FAIRGOERS' ATTITUDES TOWARD YOUTH LIVESTOCK EXHIBITS AT THE CALIFORNIA STATE FAIR

By

KRISTA L. ANDERSON

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FAIRGOERS' ATTITUDES TOWARD YOUTH

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CALIFORNIA STATE FAIR

Thesis Approved:

Dr. Dwayne Cartmell

Thesis Adviser

Dr. Traci L. Naile

Dr. Robert Terry, Jr.

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Abstract: Public and policy maker understanding of agriculture and natural resources is a national research priority set forth by the American Association of Agricultural Education. Due to a geographic distancing from agriculture, consumers' ability to obtain firsthand knowledge of agriculture may be limited to a handful of experiences such as local, county, and state fairs. Therefore, agriculturalists' opportunities to communicate with the public about agriculture production may be limited to these experiences. Youth who exhibit at these shows fill a unique gap in the agricultural education system. While a large body of research exists about agricultural literacy among youth and adult groups, few studies exist about consumer attitudes toward youth livestock fair exhibits. The study employed a survey research method using semantic differential scales in a then/now approach. Fairgoers, who had been through the youth livestock exhibits at the California State Fair, were asked about their attitudes toward the exhibits. Participants' recorded their attitudes toward the exhibits, both then and now, after viewing the exhibits. Overall, findings indicate then attitudes about the youth exhibits were positive, and after viewing the exhibits, now attitudes were even more positive. Viewing the livestock exhibits positively impacted participants' attitudes about the youth livestock exhibits.

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CHAPTER I

INTRODUCTION

Background and Setting

Agricultural fairs, or exhibitions, began as a means of trade for merchants from different countries (International Association of Fairs and Exhibitions, n.d.). Although it is not known for certain, according to the International Association of Fairs and Exhibitions, fairs existed as early as 500 BC (International Association of Fairs and Exhibitions, n.d.). The root meaning of the word fair is the Latin word "feria," which suggests that in addition to trade, fairs served as a place of worship (International Association of Fairs and Exhibitions, n.d.). The partnership between fairs and churches was logical, considering worship as well as trade typically was concentrated in large cities. According to the International Association of Fairs and Exhibitions, churches actually sponsored fairs during the early Christian era (n.d.).

In 1765, the first American fair was presented in Windsor, Nova Scotia (International Association of Fairs and Exhibitions, n.d.). In September 1811, Elkanah Watson earned the title, *Father of U.S. Agricultural Fairs* by organizing the Berkshire Agricultural Society and creating an event known as the Cattle Show, which was held in

Pittsfield, Massachusetts (International Association of Fairs and Exhibitions, n.d.). This event not only served as an exhibition of animals, but also was a contest for oxen, cattle, sheep, and swine (International Association of Fairs and Exhibitions, n.d.). By the late 1850s, fairs were so popular that during fair week, a town's population could double or triple (Lauzon, 2010). As fairs grew and developed, horse racing, betting stalls, and freak shows were incorporated into the event previously dominated by agriculture (Lauzon, 2010). Although the addition of the entertainment components created conflict between those trying to preserve the traditional agrarian goals of the fair and those focused on economic potential, some of these sources of entertainment, such as horse racing, are still present today (Lauzon, 2010). Agricultural societies, the driving force behind fairs, concluded that fairs could be places of both education and entertainment (Lauzon, 2010).

Efforts to preserve the educational components of fairs are being made to enhance fairgoers' agricultural knowledge. Recently, fairs and shows have been used as a means to re-imagine British agriculture by improving consumers' agricultural knowledge and perceptions (Holloway, 2004). "Shows are used to stage encounters and exchanges between farming and the non-farming public, which are increasingly rare in societies where many experience a distancing between themselves and the way their food is produced" (Holloway, 2004, p. 321). Holloway (2004) mentioned that this shift might align fairs in the United Kingdom with those in North America. Being aware of how the presence of livestock at shows helps to impact the public, both breed associations and youth exhibitors were asked to become directly involved in promoting agriculture at shows. Similar educational efforts are evident in North American shows.

> Today, over 3,200 fairs are held in North America each year. They provide industrial exhibits, demonstrations and competitions aimed at the advancement of livestock, horticulture and agriculture with special emphasis placed on educational activities such as 4-H, FFA and similar youth development programs. (International Association of Fairs and Exhibitions, n.d., para. 12)

While exhibiting at fairs and shows is a large component of the 4-H program, it originated as a means to bring research from universities to rural areas. In the late 1800s, researchers at public universities realized that adults were not adopting new farming techniques being developed, while youth tended to adopt these new methods quickly (4-H History, n.d.). Thereby, youth became a method of information and technology transfer from the university to the community. "The seed of the 4-H idea of practical and 'hands-on' learning came from the desire to make public school education more connected to country life" (4-H History, n.d., para. 3). From this idea, community clubs such as A.B. Graham's 'The Tomato Club' and the 'Corn Growing Club' were formed starting in 1902, which were the foundation of today's 4-H program (4-H History, n.d.).

Nationalization of the 4-H organization did not occur until 1914 when the Smith-Lever Act was passed forming the Cooperative Extension Service (4-H History, n.d.). Now, 4-H is the largest youth development organization and serves rural, suburban, and urban communities (4-H History, n.d.). Clubs, camps, and programs provide 4-H members with a "variety of science, engineering, technology and applied math educational opportunities – from agricultural and animal sciences to rocketry, robotics, environmental protection and computer science" (4-H History, n.d., para. 10). One of the leadership opportunities available in the program, in addition to public speaking and community service, is the exhibition of livestock at county and state fairs (4-H History,

n.d.). Members have the opportunity to exhibit large and small animals, from cattle and swine to turkeys and rabbits.

Another nationally recognized agricultural youth development organization is the National FFA. Following the passage of the Smith-Hughes Vocational Education Act of 1917, the Future Farmers of America was formed in 1928 (National FFA Organization, n.d.). Originally just for men, the organization sought to develop "agricultural leadership, character, thrift, scholarship, cooperation, citizenship and patriotism" (National FFA Organization, n.d., para 4). Today, the National FFA Organization includes more than 7,490 FFA chapters and more than 557,000 members (National FFA Organization, n.d.).

The FFA organization serves as one component of an overall agricultural education program. Three components make up an agricultural education program: classroom experience, membership in the FFA, and hands-on work experience through a supervised agricultural experience (SAE) (National FFA Organization, n.d.). The SAE provides students the opportunity to, among other options, exhibit livestock, be involved in agricultural mechanics, gain work experience, or volunteer (National FFA Organization, n.d.).

According to the Environmental Protection Agency (EPA) (2009), less than 1% of the population claims farming as their occupation and about 2% of the population lives on a farm. With these numbers dwindling, the majority of the population is becoming farther removed from production agriculture (EPA, 2009; Wachenheim and Rathge, 2002). As a result, "most Americans, whether young or old, have limited knowledge about agriculture and food production" (Frick, Machtmes, & Birkenholz, 1995, p. 44). However, many would agree that a basic understanding of agriculture and problems

facing the industry would prove beneficial for both consumers and producers (Frick, Machtmes, Gardner, & Birkenholz, 1995). An increased understanding could lead to better management of food supplies and resources (Frick, Machtmes, & Birkenholz, 1995).

This limited interaction with farmers results in a great deal of ambiguity for consumers. Because people base their perceptions on past experience and knowledge, if a person has limited knowledge and experience with agriculture, he or she cannot accurately perceive the industry (Duncan & Broyles, 2006). Consumers, therefore, rely on media and other opinions to form their own perceptions and attitudes about agriculture. With increased media attention on the sensational aspects of the industry, consumers easily form opinions based on misrepresentations of the truth (Tolman, 2009). "However, misperceptions about industries whose impacts are not widely understood by the general public can be corrected" (Wachenheim & Rathge, 2000, p.1). Wachenheim and Rathge (2000) noted that not only do perceptions need recognized, but they also need to be understood.

Consumers who are removed from agriculture can be influenced by experiences and interactions with agriculturalists, such as attending county and state fairs (Godfrey & Wood, 2003). Although studies have been conducted to describe agricultural knowledge and perceptions, little research has been conducted at fairs, which for some people is the only interaction they have with production agriculture. After all, perceptions of agriculture influence the agricultural industry via consumers' buying and voting power (Wachenheim & Rathge, 2002).

Every year at the California State Fair, members of 4-H and FFA organizations enter exhibits to demonstrate competencies within their selected projects (California State Fair, n.d.). The fair, which runs for two weeks in July, is held in the State's capitol city of Sacramento (California State Fair, n.d.). It first opened at its current location in 1968 and in 2011 had more than 521,000 attendees (California State Fair, n.d.). The fair features carnival rides and games, horse racing, a water park, exhibit buildings filled with vendors, and competitive livestock shows and exhibits.

During the fair, members of the public can watch 4-H and FFA members compete for championship honors both in and out of the show ring. Recognizing the need for the youth to understand that showing livestock is more than ribbons and honors, and to educate the public about these projects, the fair hosts an educational display competition (California State Fair, n.d.). These displays serve as outreach for the public to gain a deeper understanding about the youth and their efforts in addition to agriculture as a whole (California State Fair, n.d.). Additionally, youth are often available for conversations regarding their roles in the agricultural industry. This intrapersonal communication is a factor in the public opinion process (Hoffman, Glynn, Huge, Sietman, & Thomson, 2007). Finally, breed and specie organizations typically attend to interact with the public, who may only experience agriculture through this lens (Holloway, 2004).

Statement of Problem

As society becomes farther removed from agriculture, their interaction with production agriculture decreases (Wachenheim & Rathge, 2000). Consequently, agricultural literacy is diminished and perceptions of the industry are formed based on

minimal hands-on experience with, and possible misrepresentations of, the industry (Turnbull, 2002).

Because a large portion of the population lives in urban and suburban areas, people's ability to obtain firsthand knowledge of agriculture may be limited to annual local, county, or state fairs (Turnbull, 2002). As a result, agriculturalists' opportunities to communicate with the public about agriculture may be limited to a handful of these experiences. More importantly, little research exists that indicates what, if any, influence attending fairs has on fairgoers' attitudes toward youth livestock fair exhibits.

Significance of Study

In 2009, the American Association of Agricultural Education began creating a research agenda designed to address societal needs through research collaboration (Doerfert, 2011). After a three-step process, six research priorities and key outcomes desired were developed. The first of which was "Public and Policy Maker Understanding of Agriculture and Natural Resources" for which the key outcome is that "consumers and policy makers will have an accurate understanding of and informed opinion about agriculture and natural resources" (Doerfert, 2011, p. 11).

Because people are becoming farther removed from firsthand information about agriculture, consumers rely on information from the media, their social circle, and agriculturally related experiences to base their opinions (Doerfert, 2011; Wachenheim & Rathge, 2000). One experience that can impact consumers' opinions is visiting a fair and viewing youth exhibits (Turnbull, 2002). Youth involved in 4-H and FFA have a unique opportunity to influence fairgoers by serving as liaisons for agriculture through their livestock exhibits (Turnbull, 2002). The agriculture industry needs to be cognizant of

fairgoers' attitudes toward agriculture and what, if any influence, livestock fair exhibits have on their attitudes.

Purpose

The purpose of this study was to determine if visiting the livestock exhibits at a state fair impacts fairgoers' attitudes toward livestock exhibits.

Objectives

The specific objectives guiding this study were:

1. Determine the demographic characteristics of fairgoers at the California State Fair based upon age, gender, ethnicity, race, education, current residency, livestock ownership, 4-H and/or FFA experience, occupation, if they had family members who lived on a farm, and time spent viewing the exhibits.
2. Identify the attendees' attitudes about livestock fair exhibits at a state fair prior to viewing the livestock exhibits.
3. Identify the attendees' attitudes about livestock fair exhibits at a state fair after viewing the livestock exhibits.
4. Determine if visiting the livestock exhibits impacted fairgoers' attitudes about livestock fair exhibits.

Scope of the Study

This study included the fairgoers attending the California State Fair on July 14, 2012, between 10:00 a.m. and 12:30 p.m.

Assumptions

The following assumptions were made regarding this study:

1. Participants would respond honestly about their perceptions of agriculture.

Limitations

The following limitations were identified for this study:

1. Data collection was limited to those individuals who visited the livestock exhibits at the California State Fair on July 14, 2012, between10:00 a.m. and 12:30 p.m.
2. Data for both the *then* and *now* perceptions were collected after fairgoers viewed the livestock exhibits, which required respondents to retrospectively assess their initial opinion of the livestock exhibits.

Definition of Terms

The following were operationally defined for use in this study:

Fairs: Events providing industrial exhibits, demonstrations, and competition aimed at the advancement of livestock and agriculture with emphasis placed on educational activities youth development programs such as 4-H and FFA (International Association of Fair and Exhibitions, n.d.)

Fairgoer: anyone 18 years and older attending the California State Fair

Livestock: any beef, sheep, swine, and goats exhibited at the California State Fair

Perception: to become conscious of, to observe, to become aware, or to understand with one's own mind or senses

CHAPTER II

REVIEW OF LITERATURE

Introduction

Today, consumers are farther removed from agriculture than ever before, and there are fewer farmers and ranchers than ever (Wachenheim & Rathge, 2002). As consumers become geographically distanced from agriculture, their literacy as it relates to agriculture declines (Wachenheim & Rathge, 2002). Despite the distance, consumers are becoming more involved and have a larger impact on agricultural policy (Wachenheim & Rathge, 2002). To increase agricultural literacy and improve perceptions of agriculture, agriculturalists can use events such as fairs and other times of convergence between agriculturalists and consumers as opportunities to educate the public (Holloway, 2004). Additionally, youth involved in 4-H and FFA programs can use their livestock exhibits as tools to educate the public and serve as liaisons for the agricultural industry (Diem & Rothenburger, 2001).

