

What is the Meaning of Youth Livestock Production? A Hermeneutic Phenomenological Study

Rebecca L. Mott¹, Jon Simonsen², John Tummons³, Roxanne Vandermause⁴, Anna Ball⁵, D. Adam Cletzer⁶, and Jaelyn Peckman⁷

Abstract

Raising livestock for food production is a unique cultural phenomenon. It has been well documented that showing livestock as part of 4-H contributes to practical skills, knowledge, and life skills. While it is common to view livestock production through skills-based or economic lenses, there are subtle nuances of the phenomenon, social, cultural, and emotional aspects that are harder to capture. The purpose of this study was to generate an interpretation of the meaning of livestock production for long-standing 4-H livestock project members, and to uncover how these project experiences manifest in other aspects of members' lives. This project answers the question, "What does it mean to be a livestock producer?" Based on the assumption that understanding is rooted in lived experience, we used a Hermeneutic approach to examine transcripts of in-depth audio recorded interviews with 4-H members who are high school juniors or seniors and have been enrolled in livestock projects throughout their entire 4-H careers. In an additional photo elicitation activity, we examined participants' reflections on livestock photographs from their childhood. We uncovered two overarching patterns, paradoxical in nature: a) Livestock Production as a Culture of Care and Connection; and b) Livestock Production as a Culture of Loss and Misunderstanding. Patterns illuminated in this research inform educational experiences surrounding youth livestock production. This study also adds to agriculture industry's understanding of how youth experience growing up in livestock production. Finally, this study provides insight into the importance of exploring the ways livestock producers engage with consumers about agriculture.

Keywords: livestock; youth; livestock production

Author Note: Rebecca L. Mott [0000-0002-9135-6955]

We have no known conflict of interest to disclose

Correspondence concerning this article should be addressed to Rebecca L. Mott, Agricultural Education & Leadership, 123 Gentry Hall, Columbia, MO 65211. Email: mottr@umsystem.edu

¹ Rebecca Mott is a Professor of Agricultural Education and Leadership in the Division of Applied Social Sciences at the University of Missouri, 123 Gentry Hall, Columbia, MO 65211 mottr@missouri.edu

² Jon Simonsen is a Professor of Agricultural Education and Leadership in the Division of Applied Social Sciences at the University of Missouri, 126 Gentry Hall, Columbia, MO 65211 simonsenj@missouri.edu

³ John Tummons is a Professor of Agricultural Education and Leadership in the Division of Applied Social Sciences at the University of Missouri, 127 Gentry Hall, Columbia, MO 65211 tummonsj@missouri.edu

⁴ Roxanne Vandermause is the Dean of Nursing in the College of Nursing at University of Missouri-St. Louis, 1 University Blvd NAB 150, St. Louis, MO 63121 vandermauserk@umsl.edu

⁵ Anna Ball is the Associate Dean for Academic Programs in the College of Agricultural, Consumer and Agricultural Sciences at the University of Illinois Urbana-Champaign, 124 Mumford Hall, Urbana, IL 61801 aball@illinois.edu

⁶ Adam Cletzer is a Professor of Agricultural Education in the Division of Applied Social Sciences at the University of Missouri, 124 Gentry Hall, Columbia, MO 65211 cletzerd@missouri.edu

⁷ Jaelyn Peckman is an Instructor in the Division of Applied Social Sciences at the University of Missouri, 125A Gentry Hall, Columbia, MO 65211 peckmanj@missouri.edu

Introduction

Little is known about what participating in youth livestock programming means to the young people who experience this phenomenon throughout their childhoods. Anecdotal stories from livestock producers — particularly adults — abound in agricultural magazines and on industry websites, but little rigorous and systematic research has been conducted.

It is well documented that livestock projects positively contribute to youths' practical skill development, agricultural/scientific knowledge, and life skill development (Boleman, Cummings & Briers, 2005; Rusk et al., 2003; Sawyer, 1987; Shih & Gamon, 1997; Smith et al., 2009; Ward, 1996). There is a positive relationship between years of livestock project involvement and life skills development (Boleman et al., 2005), as well as leadership skill development (Walker et al., 2011). Responsibility, in particular, is an important life skill that livestock projects seem to hone (Ward, 1996). The life skill of responsibility is used by members not only to care for their livestock, but also to complete homework, be on time for jobs, and care for younger siblings (Rusk et al., 2003). Boleman and colleagues (2005) determined that livestock exhibitors perceive they accept responsibility and develop confidence and self-discipline through the influence of their projects. 4-H members use these livestock-related project skills to help develop life skills that are necessary to become a contributing adult in the community (Rusk et al., 2003).

However, our understanding of socio-affective relationships between humans and livestock has been explored much less (Wilkie, 2006). Farmers often indicate that they could not remember ever having not worked with livestock (Hoffett, 2015). The way farmers relate to their livestock is rooted in tradition and connected to their rural lifestyle (Hoffett, 2015). Caring for animals and the land gives ranchers a reason for being, work they enjoy doing, and a sense of satisfaction (McSweeney & Raish, 2012). For farmers, taking care of livestock is an important aspect of their identity and culture (Porcher, 2006; Tovey, 2003). The relationship between farmers and their livestock can be a complex web of emotional and rational aspects (Hoffett, 2015).

While it is common to view livestock production through skills-based lenses or even economic lenses, there are also subtle nuances of the phenomenon — the social, cultural, and emotional aspects — that are much harder to capture. Most extant studies that involve youth and livestock use a quantitative approach to examine the extent to which showing livestock has impacted livestock skill, life skill, or leadership skill development (Davis et al., 2000). Current research about youth livestock projects has not considered the way youth interpret the meaning of, or make sense of, the work they are doing with their livestock projects. Little is known about the *meaning* of livestock production to those involved in the phenomenon.

By lifting the veil on youth livestock production, the current research provides insight to the profession about AAAE Research Priority 7: Addressing Complex Problems. It also helps to inform AAAE Research Priority Question 2: How can teaching, research, and extension programs in agricultural leadership, education, and communication address complex issues? Illuminating this phenomenon provides a deeper understanding that can be used to enhance livestock projects for young people enrolled in nonformal educational programs. This research provides clues that help us understand how and why working with animals can impact social and emotional skill development. It provides an opportunity for the voices of youth livestock program participants to influence how adults lead, teach, and mentor youth involved in livestock projects. Additionally, this research may be useful as we think about public perception around animal agriculture.

