm (2002) expanded upon this theory so that it included the way that two "parties" act on each other, on the communication medium, and on the

message. This theory is the important element for online interactions, especially when considering blogs. The potential for creating interpersonal communications, although mediated, is growing through the use of blogs. Moore (2015) conceptualized the theory by describing three dimensions: active control, two-way communication, and synchronicity.

Lui and Shurm explained active control in the way that the controller's experience is influenced by voluntary action (2002). The blog users are able to voluntarily interact with a network of contacts online (Moore, 2015). Two-way communications conceptualizes the idea that blogging and other internet technologies allow for instant feedback and behavior tracking (Moore, 2015). Synchronicity is the dimension that explains the degree to which internet users contribute to the system and what messages they receive as feedback (Lui & Shurm, 2002).

Content Analysis. Content analysis is one way to effectively study a range of texts, or written words, with a wide scope (Macnamara, 2005). Newspaper and magazine content, narratives, social media and blogs can be analyzed using content analysis (Macnamara, 2005). Previous studies have used content analysis to gain better insight of media content. One example of these studies is Abram and Meyers (2012), who used content analysis to study the social media platforms of two opposing factors within animal agriculture. Baker and Irani (2014) studied how blogs as a social media platform affect agricultural policy by using a content analysis to study blogging and media agendas. Eberts (2016) used qualitative and quantitative content analysis to discover highest and lowest consumer engagement with images on the Dallas Farmer's Market Instagram account.

For this study, content analysis allowed the researcher to study and describe the blog contents as well as identify a potential knowledge gap concerning the protein industry. The

content analysis also determined if interactions between the protein industry and bloggers assisted in filling that gap.

Purpose and Research Questions

Moore's (2015, p. 126) thesis stated, "There is very little research on how agricultural communicators are using blogs and other forms of social media to create these relationships with targeted publics." This research attempted to identify, through a content analysis, if a knowledge gap concerning the protein industry exists. Filling the gap in literature was the overall focus that guided the research taking place in both parts of the study.

The research questions asked in order to achieve the study's purpose are:

1. How is the concept of the protein industry represented in the selected blog posts?

2. What are the themes in the selected blog posts concerning the protein industry?

3. What are the tonal characteristics of the selected blog posts concerning the protein industry?

Methodology

This study used a qualitative, interpretive research design consisting of content analysis of blogs pertaining to the protein industry or containing information about the protein industry as a whole. Qualitative research is the best approach to answer the research questions due to a lack of research conducted on blogs in the United States concerning the agriculture industry. Qualitative research uses inductive reasoning to obtain a valid answer through the lens of the researcher (Wimmer & Dominick, 2003).

Content analysis is a method of qualitative research where the researchers interpret and code textual material. This method is a way to analyze and study communications in a systematic approach that remains objective. Although this method was commonly used to convert

qualitative data into quantitative data (Miles, Huberman, & Saldana, 2020), the researcher used content analysis to recognize common themes and tones toward the protein industry throughout the blogs chosen until theoretical saturation was reached. Though Wimmer and Dominick posit multiple ways to define content analysis, systematic is one common thread (p. 140). Systematic means that content chosen to be analyzed is selected according to consistent rules. Not only is the selection process systematic, so is the evaluation process (Guest, MacQueen, & Namey, 2012).

The general steps of content analysis are to formulate a research question, define the population, select the sample, define a unit of analysis, construct categories of content, establish a quantification system, code content, analyze, and draw conclusions (Guest et al., 2012). The research is guided by well-formed questions in the observational protocol that kept the researcher focused during the analysis process.

When looking for tonal characteristics, the researcher used a tone word bank found from a Google search, "tonal words." This word bank created a loose rubric of words and phrases the researcher studied within a blog post to determine if the post was negative or positive toward the industry. Some of the positive tonal words the researcher looked for included appreciative, content, encouraging, enthusiastic, optimistic, passionate, and sympathetic. Negative tonal words included agitated, artificial, course, condescending, disappointed, disgusted, inflammatory, insulting, shameful, superficial, threatening. When determining overall tone in a post, the researcher looked at the balance of tonal words within the post. The characterization of tone was quantified by the context of each post.

Over 30 million blogs are published in the United States, with over 600 of them being about agriculture (Food and Agriculture Blogs, Statista, 2017). Using a snowball sampling method (Patton, 1990), blogs containing information about or published by the protein industry were selected. A key informant suggested blogs to begin with, followed by a generalized Google search, "animal agriculture" blogs, to include a multitude of blog types, such as professional, organization, and personal. In this study, a professional blog was written by an individual for their profession, such as dietetics. An organization blog was written by an individual either for their career or organization for which the author worked. A personal blog was written by an author for reasons other than for an organization or professional blog.

FeedSpot has a top 50 blogger list, which was used to pull the most influential animal agriculture bloggers. Within the blog domain, a search string of either protein or animal agriculture took place to determine qualifying blog posts. Posts were used going back as far as five years. As the analysis process progressed and themes became recurrent and redundant (the point of theoretical saturation), data collection ended. In the end, 10 blogs and 37 blog posts were selected to be analyzed (Lewis-Beck, 2003).

Table 1 lists the blogs, URL, and blog type utilized for the content analysis. Organization blogs were blogs written for an organization or as a career. The professional blog was written as part of the blogger's professional identity as a dietician. The personal blogs were written by individuals with knowledge or passion about agriculture.

Table 1

Blogs used for content analysis

Blog title	URL	Blog type
Animal Ag Engage	https://animalagengage.com/	Organization
Animal Climate Change	https://animalagclimatechange.org/category/animal-agriculture/	Organization
Bonnie Taub-Dix	https://bonnietaubdix.com/blog/	Professional
Messy Kennedy	http://www.messykennedy.com/	Personal
Modern Farmer	https://modernfarmer.com/	Personal
Beef. Runner. Travel	https://beefrunner.com/my-story/	Personal
The Farmer's Daughter	https://www.thefarmersdaughterusa.com/blog	Personal
V-Grits	https://blog.vgrits.com/tag/activism/	Organization

Data Collection

Data collection is one of the most important aspects of content analysis research. For this study, the researcher identified each blog post as a single unit of analysis. (Trochim, 2006). The instrument, an emergent codebook designed using inductive reasoning, included a researcher designed instrument and the inductive reasoning for emergent themes (DeCuir, 2010). A panel of agricultural communications experts determined validity of the instrument. The study followed an observational protocol as follows:

1. What were common themes throughout the blog posts?

2. What tones were present throughout the blog posts?

3. Were multiple tones present within single blog posts?

Operational Definitions in relation to Observational Protocol

The researcher identified operational definitions to structure the protocol steps. Themes were identified by utilizing NVivo 11, as the researcher identified repeating words, phrases, or ideas that were present across blogs. As a theme was identified, supporting evidence was noted. The operational definition of theme used by the researcher was supported by Ryan and Bernard (2003). Theme, though an abstract and fuzzy concept, simply means an idea that was common and repeated throughout the blog content (Ryan & Bernard, 2003).

Tone is how an author stylistically conveys an attitude through word choice (Hyde, 2005). The researcher used a list of words with identifiable connotations and denotations to assist in maintaining a protocol when analyzing written words for tone, conveyed by the blog author (Hyde, 2005). Tone was considered to be either positive toward the protein industry, or negative toward the protein industry. The use of tonal words—both positive and negative—by authors

was also noted by the researcher. The context of the tonal words was also an important part of characterizing tone in the content analysis effort.

Data Analysis

Data analysis involved the identification of themes and tone using the guidance of the emergent codebook. The constant-comparative method was utilized to ensure latent emergent themes were constant across all content. The constant-comparative method ensured that the researcher has flexibility to develop a theory inductively (Boeije, 2002). Thematic analysis was accomplished by using NVivo 11, a qualitative visual analysis software.

The researcher uploaded blog content into NVivo 11. Following successful uploads, themes were identified and annotated using the software. Once themes were identified, specific content—such as words, quotes, and phrases—were compiled to build support for the themes. When new themes were identified, constant-comparative analysis was used to identify emergent themes across all content. When identifying tone, the researcher examined the balance of negative tonal words and phrases versus positive tonal words and phrases.