Agricultural Literacy and Consumers

With the 1988 release of the National Academy of Science agricultural education report *Understanding Agriculture – New Direction for Education*, agricultural literacy and education gained attention (Frick, Miller, & Kahler, 1991). However, the definition

set forth in the report was not seen as operational. Consequently, Frick et al. (1991) conducted a study to develop a definition of agricultural literacy that was operational and could provide educators with agricultural concepts all citizens should know.

Through the Delphi process, 100 panelists' definitions of agricultural literacy were reduced to one general definition of agricultural literacy and 11 broad agricultural subject areas (Frick et al., 1991). Therefore, Frick et al. (1991) established the following definition:

> Agricultural literacy can be defined as possessing knowledge and understanding of our food and fiber system. An individual possessing such knowledge would be able to synthesize, analyze, and communicate basic information about agriculture. Basic agricultural information includes: the production of plant and animal products, the economic impact of agriculture, its societal significance, agriculture's important relationship with natural resources and the environment, the marketing of agricultural products, the processing of agricultural products, public agricultural policies, the global significance of agriculture, and the distribution of agricultural products. (p. 52)

The 11 subject areas developed by the panel were: "1) agriculture's important relationship with the environment, 2) processing of agricultural products, 3) public agricultural policies, 4) agriculture's important relationship with natural resources, 5) production of animal products, 6) societal significance of agriculture, 7) production of plant products, 8) economic impact of agriculture, 9) marketing of agricultural products, 10) distribution of agricultural products, and 11) global significance of agriculture" (Frick et al., 1991, p. 50).

Then, using a second questionnaire, 52 sub-areas were developed for the 11 concept areas, which researchers concluded could be used to guide curricula planning and that instructional materials should be developed for each subject area (Frick et al. 1991).

Several studies of agricultural literacy as well as those focusing on perceptions of agriculture utilize this study as a foundation.

Several researchers have indicated that while awareness of agriculture is necessary to the future of agriculture, consumers have a limited understanding of the industry (Bellah, Casey, & Dyer, 2004; Frick, Machtmes, & Birkenholz, 1995). "Most Americans, whether young or old, have limited knowledge about agriculture and food production" (Frick, Machtmes, & Birkenholz, 1995, p. 44). Bellah et al. (2004) stated, "the majority of Americans seem to be agriculturally illiterate" (p. 23). Despite a lack of knowledge about the industry, consumers are becoming more involved in discussions regarding agricultural policy (Wachenheim & Rathge, 2002). Therefore, by improving agricultural literacy, consumers will become more aware of issues facing agricultural production and thereby increase public pressure for policy, which mutually benefits producers and consumers (Frick, Machtmes, & Birkenholz, 1995).

The agri-food system has come under criticism; therefore, it is important that citizens understand the system in order to engage in the democratic decision-making processes (Powell, Agnew, & Trexler, 2008). "Formal education, beginning in elementary and through high school, seems to be a logical means by which to help people develop agri-food understanding that would be a foundation for well-reasoned debate" (Hess & Trexler, 2011, p. 151). To improve agricultural literacy, industry members must first know what the literacy level is (Frick, Machtmes, Gardner, et al., 1995). "If educational initiatives designed to improve America's agricultural literacy are to succeed, a bench mark that verifies the level of agricultural knowledge and perception should be determined" (Frick, Machtmes, Gardner, et al., 1995, p. 2).

One of the first and most popular initiatives to improve agricultural literacy is the Agriculture in the Classroom program (Powell & Agnew, 2011). Therefore, while agricultural literacy studies have been conducted to determine the literacy of various groups, youth are frequently the focus. In a study of rural and inner-city high school students, the 11 agricultural literacy concepts previously discussed were condensed to seven (Frick, Birkenholz, Gardner & Machtmes, 1995). For each of the seven concepts, rural students had a higher group mean knowledge score than their urban counterparts (Frick, Birkenholz, Gardner & Machtmes, 1995). The rural group also had more positive perceptions of agriculture (Frick, Birkenholz, Gardner & Machtmes, 1995). Similarly, in a qualitative study of urban youth, it was determined that "informants lacked background that supported the construction of agricultural knowledge and understanding" (Hess & Trexler, 2011, p. 159). In this study, Hess and Trexler (2011) interviewed 18 students from fourth to sixth grade about their understanding of the agri-food system and took it one step farther by comparing participant responses to expert notions of grade-specific benchmarks of agricultural literacy (Hess & Trexler, 2011). Hess and Trexler determined that few compatibilities existed between the benchmarks and participant knowledge.

In a study of rural and urban adults, said to be representative of United States residents, it was determined that both groups were most knowledgeable about animal concepts and least knowledgeable about plant concepts (Frick, Machtmes, & Birkenholz, 1995). Additionally, rural respondents were more knowledgeable than urban respondents, which supported the results of a similar study conducted by the researchers with youth during the same year (Frick, Machtmes, & Birkenholz, 1995; Frick, Birkenholz, Gardner & Machtmes, 1995). The study also evaluated perceptions of respondents. It was

determined that both groups had a positive perception about natural resources and agricultural policy; however, the rural group also had a positive perception about the animal concept (Frick, Machtmes, & Birkenholz, 1995).

Perceptions of Consumers

People base their perceptions on past experience and knowledge. Therefore, if a person has only limited knowledge and experience with agriculture, they cannot accurately perceive the industry (Duncan & Broyles, 2006). "In the early stages of opinion development, individuals likely have little issue-specific knowledge on which to base their views and might rely more heavily on predispositions that are associated with the topic at hand" (Hoffman et al., 2007, p. 290). Interpersonal communication as well as perceived community support or opposition toward a topic, whether it actually exists, also can affect individual perceptions (Hoffman et al., 2007).

Hoffman et al. (2007) stated, public opinion formation is influenced by interpersonal communication. Watts and Dodds (2007) took this idea one step farther and evaluated the impact of opinion leaders or "influentials" and their networks on the process of public opinion formation (Watts & Dodds, 2007). Recognizing that people "may be influenced more by exposure to each other than the media" (Watts & Dodds, 2007, p. 441), researching the impact these people have on their communities is of great importance. When referring to opinion leaders, they were not referring to formal heads of organizations or media personalities, but rather people who exert an influence and are respected within their communities (Watts & Dodds, 2007). Not only do these people help to form public opinion, but also they often are at the forefront of idea and innovation adoption (Watts & Dodds, 2007).

However, the researchers concluded from their simulated computer study that the influence and intensity of the influence these people had depended on how large their communities were (Watts & Dodds, 2007). Influentials had a strong, localized impact on smaller communities but can have more substantiated impact on larger groups because their influence impacts a larger network (Watts & Dodds, 2007). Watts and Dodds (2007) determined the impact of influentials was marginal stating, "large-scale changes in public opinion are not driven by highly influential people who influence everyone else, but rather by easily influenced people influencing other easily influenced people" (p. 447). This seems to coincide with Hoffman's et al.'s (2007) theory that individuals affect one another's opinions on issues.

Emotion is another factor that influences perceptions and attitudes toward agriculture. Beekman (2006) discussed the rationality of emotions and the emphasis placed on them by agricultural regulatory bodies. "Regulatory bodies tend to treat people's emotional responses toward foods as a nuisance for rational opinion formation and decision-making in the field of agricultural and food policies" (Beekman, 2006, p. 301). The researcher discussed two paradigms, the Platonic and Aristotelian, and how these and other ancient philosophers looked at emotion differently in regards to forming and expressing perceptions (Beekman, 2006). The Platonic paradigm looks at emotions and emotional perceptions as irrational and even unrestrained responses to situations (Beekman, 2006). Conversely, the Aristotelian alternative explores the idea that emotions can provide viable dialogue and possibly reasonable perspective (Beekman, 2006).

While Beekman (2006) noted both schools of thought have strong histories, it is worth considering both in today's policy development regarding agricultural and food

policy. Therefore, he suggested listening and considering consumers' emotions as valuable sources of knowledge and suggestions for industry improvements (Beekman, 2006). "Emphasizing the rationality of perceptions would allow regulatory bodies to build on people's emotions as sources of moral knowledge in a meaningful dialogue about food production and consumption" (Beekman, 2006, p. 310).

Residency is another factor that has the ability to impact perceptions toward agriculture and agricultural policy. With less than 2% of the population living on a farm, urban and suburban populations constitute the majority of the population (EPA, 2009). Rural areas include a mix of nonfarm residents and farm residents, where nonfarm residents may be both more aware and less familiar with production agriculture (Wachenheim & Rathge, 2002). Wachenheim and Rathge (2002) mentioned that knowing residents' perceptions of agriculture is important because it can influence their legislative priorities and inaccurate perceptions can hinder farm policy. "Public perceptions are an important input into the policy making process and understanding them can help the industry select strategies to articulate its value to the public" (Wachenheim & Rathge, 2000, p.1).

A study of 584 north central U.S. residents determined how perceptions of agriculture were affected by residency (Wachenheim & Rathge, 2002). The researchers concluded that geographical distance from farming affected perceptions of agriculture (Wachenheim & Rathge, 2002). Farm residents perceived fewer environmental concerns associated with agriculture than their nonfarm counterparts (Wachenheim & Rathge, 2002). Respondents from farm-dependent counties most agreed that farms have a positive economic impact on the community, and that losing farms would be economically

troublesome and make way for large-size farming operations (Wachenheim & Rathge, 2002). Finally, people who worked with livestock, or had relatives who did, were more supportive of current agricultural policy, were opposed to restricting the size of livestock operations, and felt that residents needed to become accustomed to any odors associated with farms (Wachenheim & Rathge, 2002). This particular finding supports findings by Duncan and Broyles (2006) and Hoffman et al. (2007) that personal experience and social circles influence people's opinions.

"The widening gap between those who produce and consume agricultural products has sometimes led to differing views between those who have an agricultural background and those who do not" (Goodwin, Chiarelli, & Irani, 2011, p. 21). According to Duncan & Broyles (2006), perceptions of agriulture, especially for young adults, are influenced by family, media, and other secondary and even tertiary sources because of a disconnection with the industry. Agriculturalists are, therefore, trying to improve communication and understanding between producers and consumers (Goodwin et al., 2011). To improve this communciation, research has been done to describe consumers' perceptions of words, phrases, and images (Goodwin et al., 2011; PIE Center, 2011).

Two such studies recently were conducted in Florida. The first of these was conducted by the Center for Public Issues Education in Agriculture and Natural Resources in partnership with the Agricultural Institute of Florida (PIE Center, 2011). The other study was conducted by Goodwin et al. (2011). Both studies used four focus groups; in the first, 36 participants who were shown words, images, and messages often used to communicate agriculture to the public (PIE Center, 2011). Using content analysis, respondents' opinions and perceptions of these messages were described in hopes of

improving communication with a diverse, tech-savvy audience (PIE Center, 2011). The second study asked participants to provide their perceptions of 10 messages chosen from commodity organizations' websites (Goodwin et al., 2011). Grouping messages by similarities, participants were shown the messages in three sets and asked about their feelings toward the messages (Goodwin et al., 2011).

Similar findings were found in both studies. Overall, perceptions of the words "farmers" and "locally-grown" were positive, while words like "food saftey" caused skepticism or distrust (PIE Center, 2011). Researchers concluded that agricultural communicators should engage the public through agritourism as a way to allow consumers to feel connected to producers (PIE Center, 2011). For the second study, Goodwin et al. (2001) stated that participants felt some of the messages created skepticism due to a lack of information and context for the statements. "Additionally, three of the four focus groups referenced history, the creating of mental images, lack of supporting information, and media advertisements as leading them to their conclusions about whether the messages they viewed were favorable or unfavorable" (Goodwin et al., 2011, p. 27). Paticipants indicated they preferred terms associated with local farming and wanted to see local producers to be able to make that connection (Goodwin et al., 2011).

Both of the above studies regarding perceptions indicated that consumers make choices and develop perceptions based on their knowledge, personal experiences, and the media (Goodwin et al., 2011; PIE Center, 2011). Goodwin and Rhoades stated that because consumers are farther removed from agriculture, percptions no longer are based on reality (as stated in King & Rhoades, 2012). According to Wachenheim and Rathge (2000) these misperceptions can be corrected, but first must be recognized and

understood. In an effort to understand consumer perceptions and understanding of agriculture, agricultural organizations are beginning to take independent and collaborative action. The National Corn Growers Association hired David Binder Research to conduct a nationwide study and a series of focus groups to better understand perceptions specifically regarding corn production but also agriculture as a whole (Tolman, 2009). Using six focus groups and a telephone survey of 1,000 voters, the research group found overall positive support of agriculture (Tolman, 2009). "Over 90% of those surveyed viewed farmers in a positive light and nearly two out of every three, roughly 63%, had a strongly positive image of agriculture" (Tolman, 2009, p. 2).

"U.S. Farmers & Ranchers Alliance (USFRA) is a newly formed alliance consisting of a wide range of prominent farmer- and rancher-led organizations and agricultural partners" (USFRA, n.d.). To determine consumer perceptions and opinions about agriculture, they conducted a nationwide study in August of 2011 (USFRA, 2011). Ketchum Global Research Network and Braun Research conducted the research by contacting 2,417 consumers by phone (USFRA, 2011). The survey revealed that "72 percent of consumers know nothing or very little about farming or ranching [and] 69 percent of consumer, think about food production at least somewhat often" (USFRA, 2011, para. 4).

Fairs: A Means of Education

Agricultural fairs, or exhibitions, began as a means of trade for merchants from different countries. "America's fairs have evolved from a marketplace to an educational event" (Avery, 2000, p. 83). And, although they began in Europe, fairs are primarily an American event (Avery, 2000). Throughout the years, the focus of fairs has changed and

adapted to suit the economy, bringing in entertainment in conjunction with agricultural elements. This change resulted because agricultural societies, the driving force behind fairs, concluded that fairs could be places of both education and entertainment (Lauzon, 2010).

