Genetic Modification, Factory Farms, and ALF:
A Focus Group Study of the Netflix Original Film *Okja*

Only two percent of the U.S. population belongs to farming and ranching families (American Farm Bureau Foundation for Agriculture, 2017). As the average American citizen becomes further removed from agriculture, many rely on documentaries, movies and television shows for much of their agricultural information (Holt & Cartmell, 2013). Several recent successful documentaries and movies including *Food, Inc., King Corn,* and *OMG GMO* are reaching an audience who is otherwise removed from agriculture. Some of these films, such as *Food, Inc*., lead their audiences to change their perceptions of agriculture (Holt & Cartmell, 2013); however, these new perceptions are not always positive.

Okja is a fictional Netflix original film that was released in 2017 at the Cannes Film Festival. *Okja* features a "super pig" that is owned by the large, agricultural company Mirando Corporation. Okja is raised by a young girl, Mija, and her grandfather in the South Korean mountains. Mija's grandfather is paid by Mirando Corp to raise Okja as part of a worldwide contest. The rural farmer to produce the highest yielding pig in the world is awarded a cash prize. This highly-publicized contest promotes Mirando Corp's genetically-modified pigs as being non-genetically modified and a solution to the world population's growing appetite. Okja wins the contest and is subsequently reclaimed by Mirando Corp to be part of a larger public relations event in New York City. Mija leaves her home to follow Okja through Seoul, South Korea and overseas to save "her" pig. Unbeknownst to Mija, Okja's final destination is the Mirando Corp slaughterhouse. Through a series of adventures and violent scenes, the film climaxes when Mija and the Animal Liberation Front (ALF) narrowly save Okja and a smuggled piglet from the slaughter process at a massive factory-like facility. Netflix (2017) gives its own description for the movie: "A gentle giant and the girl who raised her are caught in the crossfire between animal activism, corporate greed and scientific ethics" (para. 1). The movie received mostly positive critical reviews (Lapin, 2017; Sims, 2017). *Okja* is currently only available on Netflix.

Okja led to several reactions online from viewers who claimed to adopt more anti-agricultural views (i.e., becoming vegan, claiming the meat industry is immoral) after watching the movie (Spyrou, 2017). A review by The Reel Rejects (2017) shows the hosts lightheartedly chuckling at *Okja*'s trailer and then suddenly switching to shock/horror when Okja's fate is revealed. A quick search on Twitter for #Okja found several anti-agricultural tweets including (Young, 2017): "So #Okja was a powerful and entertaining film. Definitely makes you think about the meat industry & it's (sic) dubious methods. #netflix." Another Tweet (Vale, 2017) featured a gif of someone vigorously eating salad with the text: "me after watch (sic) #okja."

Most Americans receive information on agricultural science from the media (Verbeke, 2005), which is not always completely accurate. While entertainment media may not create negative perceptions of agriculture, they may reinforce existing negative views and stereotypes (Lundy, Ruth, & Park, 2007). Narratives, such as fictional movies, regularly include scientific themes or technologies.

> One aspect of narratives that has garnered the attention of science communicators, and also aroused their concern, is their ability to influence audiences. Narratives are powerful. They can convey information, but they can also purvey propaganda. They can teach, or they can misguide. They can make a truth more vivid, but they can also lend verisimilitude to the fabrication (Kaplan & Dahlstrom, 2017, p. 313).

The study compared how undergraduate college students enrolled in a college of agriculture (COA) major versus undergraduate college students enrolled in a non-college of agriculture (NCOA) major respond to the agricultural industry after watching *Okja*.