Rigor of Study's Design

Qualitative research has four paradigms that must be answered to ensure validity and reliability. These four paradigms are: credibility, transferability, dependability, and confirmability. To ensure credibility, the researcher used peer debriefing, which includes using a disinterested peer for objectivity. Transferability was achieved through thick, rich description of the common themes noted in blog content. To obtain dependability, an inquiry audit was used to show findings are consistent and can be repeated. Finally, confirmability was achieved through an audit trail, which is a transparent description of all research steps. A limitation of this study is that the findings are not transferable to a generalized audience outside of the United States

protein industry and its target audience (Merriam, 2009). However, readers may still find similarities between this case and their own situations and are free to apply the findings of this study in practical ways.

The researcher is from a small town in southwest Missouri, where she grew up on a small hobby farm. All of the researcher's undergraduate coursework is in animal science, which could have led to biases while conducting data analysis. The use of an objective, unbiased peer for peer debriefing counterbalanced any biases the researcher may have had toward the data. The peer chosen had no background in animal agriculture and was from a suburban area.

Findings

After completing the content analysis of 37 blog posts, nine themes emerged from the data. The top four themes were *environment, consumption of protein, alternative protein source,* and *alternative dieting*. Each of these themes is in at least eight posts and is referenced at least 14 times. There were a variety of posts chosen, from organization to personal, that were written by individuals across the United States. Subject selection was a limitation for this study due to the purpose of identifying themes and tones within blogs about the protein industry.

The blogs came from different perspectives and attitudes toward the protein industry. Table 2 includes frequency data for the themes, including subthemes and the number of posts and references within posts that the theme is mentioned.

Table 2

Theme Frequency Data

Theme	Subthemes	# of posts	# of references
Environment	Greenhouse gases		
	Climate change		
	Reduction of resources		
		14	42
Consumption of Protein	Recipes		
	Inclusion		
	Importance		
		11	34
Alternative protein source	Ostrich		
	Bugs		
	Cell-cultured meats		
		12	28
Alternative Dieting	Veganism		
	Vegetarianism		
	Flexitarianism		
		8	14

Environment

The theme of environment was referenced 42 times in 14 posts. The connection between animal agriculture and greenhouse gas emissions, climate change, and the reduction of natural resources, such as water and land usage, was made consistently throughout the posts. There was a mixture of both positive and negative posts concerning animal agriculture and the environment, with 13 posts having negative tonal characteristics toward the industry and one post being positive toward the industry. In the post, *How Animal Agriculture Affects our Planet*, by Animal Climate Change, the blogger said,

> *As the demand for meat and dairy products increases, the rise in agricultural*
>
> *emissions is inevitable. Experts forecast that animal agriculture will contribute to*
>
> *an increase of approximately 80% in global greenhouse gas emissions from the*
>
> *agricultural sector.*

In the Modern farmer blog, a post titled *Veganism 2.0: Five reasons meat-eating is becoming passé*, the author stated:

> *One of the latest studies on the environmental impacts of dietary choices claims*
>
> *that a mostly vegan diet with a little meat is actually better for the planet than*
>
> *going 100% vegan. This is because there are parts of the planet that aren't very*
>
> *suitable for agriculture, but are suitable for grazing animals in a sustainable way.*

This post, though negative on the surface, was a positive plug for animal agriculture and the environment.

Within that same post, the blogger wrote:

> *According to researchers at Oxford University in the U.K., if everyone on the*
>
> *planet went vegan, global emissions would fall by 55%, putting the planet on*

track for the 2050 goal set out in the Paris climate agreement. If we were all

vegetarians, emissions would fall by 44%...

There were more posts that were written with negative tonal characteristics on the negative relationship between animal agriculture and the environmental changes noted in the past 20 years, as opposed to those supporting animal agriculture practices. *Can Animal Agriculture be Humane?* by V-Grits' blogger stated:

Not to mention, grass-fed cow farms are still not slacking on the environmental

destruction.

Animal Ag Engage's, in the post titled *Methane: Gas killing the world through animal agriculture*, author said:

Animals used in farming take up 1/3 of the world's land (ice free), and

unsurprisingly this has a knock-on effect on everything else from fertilizer to

clearing land for cattle feed. Billions of acres of land are given over to farmed

livestock so they can graze, and food can be grown for them.

The connection being made between animal agriculture and environmental concerns was repeated across multiple blogs, including those who held positive tones toward animal agriculture and those who wrote in negative terms toward the protein industry.

Consumption of Protein

The theme of consumption of protein included posts that discussed incorporating protein into a diet, the importance of protein, and protein recipes. This theme was mentioned 34 times in 11 different blog posts. When considering tone in the posts, the importance of protein was positive toward the industry in 10 of the 11 posts. Although protein was a qualifying word for the

posts, the different subthemes surrounding the use of protein by humans was a major factor in this study.

In Beef. Runner. Travel. *Join me in the 30 Day Protein Challenge*, the author stated:

I learned about several different nutrient-dense foods that are high in protein, but hadn't considered before. I learned how protein can be an important source of nutrition to A) be healthier in general, and B) maintain strong muscles when training for longer distance running. So I decided to take the Protein Challenge once again…

The author of Messy Kennedy wrote, in *Meat-In Saturday*,

The USDA's new food pyramid suggests 5 oz. of lean protein every day and three cups of dairy. According to the Beef Checkoff, a 3 oz. of beef is a fabulous way to receive a high quality protein, zinc, vitamin B12, selenium, and phosphorous.

In *Supermarket Sleuth*, by Bonnie Taub-Dix, the discussion of including protein in different forms comes into light. The blogger wrote:

Fish, beans, chicken and other protein sources in cans are easy to stock at home, have a long shelf life, are available in most stores, are cost-effective and can easily be incorporated into casseroles, soups, sandwiches and salads.

The Farmer's Daughter, in the post titled *Tyson's Trendtellers Council Projects Food Trends for 2019*, the blogger wrote:

Consumers want protein, protein, and more protein.

The author also said,

Milk should be marketed as a great source for lots of protein and essential nutrients. Beef isn't just for dinner, it helps fuel your workouts.

In a more negative perspective toward the animal agriculture industry, *Rich Investors Ask Food Corporations to Use Less Meat*, by Modern Farmer, the author stated:

> *On September 26, FAIRR announced that it had sent out briefings to food companies including Whole Foods, Kraft Heinz, Unilever, Nestle, Walmart, and General Mills laying out the case for animal protein as a bad investment in all senses.*

The Farmer's Daughter brought to light using recipes including protein, in a post titled *Tyson Any'tizers Makes Harvest Dinners Easy*, when the author said:

> *The boneless chicken wings are great for harvest meals! They are super easy and quick to make, but also pack the flavor and some protein! Pair them with cut up vegetables, like baby carrots, and you have yourself a complete meal. The convenience is hard to beat, too.*

This theme had multiple references to different ways of including protein into a diet, the importance of protein in a human's diet, and a few recipes including protein. Overall, the theme of consumption of protein was diverse and inclusive of protein, not only animal protein.

Alternative protein source

The idea of an alternative protein source, such as beans, tofu, ostrich, bugs, and meat that is grown from muscle stem cells in a lab. This theme is mentioned 28 times in 13 posts. The top three types of alternative meats mentioned throughout the blogs were: ostrich, bugs, and cell-based meats. The tonal characteristics of this theme were positive toward the industry, though not toward traditional animal agriculture. Each post was written positively for using bugs or clean-meat as a source of protein.

The meat grown in a lab has many names, including *cell-cultured meat, fake meat, cell-based meat*, and *clean meat*. Overall, this theme focused on the positive attributes of and the science behind cell-based meats. In the blog The Farmer's Daughter, a post was written titled *Cell-based Meat, An Introduction*. In this post, in regards to scientists developing a name for this alternative protein source, the author said,

> *Proponents of cell-based meat obviously want the name to reflect something*
>
> *positive, instead of adopting a name that scares consumers.*

In the Modern Farmer blog, in the post *Swiss Supermarket to start Selling Bug Burgers*, the blogger stated,

> *The argument for insects as food is not a new one; they are high in protein, low in*
>
> *environmental impact, easy to grow in small spaces, and can be delicious.*

This article discussed that a large supermarket based in Switzerland is starting to sell burgers made from mealworms, as well as a bug falafel. This article noted not only the health benefits of eating bugs, but also the environmental impact that can occur in the author's statement:

> *Mealworms are high in protein, low in fat, and require a tenth the land needed by*
>
> *cattle to create a kilogram of edible meat*.

