International Shared Suffering: A Comparative Analysis of Varied Pig Production Methods in a University Setting

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ABSTRACT

We extend the notion of shared suffering first articulated by Donna Haraway (2008), and developed by Jocelyne Porcher (2011) to suggest that while shared suffering is unintentional in production environments, an ethic of intentionality should be employed. Intentional shared suffering evolves when individuals are given the infrastructure and opportunity to openly embrace the bonds they create with the production animals they work with. We apply and compare this framework in two pig/swine production facilities: an organic farm and a confined feeding operation both operated by a major research university to identify what contributes to unintentional and intentional shared suffering at each facility. Following three years of participant observation and interviews within both facilities, our findings clearly demonstrate that environment; shared interests among members; and leadership all contribute to an ethic of intentional shared suffering. Surprisingly, we also find that the cross-pollination of the two programs/environments facilitated community development, teaching/learning and research opportunities.

KEYWORDS: CAFO, animals, pasture-based pig production, shared suffering, socialization, emotional labor

Introduction

A complex relationship between farmers and animals has existed since livestock were first domesticated for food. Porcher (2011) has written extensively about the bond between pigs and farmers, arguing that this "work relationship" has been significantly altered by industrialization of pork production, resulting in problems for both parties. One of the key issues posed by Porcher (2011) is that "shared suffering" is less likely to occur in swine confinement facilities due to the commodity-focused nature of these systems, various technological innovations, and the social stigma against developing strong bonds between workers and swine. The fact that shared suffering is less likely to occur is problematic according to Haraway (2008), who argues that we have a moral obligation to share suffering with those animals whom we use for our purposes.

Using three years of intensive participant observation and interviews, our paper builds on the concepts and theories presented by Haraway (2008) and refined by Porcher (2011) to identify how suffering is enacted and "shared" among participants in a pastured-based system compared to participants in a confinement swine operation both located at a major research university. This is the ideal environment to assess the development of shared suffering norms for three reasons. First, both programs are designed to instruct students on pig/swine production, but with a distinct approach at all stages of production. Second, the university serves as a control mechanism governing both programs. Finally, students from both programs were encouraged to interact and share experiences.

We suggest (as does Haraway (2008) and Porcher (2011)) that "shared" suffering is always present, however, how suffering is engaged determines the spillover effects, both positive and negative. More specifically, we extend these theoretical concepts by asserting that shared suffering can be broken-down into two distinct forms: intentional and unintentional. We explore intentional shared suffering, in contrast with unintentional,

inevitable shared suffering to highlight the differences and importance of intentional awareness about suffering when working with agriculture animals. We also interrogate how two seemingly unrelated production facilities can influence each other in unique and positive ways.

History of Confined Pig/Swine[1] Operations

Concentrated animal feeding operations (also known as factory farms or CAFOs) gained popularity in the United States in the 1950s as agriculture became increasingly industrialized. Hogs were one of the first animals to be raised in indoor facilities, and today over 90 percent are raised in confinement (Rollin 1995). Much has been published about the social, economic, and environmental problems linked to CAFOs. For example, these artificial environments are not conducive to swine welfare, because they deny pigs the opportunity to express natural behaviors, such as rooting and nesting (Rollin 1995; Mason and Finelli 2006). Researchers have also documented the environmental damage caused by factory farms, linking the industry to problems such as air pollution, ground water contamination, and climate change (e.g. Cavalett et al. 2006; Olsson and Pickova 2005; Siegford et al. 2008; Stern et al. 2005; Gurian-Sherman 2008). Furthermore, workers in these facilities are exposed to unhealthy levels of ammonia, and the general public is at risk of antibiotic-resistant strains of bacteria that result from factory production (Gurian-Sherman 2008).

Returning to the Pasture

Although the majority of pork comes from factory farms, there is a strong national movement to raise pigs using sustainable methods such as pasture-based production. Popular literature like Fast Food Nation by Eric Schlosser (2001) and The Omnivore's Dilemma by Michael Pollan (2006), as well as documentaries like Food, Inc. (2009), have exposed the

[1] We use the term "pig" when referring to production at the student organic farm (SOF) and "swine" when discussing the Swine Teaching and Research Center (STRC). This is the respective language at each location

general public to many of the negative aspects of factory farming. Corporations have responded to consumer demand for a more ethical product. Grocery retailers like Whole Foods Market do not sell pork from hogs raised in gestation crates and McDonalds recently announced that their pork suppliers must phase out this inhumane practice (Bittman 2012; for more on gestation crates, see Rollin, 1995, pp. 75-78). Restaurant chains like Chipotle Mexican Grill condemn factory farms and offer only naturally raised pork (Chipotle 2012).

Raising pigs in a pasture-based system is a popular alternative to CAFOs due primarily to environmental and societal concerns (Vermeir and Verbeke 2006). However, raising pigs outdoors is less efficient. Pigs grow slower because they expend energy moving around and regulating their body temperatures. In confinement, pigs have less mobility, so most of their energy promotes growth, although not necessarily healthy growth. Also, pigs raised on pasture are more susceptible to intestinal parasites, which can inhibit growth. In CAFOs, pigs live in a sterile environment where the introduction of pathogens is limited by shower-in and shower-out systems for human workers and visitors. Finally, pasture-based production is more labor intensive, with farmers involved in almost every aspect of the pigs' lives, whereas CAFOs rely on automated systems to some degree (e.g. feeding, temperature control).