To be viable, today's fairs, which serve a diverse and changing audience, must continually adapt (Avery, 2000). Regardless, "the first and most common claim of the agricultural fair is that it is an educational institute" (Neely, 1935, p. 155). According to Neely (1935) education comes in two forms: the general process of broadening one's horizons through the learning process or through an attempt to train fairgoers on fundamental ideas. "Obviously the fair in whatever age and of whatever type has furnished informally the opportunity for broadening the experiences of those who have in one way or another participated in it" (Neely, 1935, p. 156). Formal education, according to Neely, occurs depending on the type of stimuli visitors are subjected to; typically the fair has been an agency of agricultural stimulation and information (Neely, 1935). The educational choices a fair provides allows for the attainment of agricultural concepts for those who choose to take part and "fills a unique position in the agricultural education system" (Neely, 1935, p. 157).

Neely (1935) noted that to ensure educational opportunities were not only available but utilized by visitors, fair managers used to demand exhibitors provide attractive and interesting displays. Similar efforts are being made today. In an effort to re-imagine British agriculture, both breed associations and youth show exhibitors were asked to become directly involved in promoting agriculture at shows (Holloway, 2004). These educational efforts also are evident in North American shows. Fairs "provide

industrial exhibits, demonstrations, and competitions aimed at the advancement of livestock, horticulture, and agriculture" (International Association of Fairs and Exhibitions, n.d., para. 12). To ensure agriculture remains viable, a basic understanding of its importance to society is necessary, and fairs provide a means for the agricultural industry to communicate with and educate a nonagricultural public (Avery, 2000). "Combined with formal presentations by exhibitors, the agricultural exhibit programs at fairs offer an open window into agriculture" (Avery, 2000, p. 86).

Youth Educational Programs

Avery (2000) noted that youth serve a key role in the agricultural education provided at fairs. Fairs and shows provide an opportunity for convergence of farming and nonfarming publics and an opportunity to present agriculture in a certain light (Holloway, 2004). Holloway (2004) mentioned that British agricultural societies' perceptions of a poor image of agriculture by nonfarming communities influenced show policies. Because exhibitors are aware of the importance of agriculture, specifically livestock, they were asked to contribute to the re-imaging of agriculture efforts by educating the public and displaying their livestock in the best manner possible (Holloway, 2004).

This same philosophy of youth educating the public exists in the United States. Even as far back as 1967, 4-H leaders and extension personnel were concerned with having quality education displays (Brown, 1967). Brown (1967) noted that educational exhibits needed to be based on science and that groups provide direct educational contact for the public (Brown, 1967). Today, breed and specie organizations have joined in the efforts to encourage youth to interact with and inform the public (Johnson, 2012). In a

Hoard's Dairyman blog article, Johnson (2012) encouraged youth to interact with the public and share their pride in the industry.

An exit survey was conducted at the Somerset County 4-H Fair in New Jersey in 1988, 1999, and 2000 to see if the fair was meeting its goals of educating the public and promoting 4-H and 4-H members' projects (Diem & Rothenburger, 2001). In each of the studies, the investigators determined the public learned about 4-H and the youth projects by viewing the exhibits (Diem & Rothenburger, 2001).

Fair administrators are beginning to understand the importance of educational exhibits and interaction with agriculturalists to increase awareness and improve impressions of agriculture. In fact, some fairs, such as the California State Fair, provide an educational exhibit contest for livestock exhibitors to ensure the public has the opportunity to learn while being entertained at the fair (California State Fair, n.d.). Furthermore, the California State Fair encourages exhibitors to be knowledgeable liaisons for agriculture via the champion challenge contest (California State Fair, n.d.). This is a knowledge-bowl contest that tests members' knowledge of livestock and general agriculture issues (California State Fair, n.d.). Finally, 4-H and FFA organizations hold outstanding exhibitor contests for each species. Participants are judged on their knowledge, project scope, display appeal, and ability to interact with the public while promoting agriculture via their 4-H projects or FFA supervised agricultural experience programs (California State Fair, n.d.)

Theoretical Framework: Social Representation Theory

Social representation theory is used to create understanding between expert and non-expert audiences through both discourse and imagery (Halfacree, 1993). This theory, developed primarily by Serge Moscovici, seeks to "outline how people understand, explain and articulate the complexity of stimuli and experiences emanating from the social and physical environment" (Halfacree, 1993, p. 29). A person's perceptions and understanding of a concept are influenced by their predispositions and experiences with the subject (Moscovici, 2001). Moscovici (2001) noted the world as people perceive it is a result of responses to stimuli from the physical environment and the quasi-physical environments they live in.

One unique characteristic of social representation theory is how new information is processed and unfamiliar situations are integrated into concepts and ideas already understood by individuals (Buijs et al., 2012). Buijs et al. (2012) explained that anchoring allows new representations to be linked to concepts already understood. "Objectification allows an abstract thing to become concrete through projecting abstract constructs as concrete images, which then come to stand for the new phenomenon" (Buijs et al., 2012, p. 1170). Furthermore, Moscovici (2001) noted when we think about an unfamiliar concept, our images, learned habits, memories, and genetic predisposition all combine to make the concept as we imagine it. Social representations are linked to social groups and people who experience them; however, individuals interpret and internalize them differently based on discourse about the topic with experts and previous perceptions (Halfacree, 1995). Representations symbolize a specific means of communicating and

understanding; they provide an idea for every image and from there, provide meaning, understanding, and significance to everyday life (Moscovici, 2001; Buijs et al., 2012).

However, Moscovici (2001) noted that sometimes perceptions are misguided by "a pre-established fragmentation of reality, a classification of the people and things, which comprise it" (p. 19). Moscovici noted it is not uncommon that some previously assumed facts, basic to understanding and conduct, turn out to be misconceptions. Knowledge is gained by engaging in communication and imagery about the abstract and unfamiliar (Moscovici, 2001). Because the world we live in is social, Moscovici stated all information we receive is distorted to some degree.

Until recently, only a handful of agriculturally related studies utilized social representation theory as the framework (Buijs et al., 2012). However, studies have recently been published that "illustrate how the theory of social representations can be used to deepen our understanding of disputes over land management and of how people conceptualize nature and natural resources" (Buijs et al., 2012, p. 1168). Halfacree (1993) suggested using this theory to develop a more encompassing definition and understanding of the rural. Halfacree agreed with Buijs et al. (2012) that social representations allow individuals to conceptualize new objects, events, and persons but also noted that understating the representations allows people to guide subsequent behaviors.

Researchers seem to agree the social property is the deeply engrained in the theory (Buijs et al., 2012, Halfacree, 1995; Holloway 2004; Moscovici, 2001). "They [representations] are consensual means of making the unfamiliar, but this consensus is group specific. Only those who share a representation will use it the same way"

(Halfacree, 1993, p. 30). Moreover, Halfacree (1993) stated social representations are inherently social due to the linkage to the communication process. Holloway (2004) also emphasized the communication process when he discussed this theory as the foundation of an effort to re-imagine British agriculture. He used the input from the chairs of several large agricultural societies, breed societies, and pedigreed breeders to determine what concepts should be focused on when engaging in social representations to educate the public at shows (Holloway, 2004). Holloway mentioned that seeking to improve agricultural education and, in turn, agricultural perceptions might bring these shows in line with the North American model of agricultural shows.

Livestock and agricultural shows were targeted as points of convergence between farming and nonfarming communities, which were said to be central to the effort of re-imaging agriculture and transferring agricultural knowledge (Holloway, 2004). Holloway (2004) stated, "shows are used to stage encounters and exchange between farming and the non-farming public, which are increasingly rare in societies where many experience a distancing between themselves and the way their food is produced" (p. 321). Focused on the opportunity to present a specific image of agriculture, breed associations, and livestock exhibitors were asked to help promote a positive image of agriculture (Holloway, 2004).

CHAPTER III

METHODOLOGY

Introduction

This study is designed to at determine fairgoers' attitudes toward youth livestock exhibits and whether if visiting livestock exhibits at the California State Fair impacted these attitudes. Many factors can impact consumer choices and behaviors (Hoffman et al., 2007). One such impact is the convergence of members of nonfarming and farming community members. Information and experiences gained through these encounters can be passed to consumers, and they can in turn imagine agriculture as it is presented to them (Holloway, 2004). The social representation theory was used to determine if interaction and convergence between nonfarming and farming communities can influence the public. This theory posits that when these communities come together, information is transferred and consumers take away information and images of agriculture set forth by members of the agriculture industry (Holloway, 2004). These experiences can alter consumers' perceptions and attitudes about agriculture (Holloway, 2004).

The intention of this chapter is to provide a detailed description of the methods used to collect and analyze the data. It includes information regarding the population,

instrument details, the data collection method, the data itself, and the analysis procedures employed in this study.

Institutional Review Board

Oklahoma State University policy and federal regulations require approval of all research studies that involve human subjects before investigators can begin their research. The Oklahoma State University Office of University Research Services and the Institutional Review Board (IRB) conduct this review to protect the rights and welfare of human subjects involved in biomedical and behavioral research. In compliance with that policy, this study was reviewed and was granted permission to proceed. The IRB assigned number AG1226 (see Appendix A) to this study.

Research Design

A survey research method was employed using semantic differential scales in a then/now approach. The instrument was given to fairgoers at the California State Fair on July 14, 2012, between 10 a.m. and 12:30 p.m. The researcher and a group of volunteers administered the questionnaire to fairgoers walking near the livestock exhibits. In an effort to ensure enough people completed the questionnaire, a monetary incentive was provided to participants. The researcher sought sponsorship of the project independently from agricultural organizations and companies. A sponsorship proposal was emailed to possible sponsors and follow up phone calls were made to obtain the amount of sponsorship dollars necessary to successfully complete the research.

Then/Now Data Collection

A variety of factors should be considered when selecting an appropriate data collection method. The method selected must be rigorous and accurately report the

outcomes of a study as well as require minimal time to complete and minimally interfere with the program (Colosi & Dunifon, 2006). According to Colosi and Dunifon (2006), the most widely used evaluation design is pretest then posttest, which requires participants respond to a questionnaire at two different times. While it is the go-to design, "early evaluators understood some inherent threats to the validity of the traditional pretest and posttest evaluation, it was the identification of 'response shift bias' by George Howard in 1979 that captured the biggest weakness of this widely accepted approach" (Colosi & Dunifon, 2006, p. 2). Griner-Hill and Betz (2005) provided the following definition of response shift bias:

> Howard and colleagues explained this phenomenon by theorizing that participants develop different awareness and judgments of their earlier behaviors as a function of the knowledge gained during intervention, and thus the metric they use to rate those behaviors is different than at the beginning of the program. (p. 503)

Thereby, researchers began using a retrospective pretest or a posttest then pretest also known as then/now design to determine change in attitudes or behaviors as a result of a program or treatment (Colosi & Dunifon, 2006). Because participants are asked to provide responses after the intervention, it is argued that response shift bias is reduced because their pre- and post- responses are provided from the same frame of reference (Townsend & Wilton, 2002, p. 476). Although not without its own set of concerns for validity, such as recall bias, or a distortion of memory, this evaluation method provides a unique set of benefits (Griner-Hill & Betz, 2005). It reduces incomplete data sets, is convenient for both the researcher and participant alike, and is particularly effective when describing attitude change as a result of attending a program (Griner-Hill & Betz, 2005; Colosi & Dunifon, 2006).

While Griner-Hill and Betz (2005) noted both traditional pretest then posttest and then/now have different concerns regarding validity, the degree and type are influenced by several factors and therefore, the evaluation design should be selected for what is best for each given situation. "If the goal is to capture how participants perceive the changes they made in knowledge, skills, attitudes or behaviors, then a post then pre method may be adequate to capture this type of data" (Colosi & Dunifon, 2006, p. 5). In studies where both an actual pretest and a retrospective pretest were used, no statistical difference was found in the measure of attitude (Townsend & Wilton, 2003). In fact, Townsend and Wilton (2003) noted a number of comparative studies demonstrated that results from a then/now test were more objective than those gathered using the pre/post design.

Semantic Differential

Semantic differentials, first developed by Osgood in 1957, are a reliable way to measure attitudes (Shields, 2006). "They can be applied to any investigation where people's opinion on any subject are sought, and are very adaptable" (Shields, 2006, p. 116).

Semantic differential scales are used to measure objectively the semantic properties of words and concepts and are attitude scales (Isaac & Michael, 1982). A semantic differential scale consists of three elements and takes into consideration the bipolar nature of language and mood. The three elements are the concept to be evaluated, or in this case, "youth livestock exhibits at the California State Fair;" the polar adjective pair anchoring the scale (e.g., good-bad); and a series of undefined scale positions (Isaac & Michael, 1982). As cited in Isaac and Michael (1982), Osgood stated although there

can be no fewer than five and no more than nine steps between the bipolar-adjective pair, the ideal number is seven (see Figure 1).

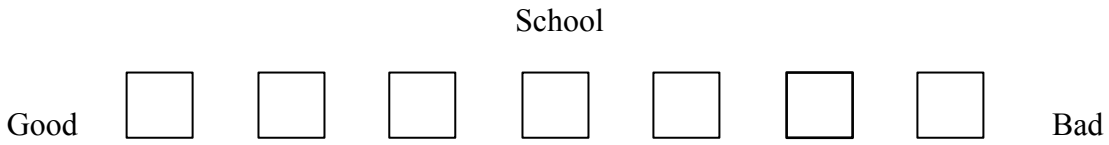

Figure 1. Example of a semantic differential scale

Osgood "found that repeated clustering of related pairs or adjectives led to the identification of three factors which indicate dimensions into which the topic under discussion could fall. These are evaluation, potency, and activity" (as cited in Shields, 2006, p. 117). Factor loadings, ranging from 1 to -1, were determined for the word pairs he analyzed, which represent how well each word pair measures each of the three factors: evaluation, potency, and activity (Isaac and Michael, 1982). For example, the factor loading for good/bad is a 1 for evaluative and .00 for potency and activity (Isaac and Michael, 1982). These factor loadings and relevance to the concept being evaluated are the two factors by which word pairs should be selected (Isaac & Michael, 1982).