The discussion of an alternative protein source, from bugs to cell-based meats, was one of the most technological and trendy topics that was written throughout the blogs. Most focused on the health impacts, with a few looking at environmental changes to be made through incorporating other proteins.

Alternative dieting

There are three different diets referred to throughout the blog posts: vegetarianism, veganism, and flexitarianism. Being a vegetarian is defined as, "a person who does not eat meat**:** someone whose diet consists wholly of vegetables, fruits, grains, nuts, and sometimes eggs or dairy products" ("Vegetarian", 2019). A person following the vegan diet is, "a strict vegetarian who consumes no food (such as meat, eggs, or dairy products) that comes from animals; also: one who abstains from using animal products (such as leather)" ("Vegan", 2019). Finally, a flexitarian is a person who follows "a style of eating that encourages mostly plant-based foods while allowing meat and other animal products in moderation" (Streit, 2018).

The tones of these posts range from supporting alternative diets in support of improving environmental changes, to supporting alternative diets for health reasons. In all eight posts, the tone was negative toward the industry. According to the article *Veganism 2.0: Five reasons meat-eating is becoming passé*, the author wrote:

> *Whether the masses fully embrace a meatless lifestyle remains to be seen, but at the very least it's fair to say that 'flexitarianism' – those who consciously choose to minimize meat consumption, but aren't totally unyielding about it – is on the rise. Last year, the global market research firm Innova heralded flexitarianism as the top trend of 2016, which helped push a 24 percent bump in the sales of meat substitutes between 2011 and 2015.*

That same post's author stated that,

> *Adventists, who generally avoid animal products for religious reasons, found that, compared to meat-eaters, the vegetarians had a 12 percent lower mortality rate and the vegans, 15 percent lower.*

This article favors alternative dieting for the health of the human race, as opposed to the article *Methane: Gas Killing the World through Animal Agriculture*. This post's blogger stated,

> *I understand not everyone reading this will turn vegetarian or even think about it,*
>
> *but remember if you do, you'll be saving 20lbs of Carbon Dioxide, 45lbs of grain*
>
> *and over 1,000 gallons of water.*

Having an alternative diet as a health-conscious decision was mentioned a few times throughout the blog posts, but the discussion of changing a diet based on environmental impact was made apparent by blogs having negative tones toward animal agriculture and the protein industry.

All four of the top themes were discussed by bloggers having positive and negative tones toward animal agriculture. Each theme included blogs from different perspectives and backgrounds, including bloggers from personal and professional blogs. The themes of *environment*, *consumption of protein*, *alternative protein source*, and *alternative dieting*, were mentioned abundantly and discussed by bloggers within a span of five years.

Conclusions and Discussion

This study included 37 blog posts from ten blogs, which were analyzed through content analysis. Using NVivo 11, nine themes were found before the researcher found theoretical saturation. The top four themes, *environment*, *consumption of protein*, *alternative protein source*, and *alternative dieting,* were mentioned at least eight times throughout the posts. These themes were discussed by bloggers having tones both negative and positive toward the animal agriculture or protein industry.

Relationship to theory and tieback to questions

The theories chosen for the framework of this study included framing, gatekeeping, agenda setting, interactivity theory, and social media theory. Each of these theories played an

integral part in analyzing and coding the data of the blog posts. The following discussion ties the findings of the study back to the chosen theories.

Framing is the concept of how journalists, in this case bloggers, present the topics or issues they choose to write about (McCombs, Shaw & Weaver, 1997). When these bloggers chose how to present their issues or how to frame their blog posts, they took both negative and positive frames. Many of the bloggers had positive attitudes toward the industry, thus demonstrating a positive frame. Their blog posts were written with words indicating good attitudes toward the protein industry. Two blogs, V-Grits and Animal Ag Climate Change, were written with negative tones toward the impact of the animal agriculture industry on the environment, as well as the negative impact of the protein industry on animal rights and welfare.

Bloggers and journalists serve as gatekeepers, in that they choose what information passes to consumers (Shoemaker & Vos, 2009). Their lens, or how they view an issue or topic, changes how this information is culled before being passed to consumers. In this study, the bloggers' lenses were both positive and negative toward the industry. Word choice again led the researcher to see positive and negative tones by authors.

Agenda setting theory suggests that bloggers can affect public opinion about what issues are important by purposively choosing the topics about which they write (McCombs, Shaw & Weaver, 1997). This theory was conceptualized in this study by the themes generated by content analysis. The major themes were the topics these bloggers chose to write about, including *environment*, *consumption of protein*, *alternative protein source*, and *alternative dieting*. These themes were repeated throughout the majority of posts and had the most references within posts, thus showing that the agendas of bloggers have a range of topics.

Using Morris' findings related to social media's role in the protein industry as an outlet for people to communicate through and interact with was integral as a conceptual framework for this study because blog authors write the posts to which followers respond (Morris, 2018). This theory ties closely into interactivity theory (Lui & Shurm, 2002), especially when considering that the two parties—writer and consumer—act upon each other by commenting and responding; act on the communication medium as it serves as their posting site; and act on the message by specifically commenting on the posts they find relevant. Bloggers can voluntarily act with consumers and followers by responding to comments on their posts, which allows for instant feedback concerning a specific topic or issue. These blogs serve as an access point for increased involvement from industry, and can be used as a positive outlet for consumer education.

How is the concept of the protein industry represented in the selected blog post?
Interestingly, the protein industry is present by using bloggers as mediators between themselves and the consumers. Though there was an organizational blog included in this study, Animal Ag Engage by the Animal Agriculture Alliance, the blogger responsible for writing the posts was not directly involved in the protein industry. This study showed that individuals who are passionate and part of the industry on their family farms, or are for or against the consumption of animal protein, are more likely to have blogs discussing the industry.

What are the themes in the selected blog posts concerning the protein industry?
There were nine themes emergent from the data, but only four were considered major themes. To be considered a major theme, the idea or phrase had to be present at least eight times in at least 14 posts. These themes were *environment*, *consumption of protein*, *alternative protein sources*, and *alternative dieting*. Each of these themes had identifiable subthemes including the connection between animal agriculture and greenhouse gas emissions, climate change, and the

reduction of natural resources and incorporating protein into a diet, the importance of protein, and protein recipes. Three types of alternative meats mentioned throughout the blogs were ostrich, bugs, and cell-based meats, and three different diets referred to throughout the blog posts of vegetarianism, veganism, and flexitarianism.

What are the tonal characteristics of the selected blog posts concerning the protein industry? Depending on the theme, the blog posts were usually negative or positive toward the protein industry. The theme of *environment* was addressed by two blogs that were always negative toward the animal agriculture industry, but was also discussed by one blog post that had positive tonal characteristics. The theme of *consumption of protein* was addressed by blog posts that were mostly positive toward the protein industry. The themes of *alternative protein source* and *alternative dieting* were discussed by blog posts that had both positive and negative tonal characteristics toward the protein industry. Two blogs, V-Grits and the Animal Ag Climate Change, were against all forms of animal agriculture. Bonnie Taub-Dix's post was positive toward the industry, with the majority of posts being about consumption of protein. The Animal Ag Engage blog, Modern Farmer, Beef. Runner. Travel, and Messy Kennedy were mostly positive toward the industry, while The Farmer's Daughter had posts that were often positive and negative within the same post.

Future Research and Implications for Industry

In the future, researchers should dig deeper into what protein consumers want to see in the social media platform of blogs. It would also be beneficial to research why bloggers post what they do concerning animal agriculture. Researchers should also consider doing research like this in other agriculture industries, such as the horticulture field, crop and soil sciences, and

organic farming. Blogs are a largely untapped social media outlet that contain large amounts of information about a wide variety of topics (Moore, 2015).

When it comes to the animal agriculture and protein industries, there is a lot of opportunity for positive blogs discussing practices within the industry. More organizational blogs discussing why this industry does what it does would open the door for consumers to directly talk with industry. Because consumers want transparency, these blogs are an appropriate and effective outlet to allow open, honest communication (Beulens, Broens, Folstar, & Hofstede, 2005).

Limitations

This study included selected blog posts about the protein industry reaching a span of five years. These posts are not all-encompassing of blogs concerning animal agriculture in the United States. Unless specifically noted by the blog author, the researcher did not know whether or not the posts were sponsored by industry. This study may not be generalizable, but readers are encouraged to use the findings however they see fit.

