

Introduction

Consumers are concerned about where their food comes from and how it is produced (*A Dangerous Food Disconnect*, 2018). As more people become disconnected from farms, consumers' knowledge of agricultural production practices will increasingly come from mass media channels and organizational sources (Kovar & Ball, 2013; Settle, et al., 2017; Powell & Agnew, 2011; Kovar & Ball, 2013; Settle, et al., 2017; Powell & Agnew, 2011). With limited first-hand experience, quickly advancing technology, and a general view that "big is bad" among consumers when it comes to agriculture, communicating with consumers about modern farming can be challenging (Rumble & Irani, 2016; Weatherell, et al., 2003).

In particular, the livestock production industry is facing media criticism and communication challenges connected to animal welfare, the use of antibiotics, environmental degradation, food safety, and questions about the nutritional value of animal-based products (Specht, et al., 2014; Zimbelman, et al., 1995). These topics have become especially salient for the broiler chicken industry with the announcement of the U.S. Food and Drug Administration (FDA) guidelines for the use of antibiotics in food production and with documentary films like *Food Inc.* and *Rotten*, which negatively portray large broiler corporations (FDA, 2013; McKenna, 2017). Limited first-hand experience combined with negative, emotional, and reactive media coverage of animal agriculture (Specht & Rutherford, 2013), makes consumer views about animal agriculture "uncertain and malleable" (Doerfert, 2003). It also creates an environment in which emotional pleas and message framing are especially persuasive (Kovar & Ball, 2013; Specht et al., 2014).

The goal of this study was to examine how large broiler companies frame sustainability and farm production practices within video content on company YouTube channels. Video is a vital component of most organizational messaging strategies. Organizations can use this participatory medium to demonstrate what happens on the farm and offer a visual manifestation of the company's sustainability values in action (*A Clear View of Transparency and how it builds consumer trust*, 2015). Videos are one of the most influential sources of information for consumers on topics of farming (USFRA, 2015). While other studies have focused on how companies frame messages about food and agriculture in terms of sustainability (Swenson & Olsen, 2017; Van Gorp & van der Goot, 2012), fewer have specifically focused on animal agriculture or broiler chicken companies. Also, while previous sustainability framing studies have investigated visual framing devices, they have not specifically investigated video mediums, which provide unique opportunities for framing due to the compositional factors, mise en scène, and musical dimensions of the medium (Rose, 2007).

Literature Review

Definitions of Agricultural Sustainability

Interpretations of agricultural sustainability vary and have mirrored what is salient in the cultural landscape. Yet, definitions of sustainable agriculture often arrange themselves into two schools of thought: agricultural sustainability as a "system-describing concept and as a goal-prescribing concept" (Hansen, 1996, p. 119; Thompson, 1992). With regard to the goal-describing concept, definitions usually have specific references to agricultural management strategies. Hansen (1996) noted that agricultural sustainability is referred to as an alternative

philosophy centered on low inputs and usually described in contrast with conventional agriculture or practices that are input intensive, large-scale, and use large amounts of pesticides, fertilizers, and antibiotics (Hill & MacRae, 1988). This definition of agricultural sustainability seems to value approaches in opposition to conventional agriculture, a term created out of reform movements focused on issues like diminished natural resources, harm of animals and the environment, and human health and safety risks (Dahlberg, 1991; Hansen, 1996). Scholars have argued the term conventional agriculture was created to “justify alternative approaches to agriculture” (Hansen, 1996, p. 120) and it may not adequately describe dominant philosophies of agriculture (Beus & Dunlap, 1991). Further, some scholars have argued that defining agricultural sustainability in opposition to conventional agriculture may cause some to reject mainstream approaches and philosophies that are effective (Hansen, 1996).

The second school of thought takes a goal-prescribing approach to agricultural sustainability, where definitions focus on the ability of a system to meet a set of goals or to continue throughout time (Hansen, 1996). Definitions in this category derive from sustainable development, in which goals focus on social justice, economic progress, and the environment and measure impact on the “Triple Bottom Line” or the balance between people, profit, and the planet (Bell & Morse, 2008; Hansen, 1996). For example, the American Society of Agronomy defines sustainable agriculture as a system that “over the long term, enhances environmental quality and the resource base on which agriculture depends; provides for basic human food and fiber needs; is economically viable; and enhances the quality of life for growers and society as a whole” (American Society of Agronomy, 1989, p. 15). Definitions like this rely on the author to define concepts, values, and weigh the importance of goals (Castellini et al., 2012; Hansen, 1996; Lynam & Herdt, 1989). Other definitions of agricultural sustainability focus on the ability of a system to exist over an extended period and often reference the maintenance of outputs and productivity, benefits to future generations, and usage of land over time (Conway & Barbie, 1988; Gray, 1991; Hansen, 1996; Monteith, 1990).

When looking at agricultural sustainability through the lens of animal production practices and on farm activities, it is also important to consider how sustainable agriculture was defined by Congress in the 1990 Farm Bill. As defined by Congress under law, the term sustainable agriculture means:

An integrated system of plant and animal production practices having a site-specific application that will, over the long term: satisfy human food and fiber needs; enhance environmental quality and the natural resource base upon which the agricultural economy depends; make the most efficient use of nonrenewable resources and on-farm resources and integrate, where appropriate, natural biological cycles and controls; sustain the economic viability of farm operations; and enhance the quality of life for farmers and society as a whole, (United States Department of Agriculture, 2002, p. 19).

It is important to consider all definitions of agricultural sustainability because agricultural companies often articulate sustainability philosophies and ideologies while pointing to specific production practices. At the same time, consumers, documentary producers, and news media organizations might be relying on different definitions of sustainability when discussing livestock production practices and goals.

Sustainability Narratives

Within definitions of agricultural sustainability, there is flexibility for authors to push ideologies and claim that various agricultural practices are sustainable within the parameters of organizational goals. Research must investigate how this might occur within the context of large-scale, modern communication and marketing efforts. In the case of agricultural sustainability messaging, where topics are complex and consumers may lack contextual knowledge about agricultural production, frames are valuable as they help simplify and organize ideas, while providing an interpretive toolkit to help message receivers attribute meaning to different situations (Steede, et al., 2020; Swenson, et al., 2016; Swidler, 1986; Van Gorp & van der Goot, 2012). Sustainability frames also connect visuals, symbols, and messaging components to cultural reference systems, which in turn helps receivers form ideas about issues and sources through the expression of shared values (Clark, 1996; Nisbet, 2009; Van Gorp & van der Goot, 2012).

In response to negative media and cultural paradigm shifts, companies have increased paid and owned content dedicated to reframing industry issues and company practices around sustainability (Cronin, et al., 2011; Haanaes, et al., 2011; Swenson & Olsen, 2017). With the importance of agricultural sustainability to consumers, increased salience has meant more companies are integrating sustainability concepts into strategic communications efforts and carving out their own definitions (Van Gorp & van der Goot, 2012). The effectiveness of this content to result in behavior change has been questioned by scholars, and consumers may be particularly skeptical of brand-driven green advertisements because of company reputation and motives. Consumers may view the framing of these sustainability messages as misleading, or as a clear attempt to bolster the brand's image while avoiding discussions about specific agricultural practices in relationship to sustainability constructs (Atkinson & Kim, 2015; Swenson & Olsen, 2017).

