Social Practices of Animal Husbandry in the Alberta Cattle Industry

by

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Abstract

The domestication of animals holds a crucial role in the development of societies worldwide. The production-based handling practices of livestock agriculture are a main area of inquiry for those who seek to improve animal husbandry and the treatment of animals implicated in agriculture. This qualitative study explores production-based social practices among cow-calf producers and dairy producers in Alberta, Canada. More specifically, I explore how producers perceive of themselves as mitigating animal welfare issues that permeate the beef and dairy industries through their animal husbandry decisions. I engage with frameworks from social practice theory to explore what facilitates the social reproduction and the social transformation of branding, disbudding and dehorning, weaning, and the on-farm low-stress handling and moving of cattle. Results suggest that both cow-calf and dairy producers descriptively outline the reproduction and simultaneous transformation of these social practices as occurring through the evolution of tools (materials), through the production of knowledge (competences), and the growth or loss of the social and symbolic meaningfulness associated with social practices (meanings). With respect to the theoretical question pertaining to meanings, this research further explores the role of human emotions in the evolution of social practices from two cow-calf producer narratives. Evidence from the findings suggest that while structural conditions exist, producers also tell stories of agency where emotions play a central role in decision-making processes. As such, I argue that positive and negative affective states, such as happiness, joy, grief, and anger may serve as a catalyst for challenging, re-directing, and changing dominant norms and social practices (i.e., structures). The findings provide a contribution to the animal welfare literature by considering the narratives behind social practices and the complexity of animal welfare issues. Moreover, this research provides additional insight on the complex role of human emotions and motivations behind animal husbandry decisions. Overall, this research

emphasizes the need to reflect on new avenues when it comes to addressing farm animal welfare issues in the beef or dairy producing industries, including the field of social practices.

Preface

This thesis is an original work by Emilie Michelle Bassi. The research project, of which this thesis is a part, received research ethics approval from the University of Alberta Research Ethics Board, Project Name “A Comparative Case Study of Animal Welfare with the Livestock Production Sector of Alberta”, PRO00066044, July 2016-July 2017.

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Much love,

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Chapter One - Introduction

Few issues within the field of food studies receive more attention than livestock welfare and the ethics of producing animal products. In particular, the production and consumption of meat products has sparked a global concern for the welfare of those animals involved in agriculture (Stull and Broadway 2013). The status of animals involved in agricultural production has largely been theorized as rooted within the historical context of religion, domestication, production, culture, economics, political institutions, and social relations. However, as philosopher Oliver notes, there remain debates that "revolve around the ways in which animals are—or are not—like us, and therefore should—or should not—be treated like us" (1997:25). These debates focus on production-based practices and how agricultural producers are dealing with existing farm animal welfare issues. One method of social inquiry that has potential for addressing production-based practices is social practice theory. The application of social practice theory permits an exploration into why producers "enact the practices they do, and how and when they do" (Barnes 2001:30). Within this thesis, I explore production-based social practices among cow-calf and dairy producers in Alberta, Canada. Specifically, I take an in-depth look at how cow-calf and dairy producers perceive of themselves as making farm animal welfare improvements through their decisions of animal husbandry. Social practice theory provides a lens to interpret the motivations for continuity or change that their production-based social practices incur. The framework leaves room to theorize about how these social practices contribute to establishing social order, but are also transforming as notions of farm animal welfare evolve.

Global concern for issues pertaining to environmental sustainability and animal welfare are growing throughout the beef and dairy supply chains (Stull and Broadway 2013). Notwithstanding these critiques, animal agriculture persists and many scholars highlight important social, economic, and environmental justifications. The International Livestock Research Institute (2016) considers livestock production to be an important contributor to social equity by alleviating the challenging economic conditions of communities living in absolute poverty. For countries of the global South, livestock provide an important source of protein, a regular source of income, a mode of financial savings, and protection against seasonal fluctuations in income (MacLachlan 2015). In North America, livestock production is also economically important. In Canada specifically, farm cash receipts for beef totaled over $8.6

billion in 2016, more than any other agricultural product (Statistics Canada 2017). Similarly, the dairy industry is also a key contributor to the Canadian economy. In 2016, the dairy industry generated just over $6 billion in farm cash receipts, just behind grains, oil seeds, and red meats (Statistics Canada 2017). Livestock also have the potential to provide a contribution towards more holistic environmental management of land. MacLachlan (2015) suggests that livestock are considered an efficient way to manage crop residues, domestic waste, and are considered an important source of fertilizer (MacLachlan 2015). Moreover, some scholars find that the most sustainable and efficient use of resources in agricultural production is achieved by mixed farming that integrates both crops and livestock (Wilkins 2008). Given these points of contention between proponents and opponents of animal agriculture, this research seeks to contribute to the ongoing discussion of establishing a livestock production sector that continues to make important economic, social, and environmental contributions while treating animals humanely.

Social practice theory, discussed further below, provides a lens with which to interpret beef and dairy production-based practices as 'social practices' that are reproducing and/or transforming. I focus on the experiences and perspectives of cow-calf producers and dairy producers who are situated early in the beef and dairy supply chains. Their experiences and perspectives provide insight into what motivates stagnancy or change within their animal husbandry decisions. Cow-calf and dairy producers are an integral part of the agricultural community who actively make animal husbandry decisions that have extensive implications for the agricultural industry, animal welfare, and society more broadly.

Organization of Thesis

This thesis is organized into four interconnected chapters. The introductory chapter provides a background to the content explored throughout this thesis and documents some of the changes that have taken shape. Included are two separate papers that address production-based social practices and how producers mitigate farm animal welfare issues from their own perspectives. Each chapter draws upon related bodies of social practice theory that outline motivations for reproduction and transformation of social practices and the implications for the agriculture industry, animal welfare, and society more broadly. Chapter two focuses on four cow-calf and dairy production-based social practices and how producers are reproducing and/or transforming these social practices by making decisions about animal husbandry. Building on chapter two, chapter three explores the role of human emotions in the structure and agency debate with

regards to the evolution of social practices. While structured as a theoretical paper, I explore the role of human emotion through the narratives of cow-calf producers. The narratives provide an understanding of how human emotions help inform animal husbandry decisions. In the concluding chapter, I revisit the objectives and summarize each chapter. I also outline the importance for this research and policy implications. Finally, I summarize key remaining questions and future directions for research concerning social practices and the rising concern for animals involved in agricultural production.

Research Objectives and Questions

Research objectives and study questions evolved over the duration of the research process. The initial objective of this study was to contribute to the growing field of the sociology of animal ethics by extending the sociological understanding of animal welfare to each stage of beef production (producers, feedlot owners, and processors). The initial goal was to compare and contrast applications of ethical production-based practices at each stage of the beef production chain. The second objective that initially guided this study was to explore beef producer, feedlot owner, and processor perceptions of farm animal welfare. While these initial objectives provided guidance for the duration of the research process, more specific objectives and questions become important to the study. Setting out to capture the beef producing industry in its entirety proved to be too large in scope given the time parameters. Early on in the data collection process, I found the perspectives among cow-calf producers to be more comparative and saturated with complexity than expected.

An overarching goal of the entire study is to better understand the human-animal interactions that take place on cow-calf and dairy producing farms. In following with the themes that emerged throughout the data collection process, the final research objectives and questions of this study are connected but distinctive, and offer contributions to the discussion on farm animal welfare and sociological theory more broadly. Chapters two and three of this thesis are based on the following research objectives and associated questions:

The first objective of this thesis is to enhance our understanding of production-based social practices and how beef and dairy producers mitigate animal welfare issues through their animal husbandry decisions. The application of social practice theory provides insight into why

some production-based social practices continue while others undergo transformation. This initial objective is guided by the following research questions:

(1) How do cow-calf and dairy producers in Alberta describe production-based social practices?
(2) In what ways do cow-calf and dairy producers perceive of themselves as improving farm animal welfare through animal husbandry decisions?
(3) How do these narratives contribute to an understanding of how social practices evolve through theories social reproduction and transformation?

The second objective of this study aims to contribute to a broad debate in contemporary social theory. I build on social practice theoretical frameworks of social reproduction and transformation by honing in on the problem of structure and agency. In doing so, I explicitly focus on investigating the role of human emotion in the evolution of social practices. To meet this objective, chapter three is guided by the following research questions:

1) How does the interactive nature of human emotions influence the evolution of social practices?
2) How do emotions relate to the problem of structure and the role of human agency in the development of social practices?
3) To what extent do emotions act as a catalyst in the evolution of social practices?

Beef and Dairy Production-based 'Social Practices'

Within this study, I use 'social practices' as an overarching term to describe the general production-based practices carried out by cow-calf producers and dairy producers. This term is derived from the theoretical framework of social practice theory that guides this research study. To clarify what these production-based social practices are, there are two industry-led documents that inform this research on the social practices of production and farm animal care in the beef and dairy producing industries: The Code of Practice for the Care and Handling of Beef Cattle jointly created by the Canadian Cattlemen's Association (CCA) and the National Farm Animal Care Council (NFACC) (2013), as well as the Code of Practice for the Care and Handling of Dairy Cattle jointly developed by Dairy Farmers of Canada (DFC) and the National Farm Animal Care Council (NFACC) (2009).

Table 1: Select 'Social Practices' of Beef and Dairy Production (DFC and NFACC 2009; CCA and NFACC 2013)

'Social Practices' of Production	Processes Highlighted in the Codes of Practice
Identification Practices	➢ **Tagging:** Beef cattle are required to have a radio frequency ear tag. All dairy animals are required to have National Livestock Identification for Dairy ear tag. ➢ **Branding (hot iron and freeze):** Brands provide proof of ownership and identification. When branding is required, individuals can minimize pain by using proper equipment, restraint, and training. Pain medication is required only in the dairy industry, though branding is rarely used.
Castration Practices	➢ **Surgical:** Testicles are removed using a knife, often during branding. ➢ **Burdizzo:** Burdizzo tool is used to crush the blood supply to the testicles. ➢ **Banding:** Blood supply is restricted to the testicles by applying a rubber ring or latex band.
Disbudding and Dehorning	➢ **Disbudding:** Techniques for removal include removing horn buds with a knife, thermal cautery of the horn buds with an electric or butane-powered disbudding iron, or the application of chemical paste to cauterize the horn buds. Only in the dairy industry is pain medication required. ➢ **Dehorning:** Methods involve cutting or sawing the horn close to the skull, sometimes followed by cautery to stop bleeding. Only in the dairy industry is pain medication required.
Weaning	➢ **Abrupt:** Abruptly removing the calf from physical and visual contact with the mother. This occurs immediately after birth in the dairy industry. ➢ **Fence-Line:** Calves are separated from their mother and placed in an adjacent pen or pasture so that auditory and visual contact is maintained. ➢ **Two-Stage:** First stage prevents nursing by placing a nose-flap on the calf while still with the cow. In the second stage, the nose flap is removed and the cow and calf are separated.
Handling and Moving	➢ Handlers are required to be familiar with cattle through training, experience, or mentorship, and use quiet handling techniques. ➢ **Processes:** take animal handling courses, be aware of the field of vision and flight zone, and use tools (flags, plastic paddles, or rattles) to direct animal movement quietly.
Milking	➢ Recommended gentle handling, calm cows, clean udders and a clean environment to ensure quality milk when milking.
Calving Management	➢ **Beef Cattle:** Births must be monitored to identify calving difficulties and ensure assistance if needed. ➢ **Dairy Cattle:** Ensure each cow has a calving pen or adequate space. Monitor and manage cows for aggressive behaviour. Provide soft, non-slip flooring, adequate water and well lit.

These documents provide context to the general social practices that are discussed throughout this thesis regarding production-based practices and animal husbandry decisions. While not an outline of all social practices undertaken in each industry, this section outlines those that are discussed in the findings of chapters two and three of this study. Such social practices include specific identification practices, castration practices, disbudding and dehorning, weaning, handling and moving, milking, and calving management, respectively. Table 1 provides a description and outline of these select social practices.

Theoretical Framework: Social Practice Theory

Applying a social practice framework serves as a lens to interpret beef and dairy production-based social practices. Within this section, I introduce social practice theory and outline competing theorizations from Anthony Giddens (1984) and Pierre Bourdieu (1980) who provide a basis for the social practice framework that I engage with in subsequent chapters of this thesis. In the following section, I provide a definition of social practices and outline the framework that is applied throughout this thesis.

Theories of practice provide multifaceted contributions to understanding social life by focusing on what individuals do, rather than the individuals themselves. Many of the key points from contemporary theories of practice can be traced to the philosophical and scientific contributions brought forth by Aristotle (Nicolini 2012). The philosophical theorizations of Wittgenstein and Heidegger have also been influential in inspiring the works of many contemporary practice-based theorists (Shove, Pantzar, and Watson 2012). However, more contemporary theories suited to the scope of this research offer competing perspectives that position the social world as characterized by diverse social practices that encompass the body, mind, objects, knowledge, discourse, and structure, yet are 'carried out' by individual agents (Reckwitz 2002).

This thesis builds on an existing dialogue in social practice theory that positions social order and social change as aspects of and occurring within the field of social practices (Schatzki 2001; Reckwitz 2002). As such, focusing on social practices is thought to provide insight into the organization, reproduction, and transformation of society. The works of Giddens (1984) and Bourdieu (1980) provide context to this contention with regards to the problem of structure and agency. Shove et al. (2012) argue that Giddens (1984) offers the most succinct account of how

theories of practice might transcend the dualisms of structure and human agency. Meanwhile, Bourdieu (1980) is considered one of the most widely celebrated contributors to theories of practice (Shove et al. 2012).

Giddens' (1984) theory of structuration offers an understanding of how social practices contribute to societal organization of norms and values through everyday activities. The theory of structuration highlights the importance of understanding human agency and structure as more collaborative than dualistic in the field of social practices (Shove et al. 2012:3; see also Nicolini 2012). Giddens (1984) positions social systems and structures as sustained through the circulating social practices that are carried out across time and space. From Giddens' (1984) perspective, the social structure is considered the main grounding point for the continued reproduction of social practices. However, agency also has an important role within the field of social practices. Individuals are thought to hold a reflexive form of knowledge that is "most deeply involved in the recursive ordering of social practices" (Giddens 1984:3). Giddens (1984) maintains that reflexivity is "the monitored character of the ongoing flow of social life" that can facilitate social change (1984:3). As such, being human means to be a 'purposive agent' where reflexivity remains possible within the reproduction of social practices (Giddens 1984). The theory of structuration captures the collaborative relationship of human agency and social structure in the reproduction and transformation of social practices that has implications for the organization of society more broadly.

Bourdieu (1980) takes a competing perspective on social practices with a focus on power, domination, and reproduction. The concept of habitus shifts the discussion away from the structure-agency debate. To do this, "one has to return to practice, the site of the dialectic," and of "the incorporated products of historical practices"; that is, of habitus and structures (Bourdieu 1980:52). Habitus is a concept that draws attention to a socially produced self, also known as socialized subjectivity (Lawler 2004). Habitus provides a theorization for how social relations constitute the self, and how the self is constitutive of social relations (Lawler 2004). However, theorizing about the habitus only makes sense within the context of fields (Lawler 2004). Fields represent a series of social arenas or institutions where individuals create social networks (Calhoun, Gertis, Pfaff, and Virk 2012). Bourdieu's (1980) concept, capital, captures the basic structure of the organization of fields, and within which the various habitus and the social practices associated reside (Calhoun et al. 2012:330). Forms of cultural, economic, symbolic,

and social capitals gather to "constitute advantages and disadvantages in society" (Reay 2005:57). Structures of power within the various forms of capital are internalized from early childhood and provide individuals with knowledge of conduct and social practices (Swartz 2013:89). From this theoretical perspective, social practices are a direct result of the interaction between habitus, of socially produced selves, and fields, the social arenas where individuals create those social networks (Mahar, Harker, and Wilkes 1990). While Bourdieu's (1980) theorization appears contrary to Giddens' (1984) by strongly emphasizing the role of structure, Scheer (2012) argues that it is incorrect to assume that his theory leaves no room for personal agency because although the habitus is dependent on socialization, it is not fundamentally reduced to it.

Building on the work of Giddens and Bourdieu, seminal social theorists hold distinctive yet related working definitions of social practices. As Reckwitz briefly summarizes, "a practice can be understood as the regular, skillful 'performance' of (human) bodies" (2002:251). Meanwhile, Schatzki refers to "open spatially-temporally dispersed sets of doings and sayings" (2016:32). Central to these understandings is that practices are always shared, thus placing the 'social' in 'social practices' (Blue, Shove, Carmona, and Kelly 2014). While these theorizations provide a surface description of practices as entities, they do not capture 'the dynamic aspects of social practice' and the potential for understanding how change occurs, as is delineated by Shove et al. (2012:1). I use three interdependent foundations throughout this thesis that capture the dynamics of when social practices are enacted or constrained: *materials*, including objects, technologies, the body, and other physical entities; *competences*, encompassing skills, knowledge, 'know-how', and techniques; and *meanings*, referring to social significance, emotions, and ideas (2012:14). Shove et al. suggest that these elements allow for social practices to "emerge, persist, shift, and disappear" when the three interconnected foundations are "made, sustained, or broken," providing insight into how social change manifests (2012:14). The interconnected foundations provide the basis for thinking about societal organization, social reproduction, and transformation within the field of production-based social practices explored throughout this thesis.

Research Methodology

The initial plan for the research methodology was to engage in an ethnographically influenced comparative case study between the different stages of production in the beef and dairy industries. Upon realizing the intensity of the scope of these stages and the depth of information gathered in the initial collection phase, it became clear that a more manageable study would involve focused ethnographic data collection coupled with narrative analysis on specific aspects of animal agriculture. While the data collection is influenced by focused ethnographic methods, the data analysis is guided by narrative sociological research.

Research Methods: Data Collection

Conventionally characterized by long-term field studies in the field of anthropology (Knoblauch 2005), ethnography includes an in-depth study of an entire culture-sharing group (Creswell 2013). However, Knoblauch (2005) argues that within sociological research, an alternative type of ethnography that differs from the conventional has emerged: focused ethnography. A focused ethnography explores small elements of society (Knoblauch 2005) and can include a more detailed exploration of actions, practices, or interactions within a culture-sharing group (Creswell 2013). The data collection phase of this study was influenced by a focused ethnography with the defining features outlined below in Table 2.

Table 2: Comparison between Conventional and Focused Ethnography (from Knoblauch 2005:7)

Conventional ethnography	Focused ethnography
Long-term field visits	Short-term field visits
Experientially intensive	Data-analysis intensity
Time extensity	Time intensity
Writing	Recording
Solitary data collection and analysis	Data session groups
Open	Focused
Social fields	Communicative activities
Participant role	Field-observer role
Insider knowledge	Background knowledge
Subjective understanding	Conservation
Notes	Notes and transcripts
Coding	Coding and sequential analysis

Consistent with a focused ethnography, data collection included gathering in-depth interviews with cow-calf and dairy producers situated within Alberta. Human geographer,

Hitchings (2011), claims that in-depth interviewing is suitable to explore the field of social practices because individuals talk in revealing ways about everyday actions. As such, the interviews conducted within this study were semi-structured in format to allow for an informal flow of conversation regarding social practices and how producers perceive of farm animal welfare issues. The interview guide was structured into three separate but related sections and was constructed to suit the study objectives, research questions, and the 'materials, competences, and meanings' from the social practice theoretical framework. In the first section, interview questions explored producer and farm demographics. This section was focused on understanding the type of farming operation and the producer who runs the operation to provide context and background to the interview data. The second section addressed farmer perceptions with regards to farm animal welfare and animal ethics. This section focused on themes and contentions in how producers are defining, and subsequently undertaking animal husbandry decisions to improve the welfare of their farm animals. The third section covered social practices of beef and dairy production entirely, from birth to death and/or transportation off of the farm. The intent behind this section was to clarify what occurs on cow-calf and dairy producing farms and how different animal husbandry techniques are applied. In addition, this section explored the motivations for continuity or change in the evolution of production-based social practices. The final section addressed producer opinions related to the future of farm animal welfare concerns. The goal of this section was to understand strategies for improving transparency of the beef and dairy producing industries. For the full interview guide see Appendix A.

There were three selection criteria for participants of this study. Each participant had to be in a decision-making capacity on a cow-calf or a dairy producing operation situated within Alberta. Information about the project and contact information was distributed to industry contacts and through the Alberta Beef Producer's Newsletter, the Western Producer, the Northern Horizon, and at Alberta Milk meetings. Referral sampling was used in some cases, mostly with dairy producers who were particularly challenging to access with the chosen participant recruitment methods. A total of 30 interviews were conducted with 36 individuals. A spouse or another family member sometimes joined the interview to add additional insights. Of the total, 20 interviews were conducted with cow-calf producers, while 10 interviews were conducted with dairy producers. Seven interviews were conducted over the phone at the request of the participant, while the remaining 23 interviews were conducted in-person. Telephone

interviewing suited some participants due to the sensitive research topic and geographically dispersed farms (Holt 2010). Of the in-person interviews, 20 took place at the participants' cow-calf operation or dairy farm, two took place at the University of Alberta, and one took place at the Delta Hotel in Edmonton. Interviews ranged between one hour and an entire day in length. The beef farms ranged in size from 13 to 1400 cows. All of the beef producing farms identified as a cow-calf operation. Additionally, some participants disclosed that they operate a backgrounding operation (an intermediary stage between the cow-calf and the feedlot that brings calves to a heavier weight) (three participants), mixed cattle and crop farm (11 participants), Certified Organic, grass fed/finishing, and direct marketed (three participants), purebred operation (two participants), and grass fed/finishing direct marketed (not organic) (one participant). The 10 dairy farms ranged in size from 50 to 350 milking cows. All of the interviewees within this study are addressed using pseudonyms to ensure anonymity.

In addition to in-depth interviews, data collection included short-term field visits on the cow-calf and dairy producing operations where interviews were conducted. These field visits took place in diverse communities situated across Alberta. The field visits involved observing how some producers interact with their livestock, a visual tour of each farm, and occasionally participation in general social practices. During one field experience, I was afforded the opportunity to participate in a 'cattle round up,' an event where producers herd and move cattle in from community pasture before winter. In other field experiences, I participated in feeding and interacting with various livestock including cattle, hens, horses, and hogs. In addition, some fieldwork experiences consisted of observation of cattle handling systems, cattle in transportation on a cattle liner, calving pens, and milking systems. While the field experiences are short-term, they are captured throughout this thesis through photographs and field notes. The photographs and field notes are important methodological tools that capture the extensiveness and detail from the field experiences (Atkinson 2015). I frequently reflected on my field notes as a tool for reflexivity, discussed in more detail below, as an important methodological consideration in qualitative research. Field notes and photographs help position myself, as the researcher, as part of the world under analysis, rather than separate from it (Maxwell 2013).

Research Methods: Data Analysis

The data analysis of this study is influenced by narrative research. Narrative research is the process of collecting and analyzing stories of experiences expressed by individuals (Creswell

2013). These stories are often gathered through in-depth interviews, observations, documents, pictures, and other sources of qualitative data (Creswell 2013). Narrative research explores different levels of meaning and brings them into a dialogue to better understand individuals and processes of social change (Squire, Andrews, and Tamboukou 2013). Further, because the methodology relies on storytelling by individuals, narratives have the capacity to shed light on one's sense of self (Creswell 2013). However, narratives also explore how stories are constructed, who produces them, and by what means (Squire et al. 2013). The broad purpose of narrative research is to see how individuals in interviews direct the flow of their experiences as they make sense of occurrences that have taken shape within their lives (Huberman and Miles 2002). Narrative research guides my understanding of how individuals experience and come to sequentially discuss the field of social practices that they participate in with respect to producing beef or dairy cattle. The analysis in chapter two incorporates the interview transcripts, short-term field experiences, photographs, and field notes. The structure of the analysis is based on a sequential description of social practices and the proponents of the social practice theoretical framework. The analytical approach I take in chapter three is an experience-centered approach based solely on the interview transcripts to draw upon the lived and told narrative accounts of the participants (Squire 2013).

All interviews were audio recorded and transcribed verbatim using F5 Transcription Software. The transcription and analysis includes long pauses to demonstrate thinking by the participant, the expression of emotions (such as weeping or laughing), and interruptions to capture a detailed description of the interview setting. The final transcripts were organized and coded for larger themes using Nvivo 11 for Mac Software. Both analyses are based on a description of a story and the analytical themes that emerge from it (Creswell 2013). Both descriptive and analytical coding were used in chapters two and three, as is consistent with narrative research (Gibbs 2007). This process of coding includes comparing each narrative to one another, looking for themes, similarities, and differences in the lived and told experiences of the participants and field experiences (Squire et al. 2013). Descriptive coding was used to identify interview passages that illustrate a description of social practices, including branding, disbudding and dehorning, weaning, calving management, on-farm low-stress handling and moving, and others discussed briefly or in greater detail throughout chapters two and three (Gibbs 2007). Analytical coding was used in the analyses to highlight less descriptive aspects of the data, such

as the expression of emotion, larger comparative themes, and less descriptive motivations that highlight reasons for continuity and change within social practices (Gibbs 2007). Such codes were formed on the basis of defining farm animal welfare, a descriptive of production-based social practices, examples of how social practices are have undergone change or remain continuous, and the less descriptive motivations for such change or continuity including 'materials, competences, and meanings' (such as emotion, highlighted in chapter three). While I outline the social practices carried out by producers, the goal of both chapters is to narrate a story about the producers, their social practices, and their motivations for change or continuity with respect to animal husbandry decisions. This narrative approach of story telling allows for a comparison where multiple points of view can be interpreted but larger themes about their social practices and the implications for farm animal welfare can be connected.

Limitations

The most significant limitations of this study are associated with the recruitment and selection of participants. While the same recruitment methods were used for both cow-calf and dairy producers, substantially less dairy producers participated in the study. Several participant recruitment methods were used to gain access to cow-calf and dairy producers alike, including relying on industry contacts, referral sampling, media advertisements, and attending industry meetings. Information about the research project was dispersed through key industry representatives from the organizations of Alberta Beef and Alberta Milk. From this publicity, the study garnered interest from the Western Producer Newspaper where a story on the details of the study, the need for participants, and contact information were published. While the article in the Western Producer garnered a strong interest from the beef producing community, no dairy producers were recruited using these efforts. In order to recruit dairy producers to participate, I attended an Alberta Milk meeting where I could engage with dairy producers and describe the project and the need for participants in person. In the end, 10 dairy producers voluntarily participated. These issues speak to the data collection process and challenges associated with using conventional types of recruitment methods with diverse populations.

The second limitation associated with participant recruitment is regarding challenges gathering diverse perspectives. The responsibility was placed on those producers who were interested in the study to contact the researcher. Therefore, it is possible that alternative

perspectives regarding social practices and farm animal welfare issues are not adequately included here. In addition, this study focuses on beef and dairy producers who are situated early in the beef and dairy supply chain. As such, this research is limited in scope given that it cannot attest to social practices and issues concerning farm animal welfare at other stages of the beef and dairy producing cycle, such as during transportation, at an auction mart, at feeding operations, or at slaughtering facilities. However, the perspectives acquired in this study are diverse in age, gender, family history, type of cow-calf or dairy operation, size of operation, and location. Therefore, diversity of perspectives was attained within the parameters of demographic characteristics and type of cow-calf and dairy producing operation.