Purpose and Objectives

The purpose of this study was to generate an interpretation of the meaning of livestock production for long-standing 4-H livestock project members, as well as to uncover how these project experiences manifest in other aspects of members' lives. This research provides an interpretation of the phenomenon of 4-H youth livestock production. The objectives of this study were: (1) generate an interpretation of the meaning of livestock production for long-standing 4-H livestock project members; and (2) uncover how livestock production experiences manifest in other parts of young people's lives.

Methods

This hermeneutic phenomenology examined the phenomenon of youth livestock production within the setting of 4-H in the state of Missouri. We served as both authors and researchers for the study, using a constructivist paradigm to preserve multiple realities of participants. We utilized literature about youth livestock projects and farmers' perspectives on livestock to provide context and identify gaps. This literature also informed our understanding and helped us to be more attuned to the phenomenon at hand (Dibley et al, 2020). Rather than identifying a predetermined theoretical framework, data interpretation and analysis was driven by participant's rich responses. It was important to us that the essence of the phenomenon of youth livestock production was not born of pre-existing literature, but rather uncovered through rich discussion with the youth participants.

We interpreted participant stories, co-creating a narrative about the meaning of livestock production to youth who were involved in 4-H over an extended period of years. This study was reviewed by University of Missouri Institutional Review Board and received an exempt status.

Heideggerian Hermeneutic Phenomenological Approach

Since the Heideggerian hermeneutic phenomenological approach seeks to understand the meaning of human experience, it was an appropriate fit for the research question at hand. Heidegger's methodological approach aims to uncover the meaning behind a phenomenon by interpreting an experience (Lopez & Willis, 2004; van Manen, 1997). This ontological perspective includes the influence of social-cultural contexts and realities, as well as how the phenomenon impacts being (McConnell-Henry et al., 2012). Hermeneutic phenomenology focuses on uncovering meanings that may be missed or passed over in other qualitative methodologies.

This is accomplished through the use of the hermeneutic circle. The hermeneutic circle consists of researchers going back and forth in the questioning of prior knowledge and experience in order to understand the deeper meaning of a phenomenon. The interplay between parts and the whole is at the core of hermeneutic phenomenological research, and it influences research design, sampling, and data analysis and interpretation.

Research participants for this study were identified through unique purposeful sampling. Five participants in Northwest and Central Missouri who met the inclusion criteria for this study were contacted over a 30-day period via email. The goal was to find youth who were heavily involved with livestock production because it was anticipated that this strategy would yield deeper understanding and insight about the phenomenon. The following inclusion criteria were created for purposeful sampling: (a) participants were high school juniors or seniors; (b) participants had been enrolled in 4-H livestock projects for between eight and 10 years; and (c) participants were active in livestock production (i.e., own, breed, and raise offspring) at the time of the study.

Language and voice and are the center of hermeneutic phenomenological methodology, and the primary researcher engaged in extensive and intense dialogues with each of the five participants. Smaller sample sizes that generate more impactful information are appropriate for hermeneutic phenomenological research (Dibley et al., 2020). Through criterion-based sampling, we aimed to recruit a sample that would reveal not only shared experiences, but also unique differences (Dibley et al., 2020) that helped us to understand the phenomenon of youth livestock production at a deeper level.

Data Sources and Collection

This study used a qualitative design that employs photo elicitation, hermeneutic individual interviews with five 4-H livestock project members, and observations/field notes of the five 4-H'ers on their respective farms and at livestock events. Using multiple data sources helped facilitate deeper understanding of the phenomenon. Below we discuss each of these data collection techniques at length.

First, photo elicitation is the idea of inserting a photograph (or another visual material) into a research interview (Harper, 2002). Having an item to handle and focus on can help to “break the ice” between the participant and researcher during an initial interview. Each participant was invited to share 4-5 photos or other artifacts from his/her early days of livestock projects. The prompt was simply, “Tell me about your pictures.” The follow-up question was, “What else do you remember?” Aligning with the Heideggerian hermeneutic approach, the participant’s lead was followed as stories unfolded about their pictures, and follow-up questions were asked for clarification when necessary. Photos promote longer, more comprehensive interviews while helping to alleviate fatigue and repetition (Collier, 1957). Additionally, they prod memory and increase the likelihood that participants will share emotional statements (Collier, 1957). Finally, photos promote deep and reflective talk (Harper, 2002).

Second, on-farm conversational interviews followed principles of philosophical hermeneutics. They were guided by the researcher, directed by each participant, and co-constructed from the mutual focus of the topic at hand (Vandermause & Fleming, 2011). The researcher followed in the direction that the participant led the conversation, and when needed, gently turned the participant back to the central question: *What is the meaning of livestock production?* Follow-up questions were used if the conversation did not naturally provide insight or understanding about the topic at hand. Interviews were audio recorded either during each participant’s chore time or in the barnyard area immediately after chores were completed. This “go-along” method tends to feel more conversational and less intense than more formal interviews (Kusenbach, 2003). Each farm visit ended with the closing question, *what else do I need to know?* We recorded brief fieldnotes during this visit and reflected on observations and interviews immediately after leaving the farm.

Finally, participants were observed at a livestock show environment “in action” with their livestock, families, and friends. We recorded field notes about demeanor, appearance, vocalizations, body language, and interactions that would not otherwise be recorded in a narrative (Crist & Tanner, 2003). After completing these observations, we spent time reflecting and writing reflective memos about our observations. Additionally, we continually practiced reflexivity throughout the research project by asking ourselves, *what is it about me that helps or hinders the project, and what, if anything, do I need to do about it?* (Dibley et al., 2020: 140).

Data Analysis and Interpretation

Involving an interpretive team in brainstorming, discussion, and analysis of results promotes a scholarly and systematic approach to hermeneutic interpretive phenomenology. Interpretive team members were identified and recruited because they had expertise or experience in the content area of inquiry or are methodological experts (Crist & Tanner, 2003). The interpretive team for this project consisted of university

agricultural education and leadership faculty members who are also livestock producers. These individuals' children have also been involved in livestock production and members of 4-H. An undergraduate student from the university who grew up raising and exhibiting livestock through the 4-H and FFA programs also served on this team. Finally, a methodological expert in Heideggerian hermeneutic phenomenology with content expertise in the field of nursing rounded out this team. The interpretive team met via Zoom after each interview had been transcribed verbatim and compared with audio recordings.