Conclusion

In conclusion, there is a presence of mediators for the protein industry present through blogs. They discuss topics directly associated with the protein industry. Direct representatives of the industry are encouraged to become more active with blogs for their organizations, and to include open, honest communications with consumers concerning their practices and concerns toward the major themes discussed in this study.

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Chapter Three: A qualitative analysis through semi-structured interviews

Introduction

Agriculture as a whole is an industry that capitalizes on adaptability. From the beginning of time, agriculturists have changed and grown with the population and its demands. Currently, producers strive to be as transparent as possible concerning their practices, while keeping animal health in the forefront of their minds. Transparent resource use, increased biodiversity, and sustainability improvements are issues that are constantly on the minds of animal agriculturists and consumers (Blokhuis, Jones, Geers, Miele, & Veisser, 2003).

In order to increase transparency, producers have to be aware of their interactions with the media and with consumers. Consumers want to know where food was born, grown, harvested, and packaged—even if they do not understand why the animal could not have gone through all of these production stages in the same place (Beulens, Broens, Folstar, & Hofstede, 2005). Blogs are a potential outlet for producers and animal agriculturists to produce and publish credible information in a place where the consumer is present.

While journalists and newspapers used to be the most credible source to receive news and information from, this mindset is shifting. The public, and even most journalists, view blogs as a credible source of information (Hayes & Carr, 2015). While this study does not aim to solve whether blogs are more credible or not, it does aim to see where bloggers are receiving the information included on their blogs for the constantly growing consumer use of the internet.

How information flows from primary sources, through mediators (such as bloggers and journalists) and on to consumers needs to be described and characterized empirically in order for communicators in the protein industry to make more informed decisions about their media relations efforts (Shapiro & Hemphill, 2016). Understanding how bloggers feel when researching

topics concerning the protein industry would enable media relations between the protein industry and media to improve by providing targeted published material. Communications is mediated up to three times before reaching the consumers and policy makers. Understanding how the bloggers gain information before passing it on to the readers is crucial for agricultural communication tactics (Shapiro & Hemphill, 2016).

Framework

The communication theories of agenda setting, framing, and gatekeeping are complementary to each other and serve as excellent frameworks for examining mass media phenomena. Each of these theories helps explain how media personnel choose their stories, how they write the stories, and how those stories fit into the media's agenda. Though each of these theories is unique, they are closely tied and are dependent on each other in their explanation of how mass media messages are communicated and understood by audiences. Another social theoretical concept, communities of practice, is important to consider when discussing the nature of blogging and the online, virtual community it presents.

Theoretical Framework

The theories supporting the frame of this study include agenda setting, framing, gatekeeping, and communities of practice. Each of these theories contributed to the shaping of this research study.

Agenda Setting. Agenda setting theory posits the process of story selection, as chosen by journalists. The media, journalists and bloggers included, determine what the public thinks about and how they think about it through agenda setting. There are now two levels examining the methods and the degree to which the media influences public opinion through agenda setting: an

initial level and a secondary level of influence about an issue or opinion (McCombs, Shaw, & Weaver, 1997).

Agenda setting focuses on the importance of the issue and problem, the definition of the issue, and the evaluation with "the creation of a climate of opinion" (McCombs, Shaw, & Weaver, 1997, p. 5). The initial level of agenda setting is the idea that not only does the media have an agenda about an idea or topic, but the public does as well. The media agenda includes attributes about the object, including personal opinion, and each of these attributes affects the public's thoughts about the object, which is the secondary level.

For example, if a blogger sees a story that has been published and that already supports the blogger's ideas concerning a topic, the blogger will choose the story supporting their preconceived notions, rather than choosing another topic. An example of this is when a blogger chooses to write about genetically modified organisms, rather than the health benefits of soybeans. The initial level of agenda setting in this example is that the blogger already has an opinion concerning GMO's and the secondary level of agenda setting is that rather than writing a post or story about soybeans, the blogger chose to write about GMO's.

Framing. Framing focuses on how issues or topics are presented by the media, instead of how they are selected to be written, which is agenda setting. Framing theory explains journalists' roles in influencing how consumers think about a topic. Not only does framing theory cover how the media tells consumer to think, it also encompasses how journalists participate in persuading the public to form opinions about current issues (McCombs, Shaw & Weaver, 1997). Persuasion can be defined as the communication process where the communicator is seeking to elicit a desired response from the receiver, in this case the consumer (Andersen, 1971). Considered a route of persuasion, framing and the instances of persuasive statements in

journalistic news stories has increased over time (Perloff, 2003). Persuasive forms of communication are also travelling more quickly than they have before (Perloff, 2003).

Following the example from agenda setting, after the blogger chooses to write about the agenda of GMO's, they then use a framing approach when writing the story. If the approach is not unbiased, the topic will be framed to ensure consumers think similarly to the blog author. If the blogger is a proponent for GMO's, the story will potentially have a positive spin and the consumers, through framing theory, will also support GMO's. Alternatively, if the blogger is against the use of GMO's, they will write the blog post in such a way to also influence the consumer to view GMO's negatively.

Gatekeeping. Gatekeeping is another theory concerning how the media influences issues and public perceptions. Gatekeeping emphasizes that the media, which can include bloggers, allows information through the *gate* for consumers to think about, and that what information the *gatekeepers* allow the public to see becomes a part of the public's opinion concerning the topic or issue. Gatekeeping was defined by Shoemaker and Vos (2009) as the process of journalists limiting the number of messages that reach people each day, narrowing the overabundance of news down to a collection of fewer, more digestible messages, thereby elevating the importance of the messages news consumers do receive.

Theories of social change and stability support the theory of gatekeeping (Shoemaker & Vos, 2009). Consumers will define their lives around the information taken from the written media as it is presented to them. So, mass media gatekeeping can have substantial cognitive effects on the public audience, giving bloggers and other representatives of the media an important role to play in society.

Communities of Practice. Communities of Practice (CoP) are groups of people who share a concern or passion about a topic or issue and deepen knowledge about their interest by interacting within the group (Wenger, McDermott, & Snyder, 2002). A CoP has three structural elements: a domain, a community, and a practice (Wenger, McDermott &, Snyder, 2002). Although these elements were originally directed to physical CoPs, it is logical to assume they apply to online communication communities as well.

Gunawardena et al. (2009) posited that for social networking, a domain "represents common ground where participants share their ideas, knowledge, and stories" (p. 6-7). Wenger (1998) stated that a community is a group of people who learn, build relationships, and result in feelings of belonging and commitment. The practice element is the knowledge the community develops, shares and maintains (Wenger, McDermott, & Snyder, 2002).

Conceptual Framework

This study's conceptual frame was formed from the research done by Morris (2018) and Moore (2015). Morris (2018) conceptualized the idea of social media and how microblogging about the protein industry takes place, with a focus on animal welfare. Moore studied the use of blogs by crop commodities and conceptualized interactivity theory.

Social Media. According to the Pew Research Center (Shearer, 2018), up to 69% of U.S. adults utilize some form of social media. Greenwood, Perrin, and Duggan (2016) posit that 6 out of 10 adults receive their news from a social media platform. This makes social media, especially blogs a relatively new and important access point for the industry to use in its consumer education efforts. Though consumers want more transparency, Morris (2018) found that the microblogs (Tweets) of protein companies concerning animal welfare practices, were slim or nonexistent. After conducting a content analysis of Tweets relating to animal welfare, Morris

(2018) found companies did not directly address audience members, and tweets regarding animal welfare happened very rarely.

Morris (2018) conceptualized that multiple news sources are using social media as a form of getting news into the world, that this new technology is being utilized heavily to reach target audiences. Morris (2018) found that providing consumers with an accurate picture of animal production practices was critical for the five company websites analyzed. Reaching a target audience with a clear, concise message through different social media is important when spreading news concerning animal welfare practices (Morris, 2018). Mangold and Faulds (2009) emphasized the importance of communications between the industry and consumers, but also communication taking place between consumers, due to the advent of social media.

Interactivity. Interactivity theory was originally explained by Rogers and was a theory concerned with computers talking to users (1969). Lui and Shurm (2002) have expanded this theory to include the way two parties act on each other, on the message, and on the communication medium. Online interactions, including blogs, are creating interpersonal, mediated communications. This theory was conceptualized in Moore's 2015 study, by utilizing the three dimensions of active control, two-way communication, and synchronicity. Barry (2014) studied the use of photography on Flickr and how the public interacted with photos. This study found that concerned parties had discussion, interests, and views that wouldn't normally be expressed in meetings or surveys (Barry, 2014).