Review of Literature

Agriculture has changed significantly due to innovations over the past century (Enns, Martin, & Spielmaker, 2016). Several of these technologies, such as CRISPR, genetic modification, and cloning, have been met with fear or skepticism by the public (Marks, Kalaitzandonakes, Wilkins, & Zakharova, 2007; Heiman & Zilberman, 2011). In a report published by the Pew Research Center in December 2016, 44% of Americans reported buying food labeled GMO-free; however, the United States government did not have any national standards for labeling food that contained genetically modified organisms at that time (Funk & Kennedy, 2016). Young adults seem to lack an understanding of agricultural technology in particular (Hefferson & Anderson, 2016; Noussair, Ruffieux, & Robin, 2004; Lundy, Ruth, & Park, 2007). For example, approximately six-in-ten college-aged (18 – 29-year-olds) adults believe that organic produce is healthier than conventionally grown produce (Hefferon & Anderson, 2016). These reports seem to indicate that even though consumers may not understand GMO technology, they are reluctant to purchase or consume products containing GMOs (Noussair, Ruffieux, & Robin, 2004; Lundy, Ruth, & Park, 2007).

Affect Heuristics

Many times, these technologies, specifically genetic modification, are not fully understood but are met with affect heuristics nevertheless (Lull & Scheufele, 2017). Affect heuristics are the shortcuts the human brain uses to connect different points of knowledge together to use in the decision-making process (Volz & Hertwig, 2016). Affect heuristics are particularly influential with regard to public perception of technologies that are "unnatural" (Lull & Scheufele, 2017). "If depictions of GM food as grossly unnatural are quite memorable, it follows that people might harbor negative affect toward them that in turn biases their risk perceptions" (Lull & Scheufele, 2017, p. 410).

The Naturalistic Fallacy

The naturalistic fallacy can also affect the public's perception of agricultural technologies. The naturalistic fallacy is the "belief that what happens in nature is good" (Pinker, 2002, p. 150). Because GMOs are not found in nature, they are "bad" according to the naturalistic fallacy (Lull & Scheufele, 2017). However, "naturalness" is a relative term (Kaiser, 2005). For example, many non-GM crops could be considered "unnatural" because their genetics are vastly different from their ancestors'.

Sources of Agricultural Information

Young adults are most likely getting scientific agricultural information from organizations other than those responsible for the creation of said science and technologies. Kahan (2012) found that the public is more likely to get scientific information from organizations they trust. Many young adults seem to have a general distrust of business corporations such as large agricultural companies; forty-five percent of adults ages 18 to 29 distrust business corporations (Maniam, 2017). In a study that tested the public's trust of agricultural and natural resource organizations,

large agricultural corporations, like Syngenta and Monsanto, were rated as neutrally trustworthy, but had lower levels of trust compared to non-profit and government organizations (Settle et al., 2017). It is likely that young adults are not getting agricultural information from the companies that incorporate modern agricultural science technologies, such as GMOs, into their products. It is much more likely that young adults are learning about agricultural issues through the media (Verbeke, 2005).

Agriculture in Film

Previous studies have recorded how audiences react to agricultural documentaries and films (Holt & Cartmell, 2013; Lundy et al., 2007; Meyers et al., 2011). A study by Holt and Cartmell (2013) found the film *Food, Inc.* impacted some viewers' opinions about the agricultural industry. In the study, students, faculty, staff, and the community were invited to view the documentary film *Food, Inc.* and participate in a group discussion with a panel of experts (Holt & Cartmell, 2013). The participants were given a survey that measured their perceptions about the U.S. agricultural industry before and after viewing the film (Holt & Cartmell, 2013).

The researchers found that participants had the greatest change of perception regarding organic food production, farmers' concerns with animal health and welfare, and confinement practices after watching *Food, Inc.* (Holt & Cartmell, 2013). The audience believed organic food was safer than non-organic food, farmers were not as concerned with animal welfare as they previously thought, and confinement practices of livestock were viewed more negatively after viewing the film (Holt & Cartmell, 2013). The study also found, "attendees were more likely to purchase products from companies which held similar values to their own," regarding agricultural issues (Holt & Cartmell, 2013, p. 53). Holt and Cartmell (2013) called for more research on how films with agricultural themes affect the public's perceptions of the industry. They also emphasized that *Food, Inc.* and other agricultural films can influence public policy as well (Holt & Cartmell, 2013). It is imperative that the agricultural industry understands possible approaches to counterbalance the negative impacts entertainment media can have on the agricultural industry (Meyers, Irlbeck, & Fletcher, 2011).