Previous research has elucidated common frames for food, science, and technology topics as they pertain to sustainability (Nisbet, 2008; Swenson & Olsen, 2017; Van Gorp & van der Goot, 2012). However, these studies have not examined frames related to agricultural sustainability in the context of livestock production, nor how agricultural companies leverage these frames in connection with specific agricultural practices. Also, these studies have not focused on visual framing devices found within videos. Specht and Rutherford (2013) stressed the need to further investigate visual representations of livestock production (Specht & Rutherford, 2013).

Theoretical Framework

Framing Theory

Framing organizes communication content within a context that is familiar to the receiver. It also focuses attention on certain events and places story components into a field of meaning (Arowolo, 2017; Goffman, 1974). Frames are presented to an audience and influence receivers' processing of a piece of content. Frames also help receivers use cognitive shortcuts that link the message to other systems of meaning for the receiver (Arowolo, 2017). In essence, frames not only tell the audience what to think about, like agenda setting theory, but also tells audiences how to think about that issue (Goffman, 1974). Entman (1993) also noted that frames

can be how a group convinces others to understand and evaluate an issue. Some frames may resonate with the receiver, and some frames the receiver may deem as an inauthentic blurring of truth and reality. For Ardèvol-Abreu (2015) this means that in order for frames to affect message processing in the desired manner, there must be a “constant negotiation between the individual’s social skills, attitudes, ideology, and the new information that comes through different news texts” and frames must match the “the schemas and belief system of the reader” (p. 430).

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Framing and Public Relations

Frames are composed of a core frame or central idea, as well as framing devices. Framing devices may include certain vocabulary choices, catchphrases, and metaphors, as well as visuals and moral appeals (Price, Nir, & Cappella, 2005). In public relations efforts, core frames and framing devices play a central role in how an organization builds common ground with audiences through unified reference systems (Hallahan, 1999; Reber & Berger, 2005). Based on these frames of reference, public relations professionals make strategic decisions about structuring messaging themes and choosing framing devices, such as selecting images, to reinforce themes and connections. In this process, frames can position attributes of a company, its business activities and actions, products and services, critical issues, and criticisms in the mind of audiences.

Public relations professionals can leverage frames to discuss the cause for issues and who is responsible, whether that means taking ownership or minimizing responsibility (Hallahan, 1999; Smith, 2012). Frames are also a key component in image repair (Smith, 2012). Combining framing devices and themes from public relations content with their own personal experience, ideology, popular thinking, and other cultural issues as presented by media sources, receivers construct meaning (Nisbet, 2008; Price et al., 2005; Van Gorp & van der Goot, 2012). Given vague or overlapping definitions of agricultural sustainability, frames created and circulated by organizations can be an essential component of communicating issues regarding agricultural sustainability and convincing receivers that a company’s production practices are sustainable (Swenson & Olsen, 2017).

Purpose & Research Objectives

The purpose of this study was to better understand common topics, techniques, and frames within video messages that connect sustainability philosophies and on-farm production practices. This qualitative content analysis aims to answer these research questions:

RQ1: What are the primary topics of large broiler chicken company videos on company YouTube channel(s) and organizational websites?

RQ2: What are the general filming techniques (animation, camera footage, seated interview, live subject or host, text overlays, live video approach) used in videos focusing on chicken production?

RQ3: What are the primary frames used in videos focusing on chicken production and agricultural sustainability?

Method

To determine the research sample, we gathered content from the YouTube channels of three broiler chicken companies: Tyson Food Inc. (and Tyson Brand), Sanderson Farms, and Perdue farms. These organizations were selected because they are in the top four of the largest U.S. broiler chicken companies (National Chicken Council, n.d.), have active YouTube channels, and received negative media coverage criticizing their production practices (Castillo, 2014; Snyder, 2015; Moyer, 2015). YouTube is one of the fastest growing, and most visited websites in the United States, and has been acknowledged by companies as an ideal platform for housing content, sharing marketing messages, and advertising to consumer groups (Agrawal, 2016; Ahn, et al., 2007; Freeman & Chapman, 2007). U.S. broiler chicken companies have reached audiences with YouTube. For example, in late 2022, Tyson Foods Inc. had 5,070 subscribers to their YouTube channel and 7.5 million views on their videos, while Sanderson Farms had 8,060 subscribers to their YouTube channel and 50.8 million views on their videos.

This research focuses on all videos posted between January 1, 2014 and July 30, 2018. This timeframe was selected because 2014 was a high visibility year for the industry and for the companies involved as the highly pathogenic avian influenza virus rampaged the poultry industry (USDA, 2017). The selected period covers time in which there was additional pressure to change production practices, as the FDA announced new guidelines for antibiotic use in animal production systems in 2013 (FDA, 2013). In 2014, both Tyson Foods Inc. and Perdue Farms announced major initiatives to end their use of antibiotics by 2016 (Perdue Company Stewardship Report, 2016; Huffstutter, 2015). By extending the analysis for two years beyond the 2016 deadline, the research sample is designed to capture both short-term and long-term changes made in production practices and potential shifts in messages about sustainability. In addition to YouTube, we also searched the three company websites for videos connected to topics like sustainability, animal welfare, chicken myths, sustainably raised, humanely raised, and growers to discover any additional relevant video content. All videos posted on the organizational YouTube channels, plus the supplemental videos from organizational webpages, resulted in a sample of 440 videos.

To identify primary topics within our sample and answer the first research question, we followed the grounded theory approach of data collection from Corbin & Strauss (2008). We looked at a pilot sample of video titles and written descriptions for an early, comprehensive list of potential primary topics. Then, we watched the full sample of videos at double speed. Each video was analyzed for dominant concepts and central ideas, then dominant ideas were categorized into collapsed groups. This process was repeated until the primary topics were determined.

After eliminating videos that did not discuss farm-specific production practices, the subset included 55 videos. To answer the second research question, we followed the methodological approach of Rose (2007) to identify video characteristics and filming techniques within the subset of videos ($n = 55$). We recorded the following characteristics and techniques: animation, camera footage, seated interview, live subject or host (speaker walking through a farm or other setting with camera moving along with them), text overlays, and live video approach (real-time footage). The idea of the live subject/host speaker comes from the widely

held news and journalism term known as a *standup* (Pittman, 2014). Based on previous research conducted by The Center for Food Integrity (2008), which links the source of information about on the farm practices to overall trust, we also recorded speaker affiliation for videos within this subset. Videos may contain multiple visual techniques or characteristics, as well as various speakers and affiliations.

To conduct the framing analysis and answer the third research question, we relied on sustainability framing packages and typologies as previously described for science, food, and agricultural messaging, as outlined by Table 1 (Nisbet, 2008; Swenson & Olsen, 2017; Van Gorp & van der Goot, 2012). Messaging framing devices include the use of catchphrases, the allusions to history or aspects of culture, the use of metaphors, or strategic lexical choices as well as elements within the message that suggest a sustainability definition, moral base, or emotion (Ferree, 2002; Van Gorp & van der Goot, 2012). The frames in Table 1 were the primary framing typologies used. This research focuses specifically on visual framing devices, and how the compositional factors of content, light, color, perspective, and expressive content may contribute to the frame (Rose, 2007).