We used Crist and Tanner's (2003) five-phase framework to guide the interpretive process. The interpretive team was involved throughout all five phases of the iterative processes. In phase one, we focused on initial reactions to interview and observation techniques, as well as the content in the initial interviews. We used this phase to note unclear concepts and to determine further questions (Benner et al., 1996). Phase two allowed us to explore central concerns and unfolding meanings, explore linkages, and talk about our own reactions to the interviews. During phase two, we also worked together on the "naming" process, conceptualizing and coding our central concerns and identifying exemplars (Benner et al., 1996). During phase three, we identified our shared meaning and developed a written interpretive summary showing patterns between meanings (Diekelmann, 1993). Phase four allowed us to create in-depth interpretations of excerpts and summaries, which supported our final interpretations of the phenomenon of youth livestock production. Phase five included us keeping interpretive meeting minutes to create an audit trail. We also worked together to refine manuscripts.

Rigor and Trustworthiness

We utilized deWitt & Ploeg's (2006) framework to help ensure rigor and trustworthiness. This framework consists of the following five constructs: balanced integration, openness, concreteness, resonance, and actualization (deWitt and Ploeg, 2006). We established positionality and used an interpretive team to attempt to achieve balance between our beliefs and the voices of the participants (deWitt & Ploeg, 2006). Documenting materials, processes, analysis methods, and memos contributed to *openness* of the study. The *concrete* use of the research is to improve programming for youth involved in livestock production, unveil clues about the complex human-animal bond, and gain insight about communicating with those inside and outside of the agricultural community. We included participants' meaningful stories and descriptions that will *resonate* with readers, leaving them with a new understanding, or an "epiphany" of the phenomenon. A study that has strength in *actualization* makes a difference that lasts long after the study is complete. Our intention is that this study will have the following impacts: (a) offer insight that can help evaluate the current educational practices surrounding youth livestock experiences; and (b) foster conversations that could begin to bridge gaps between those inside and outside of the agriculture industry.

Findings

Description of the Participants

All five participants were 17-18 years of age and had completed either their junior or senior year of high school. All had been enrolled in the 4-H program 8-10 years. Participants included three females (Krista, Brandy, and Shana) and two males (Ben and Jon). All participants were Caucasian. All participants lived in a two-parent household and had either one or two siblings. Four of the five participants lived on the farm; one lived in town and had livestock housed at a separate site. All participants were heavily involved in not only 4-H, but also FFA. Collectively, they had served as officers on the local, regional, and state levels of those positive youth development organizations. All participants had shown livestock on the county and regional levels. Several also exhibited at the state and national levels. Although the youth in this study had some distinctions in their backgrounds and experiences, patterns and exemplars surfaced based on their shared experiences as livestock producers involved in the 4-H program throughout childhood.

Common Patterns and Exemplars

Two patterns were identified by the interpretive team through the five interviews and five photo elicitation activities analyzed. Under each pattern are sub-patterns seen *within* the pattern. The first overarching pattern that emerged was *Livestock Production as a Culture of Care and Connection*. Sub-patterns that were illuminated are as follows: (a) caring in families throughout the generations; (b) feeling supported by the agriculture community, and (c) connecting to opportunities that impact one's future. The second overarching pattern was *Livestock Production as a Culture of Loss and Misunderstanding*. Sub-patterns that contributed to the second overarching pattern are as follows: (a) dealing with loss and disappointment, and (b) balancing between two worlds.

Pattern 1: Livestock Production as a Culture of Care and Connection

At the center of the meaning of livestock production is a culture wrapped in care and connection. This culture is evident not only in the way livestock producers relate to each other, but also in how they relate to their livestock. However, this may not be easily apparent to those who live outside of the phenomenon. Furthermore, those living inside of the phenomenon tend to take this culture for granted because it is simply part of the daily routine of being involved in livestock production. For example, Ben shared what is commonly called in this type of research a "paradigm case," or poignant remark that relates to all other participant experiences and themes identified in the analysis and interpretation:

The relationships you build and networking is always gonna affect you in your life. And some of those relationships you build at the fair sweating over a hundred degree day trying to get pigs ready to show or whatever, uh, you aren't gonna forget those very often. Uh, you don't get a chance to make old memories like that again. For sure. But yeah, the money is nice. Those kids they see.. a lot of people put it toward college...toward schooling, and whatever they plan to do for their project next year. I've always gotten more out of it (than the money)Just seeing all the emotion in that place (the county fair livestock sale)...how much people care for the kids that do it.. and what the kids are doing with their animals. That means a lot more to me than the check at the end of the day. Ben's words, shared on the front porch of his house on a stifling July night, paint a picture of the culture of care and connection that surrounds livestock production. He highly values the support and emotional investment of the families and community members who support youth livestock projects.

Sub-Pattern 1: Caring in Families throughout Generations. Krista's interview is representative of the intergenerational family connections that are common in the phenomenon of livestock production. She speaks about how her aunts and uncles began showing livestock in 4-H and shares that it is now a family tradition:

Yeah, so my dad and his three brothers and one sister started showing when they were 4-H'ers.... So then my dad's oldest brother's kids started showing hogs, ummm...and then that kind of passed down through them and my dad's sister and my dad's older brother ahead of him and then us. Umm...so it's definitely something that we've been doing for a long time. Umm, I have cousins who their kids have now started showing. They're doing it now. So it's just a big cycle in my family, of going to the state fair...We call it the Smith Family Reunion at the fair. We have all our pens together and we kind of take up a whole aisle and yeah, it's...it's...it's a good time for our family.

Although the tradition of producing and showing livestock is meaningful to the participants, they also clearly communicate that there is pressure and tension that accompanies the pride they take in this phenomenon. Krista explained:

Oh yeah, it's definitely...you feel like everyone's kind of looking at you so you want to do really well and you've got to perform when you're out there, uhh...and so. Having it be such a family

tradition, it's definitely something that as a little kid you take it seriously...And you want to do really well.

There are many benefits to working and living so closely with family members, but these complex interactions can also present challenges for youth raised in livestock production. High expectations from family members were referred to several times by the youth. Several mentioned with a chuckle that their parents could be "control freaks" or "perfectionists." These comments usually occurred after the audio recorder was shut off, frequently when the youth were in the middle of chores or show preparation.