Bloggers are able to utilize their network of contacts to voluntarily interact with each other (Moore, 2015). In the instance of blogging, two-way communications conceptualizes the idea that blogs allow for instant feedback and behavior tracking (Moore, 2015). Moore's (2015) study found that blogs gave the organizations the ability to interact with a larger number of

audience members and form relationships that were beneficial for both the organization and the consumer. Bloggers deemed it more rewarding when followers commented on the post or shared the link through social media or email (Moore, 2015). The degree to which internet users contribute to a system (blogs) and the messages or feedback they receive is the third dimension of synchronicity (Lui & Shurm, 2002).

   Semi-Structured Interview. Semi-structured interviews are used to assess knowledge, attitudes, beliefs, and behaviors about themes established by the researcher. Bernard and Gravlee (2014) posited that semi-structured interviews have a two-step process to maintain validity and reliability. The initial step is an exploration and familiarization done by the researcher into the topic being studied and the second step is to incorporate those results into structured interview materials that are compiled into usable data (Bernard & Gravlee, 2014).

   The structure for this study follows the guidelines posited by Bernard and Gravlee. Two phases of data collection by semi-structured interview were conducted. In the initial phase, researchers gained an understanding of the area of study and determined the appropriate questions to be asked. Grand tour questions, mini-tour questions, taxonomic questions and free-listing are all appropriate styles of questions that can be asked in the first phase of constructing a structured interview. These are questions asked to further the researcher's knowledge concerning the topic.

   Grand tour questions are the broadest, most general type of question that is used for description (Bernard & Gravlee, 2014). Mini-tour questions are more specific and try to derive meaning from the specific questions, while taxonomic questions are a structure of set and subset relations, most often used to gain understanding of interrelations. Free-listing questions are open

ended questions that are designed to gain a list of items from the subject (Bernard &Gravlee, 2014).

The information gathered from phase one, the researcher gained an understanding of blogs written about the protein industry and determined the appropriate questions to be asked, structured the semi-structured interview. The second phase of semi-structured interviewing is interviewing the subjects. These questions should be open-ended, close-ended, multiple choice, or rating-scales. The interview can be face-to-face, mail or electronic (Bernard & Gravlee, 2014). The responses to each of these styles of interview vary, with higher responses in face-to-face interviews and the least amount of responses to electronic or mail interviews. Responses should be recorded verbatim, usually by audio recording, followed by transcription.

Trolling. The concept of being a "troll" or "trolling on the internet" is a nebulous term that has been defined in different ways. For the purpose of this study, a troll is a person who maliciously tries to disrupt and aggravate followers and bloggers into an unproductive, argumentative conversation (March & Marrington, 2019). The concept of trolling has changed and developed as social media has grown. It is now considered to be inflammatory and causes damage to both the author and the social medium (March & Marrington, 2019).

Internet activism. The idea of activism has been around for quite some time and has always been tied to the media at hand (Meikle, 2018). Tilly and Tarrow (2015) found that rather than physical sit-ins and demonstrations, activists now take to the internet in demonstrations such as the Distributed Denial of Service Attack. Leaking massive amounts of data and using hashtags and retweets as forms of protest against organizations or individuals are today's newest forms of activism (Meikle, 2018). These tactics engage large groups of individuals that have

commonalities, offering ways of conceptualizing, publicizing and organizing demonstrations against an organization (Meikle, 2018).

Purpose and Research Questions

This study identified the flow of information between bloggers and their information sources. Determining the interactions between the bloggers and the protein industry, in order to fill the knowledge gap between industry and media representatives, was the guiding research purpose behind designing the semi-structured interview protocol.

The research questions guiding this study were

1. How do bloggers who write about the protein industry get their information?

2. How does flow of information take place?

3. What are bloggers' perceptions of their sources' attitudes toward requests for information?

Methodology

This study followed methodology from the qualitative paradigm and employed semi-structured interview of blog authors. This approach allowed the researcher to obtain descriptive answers to the research questions that were supported by the perceptions and feelings of the interview subjects. The focus of the study was narrowed by concentrating on authors who write about the protein industry. Semi-structured interviews were selected as the method of choice for this study because this format allowed the interviewer to follow a systematic guide of developed questions, but also allowed the researcher the freedom to ask other relevant questions that emerged during the interview process (Cohen & Crabtree, 2006).

Participant Selection

Participant selection for the interviews was based on the subjects used in the content analysis study also conducted by the researcher (Hackworth, 2019). A snowball sampling method (Patton, 1990) of bloggers having information about or published by protein industry representatives were selected for the content analysis; the authors of the chosen blogs were selected as subjects for semi-structured interviews. These bloggers were chosen based on active posts over the past five years, and availability to be interviewed within the study's time limit. Six blog authors were interviewed. The necessary sample size varies until the point of saturation is reached (Bernard & Gravlee, 2014). As the interviews progressed and themes became recurrent to the point of data saturation, the interviews stopped. The sample size is considered adequate when interviewing more subjects does not yield new information (Bernard & Gravlee, 2014).

The bloggers chosen were from across the United States, were all female, and had various timelines of blogging, anywhere from four to seven years. Each of the blogs had different topics that the author decided on which to focus. One blog focused on meat production, such as choosing the proper cuts of meat and meat color. Another focused on the dairy industry and different changes taking place over the years. Two of the bloggers focused on general education concerning the animal agriculture industry based on their children. The blogger that also worked as a lawyer was interested in debunking misinformation concerning agriculture and was passionate about educating consumers. One author blogged for the organization she was employed by and wrote about all topics concerning the protein industry. Each blogger had unique perspectives and lenses gained from each background, lifestyle, and career path.

Most of the bloggers were very easy to talk with and eager to share information once an interview was scheduled. From the researcher's perspective, each blogger was passionate and

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excited to share not only with their followers, but also with the researcher, why they were blogging and how they got started. They seemed interested in helping the researcher understand their background, why they did what they did, and how they blogged.

When it came to writing blogs, each author had their own method of choosing content, writing, editing, and publishing. Some bloggers did research before writing a post, while others focused only on their area of expertise. Research itself was conducted in various manners, which was apparent in their writing styles. The reasons for why each author began blogging also varied. Blog authors would share their blog posts to Facebook pages, which allowed them to receive comments and interactions with followers. Overall, each participant had valuable insight to the study.

Data Collection

The interviews occurred through phone calls. Although travelling and meeting the participants face-to-face would have been ideal, time constraints allowed phone calls to be the more practical route for interviews. Bernard and Gravlee (2014) created a set of guidelines for interview construction, which were followed for this study. Relevant questions were asked, keeping the study's purpose in mind. The wording of each question used for the interview was kept simple and clear (Bernard & Gravlee, 2014). In order to maintain validity and reliability for the interviews, questions were written in a way that could be read the same way to each subject and the questions did not force the subjects to recall a specific time or memory (Bernard &Gravlee, 2014). The following overarching questions guided the creation of interview questions:

1. Are interactions between bloggers and representatives of the protein industry taking place?

2. What is the nature of the interactions between bloggers and the protein industry?

3. How do bloggers feel when requesting information from their sources?

4. What is the flow of information for bloggers and their information source?

Data Analysis

Data analysis occurred after the transcription of each interview. Themes were generated through analysis of codebook data. A constant-comparative method was used to ensure that latent emergent themes were consistent across all interview content. The use of constant-comparative method enables the researcher to develop a theory more inductively (Boeije, 2002).

Thematic analysis was achieved through hand-coding transcripts. The researcher printed the interview transcripts and hand-coded responses, looking for themes throughout the authors. Utilizing a different color to highlight each theme, the researcher noted important quotes adequately portraying each theme. As themes emerged, a constant-comparative method was utilized to check if the themes were present in all transcriptions.

Rigor of Study's Design

The four characteristics of qualitative research are: credibility, transferability, dependability, and confirmability. The researcher ensured credibility by peer debriefing, maintaining objectivity by using a disinterested peer. To achieve transferability, a thick, rich description of common themes in the interview transcriptions was used. Dependability was obtained through an inquiry audit, while confirmability was ensured through an audit trail.

This study has the limitation of not being generalizable outside of the subject group (Merriam, 2009). Similar repeated research could be used to develop grounded theory about protein bloggers in the future. Readers are encouraged and free to apply the findings of this study in practical ways.