The Reflexive Process

Thinking about and doing reflexivity was a crucial component of the development of this research. Reflexivity is characterized as a consideration for how I, as the researcher, can influence the creation and implementation of the research (Maxwell 2013). The reflexive process includes reflecting on my positionality and questioning my own assumptions throughout the duration of the research process. I approached this research as a young, female, 'urbanite' who is university-educated and who, previous to conducting this research, had never been on a livestock-producing farm before. To further complicate matters, I made the decision six years ago to become a vegetarian in response to learning about rising farm animal welfare issues and environmental concerns associated with the meat-producing industry. The interviews and field visits were conducted with mostly male, livestock producing-farmers who live in rural communities. My status as an outsider to the industry coupled with our differences in food consumption provided a unique perspective on the issue with a critical focus.

Throughout the data collection process, it became increasingly obvious that I needed to begin each interview by acknowledging my position through an explanation of who I am and my lack of knowledge regarding farming practices. Given this introduction to the interview, many participants would directly ask me if I was a vegetarian or they would prepare a meal containing meat and I would have to confess. While this was at times a difficult conversation to have, I often took that opportunity to reflect on why the project was important to me. My answer always came back to simply being an animal lover. As I explained this to some of the producers, I came to understand my fondness for animals as not based in ending livestock production in its entirety,

but in exploring possibilities for change with regards to animal treatment, care, and welfare. Given this interest, it was important for me to learn from those producers who predominately care for animals for a large portion of their lives. This informed the research methods as focused ethnography-oriented and influenced by narrative sociological research that are both able to capture more than just themes, but the narratives of producers as 'multiply positioned and performing selves' (Maxwell 2013).

What resulted from the research was a constant reflection on what I was learning and the personal decisions I make in my own life with regards to food consumption. Throughout the field research experiences, I often reflected on why I became a vegetarian in the first place when I had such little knowledge about production-based practices. Conducting the interviews not only increased my knowledge of what occurs on beef and dairy producing farms, but also challenged many of my preconceived ideas. One aspect that I really found myself sympathizing with is the 'grey area' regarding farm animal welfare issues. Often I would hear accounts of disastrous farm animal welfare issues that resulted unexpectedly with no clear mitigation strategy. Many of the producers often expressed emotion with how some of these experiences have personally affected them, an aspect that I failed to consider previous to conducting this research. Towards the end of the research process, I came to understand that many of the producers and I actually shared a united stance on many issues related to environmental stewardship and animal welfare despite the differences in how our beliefs are manifested, as one a vegetarian, and the other a farmer.

I feel incredibly fortunate to have had the opportunity to spend a considerable amount of time having conversations with producers, visiting their farms, and learning about the social practices that they carry out. I believe that these conversations can play a small, yet important role in the journey towards improving the welfare of animals and better connecting urban populations with how food is being produced. All of the participants dedicated considerable amounts of time with nothing but my learning in return. Their narratives have surprised me, challenged me, and encouraged me to continue learning about the world through different perspectives.

References

Atkinson, Paul. 2015. *Working with Ethnographic Fieldnotes: Learning Tango.* London, UK: SAGE.

Barnes, Barry. 2001. "Practice as Collective Action." Pp. 25-36 in *The Practice Turn in Contemporary Theory*, edited by T.R. Schatzki, K.K. Cetina, and E. von Savigny. New York, NY: Routledge.

Blue, Stanley, Elizabeth Shove, Chris Carmona, and Michael P. Kelly. 2016. "Theories of Practices and Public Health: Understanding (Un) healthy Practices." *Critical Public Health* 26(1):36-50.

Bourdieu, Pierre. 1980. *The Logic of Practice.* Stanford, CA: Stanford University Press.

Calhoun, Craig, Joseph Gertis, Steven Pfaff, and Indermohan Virk. 2012. *Contemporary Sociological Theory.* Chichester, UK: Wiley-Blackwell.

Canadian Cattlemen's Association and National Farm Animal Care Council. 2013. *Code of Practice for the Care and Handling of Beef Cattle.* Calgary: Agriculture and Agri-Food Canada. Retrieved May 15, 2016 (http://www.nfacc.ca/pdfs/codes/beef_code_of_practice.pdf)

Creswell, John W. 2013. *Qualitative Inquiry & Research Design: Choosing Among Five Approaches.* Los Angeles, CA: Sage.

Dairy Farmers of Canada and National Farm Animal Care Council. 2009. Code *of Practice for the Care and Handling of Dairy Cattle.* Ottawa: Agriculture and Agri-Food Canada. Retrieved May 15, 2016 (http://www.nfacc.ca/pdfs/codes/dairy_code_of_practice.pdf)

Finlay, Linda. 2002. "Negotiating the Swamp: the Opportunity and Challenge of Reflexivity in Research Practice." *Qualitative Research* 2(2):209-230.

Gibbs, Graham R. 2007. "Thematic Coding and Categorizing." Pp. 38-55 in *Qualitative Research Kit: Analyzing Qualitative Data*. London, UK: SAGE.

Giddens, Anthony. 1984. *The Constitution of Society.* Oakland, CA: University of California Press.

Government of Alberta. 2017. *Highlights of the Alberta Economy.* Retrieved July 25, 2017 (http://www.albertacanada.com/business/statistics/economic-highlights.aspx)

Hitchings, Russell. 2012. "People can talk about their practices." *Royal Geographic Society* 44(1):61-67.

Holt, Amanda. 2010. “Using the Telephone for Narrative Interviewing: A Research Note.” *Sage Journals* 10(1):113-121.

Huberman, A. Michael, and Matthew B. Miles. 2002. “Narrative Analysis.” Pp. 1-67 in *The Qualitative Researcher’s Companion,* edited by A. Michael Huberman and M. B. Miles. Thousand Oaks, CA: SAGE.

International livestock Research Institute. N.d. “Why Livestock Matter.” Retrieved June 2, 2016 (https://www.ilri.org/whylivestockmatter)

Knoblauch, Hubert. 2005. “Focused ethnography.” In *Forum: Qualitative Social Research 6*(3).

Lawler, Steph. 2004. “Rules of Engagement: Habitus, power and resistance.” *Sociological Review Monograph* 53(s2):110-128.

MacLachlan, Ian. 2015. “Evolution of a Revolution: Meat Consumption and Livestock Production in the Developing World.” Pp. 21-41 in *Political Ecologies of Meat,* edited by J. Emel and H. Neo. New York, NY: Routledge.

Mahar, Cheleen, Richard Harker, and Chris Wilkes. 1990. “The Basic Theoretical Position.” Pp. 1-25 in *An Introduction to the Work of Pierre Bourdieu,* edited by R. Harker, C. Mahar, and C. Wilkes. London, UK: MacMillan Press.

Maxwell, Joseph A. 2013. *Qualitative Research Design: An interactive Approach*. Thousand Oaks, CA: SAGE.

Nicolini, Davide. 2012. *Practice Theory, Work, and Organization: An Introduction.* Oxford, UK: Oxford University Press.

Oliver, Kelly. 1997. *Family Values: Subjects Between Nature and Culture.* New York, NY: Routledge.

Reay, Diane. 2005. “Gendering Bourdieu's Concepts of Capitals? Emotional Capital, Women and Social Class.” *Sociological Review Monograph* 53(s2):57-74.

Reckwitz, Andreas. 2002. “Toward a Theory of Social Practices: A Development in Culturalist Theorizing.” *European Journal of Social Theory* 5(2):243-63.

Schatzki, Theodore R. 2001. “Introduction: Practice Theory.” Pp. 10-23 in *The Practice Turn in Contemporary Theory*, edited by T.R. Schatzki, K.K. Cetina, and E. von Savigny. New York, NY: Routledge.

Schatzki, Theodore R. 2016. “Practice Theory as Flat Ontology.” Pp. 28-42 in *Practice Theory and Research: Exploring the Dynamics of Social Life,* edited by D. Weenink, G. Spaargaren, and M. Lamers. New York, NY: Routledge.

Scheer, Monique. 2012. “Are Emotions a kind of Practice (and Is That What Makes Them Have a History)? A Bourdieuian Approach to Understanding Emotion.” *History and Theory: Studies in the Philosophy of History* 51(2):193-220.

Shove, Elizabeth, Matt Watson, and Mika Pantzar. 2012. *The Dynamics of Social Practice: Everyday Life and how it Changes.* Thousand Oaks, CA: Sage.

Squire, Corinne, Molly Andrews, and Maria Tamboukou. 2013. “Introduction: What is Narrative Research?” Pp. 1-25 in *Doing Narrative Research,* edited by M. Andrews, C. Squire, and M. Tamboukou. Los Angeles: CA: SAGE.

Squire, Corinne. 2013. “From Experience-Centred to Socioculturally-Oriented Approaches to Narrative.” Pp. 47-71 in *Doing Narrative Research,* edited by M. Andrews, C. Squire, and M. Tamboukou. Los Angeles, CA: SAGE.

Statistics Canada. 2017. Table 002-0001 Farm Cash Receipts. *CANSIM.* Retrieved August 14, 2017 (http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/agri03a-eng.htm)

Stull, Donald D. and Michael J. Broadway. 2013 *Slaughterhouse Blues: The Meat and Poultry Industry in North America.* Belmont, CA: Wadsworth.

Swartz, David. 2013. *Symbolic Power, Politics, and Intellectuals: The Political Sociology of Pierre Bourdieu.* Chicago, IL: University of Chicago Press.

Wilkins, Roger J. 2008. “Eco-efficient Approaches to Land Management: A Case for Increased Integration of Crop and Animal Production Systems.” *Philosophical Transactions of the Royal Society* 363(1491):517-525.

Chapter Two - "That's the way we've always done it": How production-based social practices are reproducing and transforming beef and dairy farms in Alberta

Introduction

On April 26, 2016, Earl's restaurant chain announced a shift towards sourcing from Certified Humane suppliers out of the U.S. after an unsuccessful attempt to secure sufficient quantities of ethically sourced beef in Alberta (Bell 2016). The decision was highly controversial with the Canadian public, politicians, and representatives of the Canadian cattle industry weighing in. Many argued that local producers were never consulted about the standards of animal care in Alberta, while others maintained that such issues will continue to surface unless industry adapts to meet the demands of the Canadian public. The announcement propelled a national conversation about the need to clarify how food is produced, and the growing demand for assurances of ethical and environmentally sustainable food production in Canada.

According to animal ethicist Rollin (1995), public concern for animals involved in agricultural production will continue to grow as the public becomes increasingly urbanized and removed from food production, while agriculture becomes increasingly industrialized. In Canada, Alberta remains the largest cattle-producing province (Statistics Canada 2017). However, the flow of cattle throughout the beef production chain is complex and comprised of cow-calf producers, backgrouding operations, transportation companies, auction marts, feeding operations, and slaughtering plants. Figure 1 captures the flow of cattle in Canada's beef production industry.

Many of the feeding operations and slaughtering facilities in Alberta are considered highly intensive. The feeding operations and slaughtering facilities are large in scale, have a high density of livestock, and many are owned or affiliated with known 'agribusiness giants' including JBS and Cargill (Stull and Broadway 2013). On the other hand, cow-calf operations are largely family owned and operated, small in scale, and diverse in operation type. Cow-calf operations in Alberta vary from commercial farms to smallholder family farms and niche markets of Certified Organic, grass-fed, purebred, and direct-marketed beef. There are vast differences in the size of operations across the beef production chain. For example, as of 2017,

cow-calf operations reported an average of 161 head of cattle, while the average feeding operation houses roughly 1, 175 head of cattle (Statistics Canada 2017). Despite significantly different characteristics of each stage of the beef supply chain, all stages, including the small-scale cow-calf producers, participate in the mass production of beef in Alberta.

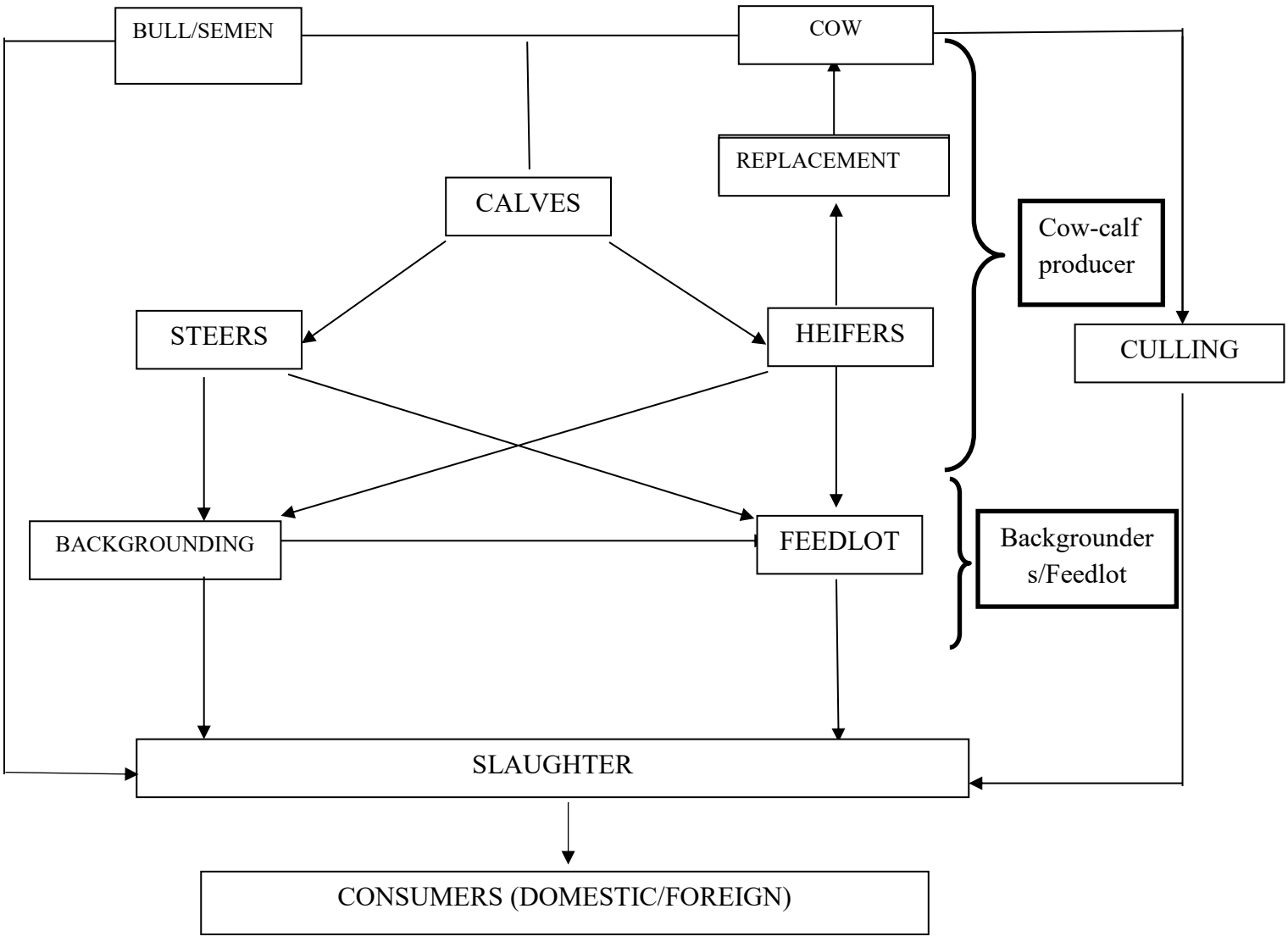

Figure 1: Beef Production in Canada - Flow of Cattle (from Boaitey 2017)

Similarly, the dairy industry is a significant part of the Canadian economy. As of 2017, there were over 77 thousand dairy cows recorded in Alberta, ranking it the third largest dairy-producing province in the country (Statistics Canada and Canadian Dairy Commission 2017).

Many of the dairy operations in Alberta are family owned but are operated differently. For example, there are different approaches to housing dairy cattle, such as free-stall and tie-stall. A free-stall operation ensures cows have stalls but are free to move around as they choose, while a tie-stall operation ensures each cow has their own stall and remains in that stall. While some niche-markets for dairy production exist, it is less common because the sector functions under a supply management system based on planned domestic production, administered pricing, and dairy product import controls (Canadian Dairy Commission 2015). This indicates that production is managed so that it coincides with predictions of demand for dairy products (Canadian Dairy Commission 2015). Despite the cultural and economic significance of the beef and dairy industries, there are growing concerns for farm animal welfare (MacDowell 2012; Ventura, von Keyseylingk, and Weary 2015), environmental sustainability (McMichael 2009), and food safety crises (Davidson, Jones, and Parkins 2015).

In response to farm animal welfare concerns, emerging market-based and regulatory policies are evident and salient. Two notable examples are the Code of Practice for the Care and Handling of Beef Cattle jointly created by the Canadian Cattlemen's Association (CCA) and the National Farm Animal Care Council (NFACC) (2013), and the Code of Practice for the Care and Handling of Dairy Cattle created by Dairy Farmers of Canada (DFC) and the National Farm Animal Care Council (NFACC) (2009). These multi-stakeholder policies are largely industry-led by producer organizations including the Canadian Cattlemen's Association and Dairy Farmers of Canada. The Codes aim to provide documentation about farm animal welfare that is useful for all stakeholders and simultaneously connect practices with science, ensure transparency, include representation from multiple stakeholders, contribute to improvements in farm animal care, identify research priorities, and ensure ease of on-farm implementation (CCA and NFACC 2013). While the Codes articulate comprehensive recommendations for the best animal husbandry practices in both the beef and dairy industries, many of the requirements remain broad. Broad recommendations are important to allow cow-calf and dairy producers to make decisions best suited to their operations, but awareness of these practices remains limited for many Canadians (Spooner, Schuppli, and Fraser 2014).

Agriculture is just one of many resource-based industries where social practices are carried out. The social practices carried out in the development of any resource-based industry have extensive implications for the environment and other living beings. However, agricultural

production is particularly unique for its role in the historical domestication of animals including cattle and horses. The theoretical framework of social practice theory provides a lens to theorize about these routinized behaviours carried out on cow-calf and dairy producing operations. Moreover, the framework theorizes about "forms of bodily activities, forms of mental activities, 'things' and their use, a background knowledge in the form of understanding, know-how, states of emotion and motivational knowledge" that inform the circulating behaviours (Reckwitz 2002:249). Individuals, such as cow-calf and dairy producers, are considered the carriers of social practices who participate in the reproduction and transformation of the beef and dairy producing industries. However, there is little research exploring the perspectives of cow-calf and dairy producers as 'carriers' who can provide insights into contemporary production-based social practices that allow for the continued structure of beef and dairy production in Alberta.

To contribute to the social practice and farm animal welfare literature, this study has two objectives. The first objective of this chapter is to descriptively outline four social practices including branding, disbudding and dehorning, weaning, and the on-farm low-stress handling and moving of cattle. With respect to these social practices, I explore how farm animal welfare considerations are implemented. The second objective is to contribute to the literature on social practices in exploring theories of social reproduction and transformation by drawing on the narratives of cow-calf and dairy producers. To meet these objectives, this research is guided by the following research questions:

(4) How do cow-calf and dairy producers in Alberta describe production-based social practices?

(5) In what ways do cow-calf and dairy producers perceive of themselves as improving farm animal welfare through animal husbandry decisions?

(6) How do these narratives contribute to an understanding of how social practices evolve through theories social reproduction and transformation?

Literature Review

Conceptualizing Farm Animal Welfare

The concept of animal welfare has developed from multidisciplinary perspectives that include general measures of animal behaviour, physiology, health, and immunity (McGlone 2001). Definitions and societal perceptions of animal welfare differ depending on whether animals are

livestock, used in vivisection laboratories, or are considered family pets. For example, research conducted in the Netherlands reveals ambivalence in farmer attitudes and perceptions of animal welfare between their family pets and livestock (Te Velde, Aarts, and Van Woerkum 2001). Te Velde et al. (2001) attribute this ambivalence within the moral circles of individuals; pets are often placed in the same circle as family, while farm animals are usually put at a far greater distance than pets. With regards to livestock, gauging 'good' farm animal welfare has always been a challenge, particularly regarding how welfare is defined and subsequently measured (Webster 2001; McGlone 2001).

Farm animal welfare conceptualizations have historically been fragmented into two groups: the biological functioning school and the feelings school (Duncan 2005). The biological functioning school emphasizes welfare as closely connected with the absence of physiological distress (Duncan 2005). The feelings school categorizes welfare as connected to the absence of negative feelings (suffering) and by the presence of positive feelings (pleasure) (Duncan 2005). Broadly stated, the World Organization for Animal Health (OIE) defines animal welfare as the way in which an animal is coping with its living conditions (2016). Moreover, understanding an animal's welfare is complex because "the welfare of any sentient animal is determined by its individual perception of its own physical and emotional state" (Webster 2016:1). Farm animal welfare concerns are often concentrated around five key issues including the behavioural restriction of animals in extensive production systems, climate and 'natural' disasters, nutrition of livestock, general health of livestock (including disease management), and human-animal interactions (Petherick 2005). Human-animal interactions are commonly emphasized for the handling and moving of animals, restraint, infrastructure and facility design, identification practices, transportation, and predator control (Petherick 2005). The complexity of defining animal welfare has led some scholars to turn to notions of animal husbandry to capture human-animal interactions (Webster 2001). Animal husbandry is the treatment that an animal receives that has larger implications for the all-encompassing welfare state of an animal (OIE 2016). 'Good' animal husbandry is thought to be more easily defined and measured because it is the responsibility to make husbandry decisions that permit good welfare, regardless of whether good welfare is achieved or not. For example, objective measures of animal health, such as monitoring cattle for signs and symptoms of illness is a measureable practice of good husbandry that should assist in leading to good welfare, however, it does not guarantee it (Grandin 2015). While animal

welfare is a term to describe the state of an animal, the treatment that an animal receives is often referred to with other terms such as animal care, animal husbandry, and humane treatment (OIE 2016).

Sociological perspectives increasingly focus on the social construction of farm animal welfare science. Some theorists suggest that animal welfare should be seen as a human construct that is fraught with human values (Rushen 2003). According to Bock and Buller (2013), notions of farm animal welfare have undergone a societal shift from being a biological and physiological concern with the goal of improving efficiency to a concern for animals as sentient beings. This shift has resulted in a complex social construction of farm animal welfare, highlighted as:

> [t]he formation of new constitutions of actors, knowledges, practices and 'evidence', each speaking, in different ways, for the materially and semiotically reconstituted animals themselves. Each also constructs animal welfare as a different problem, with responsibility for its solution shifting between farmers, animal scientists, and, finally, society more broadly. (Bock and Buller 2013:393).

The scientific measure of animal welfare will continue to develop as societal definitions and tolerances of suffering change with time, across geographic space, and as different stakeholders share their diverse perspectives (Bock and Buller 2013). Mellor suggests that contemporary notions of farm animal welfare must continue to evaluate whether a farm animal's life is "a life worth living" (2016:11). Scholars such as McGlone (2001) and Bock and Buller (2013) maintain that if defining and gauging 'good' farm animal welfare is to occur, the concept needs to be perceived of and coupled with other public goods including human health and environmental sustainability. However, it is important to note that coupling farm animal welfare with concepts of human health or environmental sustainability remains debated and the concepts could potentially be in conflict at some point. Social constructionist perspectives highlight how and why societal definitions of farm animal welfare remain complex, contested, and endlessly evolving as society changes.

The expansion of animal welfare science as an interdisciplinary field has facilitated the development of welfare assessment methods. There are several internationally affiliated frameworks for the assessment of farm animal welfare, including: *Understanding Animal Welfare: The Science in its Cultural Context* (Fraser 2008), *The Five Freedoms* (Farm Animal Welfare Council 1992, 2009), Welfare Quality Network (2009), the World Organisation for

Animal Health Guiding Principles on Animal Welfare (Grandin 2015), and the Minds-Bodies-Natures rubric. These welfare assessment schemes are summarized below in Table 3:

Table 3: Internationally Affiliated Frameworks for the Assessment of Farm Animal Welfare

Title	Elements	Authors
The Five Freedoms	• Freedom from hunger and thirst • Freedom from discomfort • Freedom from pain, injury, or disease • Freedom to express normal behavior • Freedom from fear and distress	Farm Animal Welfare Council (FAWC) (1992, 2009)
Understanding Animal Welfare: The Science in its Cultural Context	• Maintain basic health • Reduce pain and distress • Accommodate natural behaviours and affective states • Natural elements in the environment	Fraser (2008)
Welfare Quality Network	• Good Feeding • Good Housing • Good Health • Appropriate Behaviour	Botreau, Veissier, Butterworth, Bracke, and Keeling (2007)
The World Organisation for Animal Health Guiding Principles on Animal Welfare	• An animal is in a good state of welfare if it is healthy, comfortable, well nourished, safe, able to express innate behaviour, and if it is not suffering from pain, fear, and distress. Also includes disease prevention and veterinary treatment, appropriate shelter, management, nutrition, humane handling and humane slaughter/killing.	The World Organisation for Animal Health (OIE) (2016)
Bodies-Minds-Natures	• Bodies: biological indicators of health • Minds: affective states such as pain and pleasure • Natures: ability to perform some behaviour regarded as typical	Thompson (2013)

The internationally affiliated frameworks for the assessment of farm animal welfare are broad and have intersecting elements focused on basic health, natural behaviour, affective states, and freedom from suffering (See Table 3). Perhaps the most historically recognized framework is the Brambell Committee's Five Freedoms established by the Farm Animal Welfare Council (1992, 2009) in Britain. The Five Freedoms state that animal welfare, whether on farm, in transit, at market or, at a place of slaughter, must be in terms of five freedoms: (1) freedom from hunger and thirst; (2) freedom from discomfort; (3) freedom from pain, injury, or disease; (4) freedom to express normal behavior; and (5) freedom from fear and distress (FAWC 2009). Although the

framework proves useful as a method for evaluating whether animal production is morally acceptable, it is not without controversy; the Five Freedoms are heavily critiqued from scholars of various disciplines for not capturing specific or complete measures (Rollin et al. 2012; McCulloch 2012; Thompson 2013). Webster (2016) argues that the Five Freedoms do not properly reflect the causes and consequences of stresses that lead to long-term problems. Additionally, many of the criteria are frequently not achieved due to the ambiguity of farm animal welfare issues (Rollin et al. 2012; McCulloch 2012; Thompson 2013; Bock and Buller 2013). For example, freedom from discomfort can be particularly ambiguous as cattle are bound to experience some degree of discomfort during calving or perhaps when receiving a vaccination from a veterinarian.

In response to these critiques of the Five Freedoms, an alternative approach is proposed based on insights from multiple stakeholders involved in the agriculture industry and animal welfare debate. Developed by food ethicist Thompson (2013), the Bodies-Minds-Natures Rubric consists of three broad and interconnected categories: first, the 'bodies' component, recognizing the biological indicators of health as a major component of welfare (Thompson 2013). Therefore, animals of any species suffering from illness or mortality as a result of disease, injury, or other conditions have compromised welfare (Thompson 2013). Second, the 'minds' component is a category for dimensions of welfare that captures the way that an animal feels (Thompson 2013). Affective states such as pain and pleasure or more complex emotional experiences (such as fear) are acknowledged within this framework (Thompson 2013). The third category is 'natures,' referring to the ability to perform some of the behaviour regarded as typical for the species (Thompson 2013). Interestingly, research shows that producers in Canada have adopted this framework to some degree. For example, in a qualitative study of producers across western Canada, Spooner, Schuppli, and Fraser (2012) find that cow-calf producers understand farm animal welfare as incorporating affective states and wellbeing, basic animal health and body condition, and the ability to live a 'natural' life, highlighting the Bodies-Minds-Natures Rubric, as discussed by Thompson. This literature provides a practical framework that Canadian producers have come to describe as important to livestock production practices (Spooner et al. 2012).