Table 1

Framing Typology of Frames Applicable to Food and Agriculture

Frame	Description	Sources used to develop frame and description
Social Progress	Improving the quality of life for people or helping solve their problems. This is considered a subset of the progress frame.	Nisbet & Scheufele, 2009; Swenson & Olsen, 2017
Economic Development	Minimizing economic impact on people and government, or businesses.	Dahinden, 2002; Nisbet, 2008; Nisbet & Scheufele, 2009; Swenson & Olsen, 2017
Progress	Modernization and scientific advancement within the food system, sometimes pertaining to technological advancement.	Dahinden, 2002; Nisbet & Scheufele, 2009; Swenson & Olsen, 2017; Van Gorp & van der Goot, 2012
Catalyst for change	Celebrating or warning against those companies, people, policies, and actions that could upset the current balance of systems as related to sustainability. This is considered a subset of the progress frame.	Nisbet, 2009; Swenson & Olsen, 2017

Natural State	Values those practices that return farming to an idyllic, previous, more natural state. This is considered a subset of the progress frame.	Dahinden, 2002; Swenson & Olsen, 2017; Van Gorp & van der Goot, 2012
Conflict	Describes issues related to food and agriculture as a struggle between two or more groups.	Nisbet, 2009; Nisbet & Scheufele, 2009; Swenson & Olsen, 2017
Public Health	Displays how food and agricultural issues influence public health broadly.	Nisbet, 2008; Swenson & Olsen, 2017
Stewardship	Describes and values those who are caretakers of food, farming, and environmental resources.	Swenson & Olsen, 2017; Van Gorp & van der Goot, 2012

To use multiple sources of evidence for the frame analysis, the primary researcher watched the videos and uploaded video transcripts into Dedoose to code excerpts of text and analyze message content and framing devices as they align with sustainability narratives. “Dedoose is a web-based application for managing, analyzing, and presenting qualitative and mixed research data” (Dedoose, 2021, p. 1). The primary researcher met with the secondary researcher to review content, discuss initial frame themes identified, and determine consensus on coding information. After identifying frames being used in the messaging, the primary researcher returned to the videos to analyze visual content again and note how the images used, visual narratives, filming techniques, and compositional factors supported frame packages. The primary and secondary researcher then held a series of meetings to review subsets of the data and corresponding frame packages and supporting frame devices. We followed Saikko’s (2003) qualitative validity triangulation approach and focused on how “it manages to unravel social tropes and discourses that, over time, have come to pass for a ‘truth’ about the world” (Saikko, 2003, p. 20).

Results

Primary Topics

We analyzed videos on company YouTube channels and organizational websites (n= 440) by first identifying the primary topic that was the focus of the videos. Videos were sorted into ten categories: cooking, industry and production awareness, corporate and social responsibility, on-farm activities and production practices, company values, product advertising and attributes, holiday and contest, growers, and food safety and processing (Table 2).

Table 2*Definition of Broiler Chicken Video Topics*

Topic	Description	Example(s)
Cooking	Videos focus on recipes and ways to cook chicken meat products made by the company.	Recipe videos, cooking instructional videos with a live host.
Corporate Social Responsibility	Videos focus on societal and economic impact of company practices and initiatives. They also focus on broad sustainable development efforts and initiatives as described and defined by the company.	Videos about how companies are supporting local communities through food security initiatives, food banks, and providing educational opportunities for students while also supporting local economies. These also include CSR sustainability report videos and executives talking about sustainability initiatives throughout the company.
Industry and Production Awareness	Videos focus on providing information about the chicken production industry and about important production topics. These videos speak from the perspective of 3rd party industry experts and do not talk about specific practices as they relate to the company in question.	An interview with a poultry veterinarian or animal scientist from a university where they discuss their professional opinion on why antibiotics are necessary in raising chickens.
On the Farm Activities and Production Practices	Videos focus on practices central to modern chicken broiler production. These focus specifically on the practices as they relate to taking care of chickens. Typically, these videos are shot on the farm with growers present or include executives talking in-depth about production practices.	These videos include topics of animal welfare, antibiotic use, traditional housing and free-range, and organic and non-organic practices.
Company Values	Videos focus on the history of the company and demonstrate the philosophies and values of the company.	These include videos where employees and executives talk about company core values or purpose.

Product Advertising and Attributes	Videos focus on promoting consumer chicken products and the attributes of the products without significant emphasis on and clear linkage made between product and animal origin and production practices (significant can be defined by failing to show or talk specifically about production practices but leveraging them as product attributes).	These include videos talking about easy-to-use products, all-natural ingredients, and the product contains no antibiotics. Typically, these are short videos that are typically noted as social media videos or TV advertisements.
Holiday and Contest	Videos focus on celebrating holidays of interest and the various consumer contests they hold during the holidays.	These included videos celebrating holidays and videos related to consumer contests.
Growers	Videos focus on the growers who grow the company's chicken and their families.	Videos include those with emphasis on family history on the farm, why growers do what they do, and how integrators (the companies) support the growers in their work from the perspective of the growers.
Food Safety and Processing	Videos focus on food processing and food safety activities of the company in its supply chain.	These videos primarily focus on the food safety research and initiatives of the company as well as investigating behind the scenes at processing plants or when products such as chicken nuggets are made using industrial processing equipment.

The most common topic of the videos was cooking videos (50.7 %). Corporate social responsibility (12.8 %), and industry and production awareness (9.3 %) were the next highest video topics (Table 3). Of specific interest to this study, the on-farm activities and production practices category ranked fourth amongst topics (8.2 %).

Table 3*Chicken Broiler Videos by Topic (n =440)*

Topic	Video Count	Percentage of Videos
Cooking	223	50.7
Corporate Social Responsibility	56	12.8
Industry and Production Awareness	41	9.3
On-Farm Activities & Production Practices	36	8.2
Product Advertising and Attributes	34	7.7
Company Values	19	4.3
Holiday and Contest	12	2.7
Growers	12	2.7
Food Safety and Processing	7	1.6

Video Filming Techniques and Speakers

In evaluating videos that had on-farm activity and production practice messages (n = 55) and their characteristics (Table 4), the most frequently used characteristic was camera footage or b-roll (83.3%). Also, both videos and text overlays (this includes text being used outside of the traditional beginning and ending slides as well as lower thirds) were used in over half of the videos (51.9% and 61.1% respectively). While over half of the videos chose a more traditional seated interview, fewer chose to go with the live subject route (29.6%). There was only one YouTube live video out of all videos analyzed (1.9%). This additionally was the only YouTube live video in the entire study. Overall, footage shot by a camera (including what we define as camera footage, interviews, and use of live subjects) was more frequently used than animations, as only four of the 55 videos used animations (7.4 %).

When it came to the speakers in these videos, the primary speakers were growers, who were included in over half of the videos (59.3 %). Company employees (22.8 %) and executives (22.2%) were also featured in these videos. In the case of executives, the only people who were featured were John Perdue, Chairman of Perdue Farms, and John Tyson, Chairman of Tyson Foods Inc. Both are familial heirs to the business and former Chief Executive Officers. There were also seven videos containing omniscient speakers who were speaking on behalf of the company (13.0 %). Finally, there was one video where it was unclear who the speaker was, and one video containing animation with no speaker.

Table 4*On-Farm Activity and Production Practice Video Characteristics and Speakers (n = 55)*

Technique	Count	%
Camera Footage	45	83.3
Interview	33	61.1
Text	28	51.9
Live Subject	16	29.6
Animation	4	7.4

Live Video	1	1.9
Speaker Category	Count	%
Grower	19	59.3
Company Employee	15	22.8
Executive	12	22.2
Company Unknown	7	13.0
Unclear	1	1.9
None	1	1.9

Frames

The primary frame used most frequently was stewardship (40.0%). Both catalyst for change and natural state were used an equal amount (16.4%). Conflict was the fourth highest frame used in these videos, while social progress was used in four videos (7.3%). Economics, progress, and public health were the least used frames (see Table 5). There were also two videos out of the 55 where a frame determination could not be made. For these videos, the frame did not fall within an existing typology, nor did it have a central idea that could be determined. A more detailed description of each frame and how it was supported by elements within our sample follows below.