The researcher has a strong animal science/animal agriculture background, which could have created bias when conducting interviews. To deter any bias, an objective peer with no agricultural background was used during peer debriefing after transcribing interviews and identification of themes.

Findings

Two of the six authors were selected from an earlier study that examined the content of blog posts written by said authors. All six of the authors were female and had diverse backgrounds and geographical locations. Table 3 displays demographic information for the blog authors, including presence or lack of farming background, years of blogging, location, occupation, and type of blog.

The findings of the study were broken down by research question. Some of the questions were combined due to their nature when asked by the researcher during interviews. The flow of information section refers to research questions one and two (1. How do bloggers who write about the protein industry get their information? 2. How does the flow of information take place?). The tones in flow of information section refers to question three (3. What are the themes and tones in the flow of information?). The final section of interactions relates to social media and interactivity.

Table 3

Blogger Demographics

Initials	Gender	Type of blog	Years of blogging	Location	Farming Background	Occupation
AZ	Female	Personal	7	Michigan	Yes	Lawyer
CM	Female	Personal	8	Wisconsin	No	Farmer
CK	Female	Organization	4	Virginia	No	Communications Manager
JY	Female	Personal	8	Arkansas	Yes	Meat Science Professor
NS	Female	Personal	7	Kansas	Yes	Farmer/Mom
SA	Female	Personal	9	Arkansas	No	Farmer

Formative Experiences

The six female participants were from across the United States and half had a farming background, while the other half did not. The researcher used keywords to look for themes, including: *farming, agriculture, industry, background*. AZ said:

> *So I grew up on my grandparent's and parent's farm. We had started out doing a*
>
> *farmer's market, where we had sweet corn, tomatoes, melons, and so forth. Dad*
>
> *started doing corn and soybeans on the farm for extra income. I definitely had a*
>
> *background in ag and understood it.*

JY, a blogger with a career in academia, had an agricultural background also. She began blogging because she wanted to contribute to what she called "The Mom Club." She was getting all of this great advice from other moms and wanted to find a way to contribute, so she began blogging after starting a family. She said:

> *I grew up in Texas on a small hobby farm. We had horses, we rodeoed a little bit.*
>
> *We showed livestock, we had sheep and pigs. I judged meats in FFA and loved it,*
>
> *so I went to Texas Tech to be on the meat judging team. I went on to Kansas State*
>
> *and got a master's degree and coached the meat judging team. I stayed on at K*
>
> *State and got a PhD.*

One blogger did not enter into agriculture until she married into it, though she had seen dairy cattle before. She started blogging as a form of therapy for herself and said her angle to talk with people stemmed from an understanding of not knowing where food comes from, by not having an agricultural background. CM said:

> *I actually didn't grow up on a farm or in agriculture at all. My only real*
>
> *connection with the dairy industry is that I grew up on the same road that the*

World Dairy Expo is held on, that was it. I ended up meeting my husband, a son

of dairy farmers, but he was the kid who wasn't going back to the farm. After we

got married, we thought, "Well—I don't know, maybe I would like to try

farming."

Another blogger, CK, also had no experience in agriculture as she was growing up. Her unique perspective enables her to bring insight to the organization she blogs for, in order to bridge the gap between farm and fork. She said:

So I am from Centerville, Virginia, just right outside of DC. So I didn't come from

an agriculture background. I graduated in 2014 with a bachelor's degree in ag

communications, and that led me to accept an internship with the Animal Ag

Alliance. I think I have kind of a unique perspective not coming from the

agriculture background, not coming from a farm family, and really not growing

up in animal agriculture at all, to bring that perspective into how the

organization, but also myself, communicates with other likeminded lay

stakeholders who might not have as much information…

These questions were created by the researcher to make the participant more comfortable, each blog author was more than ready to answer each question asked. Each of these bloggers' experiences shaped the way they wrote about the topics they chose to discuss. Some were sparked by controversy, hard times, or incorrect information they heard from friends, family, or at their children's schools. NS, who did have an agricultural background, started blogging because:

Some information regarding contacting your senator about antibiotic usage in

cattle got into my school and I got a little fired up, you might say. I may have said

on his [Trent Loos' morning show] *that the next thing I was going to do was start*

a blog. That was in 2012, and here I am.

One of the bloggers had experience growing up on a vegetable production farm, which influenced her understanding of the agricultural field. AZ, who has a job as a lawyer and blogs on the side, said she started blogging because:

When I went to college, I was involved in political stuff, but a lot of the trendy ag

topics seemed to get under my skin a bit more. When I get into law school, I had

to take a hiatus from politics…When I was done, I was interested in addressing

that topic again. I had a few different blog ideas I was interested in, but I ended

up with the farmer's daughter because that was the thing I had the most

experience in and I was able to share more and have a little more credibility.

SA, a farmer with a nursing degree that has been used to raise kids and dairy cattle, said:

The reason I started blogging was through the encouragement of Midwest Dairy,

which is the promotion arm of our dairy industry. They began to encourage

people to share their dairy story though social media platforms. I thought

blogging would be the best platform for me that I could try to handle with my

schedule and daily activities. I didn't know anything about online presence, so

I've been on that learning curve since I think 2010.

Each blog author discussed unique topics about the protein and animal agriculture industry, from dairy cattle to meat color to advocating for animal agriculture practices. Participant careers outside of being blog authors include farming, being a lawyer, and serving as a meat science professor.

Flow of information

The question in the interview protocol regarding interactions with the protein industry focused on how authors researched a topic when unfamiliar territory. When the researcher discussed interacting with and researching topics concerning the protein industry, answers varied from discussions with experts to conducting a Google search. Keywords in this section included: *research*, *talk*, *online*, *journal*, and *link*.

One author did not write blog posts about topics with which she was not familiar. Though she saw value in educating the public on a large variety of topics, she focused on what she was familiar and comfortable with. She realized that she knew more than the average consumer and felt at ease when discussing topics. CM said,

> *My general rule is to not write about things that I can't fully understand myself*
>
> *because I think that's really important in blogging, to not be a know-it-all. If it's*
>
> *something I feel pretty strongly about, but I want to double check a couple of*
>
> *things, I usually text someone that's an expert, like our vet…*

One of the participants gained supporting research for her posts in a multitude of ways. She had the benefit of working in a department with strong academic scientists, but she also made sure to look outside of her department if it was something that she was very unfamiliar with. JY, who had a strong background as a scientist, said:

> *I do a little bit of everything. I will talk to other scientists, I have some great ones*
>
> *in the building. I reach out online to folks if I talk about processed foods or food*
>
> *safety. I reach out to friends and ask if they have a source for this or if it's true.*
>
> *There are some great extension sources that are great to link to—Sometimes I go*
>
> *into scientific journals and make sure that what I'm saying can be backed up by*
>
> *the Journal of Meat Science or the Journal of Animal Science. Sometimes it is,*

I'm an expert in meat color and I don't have to find a reference. It kind of

depends on the topic, I guess.

NS focuses on how to gain followers, so she uses recipes mostly when blogging. Her

most popular posts were from recipes or when she talks about her children, one of her sons was

diagnosed with Dyslexia and ADHD. She uses the mom route to reach her consumers. When it

came to being in new territories and choosing blog content, NS said:

I've gotten to where I use content calendars. [If it's something unfamiliar] *I*

usually contact [JY]- *she'll tell you that's the truth! We know more than the*

average consumer. You can't be afraid to talk about those topics because you

really do know more than they do. A lot of times, I go ahead and write the post,

then link to someone who is more knowledgeable.

Overall, interactions between blogger and research took place in the form of online

searches, texts, phone calls, and occasionally scientific journal resources. Direct discussions

between authors and protein industry representatives did not take place, and the only information

that flowed from the protein industry to these bloggers was information that had been published

online or in a print publication of some sort.