While internationally affiliated frameworks to effectively manage, measure, and improve animal welfare exist (as shown in Table 3), others place more emphasis on the need to improve

specific social practices and implement verification systems. For example, Grandin (2015) argues that the first steps of a farm animal welfare framework begin with improving management, breeding, housing, and handling, in an effort to reduce conditions that lead to poor welfare. Grandin outlines three components of an effective welfare program: (1) a guidance document to specify the overall principles; (2) assessment tools to assess and ensure the compliance with documents, standards, and regulations; and (3) regulations or standards that are more specific for slaughter, transport, and livestock production (2015:5). Webster (2005) and McGlone (2001) advocate for third party verification systems as an assessment tool to ensure improved production-based social practices and farm animal welfare are achieved. Webster (2005) suggests that a practical scheme for the assessment and implementation of animal welfare on farms must incorporate measures of both husbandry and welfare. Most current systems are based almost entirely on measures of husbandry; however, these measures need to evolve to include animal based welfare outcomes (Webster 2005). In addition to the internationally affiliated frameworks for the assessment of farm animal welfare listed in Table 3, multi-stakeholder and regulatory policies exist in Alberta. As noted earlier, the Code of Practice for the Care and Handling of Beef Cattle (CCA and NFACC 2013) and the Code of Practice for the Care and Handling of Dairy Cattle (DFC and NFACC 2009) are two examples of guidance documents that outline requirements and recommendations for production-based practices that best promote 'good' animal husbandry. In addition, the Codes are largely industry-led where cow-calf and dairy producers have been actively engaged and represented in the development process. However, challenges in defining, measuring, and improving farm animal welfare on cow-calf and dairy operations continue to be discussed by producers, industry stakeholders, animal activists, and the public alike.

Persistent Challenges in Farm Animal Welfare

Despite industry improvements and the recognition of farm animal welfare protocols in the agricultural sector, issues persist (Vasseur, Borderas, Cue, Lefebvre, Pellerin, Rushen, Wade, and de Passillé 2010; Moggy, Pajor, Thurston, Parker, Greter, Schwartzkopf-Genswein, Campbell, and Windeyer 2017). Many studies from the field of veterinary science focus on farm animal welfare issues that continue on livestock production farms (Vasseur et al. 2010; Moggy et al. 2017). For example, in a study of dairy operations in Québec, Canada, Vasseur et al. (2010) find that many dairy producers continue to use management practices that increase the health

risks of calves. Similarly, a study of dairy cattle in Alberta and Ontario finds that hock, knee, and neck injuries continue to persist despite the development of animal welfare assessment schemes (Zaffino Heyerhoff, LeBlanc, DeVries, Nash, Gibbons, Orsel, Barkema, Solano, Rushen, de Passillé, and Haley 2014). Furthermore, there is increasing evidence of certain social practices as contributing to stress and poor mental health of farm animals. For example, research exploring stress-associated practices on western Canadian cow-calf operations suggests that most producers perform the stress-associated practice of abrupt weaning despite other alternatives being available and accessible (Moggy et al. 2017). These accounts from cow-calf and dairy operations highlight farm animal welfare issues that continue to exist in Alberta, despite improvements in animal welfare assessment and the industry-led development of the Codes.

To explore why animal welfare issues persist despite the development of assessment schemes, some research explores farmer decision-making behavior. A relatively small amount of literature reviews farmers' decisions with regards to the adoption of new policies that improve animal husbandry and address farm animal welfare concerns (Wikman, Hokkanen, Pastell, Kauppinen, Valros, and Hänninen 2016). There are a variety of external constraints that can hinder a farmer's decision to implement better animal husbandry practices (Whay 2007; Gocsik, Saatkamp, de Lauwere, and Oude Lansink 2014). External constraints are associated with inadequate infrastructure (Zaffino Heverhoff et al. 2014), financial costs of implementing best practices, social pressures against making changes (Whay 2007), the structure of the agricultural industry, and the characteristics of the innovation to be adopted (Edwards-Jones 2006). For example, Moggy et al. (2017) find that western Canadian producers are less likely to adopt current less-stressful practices of weaning due to associated costs and logistics. Inadequate space and on-farm infrastructure, such as pasture availability and facilities, are also viewed as constraining towards the adoption of less-stressful practices from the perspective of producers (Moggy et al. 2017).

In addition to external constraints, barriers to the on-farm implementation of best animal husbandry practices are inseparable from internal influences, such as personal goals and values (Gocsik et al. 2014). Zaffino Heverhoff et al. (2014) highlight that many preventable farm animal welfare issues persist due to management practices. In a review of literature from the social sciences with insights from psychology, Edwards-Jones (2006) suggests that farmers' decisions are influenced by a range of internal factors, such as socio-demographics of the farmer,

psychological make up of the farmer, and the characteristics of the farm household. Moggy et al. (2017) also emphasize that many western Canadian producers express reluctance to change due to the risk of adopting new practices. While confronting internal constraints of personal goals and values through assessment schemes can be challenging, Bradley and MacRae (2011) suggest that the success of standards depends on the perceived legitimacy by producers, helping to determine whether voluntary code systems are adopted, implemented, and accepted by producers. However, legitimacy also depends on whether the standards accurately represent producers' expectations and perspectives (Bradley and MacRae 2011). While assessment schemes can increase farmer awareness of the benefits of implementing certain practices, ensuring welfare initiatives are practical and relevant for future on-farm implementation is also important (Dwane, More, Blake, McKensie, and Hanlon 2013). However, as earlier noted, the Codes are assessment schemes that are largely led by industry organizations including the Canadian Cattlemen's Association and the Dairy Farmers of Canada.

Interdisciplinary literature exploring farm animal welfare and producer decision-making regarding social practices tends to focus on structural constraints and producer demographics, rather than the social practices and the associated rationale. As such, my research explores contemporary perspectives of beef and dairy production-based social practices and how producers perceive of themselves as contending with farm animal welfare issues. I also explore how and why the social practices are reproducing and transforming through the use of a social practice theoretical framework.

Social Practice Theory: Societal Organization, Social Reproduction, and Transformation

Social practice theory provides a lens to interpret how practices are being reproduced and transformed in Alberta's beef and dairy producing industries. This research builds on a conceptual framework put forth by Shove, Pantzar, and Watson (2012) that positions social practices as consisting of three interconnected elements. The three elements are conceptualized as: (1) materials, encompassing tools, technologies, objects, the body, and other tangible physical entities; (2) competences, including skill, practical know-how, and techniques; and (3) meanings, consisting of symbolic meanings, emotions, ideas, and the embodied understanding of the social significance of a practice (Shove et al. 2012). Moreover, Shove et al. (2012) suggest that social practices are dispersed; that is, they circulate worldwide through the transportation and access of materials, the migration of competences, and through the association of practices with different

meanings. From this conceptual perspective, social practices "emerge, persist, shift and disappear when connections between the elements of these three types are made, sustained, or broken" (Shove et al. 2012:14).

Building on the works of Bourdieu (1980) and Giddens (1984), the shared character of social practices within networks, institutions, and personal relationships is the focus of many theorists who wrestle with understanding how society has come to be organized (Schatzki 2001; Shove et al. 2012; Nicolini 2012; Sahakian and Wilhite 2013). Conceiving of social practices as "a composite patchwork of variously skilled, variously committed performances enacted and reproduced by beginners and by old-hands alike" highlights the passed-down and deeply socialized nature of practices where individuals learn about the materials, competences, and materials that become integrated when practices are enacted (Shove et al. 2012:71). Most practice-based theorists are careful to not reduce social practices to the actions of individuals (see, for example, Nicolini 2012). However, Barnes (2001) maintains that social practices are still more closely associated with micro-level actions than of macro, order-stabilizing structures. Barnes' (2001) argument, like other social practice theorists, is grounded in the belief that social practices manifest in shared settings.

The concept of competences highlights the 'know-how' and skills needed to carry out a social practice (Shove et al. 2012). Nicolini (2012) emphasizes literature that references the importance of learning through tradition and communities. Nicolini defines practical knowledge as "a form of tradition sustained by a community and inscribed in the body and/or mind" (2012:77). Therefore, individuals learn, to some degree, about the integrated elements of materials, competences, and meanings through a process of socialization. This school of thought places social practices within communities and traditions, highlighting "the process of handing down institutionalized ways of doing" and "the social bonding or communitarian dimension that may result from it" (Nicolini 2012:77). This process is mutually beneficial; while communities pass down 'ways of doing,' individuals experience social bonding that informs their identity of belonging to a community. For example, a recent study that explores the food practices of lesbian, gay, bisexual, and transgender (LGBT) seniors finds that food practices are not just choices or habits, but are entities composed of meanings, materials, and competences that are structured as they are performed in a communal social setting (Cohen and Cribbs 2017). Through socialization, theorists draw attention to the process of handing down a tradition from generation

to generation through social networks, eventually sensitizing individuals to social order (Nicolini 2012). Still, social practice theory understands knowledge as socially and historically situated, leaving room for theorizations about history, power, and inequality (Nicolini 2012).

While the process of handing down 'doings and sayings' within a community seems collective, some theorists prefer to emphasize the social and historical context that draws attention to the division of power (Nicolini 2012). Within communities and traditions, existing power inequalities play a central role in the distribution, organization, and reproduction of circulating knowledge (Nicolini 2012). The integration and distribution of social practices between individual actors requires active involvement in and contribution to the circulation of practices (Nicolini 2012). Therefore, learning is considered an act of belonging (Nicolini 2012). As a result, Nicolini (2012) suggests that that the unity of social practices across time and space is where discourse, power, and influence are maintained. However, classifications within society (such as gender or race) change as associated meanings are formed or broken depending on what is important in a societal context at a given point of time (Shove et al. 2012). Shove et al. (2012) affirm that these changing classifications are important for questioning divisions of power.

Social reproduction is also closely associated with the performance of social practices. Shove et al. (2012) focus on the individuals who carry out and sustain practices in their theorizations of social reproduction. Often theories focus on practices-as-entities, rather than on practices-as-performances (Shove et al. 2012). Shove et al. (2012) maintain that the continuity of any single practice depends on those individuals who carry out the performances. As individuals carry out social practices, they are actively monitored and given feedback on their performances (Shove et al. 2012). From this perspective, social practices become entities when "streams of consistently faithful and innovative performances intersect" (Shove et al. 2012:101). However, the chance of becoming the carrier of a practice is considered closely associated with two criteria. Primarily, the social and symbolic significance an individual experiences when participating in a practice, also conceptually referred to as meanings (Shove et al. 2012). In addition, the ability to accumulate different types of capital that are required to participate in a practice is also central to Shove et al.'s (2012) claim. These two criteria draw attention to the impact of intersecting inequalities and the ability to participate in social practices (Shove et al. 2012). For example, emotions are considered a key indicator in making sense of the social and symbolic significance of a practice (Shove et al. 2012; Scheer 2012; Weenink and Spaargaren

2016). Weenink and Spaargaren (2016) refer to emotions-in-practices to highlight the importance of what matters to an individual and how emotions contribute, to some degree, to the reproduction or transformation of social practices. However, as earlier noted, social and material inequalities exist and can permit or inhibit the accumulation of different types of capital needed to carry out a social practice (Shove et al. 2012).

The shared nature of practices also highlights the potential for transformability (Spaargaren 2011; Hargreaves 2011; Sahakian and Wilhite 2013). For Barnes (2001) social reproduction and social change stem from the same shared setting in which social practices flourish, through learning, also referred to as an aspect of competences. There is a growing interest in applying social practice theory to speculating about human behaviour patterns, including those behaviours that radically alter societal practices and norms. Sahakian and Wilhite (2013) apply a framework of social practice theory to explore how changes in social practices occur and what the levers are for influencing change towards more sustainable consumption. In their research, Sahakian and Wilhite (2013) highlight how changes in behaviour occur by identifying opportunities and spaces for learning within communities of practice. However, the individual agents who carry out practices simultaneously change as well. Scheer (2012) highlights emotions as a kind of practice that has undergone historical transformations of emotional norms and expectations, but also acknowledges that there is a record of change in actual feelings experienced. Scheer (2012) therefore agues that as a social practice, emotions change over time not only because what shapes them has changed (such as norms and language), but also the individuals themselves undergo change (2012:220).

Shove et al.'s (2012) framework highlights that if social practices are to continue reproducing then the integrated elements of materials, competences, and meanings need to be linked together consistently over time. For example, if one of the elements is broken, such as the social and symbolic significance of a practice, then transformation or eradication can occur (Shove et al. 2012). Moreover, the reproduction and change of any given practice depends on patterns of mutual influence between co-existing social practices (Shove et al. 2012). From this conceptual perspective, it is through materials, competences, and meanings that practices-as-entities come into being and through these that they are transformed depending on whether the foundations are linked or broken (Shove et al. 2012).

Research Methods

The data collection of this research is methodologically influenced by a focused ethnography. Focused ethnography is considered a strategy of research that takes a more focused approach to exploring actions, practices, or interactions within a culture-sharing group (Knoblauch 2005; Creswell 2013). This strategy is characterized by short-term field visits and intensive data collection using audio or visual technologies (Knoblauch 2005). In addition, focused ethnographic research tends to focus on individuals' subjective experiences (Knoblauch 2005). A focused ethnography guides this study in an effort to explore the actions, practices, and interactions among cow-calf producers and dairy producers in Alberta (Maxwell 2013).

Consistent with focused ethnography methods, in-depth interviews and short-term field visits were the primary means of data collection. In-depth interviewing provides insights about actions, practices, and interactions based on the experiences, perceptions, and perspectives of the cow-calf producers and dairy producers (Maxwell 2013). A total of 30 in-depth interviews were conducted; 20 of the interviews were conducted with cow-calf producers and 10 interviews were conducted with dairy producers. Of the total interviews, 23 were conducted in-person, while the remaining seven were conducted over the phone at the request of the producer. The interview guide was semi-structured and covered the sequential process of cow-calf and dairy production-based social practices entirely (from birth to slaughter/transport off farm). In addition, the interview guide was formed with particular attention to the 'materials, competences, and meanings' used in social practices and considerations for animal husbandry. Interview questions were structured around four main themes: Farm demographics, perceptions of ethics and farm animal welfare, social practices from birth to death/transport off farm, and perceptions of the future of farm animal welfare issues in the cattle producing industries.

Participants were selected on the basis of purposeful selection, referring to a deliberate selection of individuals who are cow-calf producers and dairy producers situated within Alberta (Maxwell 2013). Information about the project and contact information were given to industry contacts and dispersed through the Alberta Beef Producer's Newsletter, the Western Producer, the Northern Horizon, and at Alberta Beef and Alberta Milk meetings. Referral sampling was used in some cases, mostly with dairy producers who were particularly challenging to access with these recruitment methods. The cow-calf operations range in size from 13 to 1400 cows. Additionally, some participants operate a backgrounding operation (three participants), mixed

cattle and crop farms (11 participants), Certified Organic, grass fed/finishing, and direct marketing (three participants), purebred operation (two participants), and grass fed/finishing direct marketing (not organic) (one participant). The 10 dairy farms ranged from 50 to 350 milking cows. All 10 dairy farms identified their operations free-stall designed housing. To ensure anonymity of the beef and dairy producers, all of the interviewees are addressed using pseudonyms.

In addition to in-depth interviews, data collection included short-term field visits on the 23 cow-calf and dairy operations where interviews were conducted in-person. The field visits consisted of observing how some producers interact with their livestock, a visual tour of each farm, and some observation and participation in livestock production practices that are captured in field notes and photographs. An example of a short-term field experience and researcher participation in a social practice is shown below in Figure 2. The photograph captures my participation in a cattle round up, a process of sorting through cattle kept at a community pasture in order to bring them back to their farm of origin for the winter season. The field notes were often written immediately after departing from the cow-calf or dairy operation. Within the field notes, I summarize what happened during the interview, what I observed in terms of social practices, and interesting themes that emerged throughout. The field notes and photographs are important for capturing the extensiveness and detail of the short-term field visits and observations that are included in the findings (Atkinson 2015).

Figure 2: Researcher Participation in a Cattle Round Up (Photo credit: Doll 2016)

The interviews collected in-person and over the phone were audio recorded and transcribed verbatim. The interviews were transcribed using F5 transcription software and organized using Nvivo 11 for Mac software. While the data collection process is more consistent with focused ethnographic methods, the data analysis is influenced by narrative sociological research. While the definition of narrative research is heavily disputed (Squire, Andrews, and Tamboukou 2013), it is most often conceptualized as a description of stories of experiences (Squire 2013). These stories of experiences are important for "bringing different and sometimes contradictory layers of meaning" into a dialogue to understand more about individuals and processes of personal transformation (Squire et al. 2013:2). As such, this study focuses on the cow-calf and dairy producers and the processes of reproduction and transformation within themselves and their social practices. The data-analysis relies on the interview transcripts, field notes, and photographs and utilizes a coding method of analysis. The data analysis is more

influenced by narrative research because it focuses on the 'layers of meaning' narrated by the individuals concerning processes of social reproduction and transformation, rather than an ethnographic description of what was observed. Using descriptive coding methods, I identified passages that illustrate a description of the specific social practices of branding, disbudding and dehorning, weaning, and on-farm low-stress handling and moving (Gibbs 2007). The analysis includes a description of the social practices while also comparing multiple points of view that exist in the cow-calf and dairy producing industries. The four social practices were chosen because producers perceive of them as sequentially important to the continued production of beef and dairy products. In addition, these particular social practices are associated with the farm animal welfare issue of human-animal interactions highlighted earlier in the literature review. Finally, I use analytical coding to understand the 'materials, competences, and meanings' highlighted in the social practice theoretical framework to explore the motivations for reproduction and transformation of these social practices and the subsequent implications for the agricultural industry, animal welfare, and society more broadly.

Findings

Social Practices of Animal Husbandry and Welfare

In each section below, I highlight four social practices regularly carried out by cow-calf and dairy producers, including branding, disbudding and dehorning, weaning, and on-farm low-stress handling and moving. I further highlight how cow-calf and dairy producers perceive of themselves as mitigating farm animal welfare issues through animal husbandry decisions pertaining to these social practices. Moreover, I pay attention to elements of materials, competences, and meanings as are highlighted in Shove et al.'s (2012) social practice framework for understanding social reproduction and transformation.

Branding

Branding is considered a contentious practice that allows for permanent identification of livestock. Out of the 30 producers interviewed, 20 cow-calf producers stated that they brand, while no dairy producers disclosed that they carry out the practice. Branding is considered the only permanent proof of ownership for cattle, especially important for those who, as commercial cow-calf producer Tyler describes, let their cattle "go into pastures in the summer where [there

are] vast grasslands, different neighbours, and other producers [who] are also putting their cattle in that area. It is for identification." Many cow-calf producers justify branding as an acceptable social practice that ensures beef cattle can be identified at a distance and need not be kept in a confined space. There are two approaches to carrying out the practice of branding. The first approach is often described as a traditional cattle branding, succinctly outlined by commercial cow-calf producer, Brendon:

> We'll do a branding in May… We will bring them into a pen and we do the traditional rope and wrestle branding where [the calf is] roped by their back feet, and brought into the central area, not too far but probably about fifteen feet. And then there will be two people that are restraining the calf, and typically we'll do all procedures at once… We will [brand] them typically between two and a half weeks old to usually around six weeks old.

Many participants describe the branding itself as holding down a hot iron on the hip or rib area of a calf for several seconds which, as Carl describes, "kills the hair cells so you just have bare skin and you cause scarring." Further, what Brendon describes as 'all the procedures,' generally consists of, "[giving calves] vaccines and checking them for different horns, dehorning them, castrating them, stuff like that, those are crucial points" that occur during a traditional branding, dually noted by Bryan.

Alternatively, Tim describes another form of branding that utilizes cattle handling systems, rather than the traditional 'rope and wrestle' method:

> We've got a calf cradle so they come in [the cradle] and they flip over so they're just in this little head gate basically but tipped over on their side… [We use] a hot iron in a fire because real hot is the best, and it honestly takes 3 seconds and it's done. And that I find works the best. It makes good brands, it's quick, and it's as ethical as it can be. Unfortunately like I don't know another way you could really identify animals.

While nearly all the cow-calf producers acknowledge branding as a painful practice, they also perceive of benefits to the welfare of their cattle. Commercial cow-calf producer, Aaron, claims that from when a calf is roped to after all the procedures are completed "if everything goes right, I would say I don't know, [it takes] about 30 seconds." Tyler shares similar sentiments: "the reason we have so many people and why we like to do it that way is it's done so quickly that the calves get back to their mothers." Many of the cow-calf producers also stressed the importance

of having their cattle graze in unconfined, vast community pastures as only made possible by the practice of branding.

While permanent identification of cattle (with no better alternative) is the main reason for branding, many producers who brand also stress the importance of maintaining western tradition that brings together their community. During fieldwork, a cow-calf producer presented me with a book that documented their community branding. The producer was beaming with pride as he identified his children learning the technical skills of how to rope and wrestle calves. Another cow-calf producer, Grant outlines the importance branding once held for his family: "Back when the kids were home, and they would get their high school buddies to come out. Well it actually started in Junior High, it was more a party." Once Grant's children moved away from home, Grant stopped branding practices. Similarly, Brendon draws attention to the importance of carrying out the tradition: "A little bit is part of Western tradition, family tradition, and our area traditions. Everybody kind of coming together and doing it on horses with ropes as kind of carrying [pauses] you know it is a bit of a community, Western tradition."

Despite many producers still carrying out the social practice of branding, many describe the practice as changing or adapting to societal influences. Brendon notes that "[branding is] trying to be reduced as much as possible." However, the change and adaptation with regards to branding is mostly occurring within the realm of pain mitigation, as Richard describes: "We started to recognize as an industry that we should be doing something to alleviate the pain, not only for the sake of the animal, but also because it is economic. As I said before, healthy, happy animals will perform better." Mark describes what pain mitigation looks like: "We use Medicam [pain medication] at branding which a lot of people don't do." Sam describes the benefits of administering pain mitigation strategies during branding practices: "Even seeing the calves after we gave them Medicam this year, after branding, like the next day was cold, it was raining, and those calves were just like (laughing) they just felt so good! And it feels good to go out there and see that rather than seeing calves walking around you know, shivering, cold, and in pain and it's just so nice to go out there and see that. You know that it was the Medicam that did it for them."

Disbudding and Dehorning

Disbudding and dehorning are considered contentious practices carried out in both the beef and dairy producing industries. Disbudding and dehorning are considered vital practices described by Brendon as "mostly for animal and human welfare" as cattle with horns who are kept in confined

spaces can use their horns to injure humans and other animals. Nearly all the participants described discontent around the practice of dehorning or disbudding, however, it is considered better than the alternative. For example, Donna describes the pros and cons: "if they think that [dehorning] is terrible they should see what an animal can do to another animal with those horns if you don't dehorn them. So it's the lesser of two evils, it's not something you like to do; it's something you try to prevent. But still you get horns sometimes." When Donna refers to dehorning as 'something you try to prevent' she is referring to how the beef producing industry has shifted towards polled genetics. Polled genetics refers to selecting and breeding cattle without horns to avoid the practices of disbudding and dehorning altogether. Nearly all the cow-calf producers interviewed expressed an evolution towards polled genetics. However, occasionally horned calves do still appear in the herd, as Brendon describes: "If we had 300 head come in, I bet you we would probably have maybe 15 calves with horns, and we used to have a lot more."

When horns do appear in a herd, there are three methods used, respectively. Donna describes disbudding and the use of caustic paste that prevents a bud from forming into a horn: "we put on the dehorning paste so that we don't have any horns." However, if the paste does not work then the producer has to perform a dehorning. Donna further describes the practice of dehorning on her operation:

> When we have to dehorn, you give them [a pain killer] before, which we never had that kind of thing before…[then] you would put a band around where there horn is, tight, and then you use a saw wire to cut the horn off. If you do it when they're young, it doesn't take much. If we get it right, it presses against the blood [vessel] and it doesn't bleed.

The practice of disbudding and dehorning in the dairy industry is different and much more common as the industry has been slower to move to polled genetics. Justin laments: "They have had polled for years in the beef industry, and they're just starting to get going now with the dairy industry." Hank explains why there is a slow shift towards polled cattle in the dairy industry: "We cannot use a bull only because it's polled. There has got to be different aspects of production, like conformity, that has priority. If they happen to be polled, that's great and we like it. I can see maybe 50 years from now we have all polled bulls." Interestingly, the dairy industry requires all dehorning practices to use pain control and tranquilizer, unlike the beef industry. Justin describes what this practice entails: "We tranquilize the calf so they're knocked out, we

freeze, we put localized freezing, same as at the dentist kind of idea, gets put around the horn bud, and then we use a burning dehorner that dehorns the calf. And [then] we give them a general painkiller."

Nearly all of the dairy producers describe pain mitigation strategies during disbudding and dehorning as a positive step towards improving social practices. For example, Hank describes: "we let them go, they go right back to eat or to lay down, there's no physical discomfort on the calf at all. And that of course is a change from prior when we did not use local freezing - a good change." Further, the influence of implementing pain mitigation strategies has largely been brought about by industry-led assessment schemes, such as the Code of Practice. For example, Andrew describes the influence:

> Painkiller with dehorning calves is something new. We do that because of Alberta Milk[1] and we're supposed to try and set an example. It is in our ProAction [program], and well, it is in the code of practice, and ProAction has basically adopted the code of practice. So it is something we've started doing. And we actually noticed less stress in the animals afterwards. Giving them Medicam lasts a few days, and you see them back eating again instead of all standing in the corner after they're dehorned.

Weaning

The practice of weaning is defined as removing milk from a calves diet (CCA and NFACC 2013). Weaning is a practice that must occur eventually on all cow-calf and dairy producing operations; however, how weaning is carried out varies across operations. Many cow-calf producers reflect on the historical and conventional practice of weaning that they were taught, often referred to as abrupt weaning. Out of 20 beef producers, nine describe using the abrupt-weaning practice. Bryan describes the conventional practice of abrupt weaning that he was taught and that continues to occur on his father's ranch:

> You bring the cows and calves in at six in the morning. Then you sort all the cows away from the calves. Then you sort the calves into males and females. And then you select any that you want to keep. The truck arrives maybe at 9 o'clock. You load it up with the cattle and you take it to the auction mart. They sit at the auction mart for a day. It's a pre-sort sale they sort them into with other groups of animals. They haven't eaten anything,

[1] Alberta Milk is an organization comprised of dairy producers, not imposed on them.

> they haven't drunk anything. The next day they go through the sale. Then they'll spend the night at the sale barn. And the next day, they'll be loaded into trucks and shipped [to a feeding operation].

Many of the participants describe implementing the practice of abrupt weaning because it is less labour intensive, a tradition that is justified because, as Bryan further describes, "that's the way we've always done it!"

While weaning is widely acknowledged by all the participants as a stressful practice, many producers describe an evolution towards different low-stress methods of weaning that are now available and practical. Many cow-calf producers expressed discomfort with the practice of abrupt weaning and maintained that they have adopted new practices that they believe improves the general welfare of their cattle, namely, fence line weaning and two-stage weaning. Three producers explicitly described using the two-stage method of weaning, described by Trenton as utilizing plastic nose tags that prevent the need for the abrupt separation of cow and calf:

> The last two years something that we've tried is a little yellow clip you put in the calves nose. And we have done that and it's been actually really good. You just put that on, and the calves are with their moms, they just can't drink [milk from her]… So we leave the calves with the mom for about two weeks like that, and then we'll chase them all in and separate them, and then it's not such a big deal for them because they're a little sad about missing mom, but it's that combination of losing their favourite food and losing their mom that really stresses them out. So by separating that into two separate things, they seem to handle it really well.

Tyler further describes why this practice is less stressful for calves and cows: "They can't suck the cow any more, but they can still graze, and it essentially breaks the bond of the mother and the calf without an abrupt break." Producers are increasingly recognizing this strategy as an animal husbandry decision that achieves the need for weaning but has perceived farm animal welfare benefits based on the reduction of stress for both cow and calf.