Table 5

On-Farm Activity and Production Practice Video Primary Frames (n=55)

Primary Frame	Count (videos including)	%
Stewardship	22	40.0
Catalyst for Change	9	16.4
Natural State	9	16.4
Conflict	5	9.1
Social Progress	4	7.3
Economics	2	3.6
Unclear	2	3.6
Progress	1	1.8
Public Health	1	1.8

The Stewardship Frame

The stewardship frame in our sample resembled previously identified typologies of stewardship (Van Gorp & van der Goot, 2012). The frame centered on valuing growers, company employees, and practices that protect and care for other people, chickens, or the environment at large. The frame frequently focused on the caretaking of animals, but also focused on company growers and consumers. The metaphor of familial care was strong within this frame, as were moral appeals to the right of chickens to receive care. Also, messages contained references to listening and meeting chickens' needs, and these messages were coupled with anthropomorphized animal tropes. Visually, this frame was supported through images of young chickens being tended to by growers, company flock health specialists, or veterinarians.

To emphasize caretaking, camera perspectives that gave viewers the point of view of the grower while taking care of chickens were commonly used, as well as handheld tracking shots from behind the grower. Low angle, tracking shots that focus on the chickens gave the effect of viewing the narrative from the chicken's perspective or how production practices affect animals. Visual and message examples of this frame can be found in Table 6.

Catalyst for Change

The catalyst for change frame, as previously described by Swenson and Olsen (2017, p. 11), “celebrates or warns against people, companies, policies, and actions that could upset the current balance of our legal, social, political, agricultural, and environmental systems.” This frame was observed in videos within our sample, especially messages connected to company actions and policies. Key to narrative articulation were notions of disruption, going above and beyond, and not acting in line with the status quo. The message was usually supported with a description of newly proposed sustainability initiatives, or results of new production practices. Themes included articulations of surprise or the idea of the new and unexpected. Videos often incorporated humorous and light-hearted messaging and expressive visuals. Another approach to frames in this category includes taking responsibility for past actions and describing new actions as improvements. Messages had a humble, serious tone, and videos adapted a slow edit pace and strong focus on the speaker talking, typically a company executive. Topics were positioned as new, alternative production practices that would enhance animal health, instead of using antibiotics. Organizational actions like more transparent communication with consumers and enhanced feedback mechanisms or communication with growers was often referenced. Visual and message examples of this frame can be found in Table 6.

Natural State

The natural state frame was also present and similar in form to descriptions of natural state (Swenson & Olsen, 2017) and natural goodness (Van Gorp & van der Goot, 2012) frames in other scholarship. Messaging typically emphasized the ability of chickens to have freedom, and autonomy to express their “natural behaviors.” In the words of Jim Perdue this meant “letting a chicken be a chicken” (Jim Perdue Talks About Giving Chickens What They Want, 2016). Visually, associations with the natural world, such as spotlighting chickens in natural light, were common. Linked to ideas of freedom, autonomy, and room to roam, there were many shots of chickens in lush, green landscapes and using enrichments in housing. Also, the dimension of space was emphasized through the perspective of the camera. For example, there were many wide-angle shots of farmhouses and over the farm drone shots looking down on the free-range pasture, emphasizing the great deal of space given to chickens (Perdue Organic Chicken Farming, 2017). These videos included narratives addressing overarching company ideologies, but most discussed specific practices such as housing, nutrition, and organic, free-range production. Visual and message examples of this frame can be found in Table 6.

Conflict

Other scholars have described the conflict frame as struggles that occur between two parties over sustainability challenges (Nisbet, 2008; Swenson & Olsen, 2017). In this analysis,

the struggle framed between two parties focused on perception, reality, and the truth around sustainability issues and on-farm practices. Primary conflicts were company vs. consumer and company vs. company. A very small number of messages also referenced company vs. sustainability mandates, and the difficulties, obstacles, and hurdles the company overcame to have more sustainable practices. The company vs. sustainability frame was rare in this analysis and was almost exclusively used by Perdue Farms. Within the company vs. consumer conflicts, videos typically discredited consumers' notions of animal agriculture. In company vs. company conflicts, messages focused on other companies' branding messages and how they are untrue and misleading. For example, videos referenced the “fancy language” other companies use to distract concerned consumers from their actual production practices.

Visual juxtaposition was a central technique used within this theme to discredit consumer perceptions or greenwashing claims. For example, viewers were given a behind-the-scenes look at production practices. Auteur choices supporting this frame took on the feel of documentary filmmaking and investigative reporting. Usage of a live host or subject was prominent and tripod usage was limited, in favor of handheld or Steadicam shooting, with natural lighting. To discredit consumer misperceptions, text overlays (using large type size or different colors) were used to negate important words or quotes. In company vs. company conflicts, on screen claims made by other companies were displayed in quotes, and then edited in a satirical form. Visual and message examples of this frame can be found in Table 6.

Social Progress

The social progress frame focused on improvements in quality of life for growers. The frame was supported through expressions of increased social value, primarily highlighting growers as the beneficiaries of company support. Growers were typically the beneficiaries of modernization within the industry and company. In messaging, there were often subtle references to upward mobility, such as increased social status and having their own business. The relationship between the company and the growers was also positioned as socially beneficial for the growers, as they were given freedom and autonomy. For example, one grower remarked, “having my own business at my home, allows me freedom and autonomy” (Donna Britt, Perdue Grower Since 1994, 2014). This was further emphasized with growers stating they now have work-life balance and can share farming experiences with their family. Common familial tropes and visuals of the family engaging in farm life were emphasized. Shots were also arranged in a way to evoke the sense of a shared experience between company employees and growers. The identity of the company employee was not always clear, and visuals signified employees, growers, and their spouses or children as part of one large organizational family. Visual and message examples of this frame can be found in Table 6.

Economics

The economics frame as described by Swenson and Olsen (2017) and by Nisbet (2008) is supported in these videos, mainly through discussions of minimizing economic impact on growers and consumers. Potential economic benefits to growers within the corporate family were often emphasized. Growers included themes like stability, economic certainty, and protection within the narratives. There were also explicit references to peace of mind felt by farmers, which was evoked by the calm, happy tone of the messaging and music.

Messaging typically focused on sustainable production practices that do not sacrifice product affordability, nor upset the balance between people vs. economics (profits or

affordability of food). For example, in a video about Tyson Foods Inc.'s philosophy on sustainability, John Tyson said, "we're responsible for doing the best we can in a humane way, always balanced against making sure that food remains available and affordable" (Raising Healthy Chickens [Extended], 2017). When this frame is used in this manner, message content is aligned with sustainability, eco-efficiency, and Neuymeyer's (1999) definition of sustainability. Visual and message examples of this frame can be found in Table 6.

Progress

The progress frame focused on modernization and the movement toward more sustainable chicken production systems. Much like in other scholarly descriptions of this frame, there was an emphasis on the value of technological advancements within the industry that would help facilitate more sustainable outcomes (Nisbet & Scheufele, 2009; Swenson & Olsen, 2017; Van Gorp & van der Goot, 2012), specifically with regard to animal welfare and improving care of animals. When referencing the technological components of this frame, b-roll shots of modern technological animal welfare tools were often used. Animated science and technology symbols were commonly incorporated into video, as well as graphs indicating upward trends. Within this context, the progress frame suggested company actions were a constant journey forward, where ongoing improvement and learning from the past was emphasized. This was supported visually through references to history, such as old images of the brand, or by interviewers set in a room with historical artifacts. Most frequently, executives were the primary speakers when this frame was being used to reframe company actions. Visual and message examples of this frame can be found in Table 6.