Data collected using semantic differentials yields a large amount of data with minimal effort (Isaac & Michael, 1982). Additionally, the symmetric response format is essential in removing most response bias (Lorr & Wunderlich, 1988). Moreover, "because separate scales are marked for each characteristic, SDs [semantic differentials] are useful for teasing out where opinions diverge" (Shields, 2006, p. 117). To reduce the risk of respondents marking the scales by running through lists without making a conscious choice, some of the bipolar adjectives are situated in the opposite direction of the others (Shields, 2006).

Population and Sample

The population for this study consisted of adult fairgoers who attended the California State Fair on July 14, 2012. During this time, a convenience sample of the population was identified to participate in the study by completing a questionnaire, specifically people near the livestock exhibits. Sponsorship funds were available for the first 400 people who took the survey. It took two and a half hours, from 10:00 a.m. to 12:30 p.m., to administer the questionnaire these participants. One individual did not wish to take the funds, which allowed for 401 people to take the questionnaire. This resulted in a sample size of 401 people. Of these, 395 responses were deemed usable. This population is only representative of people who attended the fair and were near the livestock exhibits during the specified times and therefore, the results cannot be generalized to everyone who attended the California State Fair.

Instrument Design

This study was intended to describe fairgoers' attitudes before and after visiting the livestock exhibits and whether visiting the exhibits impacted their opinions of youth livestock exhibits at the California State Fair. The instrument was only administered after fairgoers visited the exhibits, which required participants to retrospectively assess their initial opinion of the livestock exhibits.

The questionnaire consisted of 11 demographic questions to gather data about participants' age, sex, race, ethnicity, education, 4-H and FFA experience, and residency (see Appendix B). These questions were developed based on questions presented in the U.S. Census (2010) and modified questions from Frick, Machtmes, and Birkenholz's (1995) study of agricultural literacy. Fairgoers also were asked how long they spent in the

exhibits and why they attended the fair. The instrument included two tables of semantic differential scales, a then and a now table. The then scales sought to describe participants' attitudes about youth livestock exhibits before viewing the exhibits and the now scales sought to describe participants' attitudes after visiting the exhibits. In each table, participants indicated their attitudes about the statement "Youth livestock exhibits at the California State Fair" by marking an *X* along a seven-point scale between bipolar adjective pairs. Some of these word pairs were reversed to ensure an accurate description of the participants' attitudes. Additionally, the word sets were not in the same order for the then and now portions of the questionnaire.

Validity

The instrument was reviewed for content and face validity by a panel of five experts from the College of Agricultural Sciences and Natural Resources at Oklahoma State University as well as individuals involved in livestock shows and youth competitions (see Appendix C). They provided feedback and suggestions on both the content and format of the questionnaire. Specifically, the experts suggested changes regarding the format of tables and the wording of the demographic questions. Each expert was selected based on his or her expertise regarding the agricultural industry and held positions with Oklahoma State University's Department of Agricultural Education, Communications, and Leadership; the Oklahoma Cooperative Extension Service; or the California State Fair.

Reliability

Given the nature of the study, the researcher chose to conduct a pilot study. This study piloted both the instrument and data collection process. The pilot study was

conducted at the Colusa County Fair on June 7, 2012. This fair is located 68 miles north of Sacramento, the location of the California State Fair. Fairgoers near the livestock areas were asked to complete the questionnaire. In total, 30 people participated in the pilot. All participants received $5 cash as compensation for completing the questionnaire. Based on the responses, some changes were made to the instrument.

In the pilot study, each of the three constructs: evaluative, potency, and activity were evaluated (Isaac & Michael, 1982). However, participants indicated there was some ambiguity regarding the word pairs selected. For example, participants were confused by word pairs such as fast/slow and hard/soft, which represented activity and potency constructs, respectively. Therefore, the researcher determined it was most appropriate and relevant to focus on the evaluative construct. Consequently, new word pairs were selected from a list in Isaac and Michael (1982). According to Isaac and Michael (1982), word pair selection should be based on relevance and appropriateness to the topic; therefore, word pairs were re-evaluated and selected to measure only the evaluative construct (see Appendix D).

A reliability analysis was conducted on the then items and the now items in the pilot study. The Cronbach's alpha coefficient was .85 for the then items and .83 for the now items.

Data Collection

The questionnaire was administered to fairgoers who visited the livestock exhibits at the California State Fair on July 14, 2012, from 10 a.m. to 12:30 p.m. by the researcher and a group of 15 volunteers wearing orange shirts. To ensure consistency in survey administration, a training session for data collectors was conducted that morning for all of

the volunteers. Volunteers were instructed to respond to questions regarding the instrument by stating only that each question was to be answered based on the participant's interpretation of the question. Furthermore, they were instructed to have participants, especially those in pairs or groups, take the questionnaire independently. Volunteers were broken into groups and each person was assigned a task, then tasks were described to the group (see Appendix E).

The first task was for volunteers who solicited fairgoers to participate in the study. These volunteers were given cards with three questions printed on them. These cards were utilized to ensure all three questions got asked to determine potential participants' eligibility (see Appendix F). The three questions determined if participants were over 18, if they knew anyone exhibiting livestock, and finally if they had been through the livestock exhibits. To be eligible, participants had to be over 18 years of age, could not know anyone exhibiting livestock, and had to have been through the barn. If they were under 18 or knew someone showing, they were thanked for stopping but told they were ineligible. However, if they qualified based on the first two questions, but had yet to be through the barns, they were asked to return to any one of the three stations once they had viewed the exhibits and no other information was provided. If they qualified, the fairgoer was provided the card that had the appropriate yes or no responses for each question.

Participants took the card previously described to a booth where a designated individual instructed them on how to fill out the questionnaire. The volunteers distributing the questionnaire instructed participants to read the release information on the front side, fill out the demographic information, and then proceed to the back of the form. Using hand gestures to reduce ambiguity, volunteers showed them which of the

two tables represented their before and after responses. They told participants to turn in their form to a designated individual who provided them their incentive once they were done.

To ensure proper distribution of the incentive funds, only one person in each booth was designated to distribute the cash. To the best of his ability, this person checked to ensure the form was filled out completely. If there were large vacancies in the participants' responses, he asked participants to fill in those blank areas or forfeit the incentive. If they had completed the majority of the questionnaire, their hand was stamped to ensure they didn't take the survey at a different booth, and they were compensated for their time.

Tables and tents were set up in high-traffic areas near the livestock exhibits (see Figure 2). Incentive signs and sponsor signs were posted near each station (see Appendix G and H). Independent sponsors funded the $5 incentive for participants who successfully completed the questionnaire.

The Case

The livestock exhibits at the California State Fair are located in the southeast corner of the fairgrounds, farthest from the main gate. Exhibits are nestled between the grandstands that host horse racing to the east, a livestock nursery just to the north, and a horse arena and exhibit halls to the west. The livestock nursery is one of the most popular displays to that area of the grounds. Veterinary students studying at the University of California – Davis, host the nursery. Fairgoers get to see and learn about newborn piglets, calves, and kids and if they are lucky get to see the animals giving birth.

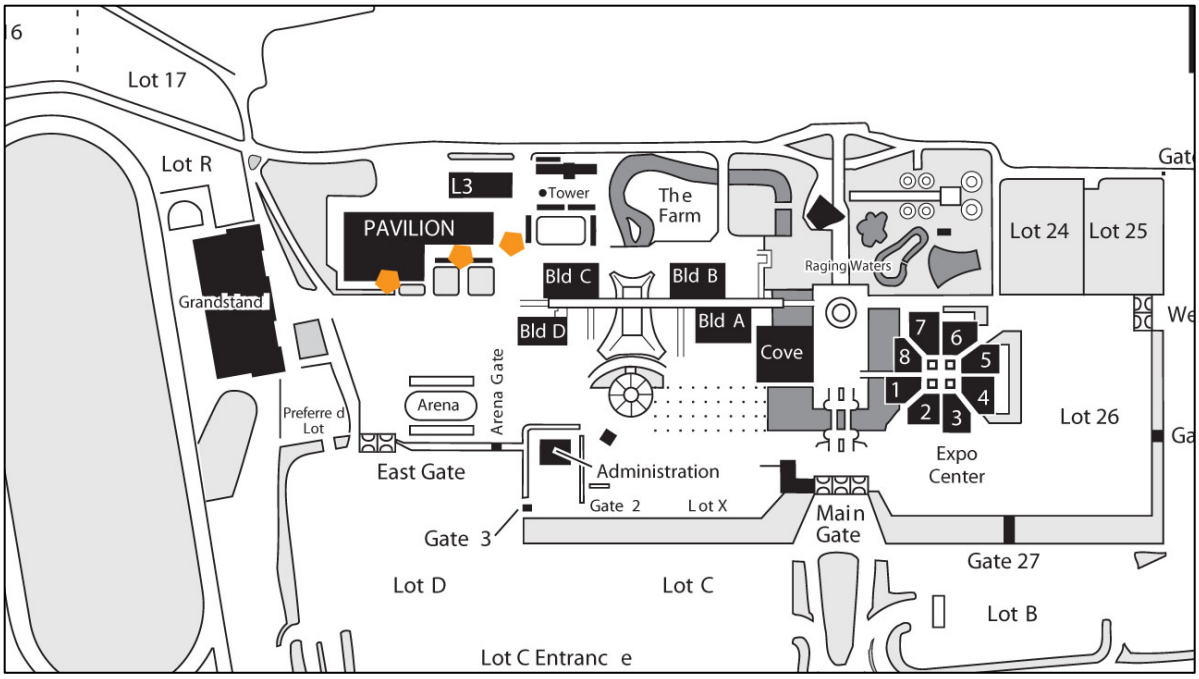

Figure 2. The orange polygons represent the areas where volunteers administered the questionnaire. These are high-traffic areas near the livestock barn.

While this was not counted as a livestock exhibit as it pertained to the study, it is often one of the stops fairgoers make when visiting that area of the fair.

There were two livestock barns that housed 4-H and FFA exhibits. Beef and sheep were housed in a temperature-controlled barn located to the north of the open-air swine barn. During the entire time questionnaires were distributed, breeding swine and breeding sheep shows were taking place in the livestock exhibits. Fairgoers had the opportunity to view the shows from bleachers surrounding the show rings. Announcers for each show often add industry facts and describe what is going on in the ring to further enhance the educational aspect of the show.

While these shows were in progress, the barns were filled with exhibitors, advisers, leaders, and parents preparing animals for show. This allowed fairgoers a unique opportunity to see the behind the scenes activities that go into exhibiting animals.

People were available for conversation, if fairgoers wanted clarification about what exhibitors were doing or had a question about their display. However, it could have been chaotic and difficult to navigate narrow alleyways with strollers and large families. Furthermore, cleanliness of the barns was a low priority for those preparing to compete.

Data Analysis

Data analysis for this study consisted of examining frequencies to describe fairgoers' attitudes about the youth livestock exhibits. A paired samples *t* test was used to determine if the change in participant perceptions was significant. Quantitative data were analyzed using Statistical Package for Social Sciences 16.0 for Windows.

The first research objective inquired about participants' demographics including their age, sex, race, ethnicity, education level, residency, 4-H and FFA experience, length of time spent viewing the exhibits, and occupation. Participants' responses were analyzed for frequency. The second objective was to determine participants' attitudes toward the youth livestock exhibits before visiting the exhibits were determined by evaluating the frequencies of responses to a then set of semantic differential scales. For objective three, participants' attitudes toward youth livestock exhibits after visiting the exhibits were determined by evaluating frequency of responses to a now set of semantic differential scales.

The fourth research objective examined whether visiting the livestock exhibits impacted participants' attitudes about the exhibits by comparing the then and now sets of responses. The confidence level for this study was set at $\alpha = .05$, a priori. The sum of the then items and sum of the now responses was compared using a paired-samples *t* test to determine whether a significant difference occurred in participants' attitudes after visiting

the barns. Finally, Cohen's *d* effect size was calculated to determine the practical significance of the shift in participants' attitudes.

CHAPTER IV

FINDINGS

Introduction

As society becomes farther removed from agriculture, few chances exist for farming and nonfarming publics to interact (Holloway, 2004). When these opportunities do arise, such as at county and state fairs, attitudes are formed and altered based on these experiences. The purpose of this study was to determine if viewing the youth livestock exhibits at the California State Fair altered fairgoers' attitudes about youth livestock fair exhibits.

Social representation theory postulates that through discourse and imagery, a common understanding of agriculture can be formed between expert and non-expert groups (Halfacee, 1993). A person's predisposition and experience with a topic influences his/her perceptions. The social representation theory says that communication and imagery can alter these perceptions, and knowledge is gained about the unfamiliar (Moscovici, 2001).

The study combined then/now and semantic differential elements on a

questionnaire. The then/now test was administered after fairgoers toured the livestock exhibits and was used to determine if this experience influenced participants' attitudes of livestock fair exhibits. Since the instrument was changed significantly as a result of the pilot study, a post-hoc reliability analysis was conducted of the then items and now items. The Cronbach's alpha coefficient was .93 for the then items and .93 for the now items.

In total, 401 individuals completed the questionnaire, of these, 395 were usable.

Findings Related to Objective 1: Demographic Characteristics

Questions related to demographics consisted of age, sex, ethnicity, race, education, current residency, whether they have owned livestock, 4-H experience, FFA experience, whether they have relatives who live on a farm, and whether they work in agriculture. They also were asked how much time they spent in the livestock exhibits.