Another alternative practice increasingly embraced by the cow-calf industry is fence-line weaning. Eight of the beef producers described using fence-line weaning. Grant succinctly describes the practice: "There are ways to wean that you can reduce [stress levels], like there's a steel fence between the cows and the calf when we wean. They can walk up and down the fence and see mom and bawl to her, but they can't suck [milk]." Anthony describes the benefits to

fence line weaning and why he chooses to adopt the low-stress practice: “We found that it’s better if the cow still sees them, but where you want them to see them.” Graham describes the importance of his calves and cows expressing less stress: “Fence line, it seems to reduce the bawling, and the crying, and that’s how I like to do it. And then get them started on feed, and you know, two or three days of crying, and pretty soon mom’s gone and they forget about each other.”

On dairy farms, the practice of weaning occurs differently. A calf is almost always abruptly separated from the cow immediately after birth (See Figure 3). Figure 3 below captures a calf born five hours prior to the photo being taken. The calf was separated from the cow immediately after birth “to prevent the spread of disease” as Hank describes, and so that the cow can produce milk for human consumption. While the female calves are typically kept as replacements, the male calves are often picked up within a few days and taken to a veal operation, a feedlot, to another cow-calf producer, or as Mitch describes “I’m not actually 100 percent sure [where they go].”

The replacements that are kept are eventually weaned from the bottle-fed milk. Marco describes how the practice of weaning in the dairy industry is carried out: “we first give them just milk, or just water instead of the milk. And then we give them more calf starter, and then within a couple days then they’re over it.” While many dairy producers acknowledge that it is stressful when the calves are first weaned, some have moved towards a less abrupt method. For example, as Justin describes: “They get taken off milk and we do that really slowly. Some guys move quickly to take them off milk but I think it’s healthier for them to slowly get off of milk. I think it helps for better transition and there’s no shock to them.” While the practice is considered stressful, it is required to ensure calves start feeding themselves and continue to grow. Brad describes the next step in a dairy calf’s life that couples with the stress of weaning: “a big thing for calves is of course when we wean them off [milk]. I think it’s a pretty big shock for them. But then after that the next big step for the calf itself is then they go out of the calf barn, they go into a barn as well but the barn is open on one side, so no insulation.”

Figure 3: Weaned Dairy Calf (Photo credit: Bassi 2016)

On-Farm Low-Stress Handling and Moving

A social practice that is marked by change and is thought to have drastic farm animal welfare benefits is the on-farm handling and moving of cattle. During my short fieldwork experiences, I participated in moving cattle from a vast community pasture to the farm of origin for winter, this is captured below in Figure 4. During this process, the cow-calf producer walked me through an understanding of on-farm low-stress handling and moving which consisted of remaining as quiet as possible, calm, and using the natural herding nature of the cattle to steer them in the proper direction.

Figure 4: Low-Stress Moving of Cattle from Community Pasture (Photo credit: Bassi 2016).

Many producers reflect on how their current practices of handling and moving differ from some of the traditional handling and moving techniques used in the farming community. Tyler summarizes the traditional way of moving and handling cattle that he has observed growing up in a cow-calf producing family: “The traditional way [is] you ride right behind them and you’re yelling at them. Sometimes whipping them and that stresses the cow out.” Bryan echoes similar sentiments that he observes on his father’s ranch:

> My dad moves his with a quad, or with his truck, so he just drives behind them, and the traditional way on our ranch to do it, one thing they told everyone [is] ‘if you don’t know anything about working cows, you’ve got to make lots of noise’ which is actually totally wrong, but lots of places do that. Lots of screaming and yelling, whistling, honking the horn, or revving the engine, and that scares the animals a lot but that’s the way we would work cows. Chasing, running, and noise.

Nearly all participants characterized their current practices as evolving to embrace low-stress methods. For low-stress handling and moving, many participants emphasize learning to control their own bodies, rather than trying to control their cattle, as was previously thought. For

example, Carl highlights the importance of quiet, calm, and slow techniques that reduce stress for the producer and cattle: "You just do it nice and easy, slow, and move and you make them move in the way that they're used to moving. You try and eliminate bright lights and shadows; like they can't differentiate [because] they have poor depth perception. And you try to keep the place as quiet as possible." Echoing similar sentiments is Tyler, who refers to the positioning of his own body when implementing low-stress handling and moving of his cattle: "It's all about how you position yourself in a way that the cow feels comfortable moving in the direction… You're trying to make the cow feel good about going where you want it to." To achieve this practice as a skill, many cow-calf and dairy producers reference regularly working with their cattle in handling and moving in an effort to train themselves and their cattle. For example, Malcolm actively carries out rotational grazing, a practice of moving his cattle every few days so that they can graze on healthy pasture:

> I advocate people to, not to chase cows, but to lead them. And my dad used to say this, and I think it's quite correct, but a cow was born to be led, not to be chased. And they are really, really easy to train. And once they have been trained to do something, they'll do it quite voluntarily.

Many of the cow-calf and dairy producers perceive of this change as directly connected to the care and love that they have for their cattle as beings. However, the love and care manifests through improving low-stress efforts. For cow-calf producer, Joanne, building trust is imperative to achieving low-stress handling and moving techniques:

> We have a trust. It's really evident I find during calving… A lot of times, if you're around them, they know to put their trust in you because they don't know what's going on. So you bring them in and a lot of times you know, we'll bring them into our chute if we have to pull a calf, but a lot of times you know, if you go out there and you talk calm and quietly, and we use all those low-stress handling methods, we can bring them up, and we can make that animal calm and quiet. Rarely do we have wrecks. So the animals trust us I find because we handle them and treat them with respect.

While many of the producers highlight how on-farm low-stress animal handling and moving benefits their operation, they also provide insights for why they believe this practice has undergone a drastic transformation. Many of the producers recalled a change in knowledge about cattle behaviour and a change in perception about agricultural animals more broadly. Malcolm

emphasizes, "…attitudes [of producers] are changing for sure." Malcolm further elaborates, "more and more guys get into rotational grazing, and moving their cattle every three, four, or five days. That is going to improve the psychology of these cows." Many of the cow-calf and dairy producers were quick to describe knowing an improvement by observing calmer behaviour among their cattle. For example, during many of the field experiences I was often invited to observe how calm and quiet the cow-calf or dairy herds were. Some of the producers described handling and moving as comparable to an art form or skill. Elizabeth succinctly summarizes: "I really like livestock handling, and I honestly find it like an art to be able to handle cattle really, really well." Donna shares similar sentiments about how a change in knowledge has transformed how producers are thinking about animal husbandry in general: "The more we learn about cattle psychology, the more we try to, as much as we can, work with it instead of just powering our way through stuff. Low-stress cattle handling has been huge for us… it is just so rewarding and exhilarating." The participants often described an evolution of knowledge and attitudes as accredited to other producers in their community, veterinarians, education, and animal handling experts including Dr. Temple Grandin. For example, Brendon describes the importance of community and other industry representatives: "We really try to make it a low-stress kind of system as possible with using, whether it's you know, it's kind of all taking courses from experts as we've just kind of done like a family thing."

With the development of knowledge has come the development of improved technology and infrastructure that has transformed the social practices of handling and moving cattle. For example, nearly all participants reference improved handling systems. Tim notes:

> Our cattle handling systems are way better. That's improved over time, just in technology, like the system that I've got in there now is just sweet. It's a crowding tub, they can't go anywhere, and there's no way of getting hurt. Where as in the old days, they're in a square pen and you rope them.

Dairy producers share similar sentiments about the emergence of improved infrastructure and technology as a perceived benefit to farm animal welfare. As Marco notes: "The milking system has definitely changed drastically, and the barn, the ventilation is a lot better. We didn't have automatic scrapers, the mattresses are better, wider, and [there are] bigger stalls…Technology has definitely advanced for sure." For the cow-calf and dairy producer participants, the advances in technology that improve their handling systems contribute to the on-farm low-stress handling

and moving of cattle. Many of the producers perceive of this evolution in handling and moving practices as making important farm animal welfare improvements.

Discussion

The multidisciplinary literature on farm animal welfare explores challenges to defining and measuring 'good' welfare. However, few studies explore the social practices and how farm animal welfare issues are considered from the perspective of cow-calf and dairy producers. The narrative accounts of social practices related to branding, disbudding and dehorning, weaning, and on-farm low-stress handling and moving of cattle contribute to the literature that seeks to better understand farm animal welfare issues. In particular, this research provides empirical insights about perceived changes that address some of the concerns from the affiliated animal welfare assessment schemes listed earlier in Table 3.

The theoretical framework proposed by Shove et al. (2012) emphasizes how social reproduction and transformation stem from similar arenas and can be captured within the interconnected foundations of materials, competences, and meanings. I build on these foundations in finding that all of the social practices, even those that appear relatively stagnant are in a state of transformation. An important contribution of this research to Shove et al.'s (2012) theoretical framework is that there are other insights from social practice theorists that help make sense of the interconnected elements and how social reproduction and transformation take shape from within the evolution of materials, competences, and meanings.

'Social' Reproduction

Narratives behind the social practices of branding, weaning, disbudding and dehorning, and on-farm low-stress handling and moving demonstrate 'routinized types of behaviour' that contribute to the social order of beef and dairy production. These findings emphasize the reproduction of social practices as embedded within the use of materials. Materials are highlighted in all the social practices as infrastructure, branding tools (branding iron, ropes, calf cradle, horses), dehorning tools (caustic paste, bud burner, saw), weaning tools (fence and nose-tags), pain medication, and the body of the producer. The continued use of these materials is interconnected with the competences to use them and the meaning associated. Thus, this interconnectivity contributes to the reproduction of social practices. In some instances, the findings demonstrate

that reproduction also occurs due to the evolution (or lack thereof) within one of the foundations. For example, many cow-calf producers reproduce the social practice of branding because they lack other permanent identification options and materials. On other hand, the development of pain medication as a tool also contributes to the reproduction of branding as it makes the practice more acceptable.

The concept of competences is useful in highlighting the dissemination of knowledge about the social practices through networks, institutions, and personal relationships (Lave and Wenger 1991; Nicolini 2012). It is theorized that social practices are learned within the confines of communities and traditions where networks, institutions, and personal relationships are structured (Nicolini 2012). "That's the way we've always done it!" and similar sentiments are frequently stated throughout the interviews as a way to express attaining knowledge about social practices simply through observing family tradition. Many of the producers refer to the importance of education, family, community, veterinarians, and industry experts in establishing the knowledge needed to carry out social practices. For example, some of the producers refer to cattle branding as important for bringing together family and community in an effort to not only carry out the practice, but to carry out the tradition of rope and wrestle branding, reaffirming and sustaining the materials, competences, and meanings of the social practice. As the findings show, branding differs from the social practices of weaning and dehorning that have undergone more substantive transformations. Aside from the development of pain mitigation strategies, branding remains comparatively more continuous which could be associated with the traditional, cultural, and communal importance of passing down the knowledge of branding, an importance that weaning and dehorning lack.

Moreover, the willingness to continue circulating social practices of beef and dairy production also draws attention to the faithfulness of the individuals, thus highlighting Shove et al.'s (2012) notion of meanings. In many ways, the cow-calf and dairy producers reference "the social and symbolic significance of participation [in a practice]" that characterizes the social practices as meaningful (Shove et al. 2012:23). The producers often refer to branding, weaning, disbudding and dehorning, and low-stress handling and moving as more than a production-based social practice. For example, the findings demonstrate feelings of discontent among cow-calf and dairy producers concerning the social practice of disbudding and dehorning. However, many of the producers stress that the social practice is also important for both human and animal welfare

concerns. This demonstrates that these social practices are not just carried out to ensure the reproduction of beef and dairy production, but because of the embodied social and symbolic meaningfulness associated with protecting human and animal welfare (Shove et al. 2012).

Continuous Transformation

The findings also reveal that within the interconnected foundations lies potential for and evidence of transformation with regards to animal husbandry decisions that improve farm animal welfare. While the social practices of branding and disbudding/dehorning are historically significant and appear relatively continuous, many of the producers see evidence of change. The findings suggest that producers perceive of their social practices as characterized by a degree of change through the development of new materials (such as, pain medication), competences (such as, knowledge about pain mitigation and stress), and meanings (embodied social significance of low-stress efforts and reducing pain for their cattle). However, disbudding and dehorning on cow-calf operations has undergone much more transformation as the industry has shifted to polled genetics. The social practice is close to being eradicated, a shift that cow-calf producers closely associate with the loss of the meaningfulness of dehorning animals and the development of knowledge with how to do eradicate the practice (breed polled cattle). With respect to the social practice of weaning, producers are increasingly adopting new animal husbandry methods that reduce stress for their cattle, such as embracing fence line and two-stage weaning. The drivers of change are often explained as a change in the accessibility and evolution of materials (fence/two-stage weaning tools), competences (knowledge of perceived stress associated with weaning), and meanings (the symbolic significance associated with reducing the stress of their cattle). And finally, the practice of low-stress handling and moving is characterized by change through the development of different quiet moving materials (flags and paddles, one's own body, horses), competences (knowledge about cattle psychology and low-stress benefits), and meanings (the embodied significance of improving trust, as noted by Donna). Evidence from the findings suggests that the changes adopted by many of the cow-calf and dairy producers are highlighted within the opportunities made available through not only the disruption of the interconnected foundations, but also the gradual evolution of any foundation that enables social reproduction.

The mechanisms of social transformation are often discussed within the context of the evolution and adoption of new materials, tools, and objects that improve animal husbandry. This

is evident as many of the producers highlight the importance of new and improved infrastructure and the development of new materials that add to the options available for improving animal husbandry. For example, the transformation of the social practice of weaning is explained by the availability of two-stage weaning tools. Likewise, the transformation discussed within the social practices of disbudding and dehorning and branding are associated with the development of pain medication. Therefore, evolution is evident within the materials used within the agricultural practices, permitting for some degree of change.

Many of the producers also narrate a story about how their knowledge about their cattle, animal husbandry, and social practices are continuously evolving. For example, implementing on-farm low-stress handling and herding practices is considered evolutionary and perceived as contrary to the traditional method that they were taught. Low-stress handling and herding is a practice that also filters into other social practices of branding, disbudding and dehorning, and weaning as it changes the way that the producer interacts with their cattle. Many of the producers described a desire to ensure low-stress handling in any given social practice that requires human-animal interaction. Evidence from the findings reveals that knowledge is dispersed through getting an education, attending workshops, listening to cattle-handling experts, consulting with veterinarians and other producers, and through learning about new research disseminated through their affiliated producer organizations, including Alberta Milk and the Alberta Beef Producers. This key finding supports the literature that highlights the transformation of social practices as occurring within shared settings.

According to the producers, the mechanisms of change evident in branding, weaning, disbudding and dehorning, and handling are all perceived to improve the welfare of their cattle, highlighting the concept of meanings. More specifically, many of the producers emphasize an embodied symbolic and social significance because they perceive of themselves as mitigating farm animal welfare issues by transforming their social practices. Social practices are often described by the producers through "mental activities, emotions, and motivational knowledge," as elements which represent their values and beliefs (Shove et al. 2012:23). For example, while many producers refer to a disruption of one or more of the interconnected foundations as driving change, the producers also refer to these changes as deeply meaningful because they improve the lives of their cattle, evidence that is directly observable to the producers in how their cattle react. As earlier highlighted, emotions are considered key in making sense of the social and symbolic

significance of a social practice (Scheer 2012; Weenink and Spaargaren 2016). Some social practice theorists emphasize emotions to highlight the importance of what matters to an individual as holding an important role in the monitoring of choices regarding social practices (Burkitt 2012; Scheer 2012; Weenink and Spaargaren 2016).

With the evolution and circulation of materials, competences, and meanings many of the producers also describe personal changes that occur in their perceptions. Personal and internal change is evident in perceiving farm animal welfare improvements as 'good change' or 'for the better,' rather than imposed upon them. For example, with regards to low-stress handling and herding, many refer to a shift in their own perceptions and opinions about cattle psychology that has filtered into other production-based social practices that include human-animal interactions. Thus, the findings demonstrate not only a change in the social practices through the evolution of the materials, competences, and meanings, but in the producers themselves.

This research reaffirms the social practice literature insofar as social reproduction and transformation stem from similar arenas within the field of practices. Social reproduction is described within the sustenance of the connection between the interconnected elements of materials, competences, and meanings. The drivers of transformation are also explained within the narratives as occurring when the connection between the interconnected foundations is disrupted. However, all four social practices, regardless of how stagnant some appear are also in a state of change to some degree, as the materials, competences, and meanings are not solely 'made, sustained, or broken' but are evolving. While the degree of change or reproduction continues to remain unclear, this research offers insights about the evolutionary process that can facilitate change in agricultural practices.

Conclusion

As part of the multidisciplinary discussion regarding the definition and measurement of farm animal welfare, this chapter seeks to descriptively outline and explain the rationale of four social practices, as well as how farm animal welfare considerations are addressed from the perspectives of cow-calf and dairy producers. Both cow-calf and dairy producers identify varying degrees of continuity and change within social practices. While branding still occurs on cow-calf operations, many identify a change through the adoption of pain mitigation strategies and low-stress handling. Disbudding and dehorning occur on both cow-calf and dairy farms, however,

cow-calf producers describe a change towards the use of polled genetics with the goal of outright eradicating the social practice, while dairy producers highlight the strides made in adopting pain mitigation strategies. Although the social practice of weaning ensues differently on cow-calf and dairy operations, many cow-calf producers describe incremental change towards low-stress methods of fence-line and two-stage weaning, while dairy producers also describe the importance of easing the stress associated with weaning. Finally, the on-farm low-stress handling and herding has evolved as a social practice that filters into all other production-based social practices where there is some degree of human-animal interaction. Low-stress handling and moving signals a shift in thinking regarding how producers perceive of themselves as carriers of social practices and animal husbandry who can improve farm animal welfare with the evolution of materials, competences, and meanings. Both cow-calf and dairy producers descriptively outline the reproduction of social practices as occurring through the continued interconnectivity of materials, competences, and meanings. However, evidence from this research also demonstrates that all social practices are in a state of change as the materials, competences, and meanings are not solely 'made, sustained, or broken' but are also evolving.

There are differences marked between the cow-calf producers and the dairy producers as is evident within their cultures of practice. The dairy operations are characterized by greater frequency of human-animal interactions than are the cow-calf operations. The more frequent human-animal interactions within the dairy producing industry are associated with a highly mechanized structure of production to produce milk with animals largely being kept in confinement. This has implications for animal husbandry as the cattle on dairy operations are handled nearly every day as they are often cleaning their stalls, supplying feed, or being milked multiple times a day. Comparatively, the cow-calf producers have human-animal interactions predominately within the context of carrying out social practices seasonally, rather than daily. For example, while dairy operations are calving throughout the year to ensure continued milk production, cow-calf operations have a calving season that typically occurs in spring. This more intensive focus on production throughout the year might clarify why polled genetics have yet to be embraced in the dairy industry, as one of the producers noted that they focus on other aspects of genetics. In addition, the dairy producers and cow-calf producers varied drastically in terms of ethnicity; all of the dairy producers who participated in this study are predominately Dutch immigrants, while many of the cow-calf producers have been on the land for several generations.

This has particular implications for gaining access to the dairy producers from a research perspective and gaining insight into their human-animal interactions. A shortcoming of this study is that we did not gain as much insight into the dairy producing industry, partly because of these differences and the intensity of production.

One of the main implications of this research is that it helps clarify how animals are treated on cow-calf operations, dairy operations, and in western Canadian society more broadly. In addition, it points to important differences in the experiences of beef cattle versus dairy cattle who are situated in connected, but different industries. Understanding these narrative accounts can help industry experts and animal welfare advocates clarify where remaining animal welfare issues are and how they can be addressed. While nuances are evident in the perspectives of producers with regards to sustaining and transforming social practices, future research could build upon other social practices of production, such as castration, calving, or milking, that were not captured within this study. In addition, future research could explore dairy production in more detail and social practices at other stages of the beef and dairy production chain, such as transportation, veal operations, feeding operations, and slaughtering facilities. Industry stakeholders and farm animal welfare advocates can build on this research by considering the narratives behind social practices and how producers perceive of themselves as contending with farm animal welfare issues in an effort to further clarify knowledge about how food is produced. Moreover, industry stakeholders and farm animal welfare advocates might consider avenues for addressing concerns by considering the rationale behind social practices and how the dissemination of new knowledge and best practices might be more successfully achieved. While this research cannot attest to the degree of change or reproduction, it does provide insight concerning the evolutionary process of materials, competences, and meaning that are also evolving within agricultural practices as potential influences for reproduction and/or transformation. Animal welfare efforts can look to the evolution of materials, competences, and meanings as a way of encouraging change in the beef and dairy production structures and encouraging social change towards better farm animal welfare.

References

Atkinson, Paul. 2015. *Working with Ethnographic Fieldnotes: Learning Tango.* London, UK: SAGE.

Barnes, Barry. 2001. "Practice as Collective Action." Pp. 25-36 in *The Practice Turn in Contemporary Theory*, edited by T.R. Schatzki, K.K. Cetina, and E. von Savigny. New York, NY: Routledge.

Bassi, Emilie M. 2016. "Weaned Dairy Calf" [image].

Bassi, Emilie M. 2016. "Low-Stress Moving of Cattle from Community Pasture" [image].

Bell, David. 2016. "Earls Restaurants' Move to Drop Alberta Beef Provokes Backlash." *CBC News,* April 27, 2016 (http://www.cbc.ca/news/canada/calgary/earls-alberta-beef-1.3556565)

Boaitey, Albert. 2017. "Three Essays in Beef Genomics: Economic and Environmental Impacts." PhD dissertation, Department of Resource Economics and Environmental Sociology, University of Alberta, Edmonton.

Bock, Bettina and Henry Buller. 2013. "Healthy, Happy and Humane: Evidence in Farm Animal Welfare Policy." *Sociologia Ruralis* 53(3):390-411.

Botreau, Raphaelle, Isabelle Veissier , Andrew Butterworth, Marc B. M. Bracke, and Linda J. Keeling. 2007. "Definition of Criteria for Overall Assessment of Animal Welfare." *Animal Welfare* 16(2):225-228.

Bourdieu, Pierre. 1980. *The Logic of Practice.* Stanford, CA: Stanford University Press.

Bradley, Andrea and Rob MacRae. 2011. "Legitimacy & Canadian Farm Animal Welfare Standards Development: The Case of the National Farm Animal Care Council." *Journal of Agriculture and Environmental Ethics* 24(1):19-47.

Canadian Cattlemen's Association and National Farm Animal Care Council. 2013. *Code of Practice for the Care and Handling of Beef Cattle.* Calgary: Agriculture and Agri-Food Canada. Retrieved May 15, 2016 (http://www.nfacc.ca/pdfs/codes/beef_code_of_practice.pdf)

Canadian Dairy Commission. 2017. "The Industry – Quick Facts" Retrieved from (http://www.cdc-ccl.gc.ca/CDC/index-eng.php?id=3796)

Cohen, Nevin and Kristen Cribbs. 2017. "The Everyday Food Practices of Community-Dwelling Lesbian, Gay, Bisexual, and Transgender (LGBT) Older Adults." *Journal of Aging Studies* 41:75-83.

Creswell, John W. 2013. *Qualitative Inquiry & Research Design: Choosing Among Five Approaches.* Los Angeles, CA: Sage.

Dairy Farmers of Canada and National Farm Animal Care Council. 2009. Code *of Practice for the Care and Handling of Dairy Cattle.* Ottawa: Agriculture and Agri-Food Canada. Retrieved May 15, 2016 (http://www.nfacc.ca/pdfs/codes/dairy_code_of_practice.pdf)

Davidson, Debra J., Kevin E. Jones, and John R. Parkins. 2016. "Food Safety Risks, Disruptive Events and Alternative Production: a Case Study of Agricultural Transition In Alberta." *Agriculture and Human Values* 33(2):359-371.

Doll, Claire. 2016. "Researcher Participation in a Cattle Round Up" [image].

Duncan, Ian J. H. 2005. "Science-based Assessment of Animal Welfare: Farm Animals." *Revue Scientifique Et Technique-Office International Des Epizooties* 24(2):483-492.

Dwane, Andrea M., Simon J. More, Martin Blake, Kenneth McKenzie, and Alison J. Hanlon. 2013. "Farmers' Self-reported Perceptions and Behavioural Impacts of a Welfare Scheme for Suckler Beef Cattle in Ireland." *Irish Veterinary Journal* 4(9):1-12.

Edwards-Jones, Gareth. 2006. "Modelling Farmer Decision-making: Concepts, Progress and Challenges." *Animal Science* 82(6):783-790.

Farm Animal Welfare Council. 2009. "Five Freedoms." Retrieved from (http://webarchive.nationalarchives.gov.uk/20110909181150/http://www.fawc.org.uk/freedoms.htm)

Fraser, David. 2008. *Understanding Animal Welfare: A Science in its Cultural Context.* Ames, IA: Wiley-Blackwell.

Gibbs, Graham R. 2007. "Thematic Coding and Categorizing." Pp. 38-55 in *Qualitative Research Kit: Analyzing Qualitative Data*. London, UK: SAGE.

Giddens, Anthony. 1984. *The Constitution of Society.* Oakland, CA: University of California Press.

Gocsik, E´va, Helmut W. Saatkamp, Caroline C. de Lauwere, and Alfons G. J. M. Oude Lansink. 2014. "A Conceptual Approach for a Quantitative Economic Analysis of Farmers' Decision-Making Regarding Animal Welfare." *Journal of Agriculture and*

Environmental Ethics 27(2):287-308.

Grandin, Temple. 2015. "The Importance of Measurement to Improve the Welfare of Livestock, Poultry and Fish." Pp. 1-20 in *Improving Animal Welfare: A Practical Approach*, edited by T. Grandin. Cambridge, MA: CABI.

Hargreaves, Tom. 2011. "Practice-ing Behaviour Change: Applying Social Practice Theory to Pro-environmental Behaviour Change." *Journal of Consumer Culture* 11(1):79-99.

Hesse-Biber, Sharlene and Particia L. Leavy. 2011. *The Practice of Qualitative Research.* Thousand Oaks, CA: Sage Publications.

Knoblauch, Hubert. 2005. "Focused ethnography." In *Forum: Qualitative Social Research 6*(3).

Lave, Jean and Etienne Wenger. 1991. *Situated Learning: Legitimate peripheral Participation.* New York, NY: Cambridge University Press.

Lund, Vonne, Grahame Coleman, Stefan Gunnarsson, Michael Calvert Appleby, and Katri Karkinen. 2006. "Animal Welfare Science – Working at the Interface Between the Natural and Social Sciences." *Applied Animal Behaviour Science* 97(1):37-49.

MacDowell, Laurel S. 2012. *An Environmental History of Canada.* Vancouver: UBC Press.

Martin, Robert .P. 2012. "The Opinions and Recommendations of One Particular Study Group: The Pew Commission on Industrial Farm Animal Production." Pp. 43-75 in *Animal Welfare in Animal Agriculture: Husbandry, Stewardship, and Sustainability in Animal Production,* edited by W. G. Pond, F. W. Bazer, and B. E. Rollin. Boca Raton, FL: Taylor & Francis Group.

Maxwell, Joseph A. 2013. *Qualitative Research Design: An interactive Approach*. Thousand Oaks, CA: Sage.

McCulloch, Steven P. 2012. "A Critique of FAWC's Five Freedoms as a Framework for the Analysis of Animal Welfare." *Journal of Agriculture and Environmental Ethics* 26(5):959-975.

McGlone, John J. 2001. "Farm Animal Welfare in the Context of Other Society Issues: Toward Sustainable Systems." *Livestock Production Science* 72(1):75-81.