Public Health

Like in previous scholarship (Swenson & Olsen, 2017), public health frames focused on the safety of agricultural production practices and nutrition of consumer products. References to "safe" and "wholesome" products were prominent, and messages were filled with assurances and confidence. Visual text overlays provided additional assurances, often highlighting in different colors words such as "no" and "never" in statements of no antibiotics ever used on the farm or in products themselves. Repetition in messaging was also prominent within this frame. Growers shared messages connected to trust and discussed their desire for safe products for their family, reminding viewers that farmers eat these products. Growers' homes were often used as settings and backdrops within messages. This frame linked production practices with ideas of caretaking and public accountability. Visual and message examples of this frame can be found in Table 6.

Table 6

Frames Used in Corporate Poultry Videos (n = 55)

Visual Example	Message Example	Description
<p>Stewardship</p> 	<p>“I treat them as my own kid. Checking on them, making sure they’re comfortable.”</p>	<p>Images of chickens being tended to or held by growers or veterinarians, especially young chickens, were commonly used within this frame.</p>
<p>Catalyst for Change</p> 	<p>“We take some unexpected extra steps to raise our chickens with no antibiotics ever.”</p>	<p>Animated motion graphics, humor, and lighthearted imagery were used in this frame, along with illusions of going above and beyond like the hurdles show on the left image.</p>
<p>Natural State</p> 	<p>“We went from meeting their basic needs of food, water and shelter to thinking about their wants, including the opportunities to express normal behaviors.”</p>	<p>Images that showcased lush green landscapes, enrichments in housing were frequently used. The idea of chickens having room to roam were also displayed using wide-angle, drone, as well as POV shots to demonstrate the dimension of space.</p>
<p>Conflict</p> 	<p>“Some of the best blessings we have is from farming... This is a family farm. It’s how we make a living. It’s how we teach important values to our children.”</p>	<p>Many of these videos used production practices common in documentary filmmaking, mimicking a “behind-the-scenes” type of perspective. Text overlays were used to negate potential consumer misconceptions about their business, or faulty claims by another business.</p>

Social Progress



“Some of the best blessings we have is from farming... This is a family farm. It’s how we make a living. It’s how we teach important values to our children.”

Images shown focused extensively on families working together on the farm, as well as shots of the family together in or around their home.

Economics



“We’re responsible for doing the best we can in a humane way, always balanced against making sure that food remains available and affordable.”

These were often grower testimonials sharing the economic benefits they have experienced since growing for the company.

Public Health



“We buy from other farmers for us to eat at our tables, so it’s really important that it’s safe and good.”

Grower homes as well as homes of consumers were common settings in this frame.

Discussion & Recommendations

All companies analyzed in this study emphasized agricultural sustainability as a core organizational value in messages to stakeholders (Perdue Company Stewardship Report, 2016; Huffstutter, 2015). Yet, this analysis shows that when it came to primary topics of video messages, this was a limited focus. Overall, only a small percentage of videos had significant sustainability messages that were directly connected to specific on the farm activities and production practices. There is an opportunity for chicken broiler organizations to directly highlight more specific and concrete sustainable production practices within their video messages.

While videos did focus on growers, products, and sustainability goals of the company, these were not often linked. For public relations purposes, a stronger link between these concepts might offer a more concrete idea of how the company defines its sustainability efforts, backed by evidence, practice, and actions the company has implemented (Hallahan, 1999). Creating more videos that address on-farm activities and production practices could be a potential way to frame responsibility, positive organizational actions, and the company’s position within the greater sustainability landscape. While a significant number of videos provided information on the

chicken production industry, these videos were from the perspective of third-party subject matter experts, and in turn, videos often did not talk about specific practices of a particular company.

For the small subset of videos that did focus on chicken production and on-farm activities, our analysis revealed common characteristics, stylistic choices, and speakers highlighted. It is notable that on-camera interviews and b-roll camera footage of the farm were frequently used. Most videos used highly polished and heavily edited formats of video, instead of using techniques like live videos. Our analysis also offers a close look at the types of speakers used in videos, and we found a high number of industry subject matter experts featured. The primary focus of most subject matter expert interviews was reframing broad industry issues and refuting commonly held perceptions or claims about general agricultural production, typically when it came to issues of animal wellbeing and public health. These messages took pressure off a specific farm and redirected frames of reference to the entire agricultural industry.

Poultry companies have faced negative criticism regarding animal welfare, responsible antibiotic use, product safety, and mistreatment of growers (Fraser, 2001). As such, it was not surprising that the top three frames used were stewardship, catalyst for change, and natural state. These frames focus on elements of caretaking, responsibility, public accountability, and stewardship and apply these ideals to people, chickens, and profit within the organization. We found that stewardship videos frequently highlighted growers within interviews. These videos connected company production to ideas of familial caretaking and stewardship (A Dangerous Food Disconnect, 2018). Leveraging stories about company employees supports a *corporation as family* message that has a long history in organizational communication (Mandell, 2002; Swenson, 2017). However, chicken production has also been criticized for its contributions to environmental issues such as water pollution, global warming, and increased land use dedicated to growing feed (Fraser, 2001; Mason & Singer, 1990). As such, it is surprising that we found many mentions of stewardship connected to the caretaking of people and animals, but few mentions of stewardship connected to the environment or natural resources in the videos.

The conflict frame was also present within our analysis. Like the progress frame, messages with company vs. consumer conflict frames may imply there is not a need for organizational change to enhance environmental impact or change production practices, instead messages may imply that blame rests with consumers to simply get educated on issues. If chicken broiler organizations are going to emphasize the disconnect between consumers and food production as an important conflict, they should produce more video content that includes specific on the farm activities and production practices, as this was a gap that we identified in video content.

The conflict and stewardship frames function to paint alternative pictures of sustainable production practices, in opposition to how chicken production has been portrayed and framed in other media. Fraser (2001) discusses issues with agricultural organizations that have “responded with public relations material promoting a very positive image of animal agriculture” to negative portrayals of animal agriculture by other media sources and deny critics’ claims entirely (Fraser, 2001, p. 1). Fraser (2001) argues this has resulted in two diametrically opposed portrayals of animal agriculture that are highly simplistic. According to other researchers, when the conflict frame is used without acknowledging a critic’s concerns or without showcasing common ground, consumers may feel there is limited agreement about facts and truth and may have difficulty engaging with content (Fraser, 2001). Other researchers have pointed out that this communication strategy may alienate consumers and perpetuate the bias consumers feel toward companies and not lead to meaningful change for the industry, since the frame tends to shift

responsibility away from the company and imply consumers are simply wrong (Peloza, Loock, et al., 2012).

Companies did address trials and tribulations of changing practices, as well as how change resulted from concerns and criticisms leveraged by outside sources in a small handful of messages within our analysis. According to other scholarship, this communication approach may be an effective cue as it demonstrates transparency, responsibility, and accountability (Rawlins, 2008; Rim, et al., 2019). More videos about sustainability challenges and changes might be an effective strategy for companies; for example, Rim, and colleagues (2019) evaluated transparency signaling within agribusiness messages and found that more transparency led to higher perceived integrity, with no effects on perceived competence and company reputation. This previous research and our analysis suggests that it might be valuable for researchers to take a closer look at this subset of sustainability videos, especially those within the conflict or progress frame categories, that include narratives about challenges faced, criticisms, and attempts at organizational change, even if those attempts at sustainability were not completely successful.