Parent-child relationships can face challenges as youth become increasingly independent with their livestock projects. Brandy provided an example of how this sometimes looks. She explained:

At the beginning of state fair this year mom was like, "Brandy, you need to go do this. Brandy you need to go do that." And I kind of had to take a step back and say, "Mom, I get what you're wanting me to do. I did this last year all on my own and we did okay. You just have to trust me" ...You have to trust the process. And so we had a heart to heart at that point in time, and she realized I could take the responsibility handling everything. And being a responsible adult at state fair.

For youth to continue to be involved in livestock production after they age out of 4-H, family support becomes critical. Ben explained how this would look in his family, "Dad's got females...groups of heifers that are the same age as all of mine, so they can go around together."

Krista, who was getting ready to graduate from high school when she participated in this study, explained her cattle will be cared for by her parents while she is in college. They will receive the profit from the sale of the calves during her time away in exchange for their labor and input costs. When she finishes school and finds her own land, her cows will be waiting for her.

Siblings are also involved in helping with transitions as 4-H members age out and move on to other endeavors. Krista mentioned the transition that occurred when her older brother left for college:

Really, until last summer, I never made any of the feeding decisions. That was something my brother really enjoyed doing. He was good at it, so I just kind of let him do it. So that was something I've just kind of gotten to take responsibility of. To decide what pigs need to be get what rations, you know...stuff like that...I have to send him pictures like once a week and we have a big chalk board where we write everything I'm feeding to them. So he's got to see that and tell me if he thinks I'm doing it wrong or whatever. So, definitely he checks in, but I'm the one executing the work I guess.

Each of the five participants shared memories of their grandparents when talking about their livestock projects. Ben laughed fondly as he told of his grandpa watching him walk his market hog one evening while sitting in his wheelchair on the front porch. Suddenly the pig ran up onto the porch. Ben explained:

I just knew that pig was gonna plow him over. And that pig stopped right in front of him, and he just reached, petted her head, and said, "Good pig." And then she ran away. Just stood there and looked at him and he petted her right on the forehead...Cuz he had pigs too...that was Mom's dad. He had pigs too, and he always liked his pigs.

Life changes accompany the phenomenon of livestock production; siblings transition in and out of the home, youth transition out of 4-H and FFA livestock projects, and family members who have been involved in livestock production become unable to participate due to aging or death. Yet care is present throughout the generations.

Sub-Pattern 2: Feeling Supported by the Agriculture Community. In addition to extensive conversations about family members within the context of livestock production, youth frequently mentioned what they referred to as their “agricultural family,” or “show family.” They feel an instant connection with others in agriculture, as Krista explained:

But you know, being able to go places... ummm and know people that are involved in agriculture and know that you have a connection with those people. Even if you don't actually know them personally, we can be connected. Because you know, we live on farms...we know what a farm life is like...Yeah, I don't know. But it's definitely something that...yeah, it is an instant connection with people that are involved in agriculture. We've all kind of ... Part of it you know I think is definitely that we've struggled through bad... you know, low grain prices or cattle prices. And so you know, everybody's sorta been through the ringer at some point or another...We know that that's kind of helped make us stronger and that...it's about tradition. We definitely grow through those times and that it's not what's making you the most money. Or you know, the easiest job to do but because we love what we do we continue to do it.

Brandy also talked about her “show family's” help following her mother's car accident:

Yes, there were other more important things to focus on other than just state fair. So I personally had my other county fair family...to be a major, major support system. And that was so important to me, just a person. Having and knowing that there's somebody that's got your back...umm, if something happens, especially like this accident.

Brandy knew that she could count on the livestock families she had spent countless hours with through the years in the livestock barns at the county fair to be her support system during an unexpected life crisis. She comments that some of these adults were “kind of like substitute parents” for her during this time.

Each of the youth in this study shared stories of being inspired by role models and mentors. Sometimes, these were older 4-H or FFA members. Other times, they were siblings or extended family members. In some cases, people in the community even became role models or mentors. Ben referred to several different types of role models and mentors in the following vignette:

Those older showmen that were 18 and 19. I was like, man I really...I really wanna be like them someday...Like I can't believe he can pick his lamb up with one hand, and then set the back feet legs with the other. And I know I was a short kid, and couldn't do that at all, but I knew someday that I wanted to be a good enough showman to be able to do something like that. And then seeing your local producer who you know has plenty of stuff to do at their house or at their jobs and that...40 hours a week is kinda done by Wednesday at their house...And you see those men and women that come out to the fair after they've had a 10-hour day...And you know they put in so much time and effort elsewhere.

4-H livestock projects help provide a way for young people to connect with others in the community of all ages and form relationships that can last for an extended period. In some cases, these relationships last far beyond the 10-year duration of the 4-H program.

Sub-Pattern 3: Connecting to the Future. Participants perceived that participating in youth livestock programs helped them make connections that led to other opportunities, thus positively impacting their futures. One of the most vivid stories of being propelled into the future through a livestock production experience came from Ben. He told of his interaction with the manager of a local feed store that is very supportive of 4-H and FFA youth during the county fair livestock sale. Ben was about 13 years old at the time this event occurred, and his family had been a regular customer of this feed store for his entire life.

Well, I... me and Mark had been bidding against each other...And keep in mind I was 13 years old at the time of this. And I uh..went up to Mark..uh, after he bought the pig. And I nudged him on the shoulder and I was like, “What's the deal biddin' against a kid? I'm just a kid”... And he laughed...And then whenever we were loading pigs he made sure she got on my trailer instead of his. So, uh..so that was Gertrude. And so her and that Hereford sow pretty much built my first two

years of showing. She's still the sow that has had the most pigs for me to date. She had...16 one litter, and 14 in another litter. And raised 'em every time.

Because of Mark's generosity, Ben had a successful start to his show pig operation. It is interesting to note that Ben actually went to work for Mark at the feed store during his junior year of high school (several years after Mark slipped the show pig on Ben's trailer) and worked there until he left for college. Mark's actions showed that he believed in Ben's potential and wanted to invest in his future. Raising and selling hogs as a 4-H member at the county fair led to this particular event. The connection made between Ben and Mark later led to a job opportunity for Ben.

Ben explained that being involved in showing livestock has also helped connect him with resources and knowledge. He believes the connections will continue to project him forward throughout his lifetime:

It has just been nice to have those connections. Again, networking and stuff. But being connected to people that can get you the resources and knowledge that you need. To go on...Not only with your project next year. And to improve it one step at a time. But throughout your lifetime. And your college...if you're going to college...and whatever career you decide to do. All these skills are applicable at that point, so...4-H livestock projects teach a lot more than just...how to feed a pig...one summer.