McMichael, Philip. 2009. "Contemporary Contradictions of the Global Development Project: Geopolitics, global ecology, and the 'development climate'." *Third World Quarterly* 30(1):247-262

Mellor, David J. 2016. “Updating Animal Welfare Thinking: Moving Beyond the ‘Five Freedoms’ towards ‘A Life Worth Living’.” *Animals* 6(3):1-20.

Moggy, Melissa A., Ed A. Pajor, Wilfreda E. Thurston, Sarah Parker, Angela M. Greter, Karen S. Schwartzkopf-Genswein, John R. Campbell, and Claire Windeyer. 2017. “Management Practices Associated with Stress in Cattle on Western Canadian Cow–calf Operations: A Mixed Methods study.” *American Society of Animal Science* 95(4):1836-1844.

Nicolini, Davide. 2012. *Practice Theory, Work, and Organization: An Introduction.* Oxford, UK: Oxford University Press.

Petherick, Carol J. 2005. “Animal Welfare Issues Associated with Extensive Livestock Production: The Northern Australian Beef Cattle Industry.” *Applied Animal Behaviour Science* 92(3):211-234.

Reckwitz, Andreas. 2002. “Toward a Theory of Social Practices: A Development in Culturalist Theorizing.” *European Journal of Social Theory* 5(2): 243-263.

Rollin, Bernard E. 1995. *Farm Animal Welfare: Social, Bioethical, and Research Issues.* Ames, IA: Iowa State University Press

Rollin, Bernard E., Donald M. Broom, David Fraser, Gail C. Golab, Charles Arnot, and Paul Shapiro. 2012. “Defining Agricultural Animal Welfare: Varying Viewpoints and Approaches.” Pp. 75-120 in *Animal Welfare in Animal Agriculture: Husbandry, Stewardship, and Sustainability in Animal Production,* edited by W. G. Pond, F. W. Bazer, and B. E. Rollin. Boca Raton, FL: Taylor & Francis Group.

Rushen, Jeffrey. 2003. “Changing Concepts of Farm Animal Welfare: Bridging the Gap between Applied and Basic Research.” *Applied Animal Behaviour Science* 81(3):199-214.

Sahakian, Marlyne and Harold Wilhite. 2013. “Making Practice Theory Practicable: Towards More Sustainable Forms of Consumption.” *Journal of Consumer Culture* 14(1):25-44.

Schatzki, Theodore R. 2001. “Introduction: Practice Theory.” Pp. 10-23 in *The Practice Turn in Contemporary Theory*, edited by T.R. Schatzki, K.K. Cetina, and E. von Savigny. New York, NY: Routledge.

Scheer, Monique. 2012. “Are Emotions a kind of Practice (and Is That What Makes Them Have a History)? A Bourdieuian Approach to Understanding Emotion.” *History and*

Theory: Studies in the Philosophy of History 51(2):193-220.

Shove, Elizabeth, Matt Watson, and Mika Pantzar. 2012. *The Dynamics of Social Practice: Everyday Life and How it Changes.* Thousand Oaks, CA: Sage.

Spaargaren, Gert. 2011. "Theories of Practices: Agency, Technology, and Culture Exploring the Relevance of Practice Theories for the Governance of Sustainable Consumption Practices in the New World-order." *Global Environmental Change* 21(3):813-822.

Spooner, Jeffery M., Catherine A. Schuppli, and David Fraser. 2012. "Attitudes of Canadian Beef Producers Toward Animal Welfare." *Universities Federation for Animal Welfare* 21(2):273-284.

Spooner, Jeffery M., Catherine A. Schuppli, and David Fraser. 2014. "Attitudes of Canadian Citizens toward Farm Animal Welfare: A Qualitative Study." *Livestock Science* 163:150-158.

Squire, Corinne, Molly Andrews, and Maria Tamboukou. 2013. "Introduction: What is Narrative Research?" Pp. 1-25 in *Doing Narrative Research,* edited by M. Andrews, C. Squire, and M. Tamboukou. Los Angeles: CA: SAGE.

Squire, Corinne. 2013. "From Experience-Centred to Socioculturally-Oriented Approaches to Narrative." Pp. 47-71 in *Doing Narrative Research,* edited by M. Andrews, C. Squire, and M. Tamboukou. Los Angeles, CA: SAGE.

Statistics Canada and Canadian Dairy Commission. 2016. *Number of Farms, Dairy Cows and Heifers.* Canadian Dairy Information Centre. Retrieved June 28, 2017 (http://dairyinfo.gc.ca/index_e.php?s1=dff-fcil&s2=farm-ferme&s3=nb)

Statistics Canada. 2017. *Alberta has the Most Beef Cattle in Canada and the Second Largest Total Farm Area (*Catalogue no. 95-640-X). Retrieved June 29, 2017 (http://www.statcan.gc.ca/pub/95-640-x/2016001/article/14808-eng.pdf)

Statistics Canada. 2017. *Cattle Inventory by Farm Type – Alberta* (Table 4c Cow-calf Operations). Agriculture and Agri-Food Canada. Retrieved August 3, 2017 (http://www.agr.gc.ca/eng/industry-markets-and-trade/market-information-by-sector/red-meat-and-livestock/red-meat-and-livestock-market-information/inventories/cattle-inventory-by-farm-type-alberta/?id=1415860000077)

Statistics Canada. 2017. *Cattle Inventory by Farm Type – Alberta* (Table 4f Feed Operations). Agriculture and Agri-Food Canada. Retrieved August 3, 2017 (http://www.agr.gc.ca/eng/industry-markets-and-trade/market-information-by-sector/red-meat-and-livestock/red-meat-and-livestock-market-information/inventories/cattle-inventory-by-farm-type-alberta/?id=1415860000077)

Stull, Donald D. and Michael J. Broadway. 2013. *Slaughterhouse Blues: The Meat and Poultry Industry in North America.* Belmont, CA: Wadsworth.

Te Velde, Hein, Noelle Aarts, and Cees Van Woerkum. 2002. "Dealing with Ambivalence: Farmers' and Consumers' Perceptions of Animal Welfare in Livestock Breeding." *Journal of Agriculture and Environmental Ethics* 15(2):203-219.

Thompson, Paul B. 2013. *From Field to Fork: Food Ethics for Everyone.* New York, NY: Oxford University Press.

Vasseur, Elsa, Fernando Borderas, Roger I. Cue, Daniel Lefebvre, Doris Pellerin, Jeffery Rushen, Kevin M. Wade, and Anne M. de Passillé. 2010. "A Survey of Dairy Calf Management Practices in Canada that Affect Animal Welfare." *Journal of Dairy Science* 93(3):1307-1315.

Ventura, Beth Ann, Marina A. G. von Keyserlingk, and Daniel M. Weary. 2015. "Animal Welfare Concerns and Values of Stakeholders within the Dairy Industry." *Journal of Agriculture and Environmental Ethics* 28(1):109-126.

Webster, Anthony J. F. 2001. "Farm Animal Welfare: the Five Freedoms and the Free Market." *The Veterinary Journal* 161(3):229-237.

Webster, John. 2005. "The Assessment and Implementation of Animal Welfare: Theory into Practice." *Revue Scientifique Et Technique-Office International Des Epizooties* 24(2):723-734.

Webster, John. 2016. "Animal Welfare: Freedoms, Dominions and "A Life Worth Living." *Animals* 6(6):1-6.

Weenink, Don and Gert Spaargaren. 2016. "Emotional Agency Navigates a World of Practices." Pp. 60-84 in *Practice Theory and Research: Exploring the Dynamics of Social Life,* edited by D. Weenink, G. Spaargaren, and M. Lamers. New York, NY: Routledge.

Whay, Becky. 2007. “The Journey to Animal Welfare Improvement.” *Animal Welfare* 16(2):117-122.

Wikman, Ingela, Ann-Helena Hokkanen, Matti Pastell, Tommi Kauppinen, Anna Valros, and Laura Hänninen. 2016. “Attitudes of Beef Producers to Disbudding and Perception of Pain in Cattle.” *Animal Welfare* 25(4):429-438.

World Organisation for Animal Health (OIE). 2016. *Terrestrial Animal Health Code.* Retrieved June 28, 2017 (http://www.oie.int/international-standard-setting/terrestrial-code/access-online/).

Zaffino Heverhoff, Jessica C., Stephen J. LeBlanc, Trevor J. DeVries, Clemence G. R. Nash, Greg. J Gibbons, Karin Orsel, Herman W. Barkema, Laura Solano, Jeffery Rushen, Anne M. de Passillé, and Derek B. Haley. 2014. “Prevalence of and Factors Associated with Hock, Knee, and Neck Injuries on Dairy Cows in Freestall Housing in Canada.” *Journal of Dairy Science* 97(1):173-184.

Chapter Three - Exploring the role of human emotion in negotiating social practices and farm animal welfare in Alberta's beef production industry

Introduction

The field of social practices is a growing avenue for grounding the study of social life. Social practice theory has developed as a way of thinking about human life, while focusing on the complexity of individuals, social structures, and discourses in an effort to explore the "nexus of doings and sayings," also known as social practices (Schatzki 2001:89). While the lineage of practice theories explore different aspects of social interactions, many argue that the framework has just started to explore the role of emotions in the various theoretical interpretations (Weenink and Spaargaren 2016; Reckwitz 2017). Sociology of emotion scholar Bericat (2016) argues that if there is any interest in explaining the fundamentals of social behaviour, then sociological analyses must continue to expand on and be inclusive of the role of emotions in diverse areas of inquiry. One area of contention within the social practice literature is the relationship between emotions and the problem of structure and agency in the evolution of social practices.

Sociological perspectives are not new to the field of affect and emotions. Dramaturgical and cultural theories, ritual theory, symbolic interactionism, exchange theory, as well as structural and evolutionary perspectives have all distinctly considered the role of human emotions (Turner and Stets 2005). Thoits (1989) points out that emotions are explored from a sociological perspective on diverse topics including, but not limited to, gender roles, charisma, stress, violence against women, and group solidarity. While emotion literature on the aforementioned topics might seem obvious, a less explored area of human emotions is within agricultural production. Given the emphasis in sociological theory to ground research in social practices to be inclusive of the role of emotions, this study explores the effects of human emotions on improving production-based social practices and, ultimately, the welfare of farm animals on cow-calf operations in Alberta, Canada.

The beef industry in Alberta is highly efficient and characterized by cow-calf producers, auction markets, and an industrialized approach to feeding operations and slaughtering facilities (Stull and Broadway 2013). The beef production chain remains largely male dominated in terms of ownership (Blue 2009), and is a central part of Alberta's agricultural, culinary, and historical 'western' identity (Blue 2008). Despite the cultural and economic importance of the industry,

ongoing issues include farm animal welfare concerns (MacDowell 2012), environmental sustainability (McMichael 2009), and recurring food safety issues (Davidson, Jones, and Parkins 2015), all of which bring attention to changing values of the public, recognition of environmental problems, and persistent pressure for change. Much of the pressure for change targets production-based social practices, including specific identification practices, castration, weaning, disbudding and dehorning, transportation, and slaughter. Interestingly, change is evident in the beef industry with the creation of the Canadian Roundtable for Sustainable Beef, the Code of Practice for the Care and Handling of Beef Cattle (Canadian Cattlemen's Association and National Farm Animal Care Council 2013), the embrace and efforts of animal scientists and industry consultants like Dr. Temple Grandin, and through the increase in adoptions of ethical and sustainable certification systems such as Verified Canadian Beef. However, issues surrounding beef production and social practices are also deeply personal as they are linked to issues around personal ethics, health, and social status pertaining to what individuals consume. The field of beef production practices, such as those noted above, is particularly interesting because of the ways that social practices are routinized, enduring, but also disrupted and redefined.

Given the need to explore the role of emotions in sociological analyses, the objective of this study is to explore a central issue within contemporary social theory. I investigate the complex nature of emotions for cow-calf producers amidst the problem of structure and agency in the evolution of their social practices of production. More specifically, this study explores the role of human emotion in challenging and re-directing social norms of animal husbandry through the production-based social practices amongst cow-calf producers in Alberta, Canada. In an effort to contribute to a deeper understanding of social practice theory and the sociology of emotion, I focus on the narrative accounts from cow-calf producers to explore the following research questions that address contemporary issues in social theory:

(1) How does the interactive nature of human emotions influence social practices?

(2) How do emotions relate to the problem of structure and the role of human agency in the development of social practices?

(3) To what extent do emotions act as a catalyst in the evolution of social practices?

This paper begins with an overview of social practice theory in an effort to provide a working definition of social practices. I further outline key similarities between social practice

theorists and emotion scholars in their conceptualization of positive and negative affective states, with a focus on the vast influences of human emotion. Contrasting from this, I outline human emotion work within the realm of social practice theories, with complements and insights from neighbouring sociology of emotion scholars. The following section outlines the context of beef production in Alberta, followed by a description of the qualitative methods and narrative methodological analysis. The empirical section of the chapter focuses on two narratives from three cow-calf producers who share insights into the role of human emotions on social practices and their perceived improvements to farm animal welfare. The discussion wrestles with the problem of social structure and agency and the role of human emotion by theorizing about the narratives. I conclude with summarizing the larger themes, limitations, and future potential areas of inquiry regarding social practices with regards to improving our understanding of farm animal welfare.

Literature Review

Conceptualizing Human Emotions: A Sociological Perspective

While a definition of emotions is nearly impossible to succinctly define from any single discipline, sociologists have brought interesting insights into the study of emotions by accounting for the vast influences that allow individuals to experience and do emotions. For scholars of emotion, every aspect of social life is considered profoundly emotional (Bericat 2016; Weenink and Spaargaren 2016). Emotions play an important role in forming social bonds, building complex sociocultural structures, ensuring cultural systems remain viable (Turner and Stets 2005; Bericat 2016), and in making sense of the world (Schatzki 2001). Equally as important, emotions can push people apart, or catalyze individuals to challenge social structures and cultural norms (Turner and Stets 2005). Simply stated, emotions can be conceptualized as "the bodily manifestation of the importance that an event in the natural or social world has for a subject" (Bericat 2016:493). However, social practice theorists and scholars of emotion are hesitant to rely on a single conceptualization of human emotions. The concepts of affect and feelings are also commonly used in social theory, sometimes interchangeably with emotion.

Scheer (2012) suggests that affects and affectivity "comprises specific stimulations attached to other people, things or ideas" (Scheer 2012:121). Thoits describes feelings as "the experience of physical drive states (e.g. hunger, pain, fatigue) as well as emotional states" (1989:318). While emotion, affect, and feeling are related, they are also distinctive. Given these distinctions, I use the concept of emotions throughout this study to capture the dynamic aspects of an individual's experiences, actions, and physiological sensations.

The concept of 'emotion' is commonly used as an all-encompassing term to capture both positive and negative affective states. From a sociological perspective, emotions are generally grouped into two overlapping categories of primary and secondary. Primary emotions are considered "universal, physiological, of evolutionary relevance and biologically and neurologically innate," such as anger, fear, satisfaction, and happiness (Bericat 2016:492). Secondary emotions are considered the outcome of a combination of primary emotions, yet are also socially and culturally conditioned, such as guilt, shame, love, disappointment, and nostalgia (Bericat 2016). However, Bericat (2016) warns that the emotions an individual feels should never be considered a simple physiological response, for emotions are often experienced with other, often contradictory and complex sensations. For example, emotional experiences are highly dependent on many different social and cultural factors (Bericat 2016).

Culture is considered a strong influence on the experience of human emotions. Emotions are considered socially constructed insofar as what people feel, experience, or express is conditioned by one's socialization into culture (Harre 1986). Some emotion scholars argue that the origin of emotions lies entirely within culture, where the primary purpose of socialization is to reinforce societal norms and values (Armon-Jones 1986). However, there are several shortcomings to this claim. For example, Kemper (1981) challenges these assertions through research exploring the universality of certain emotions across diverse cultures, while others emphasize research on the biological processes of emotions (Turner and Stets 2005). Culture helps define what emotions are to be expressed, by whom, and in what particular social situations by way of ideologies, beliefs, and norms (Turner and Stets 2005). Emotions are thought to be profoundly social because individuals learn from others (parents, teachers, friends, and media) the appropriate vocabulary, expression, and shared meaning of various emotions (Turner and Stets 2005). Scheer (2012) builds on this assertion, arguing that the processes of naming emotions are historically flexible; new words surface, while commonly used words

disappear. Acknowledging how words are used and embedded within culture is important in order to "recognize one's own ethnocentric presuppositions, and also the possibility that other cultures may use related concepts in very different ways," alluding to the importance of social context (Harre 1986:5).

Much like the cultural and contextual influences, emotions always involve a biological and cognitive component (Turner and Stets 2005; Scheer 2012). Many culturally specific and universal words used to describe an emotion are only used if and when there is some degree of bodily feelings (Harre 1986). Research in psychology and neuroscience reveals that emotions arise as the brain activates four bodily systems: the autonomic nervous system, the neurotransmitter, the neuroactive peptide systems, and the hormonal system (Turner and Stets 2005). Likewise, scholars who focus on cognition emphasize one's ability to process emotional influences (Turner and Stets 2005; Bericat 2016). The central claim in cognitive perspectives is that emotions are not formed until one cognitively evaluates the elements (object, event, behaviour, or idea) in a given situation (Turner and Stets 2005; Bericat 2016). Sociologists and social practice theorists alike continue to work towards a conceptualization of emotion that acknowledges the interconnectedness of culture with biological and cognitive processes (Turner and Stets 2005; Scheer 2012).

Emotions are not only a phenomena that individuals feel and express, but they are also patterns of relationship that link oneself with the environment and with others - they are profoundly social (Parkinson 1996; Scheer 2012; Weenink and Spaargaren 2016). Parkinson (1996) suggests that emotional influences are not only culturally defined, but also interpersonally and institutionally defined. As such, Parkinson (1996) strongly questions the longstanding assumption of emotions as an individual and internal experience. These ideas stem from Cooley's (1902) notion of the looking glass self, a conceptual perspective that highlights how a person comes to perceive of themselves through interpersonal interactions. Some social practice theorists question whether emotions have the possibility to occur outside of social contexts. For example, Reckwitz (2017) questions whether emotions are ever an individual experience. Given these theorizations, focusing on social practices, rather than physiological states of individuals, opens up the possibility that emotions only exist within the realm of social exchanges (Harre 1986). However, these claims are heavily contentious, especially regarding the degree that social exchanges matter. Most social practice theorists and scholars of emotion share an affinity for

conceptualizing emotions in a way that acknowledges historical context, yet also recognizes the interconnectivity of minds, bodies, and social relations (Scheer 2012).

Emotions, moreover, are not only something that individuals have, but are something that individuals do. An argument shared by social practice theorists and scholars of emotion alike is that emotions are a form of action (see, for example, Harre 1986; Sarbin 1986; Scheer 2012; Weenink and Spaargaren 2016). Prominent in the discussion of emotions-as-action is Sarbin (1986) who argues that feelings, such as love, grief, jealousy, joy, and anger are all examples of actions that can also be identified as emotions. Further, Bericat (2016) clarifies emotion-related concepts by maintaining that emotional experiences are known as subjective feelings that individuals have, while emotional expressions are known as the external doing of emotions. Scheer (2012) highlights the notion of emotional practices to emphasize that emotions themselves are also a form of practice because they are an action. From Scheer's (2012) perspective, it is within the doing of emotion that has implications for one ultimately becoming a subject.

In summary, no single element is solely responsible for how emotions are experienced, expressed, or described; rather there are intricacies represented within culture, language, context, cognition, social exchanges, and actions that have been captured over many disciplines. While there are many similarities shared by sociologists of emotion and social practice theorists alike, the next section will further explore the role of emotions in social practice theory, and more specifically, the ways in which the subject is theorized.

Emotion Work in Social Practice Theory: Theorizing the Self

What is the role of emotions in social practices? Do emotions motivate social actions and the evolution of social practices? Or do emotions simply reflect the circulating performance of social practices? In response to these questions, social practice theorists explore the role of emotions in an effort to theorize the self. Social practice theorists cover ground ranging from ways that emotions are produced in social practices (and vice versa), how emotions are a form of social practice (Sarbin 1986; Scheer 2012), and through theorizing how individuals experience and engage with the world (Schatzki 2010; Reckwitz 2012, 2017; Bericat 2016), all of which serve to provide a deeper insight into the circulating and routinized activities that individuals do.

Within social practice theories, emotions are considered key in making sense of the world and one's self. Weenink and Spaargaren (2016) refer to emotions-in-practices to highlight the

importance of what matters to an individual and how emotions hold a role in setting human activity into action. Routinized activities always have a variable importance to an individual based on diverse and varying emotions. Given this claim, emotions are always embodied by a subject (Turner and Stets 2005; Scheer 2012). Through embodiment, emotions inform activity by determining what makes sense to do in terms of actions or social practices (Sarbin 1986; Schatzki 2010). Weenink and Spaargaren maintain that emotions arise "in and through the reproduction of practices" (2016:72). Similarly, Shove, Pantzar, and Watson (2012) use the concept of meanings to highlight "the social and symbolic significance of participation [in a practice] at any one moment" (2012:23). The concept of meanings is an overarching term used to describe "mental activities, emotions, and motivational knowledge," as an element of social practices that could be examined through one's values and beliefs (Shove et al. 2012:23).

Often the role of emotions is unapparent; however, individuals experience, generate, and express emotions ubiquitously, even in the utmost of mundane tasks. Scheer (2012) coined the term emotions-as-practice to emphasize this claim:

> the bodily act of experience and expression—in historical sources or ethnographic work is achieved through and in connection with other doings and sayings on which emotion-as-practice is dependent and intertwined, such as speaking, gesturing, remembering, manipulating objects, and perceiving sounds, smells, and spaces. (Scheer 2012:209).

Scheer identifies four types of emotional practices as mobilizing emotions, naming emotions, communicating emotions, and regulating emotions, all of which serve to justify her argument that emotions are a form of practice because they are an action (2012). Differing slightly, Schatzki (2010) refers to emotional activity to highlight how emotions can inform activity. Schatzki (2010) alludes to three non-mutually exclusive instances that this manifests: primarily, by deciding which ways of being determine practical intelligibility – simply defined as what makes sense to do next in the flow of actions; second, emotions can help determine which actions make sense for someone to perform; and finally, emotions can determine activity by directly causing it but not in a determinant manner. While emotions have a central role in social practices, either by informing activity, or by being an action in and of itself, most social practice theorists suggest that other phenomena exist in the emotional realm of practices.

Objects or artifacts are considered an essential component of social practices that can produce emotions (Scheer 2012; Nicolini 2012). Schatzki cites social practices as "intrinsically

connected to and interwoven with objects" (2001:106). Tools are an example of an object that are used from a rational perspective, yet are "bound up with affects" (Reckwitz 2017:123). For example, using a shovel to garden might appear as a rational choice to get the job done; however, entwined within the use of the shovel might be feelings of happiness, frustration, satisfaction, or nostalgia. Therefore, emotions do not only occur between subjects, but also occur between subjects and objects. Reckwitz (2012) derives the way that one learns to use objects and their associated affect as rooted within culture and modernity. According to Pham (2007), emotional responses are those that an individual experiences in relation to an object. Pham further builds on this claim suggesting, "emotional responses evoked by objects are stored with memory representations of these objects' value" (2007:166).

Moreover, the individual artifacts or objects are less important as isolated items. The location of objects, artifacts, or tools in a three-dimensional spatial setting, their interrelations, and the way they shape and inform the environment is critical (Scheer 2012; Reckwitz 2012, 2017). Reckwitz (2017) maintains that space is not simply present, but is 'entered' into by people, experiences, and their interrelations. Moreover, individuals have the capacity to enhance their spatial environments through the use of tools and objects (Vellema 2011). According to Reckwitz, spatial settings are considered "the material pre-set stage for human action" (2012:254). Schatzki suggests that it is within a spatial context that individual agents form engagements of "interconnectedly meaningful beings" and carry out social practices (Schatzki 2001:53). This is significant from a social practices lens because meaning is given to an individual's interaction with the world.

Finally, emotions serve a role in social practices by occurring within social contexts (Weenink and Spaargaren 2016). This approach by practice theorists challenges the internal-external binary previously assumed, for emotions "…consist in external, public, intelligible signs of emotion and internal, subjective states of physical excitement" (Reckwitz 2017:119). As was earlier highlighted, communicating emotions requires a means of exchange where terminologies are used to describe how one feels (Scheer 2012). Therefore, emotions are not just an internal feeling or experience, but are also a means of communication with others (Scheer 2012).

Competing Theorizations: 'Emotional Agency' and Structural Constraints

One of the ways social practice theorists grapple with the role of emotion is through the exploration of social structure and human agency. While sparse, theorizations about the role of

emotions regarding the problem of social structures and agency are gaining momentum. More contemporary social practice theories influenced by Giddens (1984) and Bourdieu (1980) tend to balance in-between the structure and agency debate. These theorists balance between the observation of social systems determining the actions of individuals without outright reducing society to the actions of individuals (Ropke 2009). Reckwitz (2002) and Nicolini (2012) reference the triangle that individuals shift between as evidence of this balancing act: "While homo economicus is perceived as a (semi) rational decision maker and homo sociologicus is depicted as a norm-following, role-performing individual, homo practicus is conceived as a carrier of practices, a body/mind who 'carries', but also 'carries out', social practices" (Nicolini 2012:4). Reckwitz (2002) maintains that individual agents are neither autonomous nor conforming to norms. Rather, agents use competences and motivational knowledge best suited to carrying out social practices (Reckwitz 2002).

Weenink and Spaargaren (2016) take a slightly opposing perspective with more focus on agency, defining it as "the way in which human agents intervene in the ongoing flow of events in the world and their involvement in bringing about changes in their socio-material environments and in themselves" (Weenink and Spaargaren 2016:61). However, Weenink and Spaargaren (2016), too, are careful not to privilege only the agency side of the spectrum as they emphasize the role of power as both constraining and enabling. While these perspectives lie on a spectrum of the structure-agency discussion, they are distinctive, as they tend to emphasize structure and agency to varying degrees. Yet, new practices do emerge as individuals make decisions to rid of or change existing social practices (Ropke 2009). Sahakian (2015) explores how focusing on the concept of emotional energy can enhance current approaches to social practice theory. By applying this concept to two case studies related to food consumption patterns, Sahakian (2015) finds emotional energy is created, experienced, and transferred in the interaction rituals of community supported agricultural practices. These findings help inform how accounting for emotion within social practice theory can inform opportunities for more sustainable consumption (Sahakian 2015). However, Ropke (2009) suggests that theorizations must be careful to not reintroduce an overly individualistic perspective that most practices theories have sought to prevent. While concentrating on the role of emotions is distinctively individualistic, many social practice theories, as noted earlier, emphasize the cultural and structural influences of emotion.

Many practice-based theories seek to not reduce the lives of individuals to the sum of their own actions (see, for example, Ropke 2009). Referring to 'individuals-as-carriers' of practices conveys structural influences that exist within the field of social practices (See Nicolini 2012; Shove et al. 2012; Reckwitz 2017). Weenink and Spaargaren (2016) criticize this perspective, arguing that it 'decentres' the human subject and risks portraying important acts of social change in a determinant manner. Further, individuals-as-carriers implies human agents mechanically do what others did before them, and all share a common history of knowledge, understandings, motivations, and affect, despite clear evidence of the contrary (Weenink and Spaargaren 2016:64).