Two groups of agricultural students were shown the documentaries *Food, Inc.* and *King Corn* at a southwest university in the study conducted by Meyers et al. (2011). "The participants noted that the documentaries were "critical," "biased," and, "lacking scientific facts when presenting the different agricultural practices" (Meyers et al., 2011, p. 92).

Lundy et al. (2007) found that entertainment media can potentially have short and long-term influences on young adult viewers. Participants of the study believed, "the degree of influence differs depending on the amount of experience individuals have with the respective issue" (Lundy et al., 2007, p. 75). When asked whether participants attribute their perceptions of agriculture to the media, many noted that they assumed what they were shown in the media was similar to what a real chicken or dairy operation would look like (Lundy et al., 2007).

Those with agricultural knowledge view agricultural entertainment media with different perceptions and views than those without an agricultural background. Misconceptions of agriculture found in entertainment media may be met with disappointment, or even anger, from those with an agricultural background (Meyers et al., 2011), while those same misconceptions may be regarded as truth by those outside of agriculture (Lundy et al., 2007).

Theoretical Framework

Semiotics

Semiotics is the study of signs or things that can represent something other than themselves (Barthes, 1967). Semiotics can be used to analyze film (Metz, 1974). Metz (1974) describes some elements of semiotics in a film as lighting, camera angle, photographic effects, etc. Images can also be interpreted differently by viewers based on their own cultural experiences and backgrounds (Messaris & Moariarty, 2005).

The creators of *Okja* had specific ideas of how Okja-the-super-pig should be created to evoke a feeling with the audience. Director and writer of the film, Bong Joon Ho (as cited in Ellwood, 2017), described his vision of Okja in a 2017 interview: "What I was going for was that the animal had to be big in size but the feeling and the look that it gave off had to be innocent and vulnerable. A feeling that it wouldn't necessarily harm others, but it would be harmed by others" (para. 5). Even Okja's eyes were actively chosen with a purpose in mind. "Okja's eyes, how clear they are, the innocence, the kindness within that's embedded in her eyes. Many people have a puppy. It was the most efficient, easy and simple way for the audience to really feel for Okja," Joon Ho (as cited in Ellwood, 2017, para. 8) said.

Past studies regarding agriculture and semiotics in film/television have focused on how rural life is portrayed as ideal and simple (Specht & Rutherford, 2015; Specht & Beam, 2015). This study will focus on how agricultural science and businesses are portrayed in a film, particularly in *Okja*.

Semiotics has been used to analyze how agricultural images are interpreted by non-agriculturalists in other studies. A study at the 2009 Ohio State Fair used semiotics to understand how consumers view traditional versus conventional livestock housing methods (Rumble & Buck, 2013). Attendees of the state fair were shown two groups of photos, one that represented traditional livestock housing methods and one that represented conventional livestock housing methods. They were then asked to complete a questionnaire after viewing the photos.

A majority of the participants (65.5%) chose conventional housing as the method they believed was used to raise the majority of livestock in Ohio (Rumble & Buck, 2013). However, when asked which method was more humane, a majority of participants (64.1%) chose traditional housing (Rumble & Buck, 2013). Participants said the traditional housing methods were more humane because they were, "less crowded/not caged, natural setting, room to roam/free, and better physical and mental health" (Rumble & Buck, 2013, p. 63). This study highlighted the lack of knowledge many consumers have of agriculture (Rumble & Buck, 2013).

Rhoades and Irani (2008) used semiotics to analyze three advertisements from the Tractor Supply Company's 2004-2005 print advertisement campaign. The researchers found the advertisements featured in rural magazines can influence the "dominant ideology of what rural life looks like" (Rhoades & Irani, 2008, p. 11). It was also determined that negative stereotypes about farmers are still being used in the media (Rhoades & Irani, 2008).

Purpose and Research Objectives

The purpose of this study was to understand how college students responded to the Netflix original film *Okja.*

RO1: Describe the participants' insights of the film.