Of the 395 respondents, 377 provided their ages. The minimum age of participants was 18 years old and the maximum was 80 years old. It was found that 13.5% (n = 51) were between 18 and 25 years of age, 25.2% (n = 95) were between 26 and 35, 17.8% (n = 67) were between 36 and 45, 24.7% (n = 93) were between 46 and 55, 12.2% (n = 46) were between 56 and 65, and 6.6% (n = 25) were over 65 years of age (see Table 1).

More than half, 58 % (n = 58.2), of the respondents were female.

Of the 373 participants who provided their ethnicity, 13.1% (n = 46) identified themselves as Hispanic and 86.9% (n = 324) identified themselves as non-Hispanic (see Figure 3).

Table 1

Age of Respondents (n = 377)

Age (Years)	*f*	%
18 – 25	51	13.5
26 – 35	95	25.2
36 – 45	67	17.8
46 – 55	93	24.7
56 – 65	46	12.2
Over 65	25	6.6

Note. 18 non-respondents

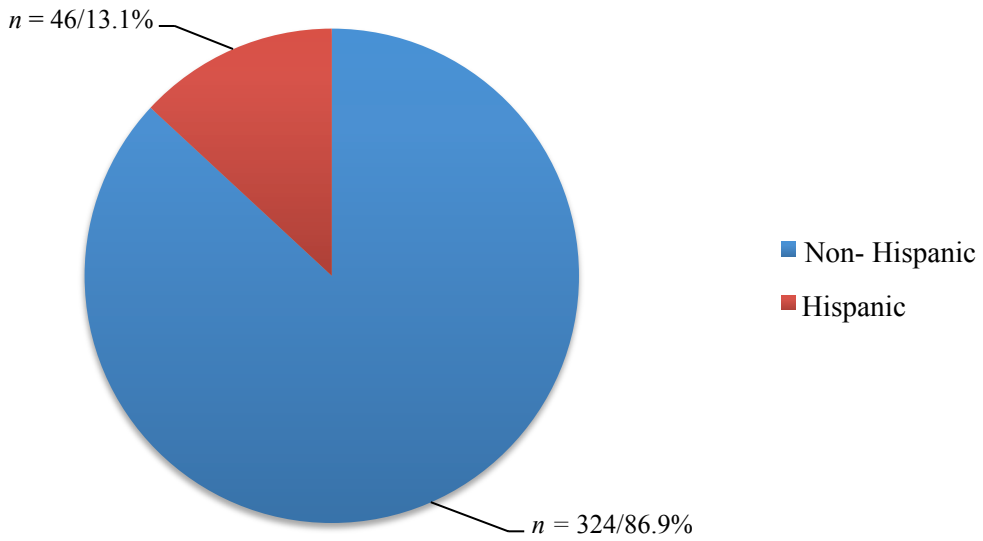

Figure 3. Respondents' ethnicities.

Of the respondents (*n* = 376) who provide their race, 77.9% (*n* = 293) identified themselves as white, 1.6% (*n* = 6) identified themselves as African American, 4.8% (*n* =

18) indicated they were Asian, 1.3% (*n* = 5) identified themselves as American Indians or Alaska Native, 1.9% (*n* = 7) identified themselves as some other race, and 12.5% (*n* = 47) identified themselves as being two or more races (see Table 2). No respondents identified themselves as Native Hawaiian or other Pacific Islander.

Table 2

Race of Respondents (n = 376)

Race	*f*	%
White alone	293	77.9
African American alone	6	1.6
Asian alone	18	4.8
Native Hawaiian or other Pacific Islander alone	0	0
American Indian or Alaska Native alone	5	1.3
Some other race	7	1.9
Two or more races	47	12.5

The questionnaire revealed 18.2% (*n* = 72) of respondents indicated that high school was their highest level of education, 35.4% (*n* = 140) had completed some college, 29.9% (*n* = 118) had obtained a bachelor's degree, and 16.5% (*n* = 65) had a graduate degree (see Table 3).

Of the respondents (*n* = 391), 3.6% (*n* = 14) said they lived on a farm, 12.9% (*n* = 51) indicated they lived in a rural area, 60.8% (*n* = 240) identified their residence as suburban, and 21.8% (*n* = 86) indicated they were urban residents (see Table 4).

Table 3

Respondents' Levels of Education (n = 395)

Education Level	*f*	%
High school degree	72	18.2
Some higher education	140	35.4
Bachelor's degree	118	29.9
Graduate degree	65	16.5

Table 4

Respondents By Current Residency (n = 391)

Race	*f*	%
Farm	14	3.6
Rural area	51	13
Suburban	240	61.4
Urban	86	22

Respondents were asked if they had ever owned livestock. Just more than one-third, 35.2% (*n* = 135), had owned livestock and 64.8% (*n* = 249) indicated they had not owned livestock.

Of the 389 respondents, 14.9% (*n* = 58) had participated in 4-H and 85.1% (*n* = 331) had not participated in 4-H. Of the 58 who participated in 4-H, 38 responded with the number of years they participated. The responses ranged from 1 to 12 years, with

63.2% (*n* = 24) responded indicating that they participated for five or fewer years (see Table 5).

Table 5

Years of 4-H Experience

No. of Years Experience	*f*	%
One (1)	3	7.9
Two (2)	8	21.2
Three (3)	4	10.5
Four (4)	5	13.2
Five (5)	4	10.5
Six (6)	3	7.9
Seven (7)	1	2.6
Eight (8)	5	13.2
Nine (9)	2	5.3
Ten (10)	2	5.3
Eleven (11)	0	0
Twelve (12)	1	2.6

Of the 387 respondents, 7.1% (*n* = 28) indicated they participated in FFA and 90.9% (*n* = 359) indicated they had not participated in FFA. Of the 28 who participated in FFA, 16 responded with the number of years they participated. The responses ranged from 1 to 6 years, and 43.9% (*n* = 7) responded they participated for three or fewer years (see Table 6).

Table 6

Years of FFA Experience

No. of Years Experience	*f*	%
Seven (1)	1	6.3
Two (2)	5	31.3
Three (3)	1	6.3
Four (4)	7	43.8
Five (5)	1	6.3
Six (6)	1	6.3

Of the 395 respondents, 42.5% (*n* = 168) of respondents indicated they had a relative who lived on a farm, and 57.5% (*n* = 227) said they did not have a relative who lived on a farm.

Of the 392 respondents, 5.1% (*n* = 20) indicted they worked in agriculture, and 94.9% (*n* = 372) said they did not work in agriculture (see Figure 4).

Participants were asked to estimate how long they spent in the livestock exhibits. Of the 380 respondents, 9.7% (*n* = 37) spent 10 minutes or less, 33.2% (*n* = 12) spent 11-20 minutes, 29.7% (*n* = 113) indicated they spent 21-30 minutes, 5.5% (*n* = 21) spent 31-40 minutes, 10.8% (*n* = 41) spent between 41-50 minutes, 9.2% (*n* = 35) spent 51-60 minutes, and 1.8% (*n* = 7) indicated they spent more than 60 minutes in the exhibits (see Table 7).

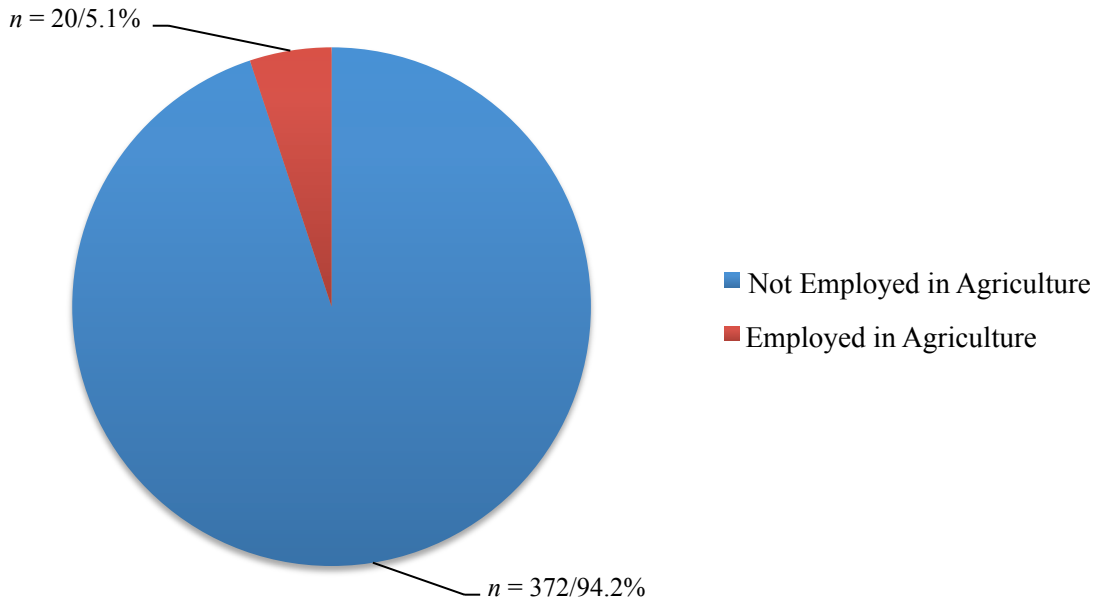

Figure 4. Respondents' occupations.

Table 7

Time Respondents Spent Viewing Exhibits

No. of Minutes	*f*	%
10 or less	37	9.7
11-20	126	33.2
21-30	113	29.7
31-40	21	5.5
41-50	41	10.8
51-60	35	9.2
61 or more	7	1.8

Findings Related to Objective 2: Attitudes About Youth Livestock Exhibits Before Visiting the Exhibits

Objective two was designed to describe participants' attitudes about youth livestock exhibits prior to visiting the youth livestock exhibits at the California State Fair on July 14, 2012. A then/now test using semantic differential scales was administered. Respondents were asked to respond to both sets of questions after walking through the livestock exhibits. Participants were instructed to place an X in one of seven undefined steps between a pair of polar opposite adjectives, which indicated the direction and degree of their opinion. Each of the 12 word pairs was selected for its ability to measure the evaluative construct, with the more positive of the two words on the left side of the scale.

Although each of the scales was undefined on the instrument, each step was assigned a numerical value for analysis based on the proximity to each word (see Figure 5). The more positive of the two words was on the left and the more negative on the right. Higher numerical values represented a more positive attitude by respondents; lower values indicated a less positive opinion. The middle box, number four, indicated a neutral feeling between the words.

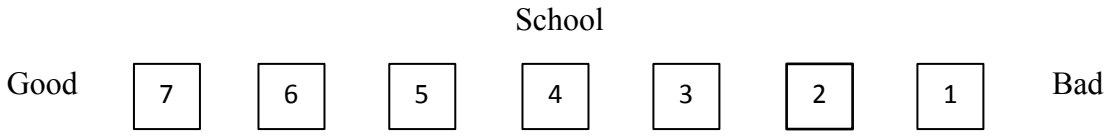

Figure 5. Numerical values assigned to steps.

To ensure an accurate portrayal of the participants' attitude, three of the word pairs were reverse coded. Thereby, the more negative of the two words was on the left

and the more positive on the right. The numerical values associated with each box also were reversed for these three pairs, thereby keeping the higher values next to the positive word. And although the word pairs did not appear in the same order on the posttest portion, the same three pairs were reverse coded (see Table 8). Participants' then responses are displayed in Table 9.

Table 8

Number of Valid Respondents Per Word Pair

Word Pairs	Retrospective Pretest Sample Size	Posttest Sample Size
Good/Bad	395	395
Pleasant/Unpleasant	392	395
Happy/Sad	392	394
*Clean/Dirty	393	391
Important/Unimportant	392	394
Beautiful/Ugly	394	394
Successful/Unsuccessful	391	394
*Interesting/Boring	394	393
Honest/Dishonest	394	393
Positive/Negative	395	394
*Kind/Cruel	395	395
Valuable/ Worthless	395	395

Note. * Indicates pair was reversed

Table 9

Participant Responses to Then Semantic Differential Scales

	7		6		5		4		3		2		1		
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	
Good	**179**	**45.3%**	81	20.5%	60	15.2%	63	15.9%	11	2.8%	1	0.3%	0	0.0%	Bad
Pleasant	**152**	**38.8%**	85	21.7%	72	18.4%	62	15.8%	14	3.6%	7	1.8%	0	0.0%	Unpleasant
Happy	**164**	**41.8%**	77	19.6%	77	19.6%	56	14.3%	15	3.8%	1	0.3%	2	0.5%	Sad
Clean	65	16.5%	64	16.3%	52	13.2%	**89**	**22.6%**	68	17.3%	33	8.4%	22	5.6%	Dirty
Important	**170**	**43.4%**	69	17.6%	68	17.3%	57	14.5%	20	5.1%	6	1.5%	2	0.5%	Unimportant
Beautiful	86	21.8%	68	17.3%	85	21.6%	**106**	**26.9%**	37	9.4%	10	2.5%	2	0.5%	Ugly
Successful	**136**	**34.8%**	86	22.0%	77	19.7%	77	19.7%	12	3.1%	2	0.5%	1	0.3%	Unsuccessful
Interesting	**139**	**35.3%**	93	23.6%	62	15.7%	48	12.2%	25	6.3%	19	4.8%	8	2.0%	Boring
Honest	**172**	**43.7%**	81	20.6%	60	15.2%	70	17.8%	5	1.3%	5	1.3%	1	0.3%	Dishonest
Positive	**198**	**50.1%**	81	20.5%	55	13.9%	48	12.2%	8	2.0%	5	1.3%	0	0.0%	Negative
Kind	**156**	**39.5%**	105	26.6%	49	12.4%	53	13.4%	20	5.1%	8	2.0%	4	1.0%	Cruel
Valuable	**182**	**46.1%**	100	25.3%	51	12.9%	50	12.7%	8	2.0%	3	0.8%	1	0.3%	Worthless

Note. Modal responses are bolded

For the word pair Good/Bad, 81% of respondents (n = 320) marked a box to the left of the midpoint of the scale, which was closest to the word good, and 3.1% (n = 12) selected a box to the right of the midpoint of the scale, which was closest to the word bad.