Social practice theories differ on the location of human emotions and their influence on agency. Taking a structural approach, Reckwitz suggests, "every practice contains a certain practice-specific emotionality (even if that means a high control of emotions). Wants and emotions thus do not belong to individuals but – in the form of knowledge – to practices" (2002:254). Nicolini shares this perception by maintaining, "being absorbed into a practice also implies accepting certain norms of correctness as well as certain ways of wanting or feeling" (2012:5). However, Weenink and Spaargaren challenge these perspectives, claiming that it seems "ontologically misleading" to argue that emotions do not belong to individuals, especially given the complex biological processes that take place (2016:66). They further argue that these sentiments could be interpreted as assuming that all individuals experience emotions in an equal and homogenous way (Weenink and Spaargaren 2016). Weenink and Spaargaren (2016) advocate for acknowledging more variation in the ways that individuals perceive, feel, and react, while also recognizing the linkages between human emotions and power. Weenink and Spaargaren (2016) perceive of divisions of power as both a restraining and motivating driver of change.

Alternatively, some social theorists bring the importance of the subjective experience to the forefront of their theorizations. For example, Schatzki (2002) explicitly highlights humans who carry out social practices as holding practical intelligibility, intentionality, and affectivity. According to Schatzki (2002), the agency of individuals resides in their ability to be intentional, complex, and bare emotions. Contrary to the theorizations of Reckwitz (2002), Shove et al. (2012), and Nicolini (2012) discussed earlier, human actions lead the creation and reproduction of social practices for seminal thinkers including Schatzki (2002) and Weenink and Spaargaren

(2016). For example, Weenink and Spaargaren (2012) argue that agency resides within emotions, a notion they conceptually refer to as 'emotional agency'. From these perspectives, emotions are central to the field of social practices and focusing on emotions helps explain why individuals engage with and actually care about the 'doings and sayings' around them.

Drawing on Nicolini's (2012) invitation to explore the role of emotion from an empirical perspective, this study builds on the theoretical viewpoints discussed here. To do so, I use in-depth interviews to further elucidate the relationship between emotions, the undertaking of social practices of production, and the subsequent implications for farm animal welfare improvements.

Study Setting: Beef Production in Alberta

To explore the aforementioned issue in contemporary social theory, this research focuses on the empirical narratives from cow-calf producers who are a significant part of Alberta's beef production industry. While this study focuses on cow-calf production, outlining the study setting provides some context to the overarching structure of the beef sector pertinent to this study.

The Canadian prairies, notably Alberta, Saskatchewan, and Manitoba, began developing at the beginning of the 20th century with settlers crafting a rural landscape of farms, ranches, small towns, and villages (Stull and Broadway 2013). During this period, farmers were limited in their capacities due to climate instability, growing times, and animal gestation (MacDowell 2012). Regardless, development steadily increased and with it farmers increasingly looked to technological developments (such as machinery and fertilizer) to increase their yields (Stull and Broadway 2013). Since the 1930s, Alberta's farming structure has undergone drastic changes. Alberta's beef production industry is complex, and comprised of small and large family-run cow-calf operations, transportation companies, auction markets, highly specialized feeding operations, and intensive slaughtering facilities (Stull and Broadway 2013). While many feeding operations are also family operated, they hold mass amounts of cattle at a highly intensive scale. In addition, the slaughtering and processing plants hold the power to determine how and where most animal protein is processed, indicating an important shift within Alberta's agricultural history towards increasingly efficient and industrialized modes of livestock production (Stull and Broadway 2013). Cow-calf operations range from conventional farms to smallholder family farms and niche markets of Certified Organic, grass-fed, and direct-marketed beef. While most cow-calf operations are family owned and operated, they are growing in size; the average herd

size has grown from 142 head in 2011, to 161 head in 2017 (Statistics Canada 2017). Given this structural context, cow-calf producers hold a unique position as running often small-scale operations that participate in an increasingly industrialized beef production supply chain.

Beef production remains an important feature of Alberta's history and identity. The province was settled as an "agricultural region" and today, "the cultural antecedents of that history continue to permeate rural communities, and the broader Canadian Prairie culture" (Davidson, Jones, and Parkins 2015:8). Further, the emergence of Bovine Spongiform Encephalopathy (BSE) in Alberta's cattle herd in 2003 influenced the development of a strong association between beef and the regional identity, elucidated by the popularity of the 'I Love Alberta Beef' slogan (Blue 2008). Blue (2008) suggest that the emergence of Alberta Beef as a defining feature of Albertan identity has been established through processes of tourist marketing, industrialization, and market globalization. Despite the cultural significance of beef production, there remain issues that permeate the beef industry. Survey data collected by the Canada West Foundation suggests that Canadians hold exceptional support for and trust in farming, especially in comparison to other resource-based industries; however, the primary reason for distrusting the agricultural industry stems from perceived farm animal welfare issues (Sajid 2014). Public trust in agriculture has become an important driver in farm animal welfare policy developments as consumers seek to better understand how their food is produced, and seek assurances of ethical and environmentally sustainable food production. In addition to consumers, animal scientists and industry consultants such as Dr. Temple Grandin have historical importance in catalyzing change in production-based social practices with the goal of improving farm animal welfare. However, the issue in contemporary social theory remains, what is the role of emotion in catalyzing change towards improving animal husbandry in production-based social practices?

Research Methods

The analytical framework of narrative research influences this study. The definition and process of 'doing narrative' research is heavily contested (Squire, Andrews, and Tamboukou 2013), however, simply stated, narrative research is a qualitative process of collecting and analyzing stories of experiences, as expressed by individuals (Creswell 2013). Squire et al. declare that by doing narrative research:

> We are able to see different and sometimes contradictory layers of meaning, to bring

> them into useful dialogue with each other, and to understand more about individual and social change. By focusing on narrative, we are able to investigate not just how stories are structured and the ways in which they work, but also who produces them and by what means; the mechanisms by which they are consumed; how narratives are silenced, contested or accepted and what, if any effects they have. (2013:2).

Narratives are thought to be stories of experiences, rather than a description of events (Squire 2013). While the theoretical divisions of narrative are overlapping, this research primarily embraces experience-centered narrative research (Squire et al. 2013). Experience-centered narrative research "…involve movement, succession, progress or sequence – usually, temporal sequences – and the articulation or development of meaning" (Squire 2013:3). This research explores the narratives from two in-depth interviews that were conducted with three cow-calf producers. Interviewing allows for learning and interpreting the interpreted experiences, perceptions, and perspectives of the participants (Maxwell 2013). In the interviewing process, each participant shared an experiential narrative about their involvement in and the sequence of production-based social practices that occur on their farm and how they have adapted to manage rising farm animal welfare issues through their animal husbandry decisions. The participants were selected on the basis of purposeful selection, referring to a deliberate selection of individuals who are cow-calf producers situated within Alberta, Canada (Maxwell 2013). Information about the project and contact information were given to industry contacts and dispersed through the Alberta Beef Producer's Newsletter, the Western Producer, and the Northern Horizon. Each individual within this study is addressed using pseudonyms to ensure anonymity.

The two interviews were conducted face-to-face in a semi-structured format to allow for an informal conversations on topics related to the succession of production-based social practices throughout the year, how they perceive of themselves as coping with the growing societal concern for farm animal welfare, and how each participant provides meaning to these social practices and their perceived farm animal welfare improvements. The interview guide was sequentially structured, covering the process of cow-calf production-based social practices in its entirety (from birth to slaughter/transport off farm). Interview questions were structured around four main themes: Farm demographics and reasons for farming, perceptions of ethics and farm animal welfare, daily production practices from birth to death/transport off farm, and perceptions

of the future of farm animal welfare issues in the beef production sector.

The interviews were collected in-person, audio recorded, and subsequently transcribed verbatim. The interviews were transcribed using F5 transcription software and organized using Nvivo 11 for Mac software. The data-analysis relies entirely on the interview transcripts. The two interviews were chosen for their detail and depth concerning the social practices they carry out in their day-to-day lives. The analytical process consisted of first, describing the interviews thematically, and from this, testing theories that give an explanation of the stories including exploring the role of emotion in the evolution of social practices (Squire 2013). Experience-centered analysis is broadly focused on the content of the stories, is distinguished by its attention to the sequencing of themes within interviews, their transformation, and resolution (Squire 2013). Thus, the analysis focuses on the content expressed in each narrative, and their attention to the sequencing of their social practices that occur on their farms. Moreover, the analysis also includes elements of how their social practices have transformed and the influences of transformation by analytically paying attention to how emotion manifests throughout the interviews within their description and expression of emotions. Using a narrative approach permits a comparison between the two accounts to identify and interpret differing points of view with regards to exploring the role of emotions and the sequence of transformation concerning social practices in Alberta's cow-calf producing industry.

Findings

Narrative One: The Role of Human Emotion in Personal and Structural Transformation

The first narrative is told by Bryan, a grass-finishing beef producer who spent the course of an afternoon sharing his story of personal transformation. Like many cow-calf producers, Bryan's story begins with being born into a commercial cow-calf operation of 200 cows run by his father, uncles, and brothers. After finishing high school, Bryan left his family-farm to pursue a degree in engineering, and subsequently found work in a multinational company. Unsatisfied with his career, Bryan left his job to pursue an alternative beef production business because he "didn't want to be a cog in a wheel of a multinational company." Today, Bryan runs a self-proclaimed ethical, grass finishing, and direct marketed beef production business, with "happy hogs and hens" on the side. However, he continues to help on his family's 60-year-old commercial cow-calf operation. In many ways, Bryan's narrative highlights a balancing act between two parallel

worlds of beef production where he connects both positive and negative affective states with the farm animal welfare implications of his social practices.

Bryan's narrative is situated within an increasingly intensive beef production sector comprised of auction marts, feeding operations, slaughter plants, and veal operations. To differentiate himself as a producer who focuses on ethical and sustainable practices of production, Bryan reflects on feelings of love that position his cattle as more than a mere commodity, despite his cattle being important drivers of Alberta's economy. Early in our conversation Bryan opened up about the happiness and joy that he associates with his cattle, stating: "[The cattle are] the centrepiece of the operation. If people never ate beef again, that would be fine for me as along as I still got to work with cows. I love working with cows, I think they're wonderful animals." Thereafter, Bryan described how his cattle have helped inform his sense of self by connecting him to the land and providing him with a sense of purpose beyond beef production:

> One of the most in touch with nature feelings I have, or something that just grounds me [in] what I feel like as a human is to be out in the field with my cows on my horse or with my dog. At the end of the day when I'm not doing anything, I'm just being there with them. And maybe we don't ever eat beef again, and I just graze cattle.

A crucial component of Bryan's narrative is on being raised and still occasionally working within a cattle-producing context that is in conflict with his personal sense of responsibility. Bryan notes: "…We work in a commercial system, and everyone in my family is not the same as me, they're all of the commercial/traditional system [pause]. So when I talk about using pain medication, or not hitting the cattle, or not yelling when we work cattle, they all think I'm a crazy person." While acknowledging that he was raised in a cattle-producing atmosphere that focuses more on efficiency and high stress techniques, Bryan insists that he looks to industry consultants and low-stress animal welfare advocates like Dr. Temple Grandin and Bud Williams as influences of best practices.

While Bryan acknowledges that he was raised and continues to occasionally assist on his family's commercial cow-calf operation, he is highly critical of the industry in two ways. First, Bryan is highly critical of dominant practices embraced by the industry, such as the abrupt weaning of calves from their mothers, cattle handling, antibiotic use, feeding operations, and

certain slaughtering practices. In a passionate account, Bryan provides an example of his critical perspective on the practice of abruptly weaning calves from their mothers:

> The emotional stress of being away from their mom. The emotional stress of [pause] which are real stresses because they affect the body's immune system. The emotional stress of being mixed with other cattle, being in a new location [pause] and, they're undergoing the physical stress of being without water, and the physical stress of being without food, and without milk, all at once. So it's emotional and a physical stress all at once. Then they go into a feedlot, they're handled, and they're given vaccines and injections because at that stage of their life that's what they need, which is fine, but it's more handling. Then they go into a feedlot pen, they've maybe never drank out of a water bowl [before]. They've never eaten food out of a food bunk. They've only eaten grass before. They're not familiar with any of that, so they don't eat anything. So it's a gigantic stress on the animals.

While Bryan passionately outlines the problems associated with this widely embraced method of weaning, it remains a practice that he occasionally participates in on his family's commercial cow-calf operation. He expresses a form of ambivalence in how he has grown to perceive of this practice as problematic, yet still actively engages in it. Bryan further reflects on feeling unconventional and removed from many of the social practices that he grew up learning. Bryan builds on this argument and eventually reflects on not only feeling critical of dominant social practices, but of the structure of the commercial beef production industry as a whole. With a regretfully defensive tone Bryan notes: "I'm unconventional in my thinking related to agriculture. So my opinion is it's best if the truth comes out and we can deal with facts rather than B.S. I'm very frustrated with the commercial agricultural system. I think there's so much bullshit, it drives me insane."

Bryan's feelings of frustration with the commercial beef production industry have sparked an interest in alternative social practices and improving farm animal welfare. To support his position as being unconventional, Bryan discusses how he actively searches for and strives to educate himself on alternative social practices that differ from and challenge what he was taught in the commercial cow-calf industry. Bryan reflects on a personal moment of actively educating himself during an interaction with Dr. Temple Grandin at a conference:

> She's interested in talking to people that work with animals on a daily basis and I was the only one [at the conference]. So I spent the whole evening with her, and the entire next day sitting with her, like all the meals, and she brought papers, and different stuff to show me. She's one of my absolute hero's. So I asked her like every question I could possibly think of and it was fantastic.

Bryan continues on why interacting with Dr. Temple Grandin was so important, stating, "I'm kind of a nerd, I like learning. Learning is one of the things I've just always liked to do. What excites me is change and improvement."

Moreover, Bryan builds on his interest in change and improvement by articulating how the social practices he embraces on his operation have changed, how his family's commercial cow-calf operation has undergone incremental change, and how he has undergone a personal transformation. In a deeply personal account, Bryan reflects on how he has undergone personal transformation that has filtered into all of his human-animal interactions. Bryan perceives of himself as ever evolving and transformative by overcoming and changing many of the dominant norms he believes are still currently adopted within the commercial beef producing industry today. From a position of vulnerability, Bryan outlines his personal transformation by reflecting on the type of producer he used to be, and how he has changed:

> When I first [started farming] I didn't know a lot of the stuff about quiet handling. I was one of the yellers, and the hitters with a stick, I didn't know. I was raised that way on the farm. What you do is you yell, and you hit cows, and that's the way it goes, and you're tough. And so that's how I started and I totally evolved over the past four years in a lot of the stuff. So my first time ever working the cattle with a dog [pause]. No one ever [did] that on our farm, it's brand new to our ranch.

Bryan states that he continues to implement better social practices that impact farm animal welfare and sustainability by adopting low-stress handling techniques, holistic rotational grazing, grass-fed and finishing practices, as well as low stress weaning methods. Still, his desire for change goes beyond himself; he works towards change within the commercial beef production system as well. In a discussion of the commercial cow-calf operation run by his family, Bryan reveals how his desire for change has come at a cost. Bryan reflects on working on incremental change towards low-stress handling, weaning, and pain mitigation strategies; however, he frequently experiences personal conflicts with his family members:

> I work on incremental [change] in the commercial system, rather, because in my system I'm the boss and I control it. And I only invite people to work with me that have the same mindset as me. And on the commercial system I'm not in control, so I can only work on incremental change. And sometimes I leave the situation because it's too stressful for me.

Despite the occasional cost to his personal relationships, Bryan has been successful in making incremental changes on his family's commercial cow-calf operation. He describes those changes briefly: "We have made a lot of progress…We stopped branding, we have more of a focus on not making noise, we are getting better, but I would say we have gone from like a 2/10 to a 6/10, and hopefully we can continue on that path."

Bryan concludes his story of transformation is by referring to important business decisions regarding the adoption, implementation, and transformation of social practices on his alternative beef producing business that he established several years ago. For example, one of the ways Bryan articulates this is in the adoption and implementation of being present during the slaughter and processing of his cattle. Bryan states: "For me, when I have a cow that walks into a butcher I supervise all the kills myself, I don't drop them off and leave. I go in and handle them until they're dead,*"* a unique practice that many producers do not experience. To justify why this practice is so important to him he reflects on making the choice because of what it means for him emotionally. In a deeply personal and complex emotional state, Bryan reflects:

> That's how I come to grips [pause], to terms with butchering animals. I think my animals have a much more pleasant life than a wild animal does, and a much more humane death than a wild animal does… So, that's how I say that it's [pause]. I treat them excellent right to the moment of death. I don't feel guilty about them dying, but it's not a happy process. But that's part of it is life and death are together. I get kind of emotional, I'm almost crying talking about it.

For Bryan, while being present for the slaughter is not a happy process, it is an important step for him emotionally because it aligns with his values of ensuring a humane death. The decision is an emotional one that comes with a negative affective state of grief, but also with a positive affective state of moving beyond his personal gratification as a producer. He concludes with why improving the welfare of his farm animals is important to him at a personal and emotional level: "I want my life to mean something, I don't want to just make money or just provide for my

family which I think is just totally selfish. I want to do something that is [pauses]. I want to make a positive impact in the world."

Narrative Two: Exploring Human Emotions as a Catalyst for Transforming Social Practices

Jolene and Anthony shared their story on their farm near St. Paul, Alberta, over the duration of three hours. Anthony's farming story begins when he took over his family's commercial cow-calf operation when he was just 19 years old, after his father had passed away in the early '60s. Coincidentally, Jolene grew up just eight miles away from Anthony. After Jolene and Anthony decided to get married, they purchased the farm from Anthony's family and decided to expand. With help from their son, Anthony and Jolene run a commercial operation of roughly 160 cow-calf pairs.

While Anthony and Jolene's operation functions within an increasingly intensive beef production sector, they hesitate to refer to their operation as commercial, despite nothing differentiating them from other commercial operations. In some ways, they perceive of themselves as fundamentally separate from the industrial context in which beef production occurs. In an effort to conceptualize their operation as such, Anthony summarizes:

> [What] do you mean commercial? That's so… I mean we're tied to the land on a personal basis, I mean it's more like a family farm. But, it has to be commercial in order to survive as far as economics. So I mean the word commercial is pretty [pause]. We do have the farm as a limited company, because with our son now and to pass it on it makes things a little bit easier financially.

Anthony and Jolene expressed discomfort with conceptualizing their operation as commercial. To contrast the idea of a commercial farm, Anthony references his family's personal attachment to the land and prefers to refer to his operation as a family farm. Elaborating further, Anthony and Jolene outline the emotional attachment that they form with their cattle. Anthony describes the impact that the emotional attachment has had on Jolene and himself:

> Anthony: Well we do lose sleep.
>
> Emilie: You lose sleep?
>
> Anthony: Yeah, like basically they are our [pause]. You know, we don't regard them as a thing. We probably show maybe too much compassion. You know like our whole herd is basically they're all farm raised. We started out like I probably bought my first cows in 1971. From then on it's always been, we didn't really buy much stock from the outside

except for breeding bulls. So basically it's all animals that were raised by us. So we nurtured them as baby calves and they become our replacements and so on.

Anthony's sentiments reference secondary emotions with negative affective states conceptualized as worrying about their cattle. Anthony further justifies these feelings by describing how he has been raising and replacing his herd with stock from the first cattle that he purchased in the '70s. While Jolene is fairly quiet during the duration of the interview, she continues the discussion of emotion. Jolene and Anthony discuss their emotional attachment further:

Jolene: They all have an identity. They all have their own characteristics, they're own [pause]. And out of 160 cows, I could probably on sight I could probably identify maybe 80%.

Anthony: She can go out there and just look at that cow and go, well that's B12.

Jolene: Which I don't know why [pause]. They're not our children.

Anthony: You get to know them just like you do if you have a pet and she's got puppies, you know every one has a different characteristic, you know that one is going to come and sniff at you, that one will stay back, or heads up, or you know, that sort of thing.

Similarly to Bryan, Jolene and Anthony's narrative account expresses a critique of the industry that they participate in. Anthony and Jolene are critical of their position as producers within an increasingly industrialized beef production chain. In our discussion, Anthony expresses feelings of distress around the continued growth of the industry and subsequent need for workers, rather than continuing with small family run operations. Anthony voices a concern over producers who are in the industry and preventing the industry from adapting and transforming for the better. Concerned, Anthony states:

I think when you get to be very big that you would lose a lot of that… Because then you depend on workers to do the job, and not all workers will be doing the job that they like. So because you have a worker working for you and he's taking care of your herd of cattle, doesn't mean he's compassionate because maybe all he thinks about is getting his paycheque at the end of the day. So, it might not be in him to be a cattle producer. I know some people that did have cattle, and they shouldn't have cattle because you know, for one thing, they're still in the old ways, and they don't want to adopt [best practices].

Anthony reflects on the dominantly embraced practice of abrupt weaning and the call from the auctioneers to bring calves to market when the price for calves is high. He expresses feelings of discomfort around disturbing his cattle in a manner that he perceives is high stress. Anthony actively reflects on an internal conflict of a desire to earn more money and the perceived compromised animal welfare implications of doing so:

> Well you know, "the price is hot, go get the calves" you hear the auctioneers on the radio [say] if you listen to CFCW. You'll hear these auctioneers, or these guys from the auction companies saying, "bring the cattle to town boys, now's the time to sell." Come on guys, I mean there's a protocol.

Anthony continues:

> Do we want to disturb the cattle, bring them all in because the price is hot right now? No, we're going to say well they've got lots of pasture, they're going to do well, you don't know that the window is this big. So you assume that it's going to be still good when you bring them in.

Anthony's sentiments reference a strong criticism of the structure of the auction mart industry and the dominant practice of abrupt weaning that he believes frames high market value as more important than the wellbeing of their calves. Additionally, Anthony and Jolene express actively making the decision to ignore the call to market even though 'the price is hot'. Rather, they continue to actively seek out and pursue better animal husbandry decisions that they perceive reduce stress on their calves. Anthony summarizes how their practices of weaning have undergone transformation, which benefit their cows and calves, rather than the market:

> In the last few years here, we haven't been weaning the calves right out at the pasture. We leave them here, and they're at least a month or so with the cows. And we get them going on their ration, let's say for feeding silage now, everybody starts to eat silage. So the calves are used to silage, you know [pause]. Years ago we would bring the cows from pasture, the calves would go in this pen, and the cows over there, and the weaning took place. The calves don't know where's the water, what's that box there with water? The calves don't know that that's water. We found that you have to introduce them to different things first otherwise it causes stress. Stress is the biggest problem with calves and cows and you try to alleviate that.

Moreover, Anthony and Jolene's narrative goes beyond questioning and critiquing the beef industry, with emphasis on how their social practices have undergone transformation. Anthony and Jolene conclude by referencing that they have made spontaneous business decisions solely based on their emotional affective states. The implication of this decision is a financial loss. However, these business decisions challenge conventional notions of livestock production, which situate cattle as a mere commodity in the market. The following excerpt summarizes contradictory and simultaneous positive and negative affective states experienced when sending cattle to market. Anthony and Jolene openly discuss feelings of happiness in their attachment to their cattle that is often met with feelings of grief associated with transporting their cattle to market. Their discussion is marked by pauses, as they stop to think and try to make a connection between their cattle and themselves, as humans:

> Jolene: We don't think of them as a commodity, like they're [pause]. They have feelings, they have intelligence.
>
> Emilie: Makes sense. Yeah.
>
> Anthony: And it's not really that hard to…
>
> Jolene: And there's tears when we ship, like I've had tears.
>
> Anthony: Well, sometimes we actually miss out on the window of opportunity because of them. Like, you prolong keeping them around, and things are going good… Like that's why I said, it's not really a commercial enterprise, that's strictly for the dollar. And emotions get in the way of the dollar signs sometimes.

Discussion

The literature on emotions in social practice theory suggests that individuals experience and engage with the world in a fundamentally emotional way (Schatzki 2010; Nicolini 2012; Bericat 2016), providing an insight into the role of affects on what individuals do in day-to-day life. To date, social practice theoretical frameworks and sociologists of emotion maintain that emotions help make sense of one's self and the surrounding world (Schatzki 2010) by occurring in situated spaces, within social contexts, and through the use of materials, tools, and objects (Reckwitz 2017). However, a more contested area within this field of study involves recurrent tensions regarding the dialectic of structure and agency, coupled with debates about the role of human emotions as an element of this discussion. Theorists such as Reckwitz (2002) and Nicolini

(2012) tend to emphasize the structural side of the spectrum affirming that individuals mechanically carry out routinized social practices that reinforce societies norms, values, and power structures (Reckwitz 2002; Nicolini 2012). Conversely, other theorists, such as Schatzki (2010) and Weenink and Spaargaren (2016) place more emphasis on the capacity of individuals to challenge routinized social practices with a key influence being the role of human emotions.

Contributing to these debates, this research provides empirical insights and interpretations of social practices and the role of human emotions in the cattle industry, sharpening our understanding of these evolving theoretical perspectives. The narratives locate complex and diverse emotions within producers' attachments and experiences with their cattle. Producers' decisions regarding their social practices are, to some extent, influenced by emotions of both positive and negative affective states. That is, feelings associated with happiness and those that are associated with sadness. Conversely, emotions of both positive and negative affective states are partly influenced by producers' production-based social practices and participation in the commercial beef industry. Concerns about the structure of the industry are evident within the narratives in several ways. First, structural constraints are evident in terms of the strong and growing presence of a commercial beef production chain. Additionally, cow-calf producers emphasize the unavoidable engagement with this industry by way of moving animals through the production process from pasture to feedlots and slaughterhouses. Finally, as noted earlier, emotions are partly learned and socially constructed, and as such, are displayed within the interviews as a reflection of social norms. However, these narratives suggest that while these structural conditions exist, emotions of both positive and negative affective states, such as happiness, joy, grief, and anger may serve as a catalyst for challenging, re-directing, and changing dominant norms and social practices (i.e., structures). This is evident as emotions are central to the process of making decisions concerning their social practices that they perceive as having implications for farm animal welfare. This key insight provides a contribution to understanding the evolution of practices.

Locating Emotions and Theorizing the Self

Although the link between social practices and emotions is often unclear, there is more consensus that emotions help make sense of one's self (Scheer 2012). Reaffirming this literature, Bryan, Anthony, and Jolene locate primary emotions such as feelings of happiness, joy, and a sense of attachment with their cattle. Bryan's narrative highlights how his love of cattle informs

his sense of self by connecting him with the land, a spatial context where he feels most grounded as a human. For Bryan, the happiness that he feels is located within his experiences grazing cattle. This is further shown in Bryan's narrative, as he feels attached to unconventional farming practices and distinct from the commercial cow-calf producing system. Therefore, his sense of self is partly informed by the experience of working with cattle and the associated feelings of happiness and joy, earlier noted as primary emotions with positive affective states.

Anthony and Jolene locate their emotional attachments in slightly different ways. Their narrative highlights secondary emotions with negative affective states such as worry and guilt through the concern they share for their cattle. They further locate secondary emotions within their sense of attachment to their cattle by referencing that they have a personal history and that they feel compassion for their cattle. Anthony and Jolene justify the compassion they feel for their cattle within their shared belief of their cattle as sentient beings, rather than tools of production.

Each narrative references being connected to the land on a deeply personal basis. These sentiments within the narratives of Bryan, Anthony, and Jolene outline the importance of spatial setting and land, as highlighted by Reckwitz (2017) where individual agents carry out practices of interconnectedness and meaningfulness between themselves and their cattle (Schatzki 2001). These insights are significant from a social practices perspective, with a focus on emotions that in turn give rise to meanings, a sense of self, and one's interaction with the world. Therefore, the emotional experiences of producers' are interconnected with their daily social practices and animal husbandry decisions.