RO2: Describe any opinions or attitudes the film may have on participants' future food consumption.

Methods

This study used a qualitative case study method. The researchers led two focus groups following a showing of *Okja*. The first was comprised of only students from Texas Tech University's College of Agricultural Sciences and Natural Resources while the other included students from other colleges and disciplines within the university. The focus groups were conducted separately in an attempt to control for agricultural knowledge and experience of participants. Data were collected via focus groups at the completion of viewing the film.

Each focus group included four to six participants recruited through an online recruitment system at Texas Tech University. Questions about participants' agricultural experiences, interpretations, and understanding of the film, opinions of the film, and the film's messages were asked of participants by the moderator. Both focus groups were conducted at the same time of day, and in the same room, one day apart. Each group was asked the same questions by the same moderator. The questions were based on instruments used in similar studies such as Frick (1990), Pense & Leising (2004), and Holt and Cartmell (2013). Each focus group lasted between 35-45 minutes and immediately followed the viewing of the film. Example questions included:

"What do you think was the film's central message?"

"Do you think the film accurately portrayed food animal production?"

The focus groups were recorded using audio and video equipment. One researcher took detailed notes that included statements and reactions of the participants throughout the focus groups. The recordings were sent to a transcription service to transcribe the conversation. The transcribed interviews allowed the researchers to use direct quotes from the participants, with participant names not recorded. Two researchers who observed the focus group and a researcher who did not attend the focus group coded the participants' answers. The researchers coded the participants' answers according to emergent themes using the constant-comparative method (Glaser, 1978, 1992; Glaser & Strauss, 1967; Strauss, 1987). As described by Onwuegbuzie, Leech, and Collins (2012), the quotes from the transcribed focus groups were, "coded and chunked, and then the chunked codes could be organized into themes" (p. 15). In order to achieve this, quotes were coded based on similarities across questions. These codes were then chunked together with codes of similar sentiment and themes emerged. Emergent themes relevant to the research objectives are presented in the findings section.

Trustworthiness was ensured during the data analysis process by the researchers creating an audit trail detailing the theme formation that thus increased the confirmability and dependability of the results (MacQueen, McLellan, Kay, & Milstein, 1998). The researchers additionally conducted debriefing sessions during the data analysis session to reduce bias (Guba, 1981). Transferability as defined by Lincoln and Guba (1985) was established through the use of detailed quotations in the findings. Finally, following the identification of primary themes, the researchers established the final themes with regard to trustworthiness and accuracy (Erlandson, Harris, Skipper, & Allen, 1993). Findings from this study are limited to the questions asked in the focus groups and the manner in which the discussions were interpreted. These are common limitations in qualitative research (Pauly, 1991).

Findings

In order to fulfill the purpose, four students enrolled in the college of agriculture (COA), all of which were female and six students in colleges outside of agriculture (NCOA) of which two were female and four were male were interviewed to understand their perceptions of the Netflix original film *Okja*. Student gender identities, college affiliation, and pseudonyms are included in Table 1.

Table 1

Participant Gender Identity, College Affiliation, and Pseudonyms

Pseudonym	College Affiliation	Gender Identity
Ally	COA	Female
April	COA	Female
Audrey	COA	Female
Alice	COA	Female
Kari	NCOA	Female
Kacey	NCOA	Female
Karson	NCOA	Male
Kraig	NCOA	Male
Karl	NCOA	Male
Kale	NCOA	Male

RO1: Describe the Participants' Insights of the Film.

Research objective one sought to understand the insights participants gauged from the film. This research objective also sought to compare differences between COA and NCOA students. Themes that emerged when addressing RO1 were that the film over dramatized food animals and the use of biotechnology in food animal production, the film was more persuasive than entertaining, Mirando Corp., as portrayed by the film, represented Monsanto, the film misrepresented food production, scientists are not transparent, and money is more important than morals in large corporations.

Over dramatization of food animals and biotechnology.