In addition to connections with individuals in the community, study participants talk extensively about positive youth development organizations. They credit both 4-H and FFA with connecting them to other opportunities both in and beyond those organizations. For example, Brandy explained that 4-H and then FFA led to her involvement in the state Junior Cattlemen's Association and then connected her with an opportunity to write for a livestock breed publication.

For the youth livestock producers in this study, numerous people and organizations within their microsystems fueled their connections and propelled them forward into the future. Raising livestock in the context of youth organizations helps bridge young livestock producers to social networks and opportunities, moving them into the agriculture industry over time.

Pattern 2: Livestock Production as a Culture of Loss and Misunderstanding

Buried much deeper inside the culture of livestock production is a pattern that seems paradoxical to care and concern: feelings of loss and misunderstanding. However, upon further examination of participants' stories, it becomes clear that with a phenomenon as complex as livestock production the paradoxical patterns can and do coexist. The patterns are tightly interwoven into the fabric that constitutes the phenomenon of livestock production.

Ben presented us with another "paradigm case" for pattern two. The excerpt from his interview referred to an experience he had at his suburban/urban high school's agriculture day event. His description of agriculture day exemplifies the feelings of loss and misunderstanding that accompany the culture of livestock production: "I remember my junior year, I talked to a vegetarian teacher for 30 minutes because she tried to convince me not to butcher my market barrow...he still went to the butcher the next morning." Ben elaborated:

I mean...just...she asked what his purpose was, and I told her he's a castrated male. He's a Hereford barrow, and a barrow has one purpose, and that's to feed people. We eat meat, and that's what he's gonna do. He's gonna go to the butcher tomorrow. He's at market weight. He's more than ready...And she just looked at me...and was like..."You're gonna kill him?...But didn't you get attached?" And I'm like, "Yeah, I pulled that piglet outta his mother. I was attached to him a little bit, but everything...we were raised on a beef cattle farm. Everything dies at some point." And then I told her, "Well, he's a castrated male. He's a full-sized pig; he's not a companion animal." She came back later with her other class and was like, "Are you sure? Are you sure you can't just keep him around? He can come to ag day next year."

Ben is unique in that he is a true “farm kid” who attended high school at a large suburban/urban high school. What stood out in this interview was that by questioning Ben about the future of his market animal, then returning with her class to again question his decision, the teacher (a person who is in a position of authority) essentially questioned her student’s culture and family’s way of life in front of his peers. In a day where diversity and acceptance are emphasized, it is remarkable that a student’s agricultural practices (which constitute an important piece of his cultural identity) are openly criticized.

In this exemplar, Ben also referred to the emotions that go into producing livestock, acknowledging that producers become attached as they work with animals throughout the entire life cycle. However, he explained how the purpose of market animals is to help feed people. This was a common narration given by each of the participants in the study. They balance affection and care for the animals with the practical purpose of livestock production: producing food.

Sub-Pattern 1: Dealing with Loss. Selling livestock that have reached adequate growth and maturity to be harvested and become part of the food chain is part of the phenomenon of livestock production. This is something that young people raised in the culture are exposed to from early childhood on. Jon explained that this is part of being a livestock producer who raises, exhibits, and sells market animals:

One of the things with showing livestock as a producer is....at the end of the fair, that “heaven wagon” or train, whatever they want to call it, where you put your animal on and you know in the beginning it was hard...you know, the first year we showed goats Mom and Dad bought us two wethers and two females. We were gonna keep the females to help us get through the...havin’ the wethers go away...And the first years it was fairly hard....and...nowadays, it’s not.

Jon also commented on several strategies that he and his family have used to help make this separation a bit easier. Strategies he mentions include: purchasing females at the same time to be kept as breeding stock so youth are able to keep part of their livestock throughout the years; not naming animals that will be used for market animals; and keeping the purpose of the animal in mind from the very beginning of the project. He also refers to a “heaven wagon,” hinting at his belief that these animals’ souls may ascend to heaven upon their death. These are common strategies mentioned by many of the participants in this study. Brandy explained:

Of course it is always sad. I mean, I’m 18 years old, and I still cry whenever I have to ...whenever my pigs leave. That’s just cuz I’ve dedicated so many hours to them, and I loved and cared for them so, so much. That it’s just ... I hate to see them go, but they have a purpose in life. And that purpose is to feed the world...I mean, I’ve always known it since I was young, just from growing up on a sheep farm. And you know, the first year I was...got into pigs especially. I mean, I knew we butchered pigs and harvested them. And I knew there would come that certain point in time. But when it came time for me, I was devastated. And I was like, “No, I don’t want to.” But then dad sat me down and explained to me kind of the same way. He said, “You know, that pig has to go on. And one of the things that, you know, helps me, is the pig’s gonna be in pig heaven is what we call it. You know, that always helps little kids. Umm, it’s gonna have a better place where they have as much mud and as much water and as much feed as they want. Umm, so that can always help little kids and it always helped me whenever I was little. You know, we’d always have our special goodbyes. And I’d try to always keep those in my mind and just leave it at that. And just say, “Okay, it’s time to go.” And just...for this animal to fill its purpose.

Young producers must learn to navigate the cycle of births and deaths that occur regularly on the farm. They look forward to births as exciting and happy times on the farm:

So I think that yes, on the farm all the time we have joys. And...it’s a lot about...the simple things... like baby calves running in the pasture. But...I think it’s just around us all the time...So when...it’s silly....but just seeing that new life on the farm. It’s just something we get to experience a lot.

However, they also share stories of sadness when a birth doesn't go well and results in loss of life. Young people who are raised on farms have direct exposure to both birth and death as part of everyday life. They are surrounded by the beginning and the end of the life cycle — and everything in between. The participants in this study all acknowledge that disappointing losses happen. However, these stories of loss tend to be framed within statements of hope for the future. Jon explained:

Umm, I mean there's been...let's see...last year... so...I... my best wether goats out of my whole crop, I hadn't sold em for big money so I kept em and was gonna show em....and then they both got tetanus about two weeks apart and keeled right over. And it was kind of just the dregs that I had left...and showed whatever I had left... and the fair rolled around, and I still won my class, and I got Reserve Champion home raised with my bottom dregs goat. And it turned out to be a decent year. But it started out bad.