'Emotional Agency' and the Transformation of Social Practices

This chapter revisits key contributions from social practice theory and the sociology of emotion to explore the debate between structure, agency, and the role of human emotion. To summarize, some theorists emphasize the structural side of the structure-agency spectrum with emphasis on individuals as norm-followers whose practices reinforce societal values and structures of power (Armon-Jones 1986; Reckwitz 2002; Nicolini 2012). Alternatively, others emphasize the ability of individuals to intervene in the flow of everyday activities (Weenink and Spaargaren 2016; Schatzki 2002). Bryan, Anthony, and Jolene exhibit complex and occasionally contradictory narratives within their interviews regarding their position as producers who partake in production-based social practices. These narratives also offer some clarity on contending views

about structure versus agency. Bryan, Anthony, and Jolene all share a narrative that is located in relation to the commercial beef production chain. This link to the industry highlights the role of existing industry standards, the Code of Practice, as well as a structure of co-dependency on other stages of production such as auction markets, feeding operations, hauling and transporting companies, and processing plants. Nevertheless, Bryan, Anthony, and Jolene all share a narrative of human agency that begins with reflexivity regarding their position as cow-calf producers who participate in the larger commercial beef industry. The first way each producer illustrates reflexivity is through the critique of dominant social practices embraced by the commercial beef industry; however, they also reflect on their place of carrying out social practices that support the industry as well. For example, Bryan, Anthony, and Jolene share a critique of the commercially embraced and widely practiced method of weaning that abruptly separates calves from their mothers. Bryan, Anthony, and Jolene also illustrate reflexivity through asking questions about the beef producing industry as a whole. Bryan reflects on feeling unconventional and frustrated with the commercial beef industry, while Anthony and Jolene describe feelings of discomfort around the continual growth of the industry. Burkitt (2012) suggests that emotion is central to the reflexive process, having an impact on how individuals perceive themselves, others, and the surrounding social world. Burkitt (2012) further maintains that the reflexive process influences social interactions, the way individuals monitor actions, and the way individuals deliberate about choices. These narratives highlight this argument put forth by Burkitt (2012) and challenges one side of the structure-agency debate that positions producers as norm-following and role-performing individuals. In contrast, their narratives suggest not only the capacity to question dominant and traditionally embraced practices, but also the commercial beef producing industry as a whole which is met with negative affective states of frustration and anger.

A narrative of agency is also suggested in the continuous pursuit for alternative social practices of farm animal welfare that differ from industry standards. To support their position as being unconventional, Bryan, Jolene, and Anthony share an active search for educating themselves on alternative practices that differ from and challenge what they have been taught in the commercial cow-calf producing industry. While changes in social practices occur from structural influences including new research, technology, conferences, and advocacy, Bryan expresses actively searching for best practices instead of settling for what he was taught or those that are listed in the Code of Practice for the Care and Handling of Beef Cattle (2013). Similarly,

Anthony and Jolene actively search for best practices that reduce stress for their calves during the practice of weaning, exhibiting an active decision to find social practices that they perceive as improving farm animal welfare. Bryan, Anthony, and Jolene suggest a narrative of agency through actively educating themselves and searching for better practices via Internet searches, conferences, books, other producers, veterinarians, and animal scientists and industry consultants such as Dr. Temple Grandin. All three producers describe actively searching for new and better practices that are often met with feelings of excitement, eagerness, and gratification. This highlights a desire among cow-calf producers to change social practices on their operations, despite structural constraints that exist. Furthermore, these sentiments draw attention to how emotions hold an important role in informing choices that can either reproduce or disrupt the social order in the beef producing industry.

Bryan, Anthony, and Jolene's narratives of agency conclude with the articulation of how their social practices and animal husbandry decisions have undergone transformation. In a deeply personal account, Bryan reflects on how he has personally undergone transformation, which has filtered into his social practices. Bryan's transformation of practices is evident throughout his narrative that articulates how within the span of a few years, he has transformed into a producer who continues to search for and implement low-stress techniques. Bryan also works on making incremental changes to social practices on his family's commercial cow-calf operation, such as abandoning social practices of branding cattle and the traditional method of handling and moving cattle. Moreover, when making decisions about adopting, implementing, or transforming the social practices on his alternative beef producing business, Bryan alludes to a connection between his emotions and changes that he has made to the structure of his operation. For example, the unique practice of being present during the slaughter of his cattle differs from the commercial beef industry in which he was raised and still occasionally participates in. For Bryan, this social practice is to ensure his cattle have a humane death. Within his narrative, he exhibits contradictory emotions simultaneously; emotions of grief for witnessing the slaughter of his cattle which are met with feelings of happiness for ensuring their humane death that align with his values of how he chooses to run his operation.

Similarly, Anthony and Jolene describe how their social practice of weaning has undergone transformation within the last few years. They recall how they used to practice a weaning method that abruptly separates calves from their mothers, and how their reflexivity and

feelings of discomfort with said practice has catalyzed a shift towards low-stress weaning methods. Further, Anthony and Jolene highlight spontaneously disrupting the practice of transporting cattle to market due to feelings of grief that are often met with feelings of attachment for their cattle. They directly name emotions as interfering with their routinized social practices and animal husbandry decisions, especially when it comes to transporting cattle to market.

Exploring the social practice and sociology of emotion literature, this study applies empirical narratives to merging theoretical perspectives in an effort to locate human emotions and explore their role in animal husbandry decisions concerning social practices. The producers locate primary emotions of happiness, sadness, grief, as well as secondary emotions such as love, guilt, and disappointment within their experiences and attachment to their cattle. Further, their experiences and expression of these emotions are dynamic and not experienced in isolation (Williamson 2011). Primary and secondary emotions with positive and negative affective states are outlined in the narratives when interacting with cattle, thinking reflexively about and questioning dominant social practices and the structure of the industry, as well as within the perceived improvement of the welfare of their farm animals.

Bryan, Anthony, and Jolene suggest a narrative of 'emotional agency' where primary and secondary emotions serve as a catalyst for challenging, re-directing, and changing norms regarding social practices (Weenink and Spaargaren 2016). 'Emotional agency' in the context of these narratives, "can be regarded as a driver of change, a motivating factor for finding your way in the world of practices" (Weenink and Spaargaren 2016:77), as is highlighted in the findings. However, it is important to note that emotions themselves are complex experiences, expressions, and descriptions of culture, language, context, cognition, social exchanges, and actions, and as such, are embedded within social structures in and of themselves. These narratives bring the importance of the subject and subjective experience to the centre of the theorizations. Drawing attention to the subjective narratives highlights the unique ability for cow-calf producers to be intentional, complex, and bare emotions within systems of production agriculture (Schatzki 2002). The common social practice notion citing "individuals-as-carriers" (Reckwitz 2012) suggest human agents simply do what others did before them mechanically, however, these narratives suggest otherwise through reflexivity, inquiry, and the transformation of social practices. Nevertheless, these narratives also suggest that agency does not solely lie within

emotions as Weenink and Spaargaren (2016) suggest, as other sources of motivation are highlighted.

Conclusion

In revisiting key research questions, this study explores a contemporary issue in social theory, namely, the interactive nature of human emotions and their effect on the evolution of social practices. More specifically, I explore how human emotions contribute to the reproduction or disruption of social practice norms. And finally, how individuals make sense of their positive and negative affective states within the context of social practices. I explore this social issue through empirical narratives with cow-calf producers who sequentially outline their daily production-based social practices that concern the welfare of farm animals. I go beyond a descriptive analysis to facilitate an understanding of how the producers draw upon primary and secondary emotions with both positive and negative affective states within the context of production-based social practices. While structural influences exist, the participants tell stories of agency with both positive and negative affective states interwoven throughout their narratives highlighting 'emotional agency' in several ways: through feelings of anger and frustration met with a reflexive process regarding dominant social practices, the structure of the beef industry, and their participation in both; through positive affective states met with a desire to inquire and implement improved animal husbandry decisions; and finally through the complex reproduction and transformation of social practices referenced within the context of juxtaposed affective states that are experienced simultaneously as they are faced with complex choices.

This research offers insights into changing practices and the complexity of farm animal welfare issues as producers draw upon the role of positive and negative affective states to help process decisions within the context of an increasingly intensive agricultural production sector. An important implication from this research is that it adds to our understanding of the agricultural industry, animal welfare, and society more broadly because it emphasizes nuances and complexities in producers' emotions. And while this research shows nuances in the positive and negative affective states of producers, future research could build upon our understanding of human emotions to garner a more in-depth look at specific emotions behind the social practices and the larger implications for farm animal welfare. This could be achieved through conducting a

narrative inquiry that follows the narratives of producers over time. Further, the findings from this study suggest future research might consider the structural constraints that interfere with an emotional desire to transform social practices or the beef sector as a whole. Industry stakeholders and farm animal welfare advocates can build on this research by considering the ways in which producers express their grievances with certain social practices that compromise farm animal welfare. Overall, this research emphasizes the need to reflect on the implications of human emotions and their impact on social practices situated within a complex social structure more broadly, as Bryan notes: "I want to make a positive impact in the world. I want my existence to be beyond my own personal gratification. So, that's my personal part of [beef producing]."

References

Armon-Jones, Carol. 1986. "The Social Functions of Emotions." Pp. 57-82 in *The Social Construction of Emotions,* edited by R. Harre. New York NY: Basil Blackwell Inc.

Bericat, Eduardo. 2016. "The Sociology of Emotions: Four Decades of Progress." *Current Sociology* 64(3):491-513.

Blue, Gwendolyn. 2008. "If it Ain't Alberta, it Ain't Beef." *Food Culture and Society* 11(1):69-85.

Blue, Gwendolyn. 2009. "Branding Beef: Marketing, Food safety, and the Governance of Risk." *Canadian Journal of Communication* 34(2):229-244.

Bourdieu, Pierre. 1980. *The Logic of Practice.* Stanford, CA: Stanford University Press.

Burkitt, Ian. 2012. "Emotional Reflexivity: Feeling, Emotion and Imagination in Reflexive Dialogues." *Sage Publications* 43(3):458-472.

Canadian Cattlemen's Association and National Farm Animal Care Council. 2013. *Code of Practice for the Care and Handling of Beef Cattle.* Calgary: Agriculture and Agri-Food Canada. Retrieved May 15, 2016 (http://www.nfacc.ca/pdfs/codes/beef_code_of_practice.pdf)

Cooley, Charles Horton. 1902. *Human Nature and the Social Order.* New York. NY: Scribner.

Creswell, John W. 2013. *Qualitative Inquiry & Research Design: Choosing Among Five Approaches.* Los Angeles, CA: Sage.

Davidson, Debra J., Kevin E. Jones, and John R. Parkins. 2016. "Food Safety Risks, Disruptive Events and Alternative Production: A Case Study of Agricultural Transition in Alberta." *Agriculture and Human Values* 33(2):359-371.

Giddens, Anthony. 1984. *The Constitution of Society.* Oakland, CA: University of California Press.

Harre, Rom. 1986. "An Outline of the Social Constructionist Viewpoint." Pp. 2-14 in *The Social Construction of Emotions,* edited by R. Harre. New York, NY: Basil Blackwell Inc.

Kemper, Theodore D. 1981. "Social Constructionist and Positivist Approaches to the Sociology of Emotions." *American Journal of Sociology* 87(2):336-362.

MacDowell, Laurel S. 2012. *An Environmental History of Canada.* Vancouver: UBC Press.

Maxwell, Joseph A. 2013. *Qualitative Research Design: An Interactive Approach*. Thousand

Oaks, CA: Sage.

McMichael, Philip. 2009. “Contemporary Contradictions of the Global Development Project: Geopolitics, Global Ecology, and the ‘Development Climate’.” *Third World Quarterly* 30(1):247-262

Nicolini, Davide. 2012. *Practice Theory, Work, and Organization: An Introduction.* Oxford, UK: Oxford University Press.

Parkinson, Brian. 1996. “Emotions are Social.” *British Journal of Psychology* 87(4):663-683.

Pham, Michael Tuan. 2007. “Emotion and Rationality: A Critical Review and Interpretation of Empirical Evidence.” *Review of General Psychology* 11(2):155-178.

Reckwitz, Andreas. 2002. “Toward a Theory of Social Practices: A Development in Culturalist Theorizing.” *European Journal of Social Theory* 5(2):243–63.

Reckwitz, Andreas. 2012. “Affective Spaces: A Praxeological Outlook.” *Rethinking History* 16(2):241-258.

Reckwitz, Andreas. 2017. “Practices and their Affects.” Pp. 114-125 in *The Nexus of Practice: Connections, Constellations, and Practitioners,* edited by A. Hui, T. Schatzki, and E. Shove. New York, NY: Routledge.

Ropke, Inge. 2009. “Theories of Practice – New Inspiration for Ecological Economic Studies on Consumption.” *Ecological Economies* 68(10):2490-2497.

Sahakian, Marlyne. 2015. “Getting Emotional: Historical and Current Changes in Food Consumption Practices viewed through the Lens of Cultural Theories.” Pp. 134-156 in *Putting Sustainability into Practice*, edited by E. Huddart Kennedy, M. J. Cohen, and N. T. Krogman. Cheltenham, UK: Edward Elgar Publishing.

Sajid, Shafak. 2014. *Restoring Trust: The Road to Public Support for Resource Industries.* Centre for Natural Resources Policy. Calgary: Canada West Foundation. Retrieved December 10, 2016 (http://cwf.ca/wpcontent/uploads/2015/10/CWF_NRP_RestoringTrust_Report_JUL2014.pdf).

Sarbin, Theodore R. 1986. “Emotion and Act: Roles and Rhetoric.” Pp. 83-97 in *The Social Construction of Emotions*, edited by R. Harre. New York, NY: Basil Blackwell Inc.

Schatzki, Theodore R. 2001. “Introduction: Practice Theory.” Pp. 10-23 in *The Practice Turn in Contemporary Theory*, edited by T.R. Schatzki, K.K. Cetina, and E. von Savigny.

New York, NY: Routledge.

Schatzki, Theodore R. 2010. *The Timespace of Human Activity: On Performance, Society, and History as Indeterminate Teleological Events*. Plymouth, UK: Lexington Books.

Scheer, Monique. 2012. "Are Emotions a kind of Practice (and Is That What Makes Them Have a History)? A Bourdieuian Approach to Understanding Emotion." *History and Theory: Studies in the Philosophy of History* 51(2):193-220.

Shove, Elizabeth, Matt Watson, and Mika Pantzar. 2012. *The Dynamics of Social Practice: Everyday Life and How it Changes.* Thousand Oaks, CA: Sage.

Spaargaren, Gert, Machiel Lamers, and Don Weenink. 2016. "Introduction: Using Practice Theory to Research Social Life." Pp. 3-27 in *Practice Theory and Research: Exploring the Dynamics of Social Life,* edited by D. Weenink, G. Spaargaren, and M. Lamers. New York, NY: Routledge.

Squire, Corinne, Molly Andrews, and Maria Tamboukou. 2013. "Introduction: What is Narrative Research?" Pp. 1-25 in *Doing Narrative Research,* edited by M. Andrews, C. Squire, and M. Tamboukou. Los Angeles: CA: SAGE.

Squire, Corinne. 2013. "From Experience-Centred to Socioculturally-Oriented Approaches to Narrative." Pp. 47-71 in *Doing Narrative Research,* edited by M. Andrews, C. Squire, and M. Tamboukou. Los Angeles, CA: SAGE.

Statistics Canada. 2017. *Cattle Inventory by Farm Type – Alberta* (Table 4c Cow-calf Operations). Agriculture and Agri-Food Canada. Retrieved August 3, 2017 (http://www.agr.gc.ca/eng/industry-markets-and-trade/market-information-by-sector/red-meat-and-livestock/red-meat-and-livestock-market-information/inventories/cattle-inventory-by-farm-type-alberta/?id=1415860000077)

Stull, Donald D. and Michael J. Broadway. 2013. *Slaughterhouse Blues: The Meat and Poultry Industry in North America.* Belmont, CA: Wadsworth.

Thoits, Peggy A. 1989. "The Sociology of Emotions." *Annual Review of Sociology* 15:317-342.

Turner, Jonathan H. and Jan E. Stets. 2005. *The Sociology of Emotions.* New York, NY: Cambridge University Press.

Vellema, Sietze. 2011. "Materiality, Nature and Technology in Agriculture: Ted Benton." Pp. 79-90 in *Transformation and Sustainability in Agriculture: Connecting Practice with Social Theory,* edited by S. Vellema. Wageningen: Wageningen Academic Publishers.

Weenink, Don and Gert Spaargaren. 2016. “Emotional Agency Navigates a World of Practices.” Pp. 60-84 in *Practice Theory and Research: Exploring the Dynamics of Social Life,* edited by D. Weenink, G. Spaargaren, and M. Lamers. New York, NY: Routledge.

Williamson, Elizabeth. 2011. “The Magic of Multiple Emotions: An Examination of Shifts in Emotional Intensity during the Reclaiming Movement’s Recruiting/Training Events and Event Reattendance.” *Sociological Forum* 26(1):45-70.

Chapter Four - Conclusion

Review of the thesis

One reformed objective of this research was to contribute to the fragmented literature on farm animal welfare by providing insight on the production-based social practices that occur on cow-calf operations and dairy farms in Alberta. I sought to explore how producers narrate stories about the reproduction or transformation of the social practices that they carry out and the larger implications for farm animal welfare. The second objective of this study focused on a larger issue in contemporary social theory that builds on the initial objective. Specifically, I sought to explore the role of human emotions in the evolution of social practices through the problem of structure and agency. The goal of this objective was to contribute to an ongoing theoretical discussion through the application of producer narratives to specific frameworks of social practice theory.

In chapter two I descriptively outline and explore the rationale behind the social practices of branding, dehorning, weaning, and low-stress handling and moving of cattle on-farm. The narratives of producers inform the sequential process of each of these core social practices and why they are important to the beef and dairy supply chains. The narratives also emphasize how these social practices are reproducing and transforming in an effort to address problems associated with animal husbandry that have larger implications for the welfare of farm animals. The application of a social practice theoretical lens provides a nuanced explanation for the reproduction and transformation of these social practices by using a framework that highlights materials, competences, and meanings (informed by Shove et al. 2012). However, I also find that other views on social practices help us understand this framework (Barnes 2001; Reckwitz 2002; Nicolini 2012). This chapter reaffirms the idea within social practice theory that social reproduction and transformation stem from similar arenas within the field of social practices; namely through the making and breaking of links between materials (pain medication, two-stage weaning tools), competences (the construction and distribution of animal husbandry knowledge), and meanings (the meaningfulness associated with improving animal husbandry) (Shove et al. 2012). I build on these foundations in finding that all of the social practices, even those that appear relatively stagnant are in a state of transformation as materials, competences, and meanings continue to evolve. This chapter fills a gap in the interdisciplinary farm animal

welfare literature by focusing on the specifics of everyday social practices carried out by producers. It offers an alternative way of understanding animal husbandry by exploring production-based social practices, the personal importance of social practices, and how producers perceive of themselves as improving farm animal welfare.

Building on chapter two, chapter three further explores the concept of meanings and how human emotions contribute to the evolution of social practices. Social practice theorists tend to explore the role of emotions through the problem of structure and agency. To explore this sociological discussion, I employ two narratives with cow-calf producers to take an in-depth look at the role of human emotions in the evolution of their social practices. While structural influences exist, the participants tell stories of agency with both positive and negative affective states interwoven throughout. The narratives suggest reflexive thinking about the social practices they carry out, their position as producers, and about the beef producing industry more broadly. In addition, the narratives highlight an active inquiry and desire to learn about best practices that improve the welfare of their cattle. Finally, both producers outline a concrete transformation of the social practices that they have carried out over time. These stories highlight an 'emotional agency' that positions human emotion as a possible catalyst in informing animal husbandry decisions in the wake of rising farm animal welfare issues in agriculture. This chapter contributes to social practice theory and the sociology of emotion literature by applying empirical narratives to the ongoing debate of structure and agency and the influence of human emotions in the evolution of social practices.

Importance of the Research and Policy Implications

An important theoretical consideration throughout the duration of this research was to keep in mind the initiatives that have mapped the complexities of the human-animal relationship as historically situated (Cudworth 2016). Mapping the status of animals in society contributes to an understanding of shifts in thinking that haven taken place concerning the treatment of animals including those implicated in vivisection laboratories, circuses, zoos, rodeos, fashion, hunting, and agriculture. The content of this thesis contributes to our understanding of how animals are treated in the initial stage of the beef and dairy producing industries. By focusing on social practices, there is value in descriptively understanding what producers are actually doing in relation to animal husbandry on their farms and the narratives behind those social practices. Some of the narratives are important in highlighting why social practices are problematic, while

others are meaningful. Additionally, many of the narratives indirectly outline challenges in adopting better social practices that improve the overall welfare of their cattle. A social practice theoretical framework is important in making sense of where social practices have come from and the implications for the agricultural industry, animal welfare, and society more broadly. This framework also informs why some social practices remain continuous, and what might contribute to changes that have the potential to improve farm animal welfare. By focusing on the social practices, the research elucidates how beef and dairy cattle are treated within human-animal interactions. In addition, it points to differences in the experiences of beef and dairy cattle depending on structural context. Acknowledging this treatment helps clarify the current status of certain animal species within society, issues producers are experiencing pertaining to social practices, and potential avenues for change.

The importance of this research is also centered on being inclusive of the role of human emotion in social inquiry. While exploring emotion and affect are not new to sociological analyses, it is less commonly explored within the sociology of agriculture. As noted earlier, Bericat (2016) affirms that emotions must continue to be considered in sociological analyses if there is any interest in explaining the fundamentals of social behaviour. As such, this research offers important considerations for the role of human emotions in agricultural production. A finding presented throughout chapter three is the experience of conflicted emotions experienced by producers within their multifaceted lives, highlighting how producers feel about their animals, their position in society, their social practices, and the larger industry. An important contribution from this research is that it offers an interpretation of those individuals who participate (sometimes reluctantly) in a larger commercialized meat producing industry that has deeply embedded animal welfare implications and is largely removed from urban life as also comprised of individuals who are 'bound up with affects'.

While this research does not aim to provide conclusive policy recommendations, there are several implications from this work. In their anthology, Krogman, Cohen, and Huddart Kennedy (2015) demonstrate that social practice theorizing is becoming increasingly connected to tackling social and environmental issues. In particular, social practice theorizing is becoming increasingly applicable to policy for exploring how social change manifests in human behavior (Krogman et al. 2015). Federal, provincial, and territorial governments are currently working to develop the next agricultural policy framework (NPF) that will launch on April 1st, 2018

(Government of Canada 2016). It is an agreement that outlines policy and program priorities for agriculture. One priority area in particular for the NPF is to secure and grow public trust in the agricultural sector (Government of Canada 2016). Findings from this study indicate a willingness among cow-calf producers and dairy producers to embrace new animal welfare policies from multi-stakeholder organizations. We also find that understanding producer perspectives and constraints can inform the development and implementation of the NPF particularly regarding two key goals of restoring public trust. Primarily, this research helps to understand industry's ability to adapt to policies, and therefore improve social practices. This research can also be used by policymakers to identify management practices that can enhance public trust of the beef and dairy production industries while simultaneously sharing the story of producers' experiences and perspectives.

Future Directions for Research

Possible directions for future research could build on the limitations and larger themes that have emerged from this study. As earlier noted, there were several issues we encountered with data collection and the scope of the research project. The sample of dairy producers was substantially less than the sample of cow-calf producers. One issue highlighted by some of the dairy producers was the amount of time required to participate in a face-to-face interview. Ideally, future research could build upon the findings to build a survey that is more accessible for dairy producers regarding their social practices, what contributes to the reproduction of social practices, and what facilitates transformation towards best social practices with perceived farm animal welfare benefits. This could provide additional insight to ensure policy developments are better equipped to help producers transition their operations in improving the welfare of their farm animals.

A very early objective established in the preliminary stages of this research was to explore beef production at all stages of the production chain. This would have consisted of exploring the social practices carried out early in the supply chain (at the cow-calf level), at auction marts, feeding operations, in transportation, and at processing facilities. However, the scope of the proposal was too large given the time constraints associated with this research project. Future directions for research could build upon this study by exploring the social practices at other stages of beef and dairy production as issues pertaining to farm animal welfare continue throughout the beef and dairy supply chain, particularly at levels considered more industrialized such as the feeding operations and slaughter plants. Future research could also

explore social practices for other animals involved in agriculture. This might include the social practices of poultry production, hog production, or even farmed bison, to name a few. These industries or the other stages of the beef supply chain could still be explored using a focused ethnography, as was employed within this study. A focused ethnography is valuable in ensuring the research is sympathetic to the lifestyle of the owner of the operation, yet could capture a detailed image of agricultural production in Canada.

While multiple points of view are captured within the narratives, recurrent themes consistent throughout the findings of this research are the motivations for the reproduction and transformation of social practices. Many of the narratives in both chapters draw upon the importance of the interconnectedness of materials, competences, and meanings. However, this research cannot attest to the scale of influence for any of these factors. For instance, the degree to which emotions influence transformative decisions on the operation of a producer is unknown. Future directions for research could explore the degree to which each proponent of the social practice theoretical framework influences what individuals do. This could build on our understanding of human emotions to garner a more in-depth look at the complexity of producers' emotions and the larger implications for change. Additionally, other possible contributing factors to the reproduction and transformation of social practices could be explored by using other theoretical perspectives, including those that explore the structural constraints that interfere with an emotional desire to transform.

In conclusion, the journey of this research was characterized by much progression, deliberation, and reformation. It was my intent to offer a critical, yet nuanced perspective to the discussion of farm animal welfare while also contributing to a dialogue in contemporary social theory. I anticipate that critical perspectives in the study of farm animal welfare will continue to inform and be directly applied to improve the lives of animals in agriculture, and those implicated in other aspects of society. Thus, future directions for research can continue to explore the role of human emotions and how these emotions interact with complex work environments and broader social structures.

References

Armon-Jones, Carol. 1986. “The Social Functions of Emotions.” Pp. 57-82 in *The Social Construction of Emotions,* edited by R. Harre. New York NY: Basil Blackwell Inc.

Atkinson, Paul. 2015. *Working with Ethnographic Fieldnotes: Learning Tango.* London, UK: SAGE.

Barnes, Barry. 2001. “Practice as Collective Action.” Pp. 25-36 in *The Practice Turn in Contemporary Theory*, edited by T.R. Schatzki, K.K. Cetina, and E. von Savigny. New York, NY: Routledge.

Bassi, Emilie M. 2016. “Weaned Dairy Calf” [image].

Bassi, Emilie M. 2016. “Low-Stress Moving of Cattle from Community Pasture” [image].

Bell, David. 2016. “Earls Restaurants' Move to Drop Alberta Beef Provokes Backlash.” *CBC News,* April 27, 2016 (http://www.cbc.ca/news/canada/calgary/earls-alberta-beef-1.3556565)

Bericat, Eduardo. 2016. “The Sociology of Emotions: Four Decades of Progress.” *Current Sociology* 64(3):491-513.

Blue, Stanley, Elizabeth Shove, Chris Carmona, and Michael P. Kelly. 2016. “Theories of Practices and Public Health: Understanding (Un) healthy Practices.” *Critical Public Health* 26(1):36-50.

Blue, Gwendolyn. 2008. “If it Ain’t Alberta, it Ain’t Beef.” *Food Culture and Society* 11(1):69-85.

Blue, Gwendolyn. 2009. “Branding Beef: Marketing, Food safety, and the Governance of Risk.” *Canadian Journal of Communication* 34(2):229-244.

Boaitey, Albert. 2017. “Three Essays in Beef Genomics: Economic and Environmental Impacts.” PhD dissertation, Department of Resource Economics and Environmental Sociology, University of Alberta, Edmonton.