COA students primarily found the film overdramatized food animals and how biotechnology is used. However, Karson, an NCOA student, indicated he felt the film dramatized what goes on in food animal production. "I think there are some things that are dramatized." Kacey also felt the film overdramatized food animals. "I think they definitely dramatized it a little," said Kacey. "I think when they're outside [the slaughterhouse] it really reminded me of a holocaust [film]."

COA students found the film to overdramatized the "super pig" Okja and give her characteristics of animals that humans hold more closely and dearly. Ally, a COA student said, "[Okja] was more puppy-like. I felt like it was my puppy and I don't want to see my puppy end like that. If it was my puppy going through those things, I would not be happy." April felt that the

film overdramatized the intelligence of Okja, “They made [Okja] insanely smart, too. At the end, I felt like Okja was whispering something in [Mija’s] ear.” April also felt that Okja was humanized in order to pluck at the heartstrings of the viewer, “[Okja] was so humanized, like so humanized even with the whole rape [scene].” Ally agreed, “And when [Okja] saved the little girl and swung her around to save her life. A pig can’t do that.”

While April is a COA student, she felt that her friends outside of the COA would view the film as over-dramatizing as well. "A lot of my friends eat non-GMO and they are obsessed with it but even I think they would watch this movie and think it was just so over-the-top." Audrey, a COA student, felt the practices in the slaughterhouse were over-dramatized as well, "I think they accurately portrayed some of how processing happens like they do use stun guns and there are feedlots. I just think they are inaccurate in the way they portrayed it; [they] overdramatized it I guess."

Persuasive rather than entertaining.

Karson, an NCOA student felt that the film was persuasive but not persuasive enough to cause change. “I think [the film] is persuasive but it’s not persuasive enough to actually have an effect.” Karl, also an NCOA student, agreed. “I think the movie is beyond…I think it’s committing more of an informative message than it is being just an entertaining film. If I wanted to teach something to somebody regarding the subject matter I would rather have them just watch an actual documentary, not just something that’s made up.” Kacey, an NCOA student, felt the film was biased in the information shared. “When you watch that and it’s not a documentary you can’t help but think of the bias in it.”

Mirando Corp as Monsanto.

While NCOA students saw the film as doing a better job at trying to persuade the audience rather than just entertain, they did not identify Mirando Corp as representative of any actual biotechnology company. However, the COA students very quickly felt that the film was attempting to portray the biotechnology company in the film, Mirando Corp, as the actual biotechnology company Monsanto. April very bluntly stated, “They didn’t even try to hide it. It was Monsanto.” Ally thought the film was actually using the name Monsanto. “I was like, is that the name of the company? And then I was like no, it’s Monsanto. For like a millisecond I thought they were saying Monsanto.”

Misrepresentation of food production

Both COA and NCOA students felt the film misrepresented how food is produced in the United States. Audrey, a COA student, felt the film was very inaccurate, “I thought it was inaccurate in a lot of ways…they are trying to relate it to real situations but inaccurately.” Audrey went on to say, “I think it inaccurately portrays that all agriculture is produced in a large corporation. I think it’s 88 percent of all farms are family owned. In everything, I think that was inaccurately portrayed.” Based on the opening statement of the film, April said she had hope for the film at first but that quickly changed. “I think her opening statement in the movie is pretty accurate about how the world needs but doesn’t have enough agriculture to feed [the population]. That gave me a little hope for the movie, but it just went downhill.” Finally, Alice, a COA student, felt that the production of Okja was flawed from the beginning. “It was incredibly unrealistic. It’s a lot easier to get attached to one animal than it is to get attached to thousands or a whole herd.”

NCOA students additionally felt that the film misrepresented food animal production. Karson had previously seen an actual video of the animal harvesting process and felt Okja overdramatized how captive bolt pistols are used to stun animals. “It doesn’t last that long. It’s quick and painless. Just boom it’s done, gone.” Kraig felt the film tried to portray food animal production as evil. “I believe they portrayed it way too evil. When you go to a normal slaughter [house], it doesn’t seem that way in reality.” Kraig went on to say, “I feel like the movie was a pretty inaccurate depiction of how exactly that process goes about.”