Feelings in flow of information

The flow of information from source to author, then from author to consumer, was one of

the main focuses of the study. The feelings author had while participating in the flow of

information was also important to this research. Overall, the participants had neutral or positive

experiences. No author reported having a negative feeling while gathering information

concerning an unfamiliar topic. Keywords the researcher looked for were *positive*, *neutral*,

negative, *supportive*, and *experience*. One blogger focused on being credible, but also on trying

to maintain a positive feeling while researching. AZ would do research by trying to find a government website, followed by a general Google search if there would be different information. When engaging in the flow of information, she said:

> *I don't know that I would say neutral* [toned]*, because if it's a topic about like GMO's for example, I'm not going to look at a source saying something bad about it, but the things I am looking at—I want to make sure that they're credible. I guess the tone is more favorable, but I also want it to be credible.*

The next blogger had a unique pool of individuals to ask questions from and she used that to her advantage. When engaging with members of the organization she works for, she had different feelings than when finding information from someone outside the organization. CK, the only participant that blogs for the organization she works for, said:

> *If it's a member, obviously we are already kind of on the same page of we both support animal agriculture. I can be a little more open and flat out ask what I have questions about. If I'm asking questions to another blogger that I don't have a personal question with, I leave those questions open-ended so they can answer them as they see fit. I think, overall the tone is good. I think looking for more information should never be frowned upon and no one should shut the door in your face if you're just asking them for more information.*

The blogger who had been writing the longest, SA readily discussed how her background as a nurse and farmer influenced how she found information to write about. Though she preferred to have solid, credible information to cite, she did not report ever having negative experiences when conducting research. SA said:

I would say positive [toned] *when you're learning. Maybe it's even a topic you*

think you know about that when you research and read more about it, you feel like

you solidly understand what you're trying to get across, I think it's a positive

experience.

CM started blogging after attending an ag chat conference, where she heard lots of people discussing blogging as an outlet. She was an avid proponent for having guest bloggers on her site if she chose to include a topic that she did not understand fully. CM, a dairy farmer who texts her vet and nutritionist to verify information she used in her blogs, said:

I think the professionals we work with on our farm, you know the people I'm

going to and asking questions, are really open to what I do. They're supportive of

what I do, so when I send something to them, they've always been happy to clarify

or make sure I have the correct information. [It's] *always positive.*

Overall, each participant had neutral to positive feelings during flow of information, regardless of how they chose to conduct research and gathered information on a topic. Bloggers felt positive or neutral while researching unfamiliar topics. The only negative tones authors reported were in reference to comments received in social media, either on the blog or their Facebook accounts.

Interactions

When followers or readers comment either on the blog, or on the blog shared to the author's Facebook (FB) page, the participants (or authors) all had either a personal or organizational protocol to follow when responding. For the most part, if a comment contained vulgar language or negativity, it would be deleted by the participant. If it was positive, the author would try to engage the follower. AZ said:

If it's on Facebook, if it's something really vulgar, I will get rid of that. Either I

hide it or delete it. If someone is questioning or they aren't sure about what I'm

saying or push back a little bit, I actually usually wait. My followers jump in and

respond to that person and push the conversation along…unless it's something

that gets under my skin, then I respond right away.

CK, who blogs for her organization, has a protocol she has to follow when responding to comments and discussion on the blog she writes. She readily admitted that she would not respond to an individual for their sake, but for the sake of all the readers that would follow. She said:

If someone is liking it or giving me a compliment, I always try to respond. That

response can be liking their comment or reacting to their comment on Facebook

or Instagram, that's a guarantee. If someone is asking for more information, what

we do is look at their background. Unfortunately, a lot of times in our industry,

we get targeted by anti-animal agriculture groups. Even then, I will respond

because I'm not responding to them, I'm responding to everyone reading their

comment and my response. If it's a comment that is negative, off the wall, using

foul language—if it does use foul language or attacks one of the Animal Ag

Alliance staff personally, I will delete it. If it's someone that just disagrees with

our post and they say that, they state their opinion, but it's done in a respectful

manner, I will just leave it. I won't like it or respond to it, but I will leave it. We

want to appear and be transparent.

JY openly says she blogs as a mom, and discusses her family often on her blog site. This makes her responses to readers take a little different route. She said:

You've got some people who are just trolls that are just out there to be ugly. If those people are on a social media site where I can deal with them pretty easily, if they use swear words or tell me I'm a terrible mother or wish ill upon me and my family, I usually just delete them. Most of the time, if it's a little combative, I try to lead with something we have in common. I try to lead with understanding their concern…Then I don't just spill out the facts, but I try to reiterate my side of the argument. I will engage with people two or three comments; if I'm not getting anywhere, I just let it go. If you're there to ask questions and engage, even if you're coming across a little combative, then I pretend I don't notice the combativeness. Whether or not you turn the person that asks that one question, doesn't matter. But all of the other readers, their friends, your friends, readers who read the comments later—that's who you influence.

CM, a blogger in Wisconsin, said:

I will start with positive comments. I usually try to at least like them; if it's on FB, I make sure I like everyone's comment. If it's on my blog and it's a comment that has anything I can respond to [I respond with] *"Thanks for commenting" or something like that. I don't allow vegan activists on my FB page anymore, so if it's a comment from an activist, they get deleted and blocked. If it's a negative comment not from an activist, I usually try to take the time and engage and answer back and go back and forth. I've come to the point in time, if you're there to be a troll or a jerk—I just delete you, I'm done.*

Each participant discussed the presence of "trolls" and how they dealt with those people within their social media platforms. All the bloggers deleted vulgar posts using foul language or

attacking the blogger, but responded to combative, questioning comments and positive comments. SA readily admitted that she did not have any trolls on her blog, though she understood the concept of trolls and knew they were present on other blogs.

Conclusions and Discussion

This study included interviews from six blog authors, two of whom were included in a previous study that utilized content analysis of blog posts concerning animal agriculture or the protein industry (Hackworth, 2019). Using hand-coding, content analysis occurred as the researcher looked for themes and similarities between the interview transcripts. All of the bloggers had neutral or positive experiences when it came to the flow of information while researching for information. Half of the bloggers had farming backgrounds, while the other half had urban or non-farming backgrounds. Each blogger began writing for different reasons, ranging from therapy to promotion to advocating for agriculture. The nature of interactions between bloggers and protein industry representatives occurred when they looked for sources online and through phone calls or texts. The tone of these interactions was considered positive or neutral throughout each type of interaction.

These bloggers serve as information mediators for the public. While for the most part, they did not have direct contact with industry representatives, the blogger who wrote for her organization interacted with representatives on an almost daily basis. Different formative experiences and agricultural backgrounds lead to unique schema and perspectives, especially when considering gatekeeping and framing theories.

Relationship to theory and tieback to questions

The theories of agenda setting, framing, gatekeeping, communities of practice, social media, and interactivity framed this study. Each of these theories were important in the creation

of the semi-structured interview protocol and the analysis of interview transcripts. Though these same theories were utilized in an earlier study concerning content analysis of blog posts, the theory of communities of practice created a slightly different framework for this content analysis.

How do bloggers who write about the protein industry get their information?

Although not representative of the entire blogging culture, the blog authors who participated in this study gathered their information for blog posts in a multitude of ways. Phone calls, texts, emails, online searches, academic journals, calling a friend, and being an expert in a field were all ways that the blog authors researched a topic when unfamiliar. One author interacted with members of the organization she worked for, while another talked to colleagues down the hall at times to ensure her information was correct.

Agenda setting, the theory that bloggers and journalists have a process for story selection and that the media determines what the public thinks about, as well as how they think about it (McCombs, Shaw, & Weaver, 1997) was conceptualized in this study by the content analysis of interview transcripts. Each of the blog authors interviewed had a process for their story selection, whether it was using a content calendar or answering questions from followers. By having a process, the authors determined what the public followers thought about and how they thought about each topic based on how the author wrote the story.

Bloggers are gatekeepers of information. This theory posits that the media allows certain information through a gate for consumers to see, and whatever information the bloggers allow through the gate becomes part of the public opinion (Shoemaker & Vos, 2009). Each of the blog authors had a unique lens allowing them to see an issue in a unique way. This was representative in their varying answers during the semi-structured interviews. Overall, each author felt

favorably toward the protein industry. This means that their writing styles were overall positive toward the protein industry.

How does the flow of information take place? The flow of information took place for the majority of participants electronically. For this study, knowing the tone of the flow of information was integral to understanding how authors found information. Every participant reported having neutral or positive experiences; no author discussed having a negative tone while researching a new or unfamiliar topic. Most of the participants also stated that learning and asking questions about new technology or a new area of interest should not be frowned upon, but always encouraged.

What are bloggers' perceptions of their sources' attitudes toward request for information? The themes found in this study concerning the flow of information were positive and/or neutral. Each participant, regardless of how they found the information they sought, had a neutral or positive interaction and flow of information from the source. Though each had a different method of finding information, all of the authors said they never felt negative or combative when asking questions and learning about a new topic for a blog post.