Bock, Bettina and Henry Buller. 2013. “Healthy, Happy and Humane: Evidence in Farm Animal Welfare Policy.” *Sociologia Ruralis* 53(3):390-411.

Botreau, Raphaelle, Isabelle Veissier , Andrew Butterworth, Marc B. M. Bracke, and Linda J. Keeling. 2007. "Definition of Criteria for Overall Assessment of Animal Welfare." *Animal Welfare* 16(2):225-228.

Bourdieu, Pierre. 1980. *The Logic of Practice.* Stanford, CA: Stanford University Press.

Bradley, Andrea and Rob MacRae. 2011. "Legitimacy & Canadian Farm Animal Welfare Standards Development: The Case of the National Farm Animal Care Council." *Journal of Agriculture and Environmental Ethics* 24(1):19-47.

Burkitt, Ian. 2012. "Emotional Reflexivity: Feeling, Emotion and Imagination in Reflexive Dialogues." *Sage Publications* 43(3):458-472.

Calhoun, Craig, Joseph Gertis, Steven Pfaff, and Indermohan Virk. 2012. *Contemporary Sociological Theory.* Chichester, UK: Wiley-Blackwell.

Canadian Cattlemen's Association and National Farm Animal Care Council. 2013. *Code of Practice for the Care and Handling of Beef Cattle.* Calgary: Agriculture and Agri-Food Canada. Retrieved May 15, 2016 (http://www.nfacc.ca/pdfs/codes/beef_code_of_practice.pdf)

Canadian Dairy Commission. 2017. "The Industry – Quick Facts" Retrieved from (http://www.cdc-ccl.gc.ca/CDC/index-eng.php?id=3796)

Cohen, Nevin and Kristen Cribbs. 2017. "The Everyday Food Practices of Community-Dwelling Lesbian, Gay, Bisexual, and Transgender (LGBT) Older Adults." *Journal of Aging Studies* 41:75-83.

Cooley, Charles Horton. 1902. *Human Nature and the Social Order.* New York. NY: Scribner.

Creswell, John W. 2013. *Qualitative Inquiry & Research Design: Choosing Among Five Approaches.* Los Angeles, CA: Sage.

Cudworth, E. 2016. "A Sociology for Other Animals: Analysis, Advocacy, Intervention." *International Journal Of Sociology and Social Policy 36*(4):242-257.

Dairy Farmers of Canada and National Farm Animal Care Council. 2009. Code *of Practice for the Care and Handling of Dairy Cattle.* Ottawa: Agriculture and Agri-Food Canada. Retrieved May 15, 2016 (http://www.nfacc.ca/pdfs/codes/dairy_code_of_practice.pdf)

Davidson, Debra J., Kevin E. Jones, and John R. Parkins. 2016. "Food Safety Risks, Disruptive Events and Alternative Production: a Case Study of Agricultural Transition In Alberta." *Agriculture and Human Values* 33(2):359-371.

Doll, Claire. 2016. “Researcher Participation in a Cattle Round Up” [image].

Duncan, Ian J. H. 2005. “Science-based Assessment of Animal Welfare: Farm Animals.” *Revue Scientifique Et Technique-Office International Des Epizooties* 24(2):483-492.

Dwane, Andrea M., Simon J. More, Martin Blake, Kenneth McKenzie, and Alison J. Hanlon. 2013. “Farmers’ Self-reported Perceptions and Behavioural Impacts of a Welfare Scheme for Suckler Beef Cattle in Ireland.” *Irish Veterinary Journal* 4(9):1-12.

Edwards-Jones, Gareth. 2006. “Modelling Farmer Decision-making: Concepts, Progress and Challenges.” *Animal Science* 82(6):783-790.

Farm Animal Welfare Council. 2009. “Five Freedoms.” Retrieved from (http://webarchive.nationalarchives.gov.uk/20110909181150/http://www.fawc.org.uk/freedoms.htm)

Finlay, Linda. 2002. “Negotiating the Swamp: the Opportunity and Challenge of Reflexivity in Research Practice.” *Qualitative Research* 2(2):209-230.

Fraser, David. 2008. *Understanding Animal Welfare: A Science in its Cultural Context.* Ames, IA: Wiley-Blackwell.

Gibbs, Graham R. 2007. “Thematic Coding and Categorizing.” Pp. 38-55 in *Qualitative Research Kit: Analyzing Qualitative Data*. London, UK: SAGE.

Giddens, Anthony. 1984. *The Constitution of Society.* Oakland, CA: University of California Press.

Gocsik, Éva, Helmut W. Saatkamp, Caroline C. de Lauwere, and Alfons G. J. M. Oude Lansink. 2014. “A Conceptual Approach for a Quantitative Economic Analysis of Farmers’ Decision-Making Regarding Animal Welfare.” *Journal of Agriculture and Environmental Ethics* 27(2):287-308.

Government of Alberta. 2017. *Highlights of the Alberta Economy.* Retrieved July 25, 2017 (http://www.albertacanada.com/business/statistics/economic-highlights.aspx)

Government of Canada. 2016. “Towards the Next Agricultural Policy Framework.” Retrieved December 7, 2016 (http://www.agr.gc.ca/resources/prod/doc/pdf/calgary_statement_declaration_calgary_jul_2016-eng.pdf)

Grandin, Temple. 2015. “The Importance of Measurement to Improve the Welfare of Livestock, Poultry and Fish.” Pp. 1-20 in *Improving Animal Welfare: A Practical*

Approach, edited by T. Grandin. Cambridge, MA: CABI.

Hargreaves, Tom. 2011. "Practice-ing Behaviour Change: Applying Social Practice Theory to Pro-environmental Behaviour Change." *Journal of Consumer Culture* 11(1):79-99.

Harre, Rom. 1986. "An Outline of the Social Constructionist Viewpoint." Pp. 2-14 in *The Social Construction of Emotions,* edited by R. Harre. New York, NY: Basil Blackwell Inc.

Hesse-Biber, Sharlene and Particia L. Leavy. 2011. *The Practice of Qualitative Research.* Thousand Oaks, CA: Sage Publications.

Hitchings, Russell. 2012. "People can talk about their practices." *Royal Geographic Society* 44(1):61-67.

Holt, Amanda. 2010. "Using the Telephone for Narrative Interviewing: A Research Note." *Sage Journals* 10(1):113-121.

Huberman, A. Michael, and Matthew B. Miles. 2002. "Narrative Analysis." Pp. 1-67 in *The Qualitative Researcher's Companion,* edited by A. Michael Huberman and M. B. Miles. Thousand Oaks, CA: SAGE.

International livestock Research Institute. N.d. "Why Livestock Matter." Retrieved June 2, 2016 (https://www.ilri.org/whylivestockmatter)

Kemper, Theodore D. 1981. "Social Constructionist and Positivist Approaches to the Sociology of Emotions." *American Journal of Sociology* 87(2):336-362.

Knoblauch, Hubert. 2005. "Focused ethnography." In *Forum: Qualitative Social Research 6*(3).

Krogman, Naomi T., Maurie J. Cohen, and Emily Huddart Kennedy. 2015. "Forging further into putting Sustainability into Practice." Pp. 231-238 in *Putting Sustainability into Practice*, edited by E. Huddart Kennedy, M. J. Cohen, and N. T. Krogman. Cheltenham, UK: Edward Elgar Publishing.

Lave, Jean and Etienne Wenger. 1991. *Situated Learning: Legitimate peripheral Participation.* New York, NY: Cambridge University Press.

Lawler, Steph. 2004. "Rules of Engagement: Habitus, power and resistance." *Sociological Review Monograph* 53(s2):110-128.

Lund, Vonne, Grahame Coleman, Stefan Gunnarsson, Michael Calvert Appleby, and Katri Karkinen. 2006. "Animal Welfare Science – Working at the Interface Between the Natural and Social Sciences." *Applied Animal Behaviour Science* 97(1):37-49.

MacDowell, Laurel S. 2012. *An Environmental History of Canada.* Vancouver: UBC Press.

MacLachlan, Ian. 2015. "Evolution of a Revolution: Meat Consumption and Livestock Production in the Developing World." Pp. 21-41 in *Political Ecologies of Meat,* edited by J. Emel and H. Neo. New York, NY: Routledge.

Mahar, Cheleen, Richard Harker, and Chris Wilkes. 1990. "The Basic Theoretical Position." Pp. 1-25 in *An Introduction to the Work of Pierre Bourdieu,* edited by R. Harker, C. Mahar, and C. Wilkes. London, UK: MacMillan Press.

Martin, Robert .P. 2012. "The Opinions and Recommendations of One Particular Study Group: The Pew Commission on Industrial Farm Animal Production." Pp. 43-75 in *Animal Welfare in Animal Agriculture: Husbandry, Stewardship, and Sustainability in Animal Production,* edited by W. G. Pond, F. W. Bazer, and B. E. Rollin. Boca Raton, FL: Taylor & Francis Group.

Maxwell, Joseph A. 2013. *Qualitative Research Design: An interactive Approach*. Thousand Oaks, CA: SAGE.

McCulloch, Steven P. 2012. "A Critique of FAWC's Five Freedoms as a Framework for the Analysis of Animal Welfare." *Journal of Agriculture and Environmental Ethics* 26(5):959-975.

McGlone, John J. 2001. "Farm Animal Welfare in the Context of Other Society Issues: Toward Sustainable Systems." *Livestock Production Science* 72(1):75-81.

McMichael, Philip. 2009. "Contemporary Contradictions of the Global Development Project: Geopolitics, global ecology, and the 'development climate'." *Third World Quarterly* 30(1):247-262

Mellor, David J. 2016. "Updating Animal Welfare Thinking: Moving Beyond the 'Five Freedoms' towards 'A Life Worth Living'." *Animals* 6(3):1-20.

Moggy, Melissa A., Ed A. Pajor, Wilfreda E. Thurston, Sarah Parker, Angela M. Greter, Karen S. Schwartzkopf-Genswein, John R. Campbell, and Claire Windeyer. 2017. "Management Practices Associated with Stress in Cattle on Western Canadian Cow–calf Operations: A Mixed Methods study." *American Society of Animal Science* 95(4):1836-1844.

Nicolini, Davide. 2012. *Practice Theory, Work, and Organization: An Introduction.* Oxford, UK: Oxford University Press.

Oliver, Kelly. 1997. *Family Values: Subjects Between Nature and Culture.* New York, NY: Routledge.

Parkinson, Brian. 1996. "Emotions are Social." *British Journal of Psychology* 87(4):663-683.

Petherick, Carol J. 2005. "Animal Welfare Issues Associated with Extensive Livestock Production: The Northern Australian Beef Cattle Industry." *Applied Animal Behaviour Science* 92(3):211-234.

Pham, Michael Tuan. 2007. "Emotion and Rationality: A Critical Review and Interpretation of Empirical Evidence." *Review of General Psychology* 11(2):155-178.

Reay, Diane. 2005. "Gendering Bourdieu's Concepts of Capitals? Emotional Capital, Women and Social Class." *Sociological Review Monograph* 53(s2):57-74.

Reckwitz, Andreas. 2002. "Toward a Theory of Social Practices: A Development in Culturalist Theorizing." *European Journal of Social Theory* 5(2):243-63.

Reckwitz, Andreas. 2012. "Affective Spaces: A Praxeological Outlook." *Rethinking History* 16(2):241-258.

Reckwitz, Andreas. 2017. "Practices and their Affects." Pp. 114-125 in *The Nexus of Practice: Connections, Constellations, and Practitioners,* edited by A. Hui, T. Schatzki, and E. Shove. New York, NY: Routledge.

Rollin, Bernard E. 1995. *Farm Animal Welfare: Social, Bioethical, and Research Issues.* Ames, IA: Iowa State University Press

Rollin, Bernard E., Donald M. Broom, David Fraser, Gail C. Golab, Charles Arnot, and Paul Shapiro. 2012. "Defining Agricultural Animal Welfare: Varying Viewpoints and Approaches." Pp. 75-120 in *Animal Welfare in Animal Agriculture: Husbandry, Stewardship, and Sustainability in Animal Production,* edited by W. G. Pond, F. W. Bazer, and B. E. Rollin. Boca Raton, FL: Taylor & Francis Group.

Ropke, Inge. 2009. "Theories of Practice – New Inspiration for Ecological Economic Studies on Consumption." *Ecological Economies* 68(10):2490-2497.

Rushen, Jeffrey. 2003. "Changing Concepts of Farm Animal Welfare: Bridging the Gap between Applied and Basic Research." *Applied Animal Behaviour Science* 81(3):199-214.

Sahakian, Marlyne and Harold Wilhite. 2013. "Making Practice Theory Practicable: Towards More Sustainable Forms of Consumption." *Journal of Consumer Culture* 14(1):25-44.

Sajid, Shafak. 2014. *Restoring Trust: The Road to Public Support for Resource Industries.* Centre for Natural Resources Policy. Calgary: Canada West Foundation. Retrieved December 10, 2016 (http://cwf.ca/wpcontent/uploads/2015/10/CWF_NRP_RestoringTrust_Report_JUL2014.pdf).

Sarbin, Theodore R. 1986. "Emotion and Act: Roles and Rhetoric." Pp. 83-97 in *The Social Construction of Emotions*, edited by R. Harre. New York, NY: Basil Blackwell Inc.

Schatzki, Theodore R. 2001. "Introduction: Practice Theory." Pp. 10-23 in *The Practice Turn in Contemporary Theory*, edited by T.R. Schatzki, K.K. Cetina, and E. von Savigny. New York, NY: Routledge.

Schatzki, Theodore R. 2010. *The Timespace of Human Activity: On Performance, Society, and History as Indeterminate Teleological Events*. Plymouth, UK: Lexington Books.

Schatzki, Theodore R. 2016. "Practice Theory as Flat Ontology." Pp. 28-42 in *Practice Theory and Research: Exploring the Dynamics of Social Life,* edited by D. Weenink, G. Spaargaren, and M. Lamers. New York, NY: Routledge.

Scheer, Monique. 2012. "Are Emotions a kind of Practice (and Is That What Makes Them Have a History)? A Bourdieuian Approach to Understanding Emotion." *History and Theory: Studies in the Philosophy of History* 51(2):193-220.

Shove, Elizabeth, Matt Watson, and Mika Pantzar. 2012. *The Dynamics of Social Practice: Everyday Life and how it Changes.* Thousand Oaks, CA: Sage.

Spaargaren, Gert, Machiel Lamers, and Don Weenink. 2016. "Introduction: Using Practice Theory to Research Social Life." Pp. 3-27 in *Practice Theory and Research: Exploring the Dynamics of Social Life,* edited by D. Weenink, G. Spaargaren, and M. Lamers. New York, NY: Routledge.

Spaargaren, Gert. 2011. "Theories of Practices: Agency, Technology, and Culture Exploring the Relevance of Practice Theories for the Governance of Sustainable Consumption Practices in the New World-order." *Global Environmental Change* 21(3):813-822.

Spooner, Jeffery M., Catherine A. Schuppli, and David Fraser. 2012. "Attitudes of Canadian Beef Producers Toward Animal Welfare." *Universities Federation for Animal Welfare* 21(2):273-284.

Spooner, Jeffery M., Catherine A. Schuppli, and David Fraser. 2014. "Attitudes of Canadian Citizens toward Farm Animal Welfare: A Qualitative Study." *Livestock Science* 163:150-158.

Squire, Corinne, Molly Andrews, and Maria Tamboukou. 2013. "Introduction: What is Narrative Research?" Pp. 1-25 in *Doing Narrative Research,* edited by M. Andrews, C. Squire, and M. Tamboukou. Los Angeles: CA: SAGE.

Squire, Corinne. 2013. "From Experience-Centred to Socioculturally-Oriented Approaches to Narrative." Pp. 47-71 in *Doing Narrative Research,* edited by M. Andrews, C. Squire, and M. Tamboukou. Los Angeles, CA: SAGE.

Statistics Canada and Canadian Dairy Commission. 2016. *Number of Farms, Dairy Cows and Heifers.* Canadian Dairy Information Centre. Retrieved June 28, 2017 (http://dairyinfo.gc.ca/index_e.php?s1=dff-fcil&s2=farm-ferme&s3=nb)

Statistics Canada. 2017. Table 002-0001 Farm Cash Receipts. *CANSIM.* Retrieved August 14, 2017 (http://www.statcan.gc.ca/tables-tableaux/sum-som/l01/cst01/agri03a-eng.htm)

Statistics Canada. 2017. *Alberta has the Most Beef Cattle in Canada and the Second Largest Total Farm Area (*Catalogue no. 95-640-X). Retrieved June 29, 2017 (http://www.statcan.gc.ca/pub/95-640-x/2016001/article/14808-eng.pdf)

Statistics Canada. 2017. *Cattle Inventory by Farm Type – Alberta* (Table 4c Cow-calf Operations). Agriculture and Agri-Food Canada. Retrieved August 3, 2017 (http://www.agr.gc.ca/eng/industry-markets-and-trade/market-information-by-sector/red-meat-and-livestock/red-meat-and-livestock-market-information/inventories/cattle-inventory-by-farm-type-alberta/?id=1415860000077)

Statistics Canada. 2017. *Cattle Inventory by Farm Type – Alberta* (Table 4f Feed Operations). Agriculture and Agri-Food Canada. Retrieved August 3, 2017 (http://www.agr.gc.ca/eng/industry-markets-and-trade/market-information-by-sector/red-meat-and-livestock/red-meat-and-livestock-market-information/inventories/cattle-inventory-by-farm-type-alberta/?id=1415860000077)

Stull, Donald D. and Michael J. Broadway. 2013 *Slaughterhouse Blues: The Meat and Poultry Industry in North America.* Belmont, CA: Wadsworth.

Swartz, David. 2013. *Symbolic Power, Politics, and Intellectuals: The Political Sociology of Pierre Bourdieu.* Chicago, IL: University of Chicago Press.

Te Velde, Hein, Noelle Aarts, and Cees Van Woerkum. 2002. "Dealing with Ambivalence: Farmers' and Consumers' Perceptions of Animal Welfare in Livestock Breeding." *Journal of Agriculture and Environmental Ethics* 15(2):203-219.

Thoits, Peggy A. 1989. "The Sociology of Emotions." *Annual Review of Sociology* 15:317-342.

Thompson, Paul B. 2013. *From Field to Fork: Food Ethics for Everyone.* New York, NY: Oxford University Press.

Turner, Jonathan H. and Jan E. Stets. 2005. *The Sociology of Emotions.* New York, NY: Cambridge University Press.

Vasseur, Elsa, Fernando Borderas, Roger I. Cue, Daniel Lefebvre, Doris Pellerin, Jeffery Rushen, Kevin M. Wade, and Anne M. de Passillé. 2010. "A Survey of Dairy Calf Management Practices in Canada that Affect Animal Welfare." *Journal of Dairy Science* 93(3):1307-1315.

Vellema, Sietze. 2011. "Materiality, Nature and Technology in Agriculture: Ted Benton." Pp. 79-90 in *Transformation and Sustainability in Agriculture: Connecting Practice with Social Theory,* edited by S. Vellema. Wageningen: Wageningen Academic

Ventura, Beth Ann, Marina A. G. von Keyserlingk, and Daniel M. Weary. 2015. "Animal Welfare Concerns and Values of Stakeholders within the Dairy Industry." *Journal of Agriculture and Environmental Ethics* 28(1):109-126.

Webster, Anthony J. F. 2001. "Farm Animal Welfare: the Five Freedoms and the Free Market." *The Veterinary Journal* 161(3):229-237.

Webster, John. 2005. "The Assessment and Implementation of Animal Welfare: Theory into Practice." *Revue Scientifique Et Technique-Office International Des Epizooties* 24(2):723-734.

Webster, John. 2016. "Animal Welfare: Freedoms, Dominions and "A Life Worth Living." *Animals* 6(6):1-6.

Weenink, Don and Gert Spaargaren. 2016. "Emotional Agency Navigates a World of Practices." Pp. 60-84 in *Practice Theory and Research: Exploring the Dynamics of Social Life,* edited by D. Weenink, G. Spaargaren, and M. Lamers. New York, NY: Routledge.

Whay, Becky. 2007. "The Journey to Animal Welfare Improvement." *Animal Welfare* 16(2):117-122.

Wikman, Ingela, Ann-Helena Hokkanen, Matti Pastell, Tommi Kauppinen, Anna Valros, and Laura Hänninen. 2016. "Attitudes of Beef Producers to Disbudding and Perception of Pain in Cattle." *Animal Welfare* 25(4):429-438.

Wilkins, Roger J. 2008. "Eco-efficient Approaches to Land Management: A Case for Increased Integration of Crop and Animal Production Systems." *Philosophical Transactions of the Royal Society* 363(1491):517-525.

Williamson, Elizabeth. 2011. "The Magic of Multiple Emotions: An Examination of Shifts in Emotional Intensity during the Reclaiming Movement's Recruiting/Training Events and Event Reattendance." *Sociological Forum* 26(1):45-70.

World Organisation for Animal Health (OIE). 2016. *Terrestrial Animal Health Code.* Retrieved June 28, 2017 (http://www.oie.int/international-standard-setting/terrestrial-code/access-online/).

Zaffino Heverhoff, Jessica C., Stephen J. LeBlanc, Trevor J. DeVries, Clemence G. R. Nash, Greg. J Gibbons, Karin Orsel, Herman W. Barkema, Laura Solano, Jeffery Rushen, Anne M. de Passillé, and Derek B. Haley. 2014. "Prevalence of and Factors Associated with Hock, Knee, and Neck Injuries on Dairy Cows in Freestall Housing in Canada." *Journal of Dairy Science* 97(1):173-184.

Appendix A - Interview Guide: Cow-calf and Dairy Producer Interviews

Introduction
I'm doing a research study to understand animal welfare of the beef and dairy cattle production industries. I am seeking to get as much detail and depth about your experiences as you are comfortable sharing. Please feel free to take your time when answering the questions and you do not have to answer anything you do not feel comfortable with.

Demographics
I would like to start out by learning a little bit more about you and your operation.

1. What type of operation do you run?
    - [Beef, Dairy, Back grounding, etc.?]
2. Can you describe the size of your operation? [Lot size, herd size, workers, etc.]
3. When was your operation established?
4. Do you consider your farm commercial or alternative?
    - In what ways is your operation commercial [or alternative]?
5. How did you become involved with the industry?
6. Why do you choose to stay involved with the industry?

Farm Animal Welfare
Now I would like to shift the conversation towards the topic of farm animal welfare.

1. What kind of responsibility do you feel towards these cattle when they are at your farm?
2. Can you describe the way you feel about these cattle?
3. What does the concept 'animal ethics' mean to you?
4. What does 'farm animal welfare' mean to you?
    - How would you define farm animal welfare?
    - What has influenced your definition of farm animal welfare? (Where did you learn this definition?)
    - Does your definition align with the larger beef/dairy industry?
5. What role does the 'Code of Practice for Farm Animal Care' hold at your operation?
    - What are your thoughts on the 'Code of Practice for Farm Animal Care'?

Daily Production Practices
Now I would like to shift the conversation towards your day-to-day production and how you apply your earlier definition of FAW to your production practices.

1. Can you walk me through an average day at your operation throughout the seasons/days?
    - What is the step-by-step process of production for each season/day?
2. In light of your earlier definition of FAW, can you describe how you directly apply that meaning to the process of… [breeding, the calving process, weaning (also, castration/de-horning/vaccination/branding), the living conditions, handling and moving on-farm, milking, transportation off farm]

    - Do you use specific tools or skills to compromise some of the more contentious practices? Why do you use them? Where did you learn about these tools?
7. In the beef/dairy production process, have you encountered views about animal welfare that differed from your own?
8. In what ways have your practices of farm animal care changed over time?
    - What has caused these changes?
9. Have you ever felt that there was a discrepancy in how you perceive animal welfare and how you practice it? Why or why not?
    - Can you describe a story or an experience when you felt you had made the best ethical choice on behalf of an animal?
10. Considering everything we have discussed - What factors do you think have influenced how you have learned or choose to treat animals at your operation? [I.e. family tradition, college, media, industry standards, consumers, etc.?] Why?
11. Can you describe any challenges facing the implementation of farm animal welfare into your daily production practices?

Future of Farm Animal Welfare in Livestock Production

The final section I would like to discuss with you has to do with the future of livestock production when considering animal welfare.

1. Can you share with me your thoughts on Certified Humane Standards?
2. Can you describe the ways that practices with regards to livestock production are changing when it comes to farm animal welfare? Controversial practices?
3. What role do you think farm animal welfare should hold within an environmentally sustainable framework for production?
4. Issues of concerning transparency of the livestock production sector and practices of farm animal welfare seem to permeate the media and industry lately. Could you provide some insight into how you think transparency of the livestock sector with regards to animal welfare could be improved?

Appendix B - Information Sheet and Consent Form

Title
A Comparative Case Study of Farm Animal Welfare within the Livestock Production Sector of Alberta

Background
We are seeking to understand the practices and perceptions of farm animal welfare among livestock producers, feedlot owners, and beef processors in both the beef and dairy industries of Alberta. Specifically, we are interested in how producers, feedlot owners, and processors apply animal welfare to everyday production practices. You have been invited to participate in a graduate studies research project because of your knowledge and experiences on the subject.

Purpose
This study can contribute to an understanding of the ways farm animal welfare and/or care is implemented into day-to-day livestock production practices in an effort to increase transparency and the long-term sustainability of the sector.

Benefits and Risks
Participants can potentially benefit from sharing personal views, perceptions, and experiences regarding farm animal welfare and livestock production practices. It is also an opportunity to participate in research that can contribute to understanding how the livestock production industry implements practices of farm animal welfare. We do not foresee any risks associated with participating in this study.

Study Procedures
You are invited to participate in an in-person interview about your perspective, experiences, and practices of farm animal welfare. If you decide to participate, the interview will take place at a time and place that is convenient for you, and will last approximately 1 to 2 hours in length. With your permission, the interview will be audio recorded to ensure accuracy. The recording will be stored on a secured server at the university and the transcribed interviews will have all identifying information removed. For this project, we will be analyzing and comparing stories to one another, looking for themes, similarities, and differences in your experiences, perceptions, and practices.

Confidentiality
Data collected will be safely stored in the university secured network to protect confidentiality. Only the researchers listed below will see the transcripts in full. All the interview transcripts will have your name, along with any other identifying information removed. Direct anonymous quotes and information will be used in a graduate student thesis, academic publications, and presentations. You may view any of these upon request.

Freedom to Withdraw
Your participation is voluntary, and you are not obliged to answer any questions that you are not comfortable with answering. You may withdraw your participation during the interview anytime. You may also withdraw the content of the interview within three months of the interview date. If

you choose to withdraw from the research project, any information you have contributed will be destroyed at your request.

Additional Contacts
If at any moment you have any questions or concerns regarding the project, the interviews, or the interview questions, please feel free to contact any of the researchers listed below. The plan for this study has been reviewed for its adherence to ethical guidelines by a Research Ethics Board at the University of Alberta. For questions regarding participant rights and ethical conduct of research, contact the Research Ethics Office at (780) 492-2615.

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Graduate Student
Department of Resource Economics and Environmental Sociology
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Consent:
By signing this form you indicate that you understand the information on this consent form and it demonstrates that you consent to this study and agree to participate voluntarily. A copy of this consent form will be given to you to keep.

_____	_____	_____
Signature of Participant	Name (please print)	Date

Please initial below for any items to which you agree:
I have received and reviewed a copy of the project information sheet_____
I have had the opportunity to ask questions about the research_____
I agree to participate in an interview for this project_____
I give permission for the researcher to re-contact me_____

I authorize the use of an audio recording device during the interview_____

I, as the researcher, agree to abide by the terms and conditions described in the information sheet referenced above.

_____	_____	_____
Signature of Researcher	Name (please print)	Date