Although it is not easy, focusing on this never-ending cycle is a coping mechanism youth livestock producers use when they are dealing with loss. Krista described how she thinks about the good things that are yet to come to help get through the times of unexpected loss:

So being involved with 4-H has taught me, you know, what the real-life experiences are of agriculture. The good and the bad, you know, umm... I think about the FFA creed where it says umm...“I know the joys and discomforts of agricultural life”... umm and so knowing that ummm...sometimes a gilt's gonna die, but you're gonna get another litter of pigs that's gonna work out.

Dealing with death is part of the cycle of life on the farm, whether this is planned (as in feeding out a market animal) or unexpected (as in accident or sickness). Youth livestock producers adopt strategies to deal with loss and have hope for the future.

Sub-Pattern 2: Balancing Between Two Worlds. The second sub-pattern uncovered in this study is Balancing Between Two Worlds. The youth shared stories of feeling misunderstood by, or different from, those who are not involved in agriculture. Ben shared his thoughts about his high school classmates' opinions of his involvement in agriculture. Ben attended a very large and diverse suburban high school and was one of very few farm youth enrolled there:

A lot of kids, they just...they think we're crazy...cuz we talk about feeding 200 cows for a year. That's a lot of work. By the time you have to check 'em , cuz calving season...and you have to put up hay for 'em in the summer...in the fall you're weaning and vaccinating and getting ready for winter...and ummm....spring you're calving...out there 24/7 it seems like... so they ...they don't believe the work that goes into it sometimes. They think we're nuts for doing what we do. So being able to talk to them...and just kinda answer any questions they may have and expose them to it [agriculture]...uhh...there's a lot of negative news out there...and umm... a lot of videos. The only videos they remember is uh...the videos of people beating pigs or poking cows with...a hot pitchfork or something...you know, some of that stuff...maybe half a percent of farmers mistreat their animals...and give the 99 ½ percent a bad name and a bad label. Uh, that cow, that cow, that animal is your livelihood. So they deserve your respect and that's something we try to really get across to them.

Ben shared that his high school's “Ag Day” held a great deal of meaning for him because it was when he got to explain what livestock production is really all about to an audience who has not had much exposure to agriculture. Ben explained what he tries to keep in mind when he feels misunderstood by those who do not live in the phenomenon of livestock production:

And they've been brought up a lot different than I have. She [the teacher] was from St. Louis, I believe. So she was from a big city that's many generations removed from the farm. So I just have to kinda keep in mind that they don't think the same way I do. And they don't have the same beliefs and the same upbringing as I did. Umm...especially with the cows...they see a cute cow and they don't really think...Oh, they see a fat cow and I see a cow that's ready to go to market.

Youth involved in production also feel like they are balancing between opposite ends of a spectrum even inside the agriculture industry: the livestock show world and the livestock production world. Throughout the study, they refer to the “two sides” of the livestock industry: show and production. Participants took pride in the fact that they are breeding, raising, and showing their own livestock. Jon explained the sense of satisfaction that he feels when his goats are recognized in the top of the home raised category or when he sees the goat kids he has sold to 4-H and FFA members as market goats in the show ring:

We’ve had reserve and grand home raised. But there’s also that satisfaction of looking out across the champion drive and seeing more than half of ‘em come from you. Even if you didn’t feed ‘em out, they come out of that pen over there (points). Went on, won their classes, beat people that spent a lot more money on goats.

Although these young producers enjoy a win in the show ring, they also realize that the livestock they raise has to be production oriented. Krista explains that one important difference she sees between “the show world” and “production” has to do with time:

What’s different is...I think we’re talking about mainly breeding stock when I’m with my family. We’re looking long-term at animals. And in the show world, you’re talking about how a pig’s gonna do in this class. And well maybe I didn’t feed him the right thing to get him to be the freshest that day. That’s something that we’re not really concerned about in terms of production, but it’s just kind of the conversation of short-term versus long-term...umm...is the biggest difference.

As a producer, Krista thinks about the long-term and takes pride in the work and effort she and her family members have put into the livestock throughout several human generations:

You know, we’d seen those pigs be born, and we’d taken care of them...And so, maybe we knew that we weren’t gonna win with ‘em, but we knew that we...just knowing that we had done all that, really played into it. Knowing, just like being around...my dad and my uncles...ummm...being on their farms versus in the show barn. Umm... a majority of the time it was really about what production agriculture looked like and how things were different from the show world. And how...it’s really about this is ultimately gonna be used for human consumption versus other things like winning first in a class. And while we do like to win, we maybe buy better pigs now than we used to...we definitely can keep that same idea in mind. It’ll ultimately be used for consumption...we are feeding people with these animals.

Although they share a great many things with youth who show livestock in the 4-H program, youth livestock producers have a different experience. Their extensive involvement with livestock throughout the entire life cycle over an extended time, as well as their pride in this involvement, makes their culture unique.

This Heideggerian hermeneutic study illuminates the stories of youth livestock producers, showing us that the phenomenon of livestock production is about much more than just taking care of livestock. The phenomenon of livestock production consists of paradoxes, tension, and ambiguity, which make the phenomenon incredibly complex. However, we can tease out practical implications that will impact positive youth development programs and the agricultural industry.

Discussion and Recommendations

For youth livestock producers, life is surrounded by generational evolution of both people and livestock, typically in close proximity. There is a connection between the history of the stock and the history of the family (Bock et al., 2007). Being involved in livestock production throughout childhood provides many opportunities for youth like Ben to develop strong family ties while also being projected into a future where they are well connected in the community.

Formal and non-formal educators should not underestimate the power that community connections can have on youth. Studies have suggested that in addition to parents, adults outside of the family play an important role in helping youth develop into adults who are productive and healthy (Halpern, 2005). Relationships with mentors can provide opportunities for other activities, resources, and connections to even more relationships, which can all help youth form their sense of identity (Darling et al., 2002). Formal and non-formal educators, volunteers, and parents should purposefully pursue ways to encourage and assist all youth, regardless of their backgrounds, in facilitating and strengthening connections with individuals and businesses in the community in which they live. The agriculture industry excels at providing opportunities for connections that help bring “their own” youth into the agricultural family. However, it is more difficult to reach youth who have not been born into, and projected forward into, this industry. More research is needed to determine what experiences are pivotal and what support is required to recruit youth who are not raised in agriculture to pursue opportunities and careers in agriculture.