Scientists are not transparent.

Both COA and NCOA participants felt that the film demonstrated a lack of transparency among scientists. Both groups were asked if they believed that biotechnology companies are currently working to genetically modify livestock. Both groups believed that they were and that it is being hidden from the public. April said, “I know they are doing [genetic modification] in cattle and they have been doing it for quite some time.” Audrey discussed research she had read regarding genetic modification in feral hogs. “I know a guy is genetically modifying feral hog sperm so they don’t reproduce as much.” Karl shared a sentiment similar to the COA participants. “100% yes they are doing [genetic modification]. Even if we aren’t seeing it in the stores, they’re getting ready for when they’re allowed to do it, so they can make bigger cows and stuff like that.” Kraig felt as if the government is playing a role in keeping scientific information away from the public, “I think the government keeps a lot of things from us and so whether or not it’s happening, which it probably is, we definitely have the technology to be doing [genetic modification]. I think this movie kind of foreshadows what could happen in the future, genetically modifying livestock.”

Ally felt that researchers do not discuss their research with the public enough, “I feel like a lot of research isn’t always talked about.” Audrey felt that agricultural scientists are hiding research from the public out of fear of the public’s reaction. “A lot of times the public thinks that agriculture is keeping so much from them and hiding everything but if they were to tell [the public] they freak out.”

Money over morals.

The final theme that emerged in RO1 was that the film depicted biotechnology companies as being more focused on making money instead of adhering to morals. Very simply, April felt the theme of the film was, "Big corporations are bad." COA participants did not address the money over morals theme anymore throughout the interview, however, the NCOA participants discussed it considerably more. Karl stated, "In this type of industry, the billion-dollar industry, there's a lot of capital behind it, there's a lot of money to be made. It's painting the picture of how society is so dependent on making money and the evils of a capitalistic society." Karson clearly felt that Mirando Corp was out to make larger animals to make a larger product.

> They want to make the cows, the pigs, the whatever else, as big as they can so you can get the most meat out of it and it’s not really looking at it from a moralistic standpoint but they’re looking at it more like how much bang I get for my buck.

Kale summarized a quote from the film as an example of money over morals, “The Mirando lady said, ‘If you sell for cheap, they’re going to buy it.’”

RO2: Describe Any Opinions or Attitudes the Film May Have on Participants' Future Food Consumption.

Only one theme emerged from RO2 that all participants, regardless of their major, would continue to purchase and consume food animal products. Audrey felt that the film will not impact her food consumption decisions, but that it might impact others.

> For myself, it's not going to change the way I think about food, but I think for a lot of people that's the only truth they know; they don't really know much about the ag industry and they don't look much further into it. I think that would definitely affect the way they [buy and eat].

Ally reflected on how her participation in FFA shaped her present views of food animal production. "If I was a freshman in high school [the film] would have swayed me all the way to being vegetarian. I was a suburbs kid, but when I joined FFA and got a pig to show I learned that you can kill it and my family can eat it." Finally, Alice put it very bluntly, "I love bacon so no, [it won't change my eating habits]."

The NCOA participants shared similar viewpoints. Karl said, "I mean, I like meat, and all different products, whether or not it's been genetically modified or not. I mean, food is food in the end to me." Kraig felt that the film cannot change the whole world's eating habits, so it is not going to change his. "Millions and millions of people all over the world eat meat." Kacey felt that if the meat is available then he is going to eat it. "You go into [the grocery store] and it's like, oh here's a steak. If you don't buy it, that's not saving an animal's life. Somebody else will buy it and eat it if you don't." Finally, bacon emerged again as a driving force for the continued consumption of meat despite the main animal character, Okja, being a pig. "Dude, bacon's good," said Kacey. "Bacon is delicious. I put it on everything," said Karl.