Framing theory is the concept of how bloggers present topics, though not the theory of how topics are selected (McCombs, Shaw & Weaver, 1997). These bloggers all had a neutral or positive tone not only when researching topics, but also when writing posts for these topics. Though two authors maintained a neutral attitude when writing and talking with the researcher, the majority of bloggers had a positive attitude toward the animal agriculture industry and that was represented in their writing, as well as their research.

By encouraging readers to do research, to be actively engaged, and to learn, the protein industry mediators, or bloggers, are helping consumers learn about the industry. Bloggers serve

as an easily recognizable, credible source of information in the mind of a consumer (Sweetser, Porter, Chung, & Kim, 2008), thus allowing bloggers to mediate and translate information from the protein industry into language that consumers are able to understand. The bloggers in the study would reach out to consumes and interact with them in different ways following protocols.

Blogs serve as a Community of Practice (CoP) for both the followers and the bloggers (Gunawardena et. al, 2009). The participants of this study shared a concern or passion for a topic that was represented in their blog content and shared with their audience within the domain of a blog. Though not all responses to the blog were positive, each author had a protocol or procedure for dealing with comments from readers. This allowed the followers to deepen their knowledge within the established group or following of the blog.

Social media and interactivity theory are closely intertwined. Bloggers used the social media platform to get news and discussion about topics into the world, as well as reach their targeted audience (Morris, 2018). Online interactions took place between blogger and follower in mediated conversations. Two-way communications such as this allow for instant feedback between the author and reader (Moore, 2015). These bloggers use the platform as an access point for positive education and consumer interaction. Authors and followers alike act upon the communication medium and a specific message by commenting and responding on the blog.

Future Research and Implications for Industry

In the future, researchers should dig deeper into responses from followers or readers to the blog authors, whether directly on the blog or on Facebook where the blog post was shared. Studying activist protocols and activities against animal agriculture bloggers could also be an interesting area of research. Understanding what the consumer, in the form of a blog follower/reader, wants to see in regard to the protein industry would be useful. Although studies

have been conducted on blogs about crop commodities (Moore, 2015) and the protein industry, it would also be interesting to see if authors who focus on other agricultural topics report similar experiences concerning the flow of information between author and source. Limited research has been conducted including blogs as a source of data. Although done without intention, all of the bloggers in this study were women. This could be a coincidence, or a description of who blogs about agricultural issues. Future research should look into whether or not gender plays a role in blogging.

More organizations should become part of the blogging social media platform. There are a multitude of opportunities for organizations to interact directly with their consumers. Morris (2018), took a look into Twitter as a social media outlet for the protein industry, but looking further into using social media as a media relations tool would be useful for industry. At the very least, organizations are encouraged to be open and transparent with communication mediators, such as bloggers, concerning their industry. Blogs could serve as an efficient and effective outlet to allow open communication between industry and consumer, as well as media relations.

Limitations

The interviews with these participants were not considered to encompass all protein bloggers in the United States. The authors that participated in this study were all female and their geographical location varied. Though age was not a question asked by the researcher, the length of time the participants had been blogging was different across the bloggers.

Conclusion

Blog authors serve as mediators of information from the industry to the consumer, though their flow of information may not always be coming directly from the industry. Direct representatives are encouraged to begin forming associations with these mediators, to encourage

open and transparent communications between consumers and industry. Blog authors reported

having positive and/or neutral tones of flow of information and that they strive to remain

credible, open sources of information for their followers.

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Appendix

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To:	Kylie Jo Hackworth
From:	Douglas James Adams, Chair IRB Committee
Date:	12/05/2018
Action:	**Expedited Approval**
Action Date:	12/05/2018
Protocol #:	1810154644
Study Title:	Interactions between the Protein Industry and Social Media: A Qualitative Study through Semi-Structured Interviews and Content Analysis of Blogs
Expiration Date:	11/18/2019
Last Approval Date:	

The above-referenced protocol has been approved following expedited review by the IRB Committee that oversees research with human subjects.

If the research involves collaboration with another institution then the research cannot commence until the Committee receives written notification of approval from the collaborating institution's IRB.

It is the Principal Investigator's responsibility to obtain review and continued approval before the expiration date.

Protocols are approved for a maximum period of one year. You may not continue any research activity beyond the expiration date without Committee approval. Please submit continuation requests early enough to allow sufficient time for review. Failure to receive approval for continuation before the expiration date will result in the automatic suspension of the approval of this protocol. Information collected following suspension is unapproved research and cannot be reported or published as research data. If you do not wish continued approval, please notify the Committee of the study closure.

Adverse Events: Any serious or unexpected adverse event must be reported to the IRB Committee within 48 hours. All other adverse events should be reported within 10 working days.

Amendments: If you wish to change any aspect of this study, such as the procedures, the consent forms, study personnel, or number of participants, please submit an amendment to the IRB. All changes must be approved by the IRB Committee before they can be initiated.

You must maintain a research file for at least 3 years after completion of the study. This file should include all correspondence with the IRB Committee, original signed consent forms, and study data.

cc: Jefferson Davis Miller, Investigator

Chapter Four: Conclusion

The two articles in this thesis explore the presence of the protein industry or animal agriculture in the form of blogging and discuss the flow of information as seen by blog authors. The participating blog posts for the content analysis and the blog author participants of semi-structured interviews were described in the study. Through content analysis, it was determined that the most recurrent themes were discussed in both positive and negative terms toward the animal agriculture or protein industry. In regard to the flow of information, all of the participants experienced neutral or positive experiences when researching unfamiliar topics.

Traditional news journalists, consumers, and even policy makers perceive bloggers to be more trustworthy than news media (Sweetser, Porter, Chung, & Kim, 2008). Producers of protein and involved in animal agriculture face more pressure from consumers for transparency. Consumers want to know all they can about their food, from birth to processing (Beulens, Broens, Folstar, & Hofstede, 2005). The importance for production agriculturists to have a positive relationship with the media is growing along with the population for which producers are expected to provide. Bloggers are viewed as mediators, gatekeepers, and public defenders concerning information the consumer wants (Sweetser et al., 2008).

The first article of this study included 37 blog posts from ten blogs, which were analyzed using NVivo 11. Nine themes total were found before theoretical saturation was reached, with the top four being *environment*, *consumption of protein*, *alternative protein source*, and *alternative dieting*. Each of these themes had both negative and positive tones toward the protein industry. It was determined that bloggers serve as information mediators between the protein industry and consumers, though protein representatives aren't actively engaged in the social media platform of blogging. Individuals passionate concerning consumption, or lack thereof, of

animal protein are most likely to have blogs about animal agriculture. Each of the themes in this article had identifiable subthemes ranging from incorporating protein into the diet to animal agriculture and the link to greenhouse gas emissions, to being vegan or eating cell-based meats. Bloggers were recognized to be filling a knowledge gap by encouraging readers to learn, research protein for themselves, and be actively engaged in the conversation. Bloggers translate protein industry jargon into a language easily consumed by their audiences, providing a source of information deemed credible. The full results of the content analysis can be found in Chapter 2 of this thesis.

Six blog authors, two of which were included in the first study, were interviewed using a semi-structured interview protocol for the second article. The researcher hand-coded interview transcripts looking for themes and similarities between interviews. All the bloggers reported having neutral or positive experiences regarding flow of information. The authors that took place as participants in this study got their information concerning unfamiliar topics through multiple ways, including: academic journals, Google searches, phone calls, emails, texts and being an expert in a specific field. For most of the participants, the flow of information took place electronically. No participant reported having face-to-face interactions with an information source. Each participant encouraged asking questions and learning about new topics within the field of animal agriculture or the protein industry. Concerning themes in the flow of information, all the participants reported having positive and/or neutral themes. Regardless of how the author conducted research, all had neutral or positive interactions and flow of information. None of the participants reported feeling negative or combative when participating in a flow of information. Though the same theories of agenda setting, framing, gatekeeping, social media, and interactivity were utilized in the first article, the theory of communities of practice created a slightly different

framework this study. Full results of the interview transcripts can be found in Chapter 3 of this thesis.

Future research should look at blogging concerning other agricultural practices, including what consumers would like to see in the social media platform. Deeper research into responses from followers to the blog authors, and the blog author responses, could prove valuable. Understanding exactly what consumers are looking for in blogs would be useful for industry purposes.

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