Implications for Practice

Video continues to be an influential route to communicate farm practices and sustainability efforts to consumers. Frame choices within video messages demonstrate company priorities and values. Framing choices can align company philosophy, consumer knowledge, and on the farm practices. Frames can link specific production practices of the company to agricultural sustainability goals. Our analysis demonstrates the approaches that different companies are taking to do this, as well as opportunities to leverage different frames within video messages.

Large companies might consider expanding the videos they offer to consumers, especially on topics that consumers are demanding like animal care, production practices and environmental impacts (Perception Survey and Sustainability Research Roadmap, 2015). Companies also infrequently addressed how they are protecting natural resources and limiting negative environmental impacts on the farm within video messages. Companies should consider implementing discussions of how production practices affect the environment more directly, since protecting the environment and replenishing natural resources are concepts consumers associate with sustainability (Perception Survey and Sustainability Research Roadmap, 2015). Companies might directly acknowledge sustainability concerns, issues, and challenges, and share live footage rather than heavily edited narratives about on-farm production practices.

Using this framing analysis as a guide, future research might investigate how consumers interpret message frames relative to company intent. Understanding how consumers think about all of these frames and their interest in various video topics would be a valuable addition to literature on sustainability videos. Additional research might also investigate how to best align consumer ideologies within framing strategies. It would be valuable to understand if consumers have a more nuanced understanding of sustainability in chicken production after viewing production videos, or if certain message frames turn off already critical consumers.

Conclusion

Since consumers are hungry for information about where their food comes from, convincing consumers that on-farm activities and production practices are sustainable is

important for large broiler companies. With limited first-hand experience with agriculture, it is not feasible that consumers can make informed decisions about agriculture without access to communication about specific on-farm production practices. Companies are spending quite a bit of time developing cooking videos; it might be valuable to supplement these with more access to live footage about the nuances of farm production.

This analysis found that within the stewardship frame companies did discuss topics of people, animals, and profit, but not necessarily planet (environmental impacts). Like other scholarship, this study found that the natural state frame was associated with organic, free-range farming, while public health and catalyst of change frames were associated with production using no antibiotics ever. These frames tend to paint a near perfect image of agriculture. If large broiler companies are truly to close knowledge gaps and engage consumers in discussions about sustainability and production practices, one option might be to frame conflict as company vs. sustainability, in which companies signal their imperfect progress toward sustainability goals and the trade-offs made between animal wellbeing, nutrition, profits, and environment impacts. Sustainability is a complex topic, especially as applied to food and agricultural issues (Nisbet, 2008, 2009; Van Gorp & van der Goot, 2012). Hopefully, ongoing and thoughtful reflection on framing strategies in video narratives can help organizations reach their goals and help consumers effectively engage in discussions and decisions about food production, sustainability, and the environment.

References

- A Clear View of Transparency and how it builds consumer trust.* (2015). <http://www.foodintegrity.org/wp-content/uploads/2018/03/CFI-2015-Consumer-Trust-Research-Booklet.pdf>
- A Dangerous Food Disconnect.* (2018). http://www.foodintegrity.org/wp-content/uploads/2018/01/CFI_Research_8pg_010918_final_web_REV2-1.pdf
- Agrawal, A. (2016). 3 reasons why you should be marketing on YouTube and periscope. <https://www.forbes.com/sites/ajagrawal/2016/01/03/3-reasons-why-you-should-be-marketing-on-youtube-and-periscope/#5b5ca2413173>
- Agronomy, A. S. of. (1989). Decision reached on sustainable agriculture. *Agronomy News*, p. 15.
- Ahn, Y.-Y., Han, S., Kwak, H., Moon, S., & Jeong, H. (2007). Analysis of topological characteristics of huge online social networking services. *Proceedings of the 16th International Conference on World Wide Web - WWW '07*, 835. <https://doi.org/10.1145/1242572.1242685>
- Arowolo, S. O. (2017). *Understanding framing theory*. <https://doi.org/10.13140/RG.2.2.25800.52482>
- Atkinson, L., & Kim, Y. (2015). I drink it anyway and I know I shouldn't: Understanding green consumers' positive evaluations of norm-violating non-green products and misleading green advertising. *Environmental Communication*, 9(1), 37–57. <https://doi.org/10.1080/17524032.2014.932817>
- Banas, J. A., & Rains, S. A. (2010). A meta-analysis of research on inoculation theory. *Communication Monographs*, 77(3), 281–311. <https://doi.org/10.1080/03637751003758193>
- Bell, S., & Morse, S. (2008). Sustainability indicators: Measuring the immeasurable? *Second Edition Earthscan.London.Sterling, VA*. [https://doi.org/10.1016/S0743-0167\(99\)00036-4](https://doi.org/10.1016/S0743-0167(99)00036-4)
- Beus, C. E., & Dunlap, R. E. (1991). Measuring adherence to alternative vs. conventional agricultural paradigms: A proposed scale. *Rural Sociology*, 56(3), 432–460. <https://doi.org/10.1111/j.1549-0831.1991.tb00442.x>
- Castellini, C., Boggia, A., Cortina, C., Dal Bosco, A., Paolotti, L., Novelli, E., & Mugnai, C. (2012). A multicriteria approach for measuring the sustainability of different poultry production systems. *Journal of Cleaner Production*, 37, 192–201. <https://doi.org/10.1016/J.JCLEPRO.2012.07.006>
- Castillo, M. (2014, January 13). 34,000 pounds of Tyson Foods chicken recalled over possible Salmonella. *CBS News*. <https://www.cbsnews.com/news/34000-pounds-of-tyson-farms-chicken-recalled-salmonella/>

- Clark, H. H. (1996). *Using language*. Cambridge University Press.
- Compton, J., Jackson, B., & Dimmock, J. A. (2016). Persuading others to avoid persuasion: Inoculation theory and resistant health attitudes. *Frontiers in Psychology*, 7, 122. <https://doi.org/10.3389/fpsyg.2016.00122>
- Conway, G. R., & Barbie, E. B. (1988). After the green revolution: Sustainable and equitable agricultural development. *Futures*, 20(6), 651–670. [https://doi.org/10.1016/0016-3287\(88\)90006-7](https://doi.org/10.1016/0016-3287(88)90006-7)
- Corbin, J., & Strauss, A. (2008). *Basics of qualitative research (3rd ed.): Techniques and procedures for developing grounded theory*. <https://doi.org/10.4135/9781452230153>
- Cronin, J. J., Smith, J. S., Gleim, M. R., Ramirez, E., & Martinez, J. D. (2011). Green marketing strategies: an examination of stakeholders and the opportunities they present. *Journal of the Academy of Marketing Science*, 39(1), 158–174. <https://doi.org/10.1007/s11747-010-0227-0>
- Dahinden, U. (2002). Biotechnology in Switzerland. *Science Communication*, 24(2), 184–197. <https://doi.org/10.1177/107554702237844>
- Dahlberg, K. A. (1991). Sustainable agriculture: Fad or harbinger? *BioScience*, 41(5), 337–340. <https://doi.org/10.2307/1311588>
- Dedoose. (2021). What is Dedoose? Dedoose: Great research made easy. <https://www.dedoose.com/userguide/meetdedoose/whatisdedoose#WhatIsDedoose>
- Doerfert, D. L. (2003). An assessment of research studies published within the agricultural education profession. *Proceedings of the 22nd Annual Western Region American Association for Agricultural Education Research Conference*. <http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.510.3915&rep=rep1&type=pdf>
- Donna Britt, *Perdue Grower Since 1994*. (2014). Retrieved from https://www.youtube.com/watch?v=IUUjeKA_qi4&feature=youtu.be
- Entman, R. M. (1993). Framing: Toward clarification of a fractured paradigm. *Journal of Communication*, 43(4), 51–58. <https://doi.org/10.1111/j.1460-2466.1993.tb01304.x>
- Farm Structure. (2018). Retrieved June 28, 2018, from United States Department of Agriculture - Economic Research Service website: <https://www.ers.usda.gov/topics/farm-economy/farm-structure-and-organization/farm-structure/>
- Ferree, M. M. (2002). *Shaping abortion discourse: democracy and the public sphere in Germany and the United States*. Cambridge University Press.