Youth who are involved in the production of livestock throughout their entire childhoods have a unique opportunity to develop autonomy over time in a way that youth who purchase animals in the spring, raise and show them throughout the summer, and send them to market may not. Leaders, volunteers, and educators should keep these differences in mind as they design experiential learning opportunities for youth livestock producers. Much “doing” is happening naturally for many of these young people. However, efforts should be made to enhance opportunities for reflection. This focus will promote deeper learning and improve the ability of youth livestock producers to apply that learning to new situations or circumstances. This information should also be incorporated into educator and volunteer training to help parents, other adult volunteers, and educators ensure that they are allowing the child to function in a way that advances meaningful learning and growth. Intentionally focusing on what a young person is capable of doing on their own will help ensure that the focus of livestock projects is truly on developing the competence and confidence that is critical for youth development, not just winning shows.

In viewing youths’ narratives, it is easy to see that there is more to their relationship with the livestock they raise than simply “looking after them.” There is an emotional component present in these relationships as well. Although we live in a society where livestock producers are often stereotyped as “callous,” or “uncaring,” this research illuminates how deeply youth feel about their livestock. Their tenderness contrasts sharply with the stereotype but is supported by the small body of research (Ellis, 2014; Hoffett, 2015; McSweeney & Raisch, 2012) that exists investigating the relationships between adult producers and their livestock.

Extant literature in the area of human-livestock interactions suggests that it is not just youth who experience raising and letting go of livestock as emotionally complicated. Ellis (2014) described the profession of ranching as “emotionally labor intensive” (p. 95). Adult ranchers who feel emotionally attached to their livestock often use their sense of responsibility to care for livestock, the belief that animals are meant to be used to produce food (dominion), religious beliefs, and the life cycle (where everything starts over again on the farm) to deal with their emotions (Ellis, 2014).

In the current study, youth alluded to these same strategies that adult livestock producers use. An additional method used by parents to help ease the feelings of loss when a market animal is shipped that emerged in this study is purchasing or allowing the youth to produce another animal (for example, a heifer) that they could keep and breed. For the youth in this study, this purchase typically occurred in the earliest years of 4-H. This strategy emphasizes how important the “circle of life” is to livestock producers; as one participant stated, “It’s more about the long-term.” Even the way the participants conclude their stories of losses and disappointments suggest that they are looking ahead; they tend to conclude their narratives with phrases like “that’s just the way it goes sometimes...” and “there’s always next year.” Further research is needed to more fully understand the unique stressors and emotional dissonance associated with raising livestock for people of all ages.

Rather than shielding children from the adversity surrounding livestock production, educators, parents, and volunteers should prepare them for it. Livestock project curriculum should be revised to include anticipatory guidance that helps youth and families deal with the losses and emotional tension associated with livestock production. To ensure credibility, it will be essential for educators, youth development professionals, and content experts on the development team to understand the meaning of experiences for those embedded in the culture of livestock production. It will be imperative that adults involved in the development of this programming have extensive experience with livestock production themselves. Furthermore, youth who live in this phenomenon should be engaged in the program development/adaptation process.

Communicating across cultures is extremely challenging; every culture has its own norms that those within the culture have absorbed from a young age. Positive youth development livestock curriculum and programming should be designed around research-based information on how to most effectively communicate about livestock production with those who have been raised outside of agriculture. Curriculum and programming should also offer guidance regarding how to respond when approached by those who wish to eliminate animal agriculture. Additionally, research should be conducted to explore what it means to youth livestock producers when they are criticized for their involvement in animal agriculture, particularly by those who are in positions of power or status. When a young person's cultural identity is wrapped up in livestock production, criticism or questions of ethics from adults in authority could be negatively impactful.

This issue not only impacts youth involved in livestock production, but also the agriculture industry as a whole. Exploring the social identities and cultures of farmers and ranchers and how they “walk the line” between the agricultural world and “the other world” is critical for the agriculture industry to explore. One key to successfully communicating with consumers about their food may be developing an understanding of, and respect for, cultural differences.

Conclusions

Data derived from hermeneutical analysis are intended to help stimulate thinking in new ways, raise questions, and recognize aspects of a phenomenon that have been previously overlooked in research (Vandermause & Fleming, 2011). It is important to remember that the purpose for such an ontological approach to research is very different from positivist research that generalizes facts. Results from this study are not to be considered a distillation of meaning that applies to all youth livestock producers in all situations. Rather, this data should be used to help consider possibilities for understanding aspects of livestock production that could be relevant and useful to a variety of individuals and organizations for a variety of purposes. By generating interpretations of the meaning of livestock production, we are able to uncover what livestock production is about in a way that encompasses logic, ethics, and emotions. Although this study occurs with a small number of participants at one point in time, it helps to illuminate patterns that are common across young people who spend their childhoods surrounded by the phenomenon of livestock production.

The culture of livestock production consists of two overarching patterns that are distinctly different — paradoxical, in fact, yet tightly interwoven. The fabric that creates the first pattern of the culture (livestock production as a culture of care and connection) is quite transparent. Like a sheer curtain blowing in the breeze on a summer afternoon, it is pleasant and refreshing. It summons a sense of days gone by — nostalgia. This pattern is the story the agriculture industry is proud of, and comfortable, telling. Veiled behind much heavier draperies is the second pattern: livestock production as a culture of loss and misunderstanding. Persons living outside of this culture see little evidence of the emotional work that takes place behind these curtains, which are tightly drawn most of the time. Indeed, typically, all they can see is the heavy curtain. When the heavy

draperies do move apart, it is usually only briefly; perhaps only long enough for one to see a glimpse of the tension, dissonance, and emotional ambiguity involved in livestock production.

Patterns illuminated in this research will help inform and enhance both formal and non-formal educational experiences surrounding livestock production. This study also adds to the agriculture industry's understanding of how youth experience growing up in livestock production by adding rigorous and systematic research to the discussion. Finally, this study provides insight into the importance of continuing to explore the ways livestock producers engage with the world about agriculture.