For the following word pairs, 392 participants responded. For the pair Pleasant/Unpleasant, 78.8% (n = 309) marked a box to the left of the midpoint of the scale, which was closest to the word pleasant, and 5.4% (n = 21) selected a box to the right of the midpoint on the scale, which was closest to the word unpleasant. For the pair Happy/Sad, 81.1% (n = 318) marked a box to the left of the midpoint on the scale, which was closest to the word happy, and 4.6% (n = 18) selected a box to the right of the midpoint on the scale, which was closest to the word sad.

Of the 393 respondents who responded to the pair Clean/Dirty, 46.1% (n = 181) marked a box to the left of the midpoint on the scale, which was closest to the word clean, and 31.3% (n = 123) selected a box to the right of the midpoint on the scale, which was closest to the word dirty.

For the pair Important/Unimportant, 392 participants responded. Of these, 78.3% (n = 307) marked a box to the left of the midpoint on the scale, which was closest to the word important, and 7.1% (n = 28) selected a box to the right of the midpoint on the scale, which was closest to the word unimportant.

Of the 394 participants who responded to the pair Beautiful/Ugly, 60.7% (n = 239) marked a box to the left of the midpoint on the scale, which was closest to the word beautiful, and 12.4% (n = 49) selected a box to the right of the midpoint on the scale, which was closest to the word ugly.

Of the 391 participants who responded to Successful/Unsuccessful, 76.5% (*n* = 299) marked a box to the left of the midpoint on the scale, which was closest to the word successful, and 3.8% (*n* = 15) selected a box to the right of the midpoint of the scale, which was closest to the word unsuccessful.

Of the 394 who responded to the pair Interesting /Boring, 74.6% (*n* = 294) marked a box the right of the midpoint of the scale, which was closest to the word interesting, and 13.2% (*n* = 52) selected a box to the right of the midpoint of the scale, which was closest to the word boring. Regarding the word pair Honest/Dishonest, 79.4% (*n* = 313) marked a box the left of the midpoint of the scale, which was closest to the word honest, and 2.8% (*n* = 11) selected a box to the right of the midpoint of the scale, which was closest to the word dishonest.

All of the participants (*n* = 395) responded to the final three word pairs. For the pair Positive/Negative, 84.6% (*n* = 334) marked a box the left of the midpoint of the scale, which was closest to the word positive, and 3.3% (*n* = 13) selected a box to the right of the midpoint of the scale, which was closest to the word negative. For the word pair Kind/Cruel, 78.5% (*n* = 310) marked a box to the left of the midpoint of the scale, which was closest to the word kind, and 8.1% (*n* = 32) selected a box to the right of the midpoint of the scale, which was closest to the word cruel. Pertaining to the word pair Valuable/Worthless, 84.3% (*n* = 333) marked a box to the left of the midpoint of the scale, which was closest to the word valuable, and 3.0% (*n* = 12) selected a box to the right of the midpoint of the scale, which was closest to the word worthless.

Findings Related to Objective 3: Attitudes About Youth Livestock Exhibits After Visiting Exhibits

The now semantic differential scales participants filled out contained the same word pairs as the then test, but in a different order. The findings for the now semantic differential scales are described below in that order. Participants' now responses are displayed in Table 10.

Of the respondents (n = 395) for the pair Pleasant/Unpleasant, 93.2% (n = 368) marked a box to the left of the midpoint of the scale, which was closest to the word pleasant, and 3.5% (n = 14) selected a box to the right of the midpoint of the scale, which was closest to the word unpleasant.

Of the 393 participants who responded to Interesting/Boring, 84.5% (n = 332) marked a box the left of the midpoint of the scale, which was closest to the word interesting, and 10.2% (n = 40) selected a box the right of the midpoint of the scale, which was closest to the word boring.

For the pair Happy/Sad, 394 participants responded. Of these, 89.6% (n = 353) marked a box to the left of the midpoint of the scale, which was closest to the word happy, and 3.8% (n = 15) selected a box to the right of the midpoint of the scale, which was closest to the word sad.

Of the 395 respondents for the word pair Valuable/Worthless, 94.2% (n = 372) marked a box the left of the midpoint of the scale, which was closest to the word valuable, and 1.8% (n = 7) selected a box to the right of the midpoint of the scale, which was closest to the word worthless.

Of the 396 respondents for the word pair Good/Bad, 95.4% (n = 377) marked a

Table 10

Participant Responses to Now Semantic Differential Scales

	7		6		5		4		3		2		1		
	f	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	*f*	%	
Good	**228**	**57.7%**	109	27.6%	40	10.1%	10	2.5%	6	1.5%	2	0.5%	0	0.0%	Bad
Pleasant	**216**	**54.7%**	107	27.1%	45	11.4%	13	3.3%	11	2.8%	2	0.5%	1	0.3%	Unpleasant
Happy	**202**	**51.3%**	88	22.3%	63	16.0%	26	6.6%	7	1.8%	6	1.5%	2	0.5%	Sad
Clean	94	24.0%	**98**	**25.1%**	66	16.9%	57	14.6%	41	10.5%	24	6.1%	11	2.8%	Dirty
Important	**221**	**56.1%**	106	26.9%	41	10.4%	18	4.6%	6	1.5%	1	0.3%	1	0.3%	Unimportant
Beautiful	**146**	**37.1%**	98	24.9%	70	17.8%	61	15.5%	15	3.8%	3	0.8%	1	0.3%	Ugly
Successful	**207**	**52.5%**	110	27.9%	41	10.4%	31	7.9%	2	0.5%	3	0.8%	0	0.0%	Unsuccessful
Interesting	**192**	**48.9%**	103	26.2%	37	9.4%	21	5.3%	21	5.3%	13	3.3%	6	1.5%	Boring
Honest	**218**	**55.5%**	112	28.5%	33	8.4%	26	6.6%	1	0.3%	3	0.8%	0	0.0%	Dishonest
Positive	**230**	**58.4%**	109	27.7%	34	8.6%	15	3.8%	3	0.8%	3	0.8%	0	0.0%	Negative
Kind	**181**	**45.8%**	111	28.1%	42	10.6%	28	7.1%	11	2.8%	12	3.3%	9	2.3%	Cruel
Valuable	**214**	**54.2%**	102	25.8%	56	14.2%	16	4.1%	4	1.0%	2	0.5%	1	0.3%	Worthless

Note. Modal responses are bolded

box to the left of the midpoint of the scale, which was closest to the word good, and 2.0% (*n* = 8) selected a box to the right of the midpoint of the scale, which was closest to the word bad.

Of those who responded (*n* = 394) to the word pair Successful/Unsuccessful, 90.9% (*n* = 358) marked a box to the left of the midpoint of the scale, which was closest to the word successful, and 1.3% (*n* = 5) selected a box to the right of the midpoint of the scale, which was closest to the word unsuccessful.

Of the 391 participants who responded to the pair Clean/Dirty, 66.0% (*n* = 258) marked a box to the left of the midpoint of the scale, which was closest to the word clean, and 19.4% (*n* = 76) selected a box to the right of the midpoint of the scale, which was closest to the word dirty.

For the next two word pairs, 394 responded. For Important/Unimportant, 93.4% (*n* = 368) marked a box to the left of the midpoint of the scale, which was closest to the word important, and 2.0% (*n* = 8) selected a box to the right of the midpoint of the scale, which was closest to the word unimportant. Regarding the word pair Positive/Negative, 94.7% (*n* = 373) marked a box to the left of the midpoint of the scale, which was closest to the word positive, and 1.5% (*n* = 6) selected a box to the right of the midpoint of the scale, which was closest to the word negative.

All of the respondents (*n* = 395) recorded responses for Kind/Cruel. Of these, 84.6% (*n* = 334) marked a box to the left of the midpoint of the scale, which was closest to the word kind, and 8.4% (*n* = 33) selected a box to the right of the midpoint of the scale, which was closest to the word cruel.

Of the respondents (n = 394) for the pair Beautiful/Ugly, 79.7% (n = 314) marked a box to the left of the midpoint of the scale, which was closest to the word beautiful, and 4.8% (n = 19) selected a box to the right of the midpoint of the scale, which was closest to the word ugly.

Of the 393 participants who responded to the word pair Honest/Dishonest, 92.4% (n = 363) marked a box to the left of the midpoint of the scale, which was closest to the word honest, and 1.0% (n = 4) selected a box to the right of the midpoint of the scale, which was closest to the word dishonest.

Findings Related to Objective 4: Determine if the Livestock Exhibits Impacted Fairgoers' Attitudes

Several steps were taken to evaluate what, if any, impact the livestock exhibits had on fairgoers' perceptions of youth livestock fair exhibits. First, a post-hoc evaluation of reliability was determined separately for the then and now items on the instrument.

To determine if the livestock exhibits impacted participants' attitudes, a paired-samples t test was conducted. Each participants' responses for the 12 word pairs were summed to calculate a score for the then scales, and the same calculation was done to determine a sum for the now responses. The then mean was determined to be 67.35 with a standard deviation of 12.36 and the now mean was 73.04 with a standard deviation of 10.30 (see Table 11). A paired-samples t test was used to evaluate change in attitudes before and after. The difference in then and now attitudes was statistically significant at the specified .05 level, $t(375) = -13.20$, $p < .001$.

To determine the practical significance, a Cohen's d effect size was calculated. This statistic demonstrates the practical significance the exhibits had on participants'

Table 11

Then/Now paired-Samples t Test

Data Set	*n*	*M*	*SD*	*t*	*p*
Summed Then	376	67.35	12.36	__	__
Summed Now	376	73.04	10.3	-13.202	.0001

df = 374; α = 0.05

attitudes. To determine the effect size, the mean difference was divided by the pooled standard deviation (Thalheimer & Cook, 2002). To establish this value, the then mean was subtracted from the now mean and divided by the pooled standard deviation, 73.04 - 67.35 / 11.33 = .05. According to Cohen (1992), 0.5 represents a medium effect size.

Additionally, the researcher looked at the means for each item, graphically, as demonstrated in Isaac and Michael (1982) (see Figure 6).

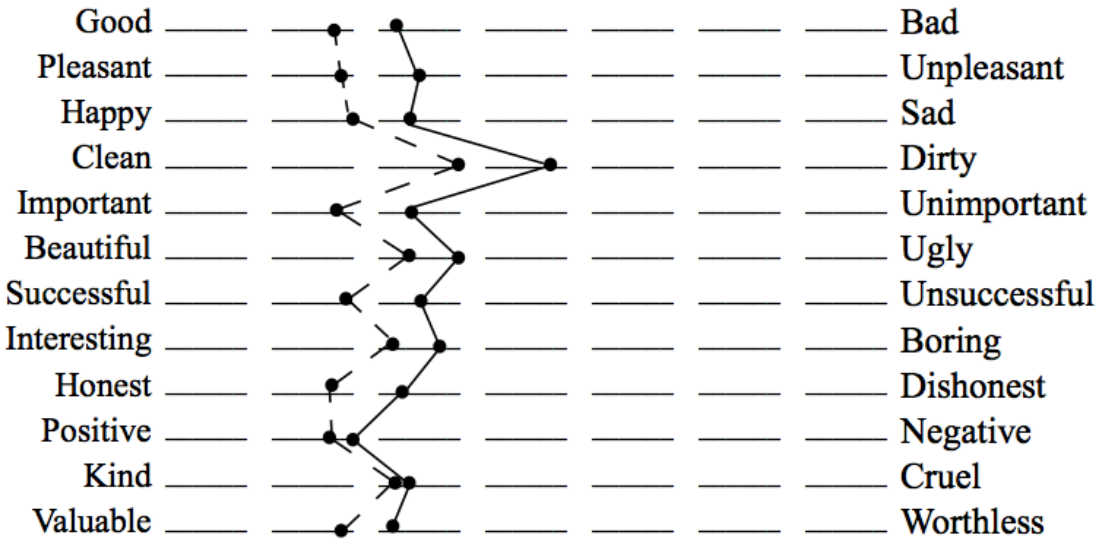

Figure 6. Graphical representation of mean responses.
Note. The solid line is the response means for then responses and the dashed is now responses

CHAPTER V

DISCUSSION AND RECOMMENDATIONS

Introduction

The study was designed to describe the influence 4-H and FFA exhibits had on fairgoers' attitudes about youth livestock exhibits. As society becomes farther removed from agriculture, interactions between farming and nonfarming communities become fewer (Holloway, 2004). When these chances do arise, such as at county and state fairs, attitudes are formed and altered based on these experiences. The purpose of this study was to determine if visiting the youth livestock exhibits at the California State Fair altered fairgoers' perceptions of youth livestock exhibits.

Social representation theory postulates that through discourse and imagery, a common understanding can be formed between expert and nonexpert groups (Halfacee, 1993). A person's predisposition and experience with a topic influences his or her perceptions, and the social representation theory says that communication and imagery can alter these perceptions, and knowledge is gained about the unfamiliar (Moscovici, 2001).

This study combined semantic differential and then/now elements on the

questionnaire distributed to fairgoers. The then/now test was administered after they visited the livestock exhibits and sought to describe whether this experience impacted their attitudes of youth livestock fair exhibits. The findings included frequencies for descriptive statistics as well as a paired-samples *t* test to determine the statistical significance of differences in perceptions. Finally, a Cohen's d for effect size was used to determine practical significance.

Statement of Problem

As society becomes farther removed from agriculture, interaction with production agriculture decreases (Wachenheim & Rathge, 2000). Consequently, agricultural literacy is diminished and perceptions of the industry are formed based on minimal hands-on experience with and possible misrepresentations of the industry (Turnbull, 2002).