- Fraser, D. (2001). The new perception of animal agriculture: Legless cows, featherless chickens, and a need for genuine analysis. *Journal of Animal Science*, 79(3), 634. <https://doi.org/10.2527/2001.793634x>
- Freeman, B., & Chapman, S. (2007). Is YouTube telling or selling you something? Tobacco content on the YouTube video-sharing website. *Tobacco Control*, 16(3), 207–210. <https://doi.org/10.1136/tc.2007.020024>
- Goffman, E. (1974). *Frame analysis: An essay on the organization of experience*. Harper & Row.
- Gray, R. (1991). Economic measures of sustainability. *Canadian Journal of Agricultural Economics*, 39. <https://onlinelibrary.wiley.com/doi/pdf/10.1111/j.1744-7976.1991.tb03614.x>
- Haanaes, K., Arthur, D., Balagopal, B. Kont, M. T., Reeves, M., Velken, I., Hopkins, M. S., Kruschwitz, N. (2011). Sustainability: The ‘Embracers’ Seize Advantage. *BCGandMIT Sloan Management Review*. <https://sloanreview.mit.edu/projects/sustainability-the-embracers-seize-advantage/>
- Hallahan, K. (1999). Seven models of framing: Implications for public relations. *Journal of Public Relations Research*, 11(3), 205–242. https://doi.org/10.1207/s1532754xjpr1103_02
- Hansen, J. W. (1996). Is agricultural sustainability a useful concept? *Agricultural Systems*, 50(2), 117–143. [https://doi.org/10.1016/0308-521X\(95\)00011-S](https://doi.org/10.1016/0308-521X(95)00011-S)
- Higgins, M. A. (1991). Bridging the communication gap between farmers and nonfarmers. *Journal of Applied Communication Research*, 19(3), 217–222. <https://doi.org/10.1080/00909889109365304>
- Hill, S. B., & MacRae, R. J. (1988). Developing sustainable agriculture education in Canada. *Agriculture and Human Values*, 5(4), 92–95. <https://doi.org/10.1007/BF02217652>
- Huffstuter, P. J. (2015). Tyson continues effort to cut antibiotics from chicken production. Reuters. <https://www.reuters.com/article/us-tyson-foods-antibiotics/tyson-continues-effort-to-cut-antibiotics-from-chicken-production-idUKKBN0M713320150311>
- Inoculation Theory. (2018). Retrieved June 29, 2018, from Communication Theory website: <https://www.communicationtheory.org/inoculation-theory/>
- Jim Perdue Talks About Giving Chickens What They Want*. (2016). Retrieved from <https://www.youtube.com/watch?v=BdDHPe0N-Lk>
- Johnson, A. (1991). *Factory farming*. B Blackwell Publishing.
- Kidd, C. V. (1992). The evolution of sustainability. *Journal of Agricultural and Environmental Ethics*, 5(1), 1–26. <https://doi.org/10.1007/BF01965413>

- Kovar, K. A., & Ball, A. L. (2013). Two decades of agricultural literacy research: A synthesis of the literature. *Journal of Agricultural Education*, 54(1), 167-178.
<https://doi.org/10.5032/jae.2013.01167>
- Lynam, J. K., & Herdt, R. W. (1989). Sense and sustainability: Sustainability as an objective in international agricultural research. *Agricultural Economics*, 3(4), 381-398.
[https://doi.org/10.1016/0169-5150\(89\)90010-8](https://doi.org/10.1016/0169-5150(89)90010-8)
- MacRae, R. J., Hill, S. B., Mehuys, G. R., & Henning, J. (1990). Farm-Scale Agronomic and Economic Conversion from Conventional to Sustainable Agriculture. *Advances in Agronomy*, 43, 155–198. [https://doi.org/10.1016/S0065-2113\(08\)60478-2](https://doi.org/10.1016/S0065-2113(08)60478-2)
- Mandell, N. (2002). *The Corporation as Family: The Gendering of Corporate Welfare, 1890-1930*. Chapel Hill: University of North Carolina Press.
- Mason, J., & Singer, P. (1990). *Animal Factories* (Rev. ed.; P. Singer, Ed.). Harmony Books.
- McAleney, J. (2016). The basics of B-roll. Retrieved May 30, 2018, from Vimeo website:
<https://vimeo.com/blog/post/the-basics-of-b-roll>
- McGuire, W. J. (1964). Some Contemporary Approaches. *Advances in Experimental Social Psychology*, 1, 191-229. [https://doi.org/10.1016/S0065-2601\(08\)60052-0](https://doi.org/10.1016/S0065-2601(08)60052-0)
- McKenna, M. (2017). *Big chicken: The incredible story of how antibiotics created modern agriculture and changed the way the world eats*. National Geographic Partners, LLC.
- Monteith, J. L. (1990). Can Sustainability Be Quantified? *Indian Journal of Dryland Agricultural Research Development*, 5(2), 1-15.
<https://core.ac.uk/download/pdf/12106434.pdf>
- Moyer, J. W. (2015, December 11). Man arrested after undercover video reveals alleged abuse at Perdue chicken supplier. *The Washington Post*.
<https://www.washingtonpost.com/news/morning-mix/wp/2015/12/11/man-arrested-after-undercover-video-reveals-alleged-abuse-at-perdue-chicken-supplier/>
- National Chicken Council. (n.d.). Industry Stats and Facts.
<https://www.nationalchickencouncil.org/industry/statistics/>
- Neumayer, E. (1999). *Weak versus strong sustainability: Exploring the limits of two opposing paradigms*. Edward Elgar Publishing.
- Nisbet, M. (2009). Communicating climate change: Why frames matter for public engagement. *Environment: Science and Policy for Sustainable Development*, 51(2), 12-23.
<https://doi.org/10.3200/ENVT.51.2.12-23>