Discussion, Conclusions, and Recommendations

The purpose of this study was to understand how college students responded to the Netflix original film *Okja*. With the American citizen becoming further removed from agriculture, agricultural information is often times communicated to the public through documentaries, movies, and television shows (Holt & Cartmell, 2013). Successful films such as *Food, Inc*., have led their audiences to change their perceptions of agriculture (Holt & Cartmell, 2013). In many cases, these films portray agriculture and food production in a negative light, thus negatively impacting public opinion of agriculture. The background and cultural experiences of the viewers of these films can greatly impact how they view the film, what they take away from the film, and how they respond to any call to action (Messaris & Moariarty, 2005). The viewers of this film included students who were majoring in a field within the College of Agricultural Sciences and Natural Resources at Texas Tech University as well as students who were majoring in a field outside of agriculture. The backgrounds and cultural experiences of these students, therefore, were different and could impact how they viewed the film. Previous knowledge, affect heuristics, and semiotics played a role in how the students processed and understood the film in that the COA students quickly decided that the fictional corporation portrayed by the film was set up to represent Monsanto. The NCOA students, however never linked Mirando Corp. with Monsanto. Thus, the previous experiences of the COA students impacted their perceptions of the film differently than the NCOA students.

A further indicator that previous knowledge and experiences impacted how viewers perceived the film was the COA students view that Okja was portrayed more like a pet than as a food animal.

The COA students indicated that the personality, mannerisms, and intelligence of Okja were not those of a pig but rather, more closely related to those of a dog. Two of the COA students had previous experiences with showing pigs and described how Okja's behavior was more like a puppy than a pig. The creators of the film purposefully chose to make Okja look and act like a dog to evoke this emotion (Ellwood, 2017). This was recognized by the COA students, but less so by the NCOA students. Individuals watching the film with no prior experience with pigs or other food animals might be led to believe that Okja represents pigs in food production today. Thus, the film tries to make a connection between pigs used for food production with the family pet. This thus pulls at the heartstrings of the viewer as indicated in the over dramatization of food animals and biotechnology theme and could impact the viewer's future support of food animal production.

The vast majority of previous research dealing with public opinion of film related to agricultural production has been with documentaries. *Okja*, however, is not a documentary, rather a film meant for entertainment with a background message as identified by members of both focus groups. Previous research with agricultural documentaries had found that audience viewpoints changed after viewing the films (Holt & Cartmell, 2013; Lundy et al., 2007; Meyers et al., 2011). However, the findings from this study indicate that the participant's views and understanding of food animal production were not changed after viewing the film. While the participants indicated that they recognized the emotions the film evoked, they indicated they were not swayed in their viewpoints and recognized the bias in the film. This finding indicates that entertainment films may not be the most effective method for those working to change public opinion.

The second research objective sought to describe how the film impacted participant's future food purchasing decisions. Regardless of previous experiences, both COA and NCOA students indicated that their food purchasing decisions would not be affected by viewing the film. This further supports the finding that entertainment films may not be an effective method for changing public opinion of agriculture and food production.

Findings from this study differed from social media discussions regarding the film. This could be due to the intrinsic motivation to post on social media individuals have if they have strong feelings regarding a topic. Findings from this study further suggest that agricultural communicators may best be advised to bypass the use of entertainment in communicating agricultural production and controversial agricultural issues to the public. The increased cost associated with developing entertainment films and shorts may not be worth the money for smaller companies or organizations if public opinion is not swayed by these kinds of activities. Transparency in agriculture through real-life and real-time activities in a documentary style may serve a greater role in improving public opinion of food and agricultural production practices and industries.

This study was limited in scope in that it was comprised of students from one state at one university. Further, the study is limited in that it was qualitative in nature and had a total sample size of 10, therefore the findings are not generalizable to the general population. However, the findings from this study serve as an initial indicator of the role entertainment films play in their attempt to sway public opinion of food and agricultural production practices and industries.

Future research in this area should include a quantitative survey of viewers of the film. A pre-test/post-test method could be of value in determining how viewing the film impacted the viewers perceived knowledge, support for agricultural production, and future food purchasing decisions. Total views of the film on Netflix could additionally be of importance in determining what percentage of Netflix subscribers actually watched the film as this could aid in better understanding the film's reach.

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