Because a large portion of the population lives in urban and suburban areas, people's ability to obtain firsthand knowledge of agriculture may be limited to annual local, county, or state fairs (Turnbull, 2002). As a result, agriculturalists' opportunities to communicate with the public about agriculture may be limited to a handful of experiences such as fairs. More importantly, little research exists that indicates what, if any, influence attending fairs has on fairgoers' perceptions of youth livestock fair exhibits.

Purpose

The purpose of this study was to determine if visiting the livestock exhibits at a state fair would impact fairgoers' attitudes toward the livestock exhibits.

Objectives

The specific objectives guiding this study were:

1. Determine the demographic characteristics of fairgoers at the California State Fair based upon age, gender, ethnicity, race, education, current residency, livestock ownership, 4-H and/or FFA experience, occupation, if they had family members who lived on a farm, and time spent viewing the exhibits.
2. Identify the attendees' attitudes about livestock fair exhibits at a state fair prior to viewing the livestock exhibits.
3. Identify the attendees' attitudes about livestock fair exhibits at a state fair after viewing the livestock exhibits.
4. Determine if visiting the livestock exhibits impacted fairgoers' attitudes about livestock fair exhibits.

Summary of Objective 1 Findings

The first objective guiding this study sought to describe selected demographic characteristics of participants. Respondents were asked to respond to 11 questions related to this objective. The age of respondents ranged from 18 to 80 years. The age range of 25 to 35 years was the largest group at 25.2% (n = 95), closely followed the age range of 46 to 55 years, which represented 24.7% (n = 93). Women composed 58.2% (n = 230) of respondents. Additionally, 86.9% (n = 324) identified their ethnicity as non-Hispanic. When asked to indicate their race, 77.9% (n = 293) identified themselves as white. Regarding education, 35.4% of respondents (n = 140) indicated they had some higher education, while 29.9% (n = 118) indicated they received a bachelor's degree.

When asked about their current type of residency, 61.4% (n = 240) identified their residency as suburban. Participants were asked whether or not they had ever owned livestock, and 64.8% (n = 249) indicated they had never owned livestock. When asked if they had ever participated in 4-H, 85.1% (n = 331) of respondents indicated they had not participated in the organization. Of those who had, 38 provided the number of years they participated, which ranged from 1 to 12 years; however, 63.2% (n = 24) responded that they participated for five or less years. Respondents also were asked if they had ever participated in FFA and if so, for how many years. Of the respondents, 92.8% (n = 359) had not participated in the organization. Of those who had, 16 indicated they were members for 1 to 6 years; however, 87.7% (n = 24) responded they participated for four or fewer years. When asked whether they had relatives who lived on a farm, 57.5% (n = 227) of respondents indicated they did not. Respondents also were asked if they worked in agriculture, and 94.9% (n = 372) indicated they did not work in agriculture.

The length of time viewing the exhibits was determined as a demographic characteristic. Respondents were asked to indicate how long they spent in the livestock exhibits. Approximately 73% (n = 276) of the respondents reported spending 30 minutes or fewer viewing the exhibits.

Conclusions, Recommendations, and Implications Related to Objective 1

The typical respondent to this study is a middle-aged, suburbanite female with at least some higher education. She has never owned livestock or been involved in 4-H or FFA, and does not worked in agriculture. She viewed the livestock exhibits briefly.

The general demographic makeup of participants with regard to sex, age, race, and ethnicity is fairly consistent with the 2010 Census information for California

(Census, 2010). However, the proportion of Hispanic participants is much lower, at 13% when compared to the general California population, which is more than 37% (Census, 2010). The low percentage of Hispanic respondents is a curiosity. This occurrence could be due to the fact that the questionnaire was available in English only, thus inhibiting Hispanics from participating. If the study is replicated, the questionnaire should be translated into Spanish to allow for Spanish speakers/readers to take part in the study.

A report from the California Postsecondary Education Commission (2007), stated that just more than 60% of people ages 25 to 64, have had some post secondary education. A higher proportion of the participants in this study (80%) indicated they had completed some college or other higher education. Interestingly, 5% of participants indicated they are employed in agriculture, which is more than the national average of 1% (EPA, n.d.). This difference might be explained by the fact that people employed in agriculture might be more likely to view livestock exhibits.

Results can only be generalized to the 395 participants. Due to the limited time frame during which questionnaires were distributed, this study should be repeated during the later part of the day to determine if participant demographics and responses change based on the time of day. Furthermore, it is recommended the study be replicated at county and local fairs in different areas across the state of California. Having a robust team of volunteers and support from industry members to provide financial incentives would allow this study to be duplicated at multiple county fairs. This would allow for a much larger and deeper picture of fairgoer demographics and attitudes of youth livestock exhibits.

Summary of Objective 2 Findings

The second objective was to determine participants' attitudes about youth livestock exhibits prior to entering the livestock exhibits. Overall, respondents had positive attitudes about the youth livestock fair exhibits prior to entering the facilities containing the animals. For all but two of the word pairs, more than one-third (n = 120) of respondents selected the box closest to the positive word of the word pair. The two exceptions were clean/dirty and beautiful/ugly. However, for the pair clean/dirty, more than 46% marked a box on the left side of the midpoint of the scale. For beautiful/ugly, more than 60% selected a box on the left side of the midpoint of the scale.

Conclusions, Recommendations, and Implications Related to Objective 2

Overall, respondents' attitudes about youth livestock exhibits prior to viewing the exhibits are positive. This conclusion may be a result of their previous experiences with or knowledge of agriculture, or even previous experience with the exhibits at the state fair. Additionally, participants have the least positive attitude toward the livestock exhibits' cleanliness and beauty.

Summary of Objective 3 Findings

The third objective was to determine participants' attitudes about youth livestock exhibits after viewing the exhibits. Overall, respondents indicated they had positive perceptions of livestock exhibits. For all but one word pair, more than 35% of respondents selected the box closest to the word on the left side of the scale. The word pair clean/dirty did not fall in this category. However, for this pair, over 66% of respondents marked a box on the left side of the midpoint of the scale.

Conclusions, Recommendations, and Implications Related to Objective 3

Respondents' attitudes toward youth livestock exhibits remain positive after viewing the exhibits. Additionally, after viewing the exhibits the positivity of attitudes for all pairs improves, including beautiful/ugly and clean/dirty. Therefore, it is concluded that respondents feel positively about the youth livestock exhibits. The improvement in attitudes seems to be supported by Holloway's (2004) concept of using social representation theory to improve agricultural perceptions.

Duncan and Broyles (2006) stated that people more accurately perceive a concept after experiencing it, which supports the improved positivity of perceptions after viewing the exhibits. This improvement demonstrates to agricultural communicators, fair administrators, youth organization leaders, and fair exhibitors the value youth programs and exhibits have for the industry (Diem & Rothenburger, 2001).

Summary of Objective 4 Findings

The fourth objective was to determine whether viewing the youth livestock exhibits impacted participants' attitudes toward youth livestock exhibits. A paired-samples *t* test was conducted, determining that results were statistically significant. To determine the practical significance, Cohen's d effect size was determined to be .05, which indicates a medium effect size.

Conclusions, Recommendations, and Implications Related to Objective 4

The change between then and now responses is statistically significant and has a medium effect size. Therefore, the youth livestock exhibits influence participants' attitudes toward youth livestock exhibits in a positive way. The most noticeable changes are in participants' opinions of the cleanliness and beauty of the exhibits. Attitudes

change in a positive manner, indicating respondents clarify previous ambiguity they had regarding the exhibits (Holloway, 2004).

Given the medium effect size, it is concluded that although an impact is made, exhibits can be more impactful. To make this impact, club leaders for 4-H and FFA advisers should make increased efforts to provide educational exhibits for fairs as well as ensure members are available to engage in conversations with fairgoers. Admittedly, a great deal of financial resources and time go into constructing educational displays (Diem & Rothenburger, 2001). However, as demonstrated by the study, this does have a payoff in improving perceptions. It may even validate the need for fundraising efforts by agricultural organizations and companies to ensure displays can be improved to increase literacy and awareness of youth projects.

Moreover, this study supported a British movement to improve perceptions and knowledge of agriculture by increasing communication, interaction, and imagery between farming and nonfarming publics (Holloway, 2004). Holloway (2004) stated times of convergence between experts and nonexperts, such as fairs, can improve consumer perceptions and increase their knowledge and understanding of agriculture. The intrapersonal communication and imagery provided by the exhibits and exhibitors impacted participants' attitudes (Holloway, 2004; Moscovici, 2001). Therefore, youth organizations such as 4-H and FFA should continue to ensure exhibits are both educational and aesthetically pleasing. As the study indicated, cleanliness and beauty were the two areas with the least positive attitudes.

Holloway (2004) suggested that in addition to exhibitors, organizations should also become engaged in interacting with fairgoers to further enhance the educational

experience at fairs. The same could be said for North American organizations such as the Western Fairs Association and specie organizations. Participation on behalf of these groups might fill an additional educational gap when exhibitors are showing and have less time to interact with fairgoers, as was the case during this study.

Even though few previous studies regarding attitudes at fairs have been conducted, the findings agreed with studies of agricultural perceptions, which stated that participants perceived agriculture positively (Tolman, 2009; Wachenheim & Rathge, 2002). Although attitudes initially were positive, interaction with agriculturalists improved these, thereby changing attitudes as Wachenheim and Rathge (2002) indicated was possible.

The social representation theory also states that the image of the industry that is presented is the one people will see and perceive (Moscovici, 2001; Holloway, 2004). Therefore, it is not unreasonable to postulate that fairgoers will extend these positive perceptions of youth livestock exhibits to agriculture as a whole. The results of this study could validate the implementation of a similar re-imaging of American agriculture via annual local, county, and state fairs as a means to improve attitudes about agriculture (Holloway, 2004).

While this study demonstrated the benefit of youth livestock exhibits for improving perceptions, it only described if a change occurred and if it was significant. A qualitative study should be conducted to glean a deeper understanding of how participants' attitudes are formed and altered. Determining what aspects most significantly impact fairgoers' opinions can lead to improved communications strategies by exhibitors. Furthermore, one final area where this study was limited was the reliance

on participants' retrospective assessment of the exhibits. Therefore, a true pretest/posttest version of the study should be conducted to determine if the results differ.

Using this understanding of attitudes, agriculturalists can create communication strategies to positively influence consumers' attitudes and understanding of agriculture (Goodwin et al., 2011). Furthermore, youth organization leaders need to work to ensure their groups are positive liaisons for agriculture by communicating with consumers and having clean and informative displays (Diem & Rothenburger, 2001).

This human interaction and transfer of information between experts and nonexperts gives consumers the knowledge, imagery, connection, and personal experience necessary to form positive attitudes toward the agriculture industry, which they ultimately influence via their impact on agricultural policy (Holloway, 2004; Moscovici, 2001; Wachenheim & Rathge, 2002).

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APPENDICES

APPENDIX A

INSTITUTIONAL REVIEW BOARD

Oklahoma State University Institutional Review Board

Date:	Thursday, June 28, 2012	Protocol Expires:	6/21/2013
IRB Application No:	AG1226		
Proposal Title:	The Impact of 4-H and FFA Exhibits on Fairgoers' Perceptions of Agriculture		
Reviewed and Processed as:	Exempt **Modification**		

Status Recommended by Reviewer(s) **Approved**

Principal Investigator(s):

Krista Anderson
1200 N. Perkins Rd. D8
Stillwater, OK 74075

Robert Terry
458 Ag Hall
Stillwater, OK 74078

The requested modification to this IRB protocol has been approved. Please note that the original expiration date of the protocol has not changed. The IRB office MUST be notified in writing when a project is complete. All approved projects are subject to monitoring by the IRB.

☑ The final versions of any printed recruitment, consent and assent documents bearing the IRB approval stamp are attached to this letter. These are the versions that must be used during the study.

The reviewer(s) had these comments:

The modification request revising the questionnaire to reflect information gathered during pilot testing is approved.

Signature :

Shelia Kennison, Chair, Institutional Review Board

Thursday, June 28, 2012
Date

APPENDIX B

QUESTIONNARE FROM PILOT STUDY

Project Title: Impact of 4-H and FFA Exhibits on Fairgoers' Perceptions of Agriculture

Investigator(s): Krista Anderson, Department of Agricultural Education, Communications & Leadership, Oklahoma State University

Purpose: The purpose of this study is to determine the impact youth exhibits at the California State Fair have on fairgoers' perceptions and attitudes of today's agriculture.

Procedures: This study will include a questionnaire provided to fairgoers exiting the livestock areas at the California State Fair. Participants will be given only one questionnaire. The questionnaire will seek basic demographic information. Additionally, it will determine your perceptions of the livestock exhibits prior to entering the livestock barns (retrospective) and after (post) the experience. It should take only about five minutes total. The information gained from these surveys will serve as a baseline for consumer perceptions of agriculture and youth organizations role in the industry. The information collected from this study will remain anonymous. If you wish to participate, please complete the questions as directed and return to a volunteer. Upon completion, you will receive your compensation.

Risks of Participation: No known risks are associated with this study, which are greater than those ordinarily encountered in daily.

Benefits: The findings of this study will help improve communication efforts between the agricultural industry and consumers. By understanding how agricultural exhibits impact public perceptions, youth organizations and agriculturalists can improve communication methods for educating and communicating their efforts with their consumers.

Anonymity: Your personal information will remain completely confidential and at no time will be asked from you. All results from this study will be reported as aggregated data; no individual responses will be reported. +

Contacts: If you have any questions about this research or your rights as a participant in this study, please contact Krista Anderson at 209-402-5734 or akrista@okstate.edu. If you have questions about your rights as a research volunteer, you may contact Dr. Shelia Kennison, IRB Chair, 219 Cordell North, Stillwater, OK 74078, 405-744-3377 or irb@okstate.edu.
Participant Rights: Your participation is voluntary and greatly appreciated. By turning in a completed questionnaire to a volunteer, you willingly agree to participate.