References

- Benner, P., Tanner, C.A., & Cheslea, C.A. (1996). *Expertise in nursing practice: Caring, clinical judgment, and ethics*. Springer.
- Bock, B., Van Huik, M., Prutzer, M., Eveillard, F. & Dockes, A. (2007). Farmers' relationships with different animals: The importance of getting close to the animals. Case studies of French, Swedish, and Dutch cattle, pig and poultry farmers. *International Journal of Sociology of Food and Agriculture*, 15(3), 108-125. <https://doi.org/10.48416/ijfsaf.v15i3.290>
- Boleman, C. Cummings, S. & Briers, G. (2005). An assessment of life skills gained from youth exhibiting beef, swine, sheep or goat 4-H projects. San Antonio, TX, National AAAE Research Conference, 388-399.
- Collier, J.J. (1957). Photography in anthropology: A report on two experiments. *American Anthropologist*, 59(5), 843-859. <https://doi.org/10.1525/aa.1957.59.5.02a00100>
- Crist, J.D., & Tanner, C.A. (2003). Interpretation/analysis methods in hermeneutic interpretive phenomenology. *Nursing Research*, 52(3), 202-205. <https://doi.org/10.1097/00006199-200305000-00011>
- Darling, N., Hamilton, S., Toyokawa, T., Matsuda, S. (2002). Naturally occurring mentoring in Japan and the United States: Roles and correlates. *American Journal of Community Psychology*, 30, 245-270. <https://doi.org/10.1023/A:101468492846110.1023/A:1014684928461>.
- Davis, C., Keith, T., Williams, K., & Frazee, S. (2000). Validation of the perceived benefits of competitive livestock exhibition by Texas 4-H members. *Journal of Southern Agricultural Education Research*, 50(1). <http://pubs.aged.tamu.edu/jsaer/pdf/vol50/50-00-119.pdf>
- deWitt, L., & Ploeg, J. (2006). Critical appraisal of rigor in interpretive phenomenological nursing research. *Journal of Advanced Nursing*, 55(2), 215-229. <https://doi.org/10.1111/j.1365-2648.2006.03898.x>
- Dibley, L., Dickerson, S., Duffy, M. & Vandermause, R. (2020). *Doing hermeneutic phenomenological research: A practical guide*. Sage.
- Diekelmann, N. (1993). Behavioral pedagogy: A Heideggerian hermeneutical analysis of the lived experiences of students and teachers in baccalaureate nursing education. *Journal of Nursing Education*, 32(6), 245-254. <https://doi.org/10.3928/0148-4834-19930601-04>
- Ellis, C. (2014). Boundary labor and the production of emotionless commodities: The case of beef production in the United States. *The Sociological Quarterly*, 55(1), 92-118. <https://doi.org/10.1111/tsq.12047>
- Harper, D. (2002). Talking about pictures: A case for photo elicitation. *Visual Studies*, 17, 13-26. <https://0-doorg.aupac.lib.athabascau.ca/10.1080/14725860220137345>

- Halpern, D. F. (2005). Psychology at the intersection of work and family: Recommendations for employers, working families, and policymakers. *American Psychologist*, 60(5), 397-409. <https://doi.org/10.1037/0003-066X.60.5.397>
- Hoffet, F. (2015). Farm animals: Between pets and livestock: A case study from a Swiss alpine farm. [Master's thesis, Swedish University of Agricultural Sciences]. https://stud.epsilon.slu.se/8472/1/hoffet_f_150909.pdf
- Kusenbach, M. (2003). Street phenomenology: The go-along as ethnographic research tool. *Ethnography*, 4(3), 455-485. <https://doi.org/10.1177/146613810343007>
- Lopez, K.A. & Willis, D.G. (2004). Descriptive versus interpretive phenomenology: Their contributions to nursing knowledge. *Qualitative Health Research*, 14(5), 726-735. <https://doi.org/10.1177/1049732304263638>
- McConnell-Henry, T. Chapman, Y. & Francis, K. (2009). Husserl and Heidegger: exploring the disparity. *International Journal of Nursing Practice*, 15(1), 7-15. <https://doi.org/10.1111/j.1440-172X.2008.01724.x>
- McSweeney, A.M. & Raish, C. (2012). Social, cultural, and economic aspects of livestock ranching on the Santa Fe and Carson National Forests. General Technical Report RMRS-GTR-276 U.S. Department of Agriculture, Forest Service, Rocky Mountain Research Station, p. 199. https://www.fs.usda.gov/rm/pubs/rmrs_gtr276.pdf
- Porcher, J. 2006. Well-being and suffering in livestock farming: Living conditions at work for people and animals. *Sociologie du Travail*, 48(2003), 27-43. <https://doi.org/10.1016/j.socotra.2006.02.001>
- Rusk, C.P., Summerlot-Early, J.M., Machtmes, K.L., Talbert, B.A. & Balschweid, M.A. (2003). The impact of raising and exhibiting selected 4-H livestock projects on the development of life and project skills. *Journal of Agriculture Education*, 44(3). <https://doi.org/10.5032./jae.2003.03001>
- Sawyer, B. J. (1987). *What 4-H members learn in animal science projects: An Evaluation report*. Corvallis, OR: Oregon State University Extension Service. <https://openpublishing.psu.edu/4-H/content/what-4-h-members-learn-animal-science-projects-evaluation-report>
- Shih, C., & Gamon, J. A. (1997). Using the Delphi technique to assess education needs related to extension's 4-H beef program. *Journal of Agriculture Education*, 38(1). <http://pubs.aged.tamu.edu/jae/pdf/vol38/38-01-14.pdf>
- Smith, M.H., Meehan, C.L., & Dasher, S.H. (2009). Assessing volunteers' needs and interests to inform curriculum development in 4-H. *Journal of Extension*, 47(1). <http://www.joe.org/joe/2009february/iw3.php>
- Tovey, H. (2003). Theorizing nature and society in sociology: The invisibility of animals. *Sociologia Ruralis*, 43(3), 196-213. <https://doi.org/10.1111/1467-9523.00241>
- Vandermause, R.K. & Fleming, S.E. (2011). Philosophical hermeneutic interviewing. *International Journal of Qualitative Methods*, 10(4), 367-377. <https://doi.org/10.1177/160940691101000405>
- Van Manen, M. (1997). *Researching lived experience: Human science for an action sensitive pedagogy* (2nd ed.). The Althouse Press.
- Walker, B.F., Morgan, A.C., Ricketts, J.C. & Duncan, D.W. (2011). The impact of beef cattle projects on youth leadership life skills development. *Journal of Youth Development*, 6(4). <https://doi.org/10.5195/JYD.2011.164>
- Ward, C.K. (1996). Life skill development related to participation in 4-H animal science projects. *Journal of Extension*, 34(2). <http://www.joe.org/joe/1996april/rb2.php>

Wilkie, R. (2010). *Livestock/deadstock: Working with farm animals from birth to slaughter*. Temple University Press. <http://www.jstor.org/stable/j.ctt14bs7z3>