- Nisbet, M. (2008). Framing Science: A New Paradigm in Public Engagement. (January 2009).
- Nisbet, M., & Scheufele, D. (2009). What's next for science communication? Promising directions and lingering distractions. *American Journal of Botany*, 96, 1767-1778. <https://doi.org/10.2307/27733515>
- Pelozo, J., Loock, M., Cerruti, J., & Muyot, M. (2012). Sustainability: How stakeholder perceptions differ from corporate reality. *California Management Review*, 55(1), 74-97. <http://journals.sagepub.com/doi/pdf/10.1525/cm.2012.55.1.74>
- Perception Survey and Sustainability Research Roadmap*. (2015). <http://usfarmersandranchers.org/portfolio-items/2015-research-roadmap/?portfolioID=94>
- Perdue Company Stewardship Report*. (2016). Retrieved from <https://www.perduefarms.com/media/1656/perdue-farms-2017-responsibility-report.pdf>
- Perdue Organic Chicken Farming*. (2017). Retrieved from https://www.youtube.com/watch?v=_qx0CyJ8dm0
- Pfau, M., Tusing, K. J., Koerner, A. F., Lee, W., Godbold, L. C., Penaloza, L. J., Yank, V. S. & Hong, Y. H. (1997). Enriching the inoculation construct the role of critical components in the process of resistance. *Human Communication Research*, 24(2), 187-215. <https://doi.org/10.1111/j.1468-2958.1997.tb00413.x>
- Pittman, M. (2014). Standups and voice-overs. <https://multimedia.journalism.berkeley.edu/tutorials/standups/>
- Powell, D. V, & Agnew, D. M. (2011). Assessing agricultural literacy elements of project food land and people in K-5 using the food and fiber systems literacy standards. *Journal of Agricultural Education*, 52(1), 155-170. <https://doi.org/10.5032/jae.2011.01155>
- Raising Healthy Chickens [Extended]*. (2017). <https://www.youtube.com/watch?v=j2x5tfP7Xig&feature=youtu.be>
- Rawlins, B. (2008). Give the emperor a mirror: Toward developing a stakeholder measurement of organizational transparency. *Journal of Public Relations Research*, 21(1), 71-99. <https://doi.org/10.1080/10627260802153421>
- Reber, B. H., & Berger, B. K. (2005). Framing analysis of activist rhetoric: How the Sierra Club succeeds or fails at creating salient messages. *Public Relations Review*, 31(2), 185-195. <https://doi.org/10.1016/J.PUBREV.2005.02.020>
- Rim, H., Swenson, R. Anderson, B. (2019). What happens when brands tell the truth? Exploring the effects of transparency signaling on corporate reputation for agribusiness. *Journal of Applied Communication Research*, 47(4), 439-459.

- Rose, G. (2007). *Visual methodologies: an introduction to the interpretation of visual materials* (2nd ed.). SAGE Publications.
- Rumble, J. N., & Irani, T. (2016). Opening the doors to agriculture: The effect of transparent communication on attitude. *Journal of Applied Communications*, 1004148(2), 1051–1834. <https://doi.org/10.4148/1051-0834.1030>
- Saukko, P. (2003). Doing Research in Cultural Studies. <https://doi.org/10.4135/9781849209021>
- Settle, Q., Rumble, J. N., Mccarty, K., & Ruth, T. K. (2017). Public knowledge and trust of agricultural and natural resources organization. *Journal of Applied Communications*, 101(2). <https://doi.org/10.4148/1051-0834.1007>
- Smith, E. (2012). Corporate image and public health: An analysis of the Philip Morris, Kraft, and Nestlé websites. *Journal of Health Communication*, 17(5), 582–600. <https://doi.org/10.1080/10810730.2011.635776>
- Snyder, B. (2015, September, 25). This chicken company just recalled half a million pounds of meat for this reason. *Fortune*. <https://fortune.com/2015/09/25/sanderson-farms-recall/>
- Specht, A. R., Mckim, B. R., & Rutherford, T. (2014). A little learning is dangerous: The influence of agricultural literacy and experience on young people’s perceptions of agricultural imagery. *Journal of Applied Communications*, 98(3). <https://doi.org/10.4148/1051-0834.1086>
- Specht, A. R., & Rutherford, T. (2013). Agriculture at eleven: Visual rhetoric and news media portrayals of agriculture. *Journal of Applied Communications*, 974148(4), 1051-1834. <https://doi.org/10.4148/1051-0834.1130>
- Steede, G. M., Meyers, C., Li, N., Irlbeck, E. G., & Gearhart, S. (2020). The influence of framing effects on public opinion of antibiotic use in livestock. *Journal of Applied Communications*, 104(2). DOI: 10.4148/1051-0834.2291
- Swenson, R. (2017). Parasocial engagement & starting a corporate family in Ford Times, 1908-1917. *Journal of Magazine and New Media Research*, 17(2), 1-18.
- Swenson, R., Gilkerson, N., & Anderson, B. (2016). Taking food fights online: Analysis of Chipotle’s attempt to cultivate conversation with The Scarecrow video. *Public Relations Review*, 42(4), 695–697. <https://doi.org/10.1016/j.pubrev.2016.04.001>
- Swenson, R. & Olsen, N. (2017). Food for thought: Audience engagement with sustainability messages in branded content. *Environmental Communication*, 0(0), 1-16. <https://doi.org/10.1080/17524032.2017.1279202>
- Swidler, A. (1986). Culture in action: Symbols and strategies. *American Sociological Review*, 51(2), 273. <https://doi.org/10.2307/2095521>

- Thompson, P. B. (1992). The varieties of sustainability. *Agriculture and Human Values*, 9(3), 11–19. <https://doi.org/10.1007/BF02217917>
- Thornton, G. (2016). Top 10 US chicken producers grow in new directions | WATTAgNet. Retrieved May 19, 2018, from WattAgNet website: <https://www.wattagnet.com/articles/25893-top---us-chicken-producers-grow-in-new-directions>
- Tonsor, G. T., Olynk, N., & Wolf, C. (2009). *Media Coverage of Animal Handling and Welfare: Influence on Meat Demand*. <https://bookstore.ksre.ksu.edu/pubs/MF2951.pdf>
- Ramos, S., MacLachlan, M. & Melton, A. (2017). Impacts of the 2014 - 2015 highly pathogenic avian influenza outbreak on the U.S. poultry sector. *United States Department of Agriculture: A report from the economic research service*. <https://www.ers.usda.gov/webdocs/outlooks/86282/ldpm-282-02.pdf?v=539>
- Ramos, S., MacLachlan, M. & Melton, A. (2017). Impacts of the 2014 - 2015 highly pathogenic avian influenza outbreak on the U.S. poultry sector. United States Department of Agriculture: A report from the economic research service. <https://www.ers.usda.gov/webdocs/outlooks/86282/ldpm-282-02.pdf?v=539>
- United States Department of Agriculture. (2002). *How Sustainable Agriculture Relates to Sustainable Development | National Institute of Food and Agriculture* (2nd Ed.). <https://nifa.usda.gov/how-sustainable-agriculture-relates-sustainable-development>
- U.S. Food and Drug Administration. (2013). Consumer updates - Phasing out certain antibiotic use in farm animals. <https://www.fda.gov/ForConsumers/ConsumerUpdates/ucm378100.htm>
- Van Gorp, B., & van der Goot, M. J. (2012). Sustainable food and agriculture: Stakeholder's frames. *Communication, Culture & Critique*, 5(2), 127–148. <https://doi.org/10.1111/j.1753-9137.2012.01135.x>
- Weatherell, C., Tregear, A., & Allinson, J. (2003). In search of the concerned consumer: UK public perceptions of food, farming and buying local. *Journal of Rural Studies*, 19(2), 233-244. [https://doi.org/10.1016/S0743-0167\(02\)00083-9](https://doi.org/10.1016/S0743-0167(02)00083-9)
- Zimbelman, R. G., Wilson, L. L., Bennett, M. B., & Curtis, S. E. (1995). Public image of animal agriculture in the United States. *Livestock Production Science*, 43(2), 153-159. [https://doi.org/10.1016/0301-6226\(95\)00040-R](https://doi.org/10.1016/0301-6226(95)00040-R)