Please place an "X" in each box that describes you								
Sex	Male ☐	Female ☐						
Age	☐							
Ethnicity	Hispanic ☐	Not Hispanic ☐						
Education	High school degree ☐	Some College ☐	Bachelor's Degree ☐	Graduate Degree ☐				
Current Residency	Farm ☐	Rural Area ☐	Metropolitan ☐	Suburban ☐	City/Town ☐			
Have ever owned livestock	Yes ☐	No ☐						
4-H experience	Yes ☐	No ☐	Years ☐					
FFA experience	Yes ☐	No ☐	Years ☐					
Relatives who live on a farm	Yes ☐	No ☐						
Occupation	Industry _____	Employer _____	Position _____					
Why did you come to the fair?	_____							

Volunteer Initials: _____ **Time: _____**

Over →

EXAMPLE: Please rate the concept **"Fairs are"** according to how you **FELT BEFORE** going to the California State Fair by placing an "X" along the scale

Good ☐ ☒ ☐ ☐ ☐ ☐ ☐ **Bad**

Please rate the concept "Youth Livestock Exhibits at the California State Fair Are" according to how you **FELT BEFORE** visiting the livestock area by placing an X along the scale.

Youth Livestock Exhibits at the California State Fair Are …

Good	☐	☐	☐	☐	☐	☐	☐	**Bad**
Spacious	☐	☐	☐	☐	☐	☐	☐	**Constrained**
Complex	☐	☐	☐	☐	☐	☐	☐	**Simple**
Large	☐	☐	☐	☐	☐	☐	☐	**Small**
Important	☐	☐	☐	☐	☐	☐	☐	**Unimportant**
Serious	☐	☐	☐	☐	☐	☐	☐	**Humorous**
Active	☐	☐	☐	☐	☐	☐	☐	**Passive**
Slow	☐	☐	☐	☐	☐	☐	☐	**Fast**
Positive	☐	☐	☐	☐	☐	☐	☐	**Negative**
Strong	☐	☐	☐	☐	☐	☐	☐	**Weak**
Calm	☐	☐	☐	☐	☐	☐	☐	**Excitable**
True	☐	☐	☐	☐	☐	☐	☐	**False**

Please rate the concept "Youth Livestock Exhibits at the California State Fair Are" according to how you **FEEL AFTER** visiting the livestock area by placing an X along the scale.

Youth Livestock Exhibits at the California State Fair Are …

Important	☐	☐	☐	☐	☐	☐	☐	**Unimportant**
Spacious	☐	☐	☐	☐	☐	☐	☐	**Constrained**
Complex	☐	☐	☐	☐	☐	☐	☐	**Simple**
Serious	☐	☐	☐	☐	☐	☐	☐	**Humorous**
Good	☐	☐	☐	☐	☐	☐	☐	**Bad**
Large	☐	☐	☐	☐	☐	☐	☐	**Small**
Active	☐	☐	☐	☐	☐	☐	☐	**Passive**
Slow	☐	☐	☐	☐	☐	☐	☐	**Fast**
Positive	☐	☐	☐	☐	☐	☐	☐	**Negative**
True	☐	☐	☐	☐	☐	☐	☐	**False**
Calm	☐	☐	☐	☐	☐	☐	☐	**Excitable**
Strong	☐	☐	☐	☐	☐	☐	☐	**Weak**

APPENDIX C

PANEL OF EXPERTS

PANEL OF EXPERTS

Dr. Dwayne Cartmell
436 Agricultural Hall
Oklahoma State University

Sandi M. Hurtgen
California State Fair
Livestock Entries

Dr. Traci L Naile
437 Agricultural Hall
Oklahoma State University

Dr. Robert Terry, JR.
466 Agricultural Hall
Oklahoma State University

Russell Gosz
201F Animal Science
Oklahoma State University

APPENDIX D

REVISED QUESTIONNARE USED AT STATE FAIR

Project Title: Impact of 4-H and FFA Exhibits on Fairgoers' Perceptions of Agriculture

Investigator(s): Krista Anderson, Department of Agricultural Education, Communications & Leadership, Oklahoma State University

Purpose: The purpose of this study is to determine the impact youth exhibits at the California State Fair have on fairgoers' perceptions and attitudes of today's agriculture.

What to Expect: This study will include a questionnaire provided to fairgoers exiting the livestock areas at the California State Fair. Participants will be given only one questionnaire. The questionnaire will seek basic demographic information. Additionally, it will determine your perceptions of the livestock exhibits prior to entering the livestock barns (retrospective) and after (post) the experience. It should take only about five minutes total. The information gained from these surveys will serve as a baseline for consumer perceptions of agriculture and youth organizations role in the industry. The information collected from this study will remain anonymous. If you wish to participate, please complete the questions as directed and return to a volunteer. Upon completion, you will receive your five dollar compensation.

Risks of Participation: No known risks greater than those ordinarily encountered daily are associated with this study.

Benefits:. The findings of this study will help improve communication efforts between the agricultural industry and consumers. By understanding how agricultural exhibits impact public perceptions, youth organizations and agriculturalists can improve communication methods for educating and communicating their efforts with their consumers.

Compensation: Each participant will receive five dollars cash upon completing the survey.

Confidentiality: Your personal information will remain completely confidential and at no time will be asked from you. All results from this study will be reported as aggregated data; no individual responses will be reported.

Contacts: If you have any questions about this research or your rights as a participant in this study, please contact Krista Anderson at 209-402-5734 or akrista@okstate.edu. If you have questions about your rights as a research volunteer, please contact Dr. Shelia Kennison, IRB Chair, 219 Cordell North, Stillwater, OK 74078, 405-744-3377 or irb@okstate.edu.

Participant Rights: Your participation is voluntary and greatly appreciated. By turning in a completed questionnaire to a volunteer, you willingly agree to participate.

Incentive Distribution

Volunteer Initials: _____ Time: _____

Please provide the information that best describes you by placing an "X" in the appropriate boxes and filling in the blanks below

Age	_____							
Gender	Male ☐		Female ☐					
Ethnicity	Hispanic ☐		Not Hispanic ☐					
Race *(please mark only one box)*	White alone ☐		African American Alone ☐		Asian alone ☐			
	Native Hawaiian or Other Pacific Islander alone ☐		American Indian or Alaska Native alone ☐					
	Some other race alone ☐		Two or more races ☐					
Education	High school degree ☐		Some higher education ☐		Bachelor's degree ☐		Graduate degree ☐	
Current Residency	Farm ☐		Rural area ☐		Suburban ☐		Urban ☐	
Have ever owned livestock	Yes ☐		No ☐					
4-H experience	Yes ☐		Years ____		No ☐			
FFA experience	Yes ☐		Years ____		No ☐			
Relatives who live on a farm	Yes ☐		No ☐					
Do you work in agriculture	Yes ☐		No ☐					
About what time did you enter the barns? _____AM/ PM			**How long did you spend in the barns?** _____ minutes					
Why did you come to the fair?	_____							

Over →

EXAMPLE: Please rate the concept **"Fairs are"** according to how you **FELT BEFORE** going to the California State Fair by placing an "X" along the scale

Good ☐ ☐ ☐ ☒ ☐ ☐ ☐ **Bad**

Please rate the concept "Youth Livestock Exhibits at the California State Fair Are" according to how you **FELT BEFORE** visiting the livestock area by placing an X along the scale.

Youth Livestock Exhibits at the California State Fair Are …

Good	☐	☐	☐	☐	☐	☐	☐	**Bad**
Pleasant	☐	☐	☐	☐	☐	☐	☐	**Unpleasant**
Happy	☐	☐	☐	☐	☐	☐	☐	**Sad**
Dirty	☐	☐	☐	☐	☐	☐	☐	**Clean**
Important	☐	☐	☐	☐	☐	☐	☐	**Unimportant**
Beautiful	☐	☐	☐	☐	☐	☐	☐	**Ugly**
Successful	☐	☐	☐	☐	☐	☐	☐	**Unsuccessful**
Boring	☐	☐	☐	☐	☐	☐	☐	**Interesting**
Honest	☐	☐	☐	☐	☐	☐	☐	**Dishonest**
Positive	☐	☐	☐	☐	☐	☐	☐	**Negative**
Cruel	☐	☐	☐	☐	☐	☐	☐	**Kind**
Valuable	☐	☐	☐	☐	☐	☐	☐	**Worthless**

Please rate the concept "Youth Livestock Exhibits at the California State Fair Are" according to how you **FEEL AFTER** visiting the livestock area by placing an X along the scale.

Youth Livestock Exhibits at the California State Fair Are …

Pleasant	☐	☐	☐	☐	☐	☐	☐	**Unpleasant**
Boring	☐	☐	☐	☐	☐	☐	☐	**Interesting**
Happy	☐	☐	☐	☐	☐	☐	☐	**Sad**
Valuable	☐	☐	☐	☐	☐	☐	☐	**Worthless**
Good	☐	☐	☐	☐	☐	☐	☐	**Bad**
Successful	☐	☐	☐	☐	☐	☐	☐	**Unsucessful**
Dirty	☐	☐	☐	☐	☐	☐	☐	**Clean**
Important	☐	☐	☐	☐	☐	☐	☐	**Unimportant**
Positive	☐	☐	☐	☐	☐	☐	☐	**Negative**
Cruel	☐	☐	☐	☐	☐	☐	☐	**Kind**
Beautiful	☐	☐	☐	☐	☐	☐	☐	**Ugly**
Honest	☐	☐	☐	☐	☐	☐	☐	**Dishonest**

APPENDIX E

VOLUNTEER TRAINING SCRIPT

Thesis Project: Volunteer Information

Group assignments:

Purple:

Each group has people to bring in participants, these are highlighted in purple. To get someone to talk the survey, you may ask if they want an easy five dollars, explain it can buy their child cotton candy, or tell them it's for a college project.

Ex: *"Would you be interested in taking a short, five minute survey about the livestock exhibits and receive five dollars cash for your time?"*

If they ask what the survey is about, only state that it is about their experience in the livestock exhibits. You may explain that it is for a master's thesis, but not explain the goal of the project. Should they want to know more, they can get more information after. If they say yes, please ask them these three qualifying questions.

Ex: "*We will determine your eligibility through three basic questions. One, are you 18 years or older? Two, do you know someone exhibiting livestock at the fair? Three, have you been through the livestock exhibits?"*

The responses you need are:

1. Yes, I am 18
2. No, I do not know anyone showing
3. Yes, I have been through the exhibits

* If they answer **NO** to question one or **YES** to question two, explain that they are simply ineligible and thank them for their time

* If they haven't been through the barn, only state *(we do not want to impact their perceptions by providing too much detail)*:

Ex: *"Please go enjoy the exhibits and return when you have been through the livestock exhibits."*

If they pass all three questions, please write Y, N, Y on the paper – this is their ticket to get to take the survey. Then, send them, with their paper, to the person highlighted in blue.

Blue:

These are the ones administering the survey to participants who qualify. Be sure they provide you with the pink piece of paper saying they have been asked all three qualifying questions. Then, explain how to fill out the survey, demonstrating where to start and that they do not need to sign in the volunteer portion.

Ex: *"This portion (pointing) is a consent/waiver indicating there is no harm to you and that you agree to take the survey, this side (pointing to the right side) is demographic information. –Flip- This left hand column is how you felt before going into the exhibits, and the right (pointing) is how you felt after. Once you are finished, bring your completed form to the gentleman and he will give you your cash."*

** If the participants are a couple, they may each take the survey, but need to take it independently, ie- no discussing the questions

Green

These individuals are charged with collecting the survey and handing out the money

1. Check to see the survey is complete; each question on the back needs to be answered to receive the money. As long as most of the front is filled out, that is fine.

If a section on the back of the survey was missed, please say:

"It appears you missed a section, would you mind filling it out?"

** If they say no, inform them that they forfeit the incentive and thank them for their time

2. If it is complete:

1- Stamp the top of the person's right hand

2- Time-stamp the sheet and initial in the incentive payout box

3- Pay the participant for their time and thank them for their time

3. Then, place the survey in the box provided.

*** Be sure that you keep an eye out for people trying to retake the survey; they will have a stamp on their right hand.

APPENDIX F

CARD USED TO DETERMINE PARTICIPANT ELIGIBILITY

1. Are you 18 or older? _____

2. Do you know someone exhibiting livestock here? _____

3. Have you been through the livestock exhibits? _____

APPENDIX G

INCENTIVE SIGN

$

Want $5 Cash?

Take this 5 minute survey!

$

APPENDIX H

SPONSOR SIGN DISPLAYED AT FAIR

Thank You Sponsors!

San Joaquin, Inland Empire
and Merced Chapters

VITA

Krista Lynn Anderson

Candidate for the Degree of

Master of Science

Thesis: THE IMPACT OF 4-H AND FFA EXHIBITS ON FAIRGOERS' PERCEPTION OF AGRICULTURE

Major Field: Agricultural Communications

Biographical:

Education:

Graduated from Escalon High School, Escalon California, May 2006

Received Associate of Science degrees in Animal Science, Agriculture Business, and Agricultural Sales and Services from Modesto Junior College, Modesto, California in December 2008.

Received Bachelor of Science degree in your Agricultural Communications from Oklahoma State University, Stillwater, Oklahoma in December 2010.

Completed the requirements for the Master of Science degree in Agricultural Communications at Oklahoma State University, Stillwater, Oklahoma in December, 2012.

Experience:

Serve as the public relations and administrative assistant for the Oklahoma Cooperative Extension Service, Staff and Program Development Office from December 2009 – Present.

Served as the Wes Watkins Center for International Trade and Development communications and marketing graduate assistant from December 2010 – December 2012.

Professional Memberships:

Phi Kappa Phi Honor Society

Gamma Sigma Delta