Pasture-raised pork is a niche product with a high consumer demand and general appeal. For example, pastured pork is considered more humane because it allows the animals to express natural behaviors (Rollin 1995). Pasture-based production is also better for the environment because it causes less air, land, and water pollution (Gurian-Sherman 2008). It is also healthier for consumers because it is leaner. Finally, small pasture farmers benefit from consumer support, which is important as corporations drive family farmers off the land. However, pastured-raised pork is considerably more expensive than conventional pork, due

in part to the lack of government subsidies applied to the latter, making it cost prohibitive for some.

Animal Husbandry as Bonding

Historically, caring for farm animals was thought of as animal "husbandry," wherein the farmer served as a "husband" to his or her animals, providing them with food, shelter, and medical attention. Many family farmers kept small herds of pigs, so it was simply easier for them to know the animals as individuals (although whether or not they thought of them in this manner cannot be determined) (Fagan 2015). Porcher (2011) calls the relationship between a farmer and their animals, "an inevitable bond." (2011:4) While bonding between agricultural animals and humans has previously undergone a variety of descriptions and definitions (Boivin et al. 2001; Hemsworth and Coleman 1998), we use the term bonding to refer to the myriad manners in which our participants formed within and across species relationships in their respective environments.

Along with the industrialization of US agriculture after World War II, the concept of animal husbandry underwent a transformation, becoming regarded more as animal science—that is, a more technical and less intimate way of caring for animals (Fagan 2015). Along with this transition, sharing suffering with farm animals—while still occurring—became less intentional. Porcher (2011) writes that certain technologies developed in industrial pig facilities (e.g. less "hands-on" methods of caring for pigs or less traumatic methods of slaughtering animals) make it easier for workers to ignore animal suffering, believing that such techniques alleviate the animals' pain.

Theory

Intentional and Unintentional Shared Suffering

Donna Haraway (2008) suggests that we should consider sharing suffering between species; however, this concept is not readily defined. As Haraway (2008) writes, "I don't

think we will ever have a general principle for what sharing suffering means, but it has to be material, practical, and consequential, the sort of engagement that keeps the inequality from becoming commonsensical or taken as obviously okay" (p. 77). While a number of definitions of sharing suffering have circulated, the common thread is a recognition that suffering (physical, mental and emotional) can transfer between species. However, Haraway (2008) contends that sharing suffering is embedded in the contextual nature from which it evolves, so there is no all-encompassing theory for how it will manifest or what the social and structural impacts will be. In this respect, the enactment of shared suffering is specific to each circumstance, cross-species interaction and location of engagement. Certainly, it is not found in mimicking, but rather in recognition and reflexivity on the part of the individual. This conceptual framework has been extensively explored in Porcher's work with industrial pork production facilities.

In her analysis of the industrial pork industry, Porcher (2011) extends Haraway's (2008) concept of shared suffering, noting that when species share space, the suffering of any one group becomes communal. For humans, suffering is both physical (Molinier 2006) and mental (Dejours 1998). Mentally, Porcher (2011) finds, "the suffering resulting from the relationship with the animals is either indirect (suffering from seeing the animals locked up) or direct when workers must inflict the suffering themselves" (p. 7). These conditions are accompanied by an identity disjuncture or "multiple recognition deficit" (Porcher 2011), where workers are restricted from showing or receiving affection from the animals they are working with (Porcher 2002; 2003). The physical suffering for both animals and humans often involves respiratory afflictions like asthma and chronic bronchitis (Donham 2000; Borghetti et al. 2002; Dosman et al. 2004; McDonnell et al. 2008) or pathogenic agents (Chandler et al. 1999; Caprioli et al. 2007; de Deus et al. 2008; Pavio 2008; Renou et al. 2008).

In order to deal with these issues, Porcher (2011) writes that humans use conceptual tools such as animal welfare, stress and pain to conceal the suffering experienced within industrialized systems. Often these tools are invoked for economic reasons, or because of social norms, but in doing so; both humans and animals pay the consequences. From Porcher's (2011) work, we find that shared suffering can be broken down into two facets with distinctly different affects. First, the shared suffering that Porcher (2011) describes is an unintentional shared suffering, which occurs when cross-species suffering is concealed, hidden or discounted. Essentially, this would be the process of referring to or utilizing an animal as purely an object, negating their sentience. This process assumes that animal commodities are no different than natural resource commodities such as coal, wood or crude. Counter to this, we identify another form of suffering as an ethic of intentional sharing of suffering, where the recognition of cross-species suffering is apparent, discussed and critically engaged.

Porcher (2011) contends that "over the last twenty years, millions of dollars and euros have been poured into research on "animal welfare" and thousands of articles have been published on the subject, only to produce inconsistent results" (p. 11). Citing Marx (1996), Porcher (2011) calls for animal husbandry to return to "a path to fulfillment and freedom by allowing each individual to express their potential" (p. 14). In light of this call, this paper extends the theory of shared suffering by deconstructing it into two antagonistic elements as a means to encourage an ethic of intentionality, where individuals engaged in animal production remain reflexive of their positions and attuned to their one-on-one connections with animals and the physical environment. In this ethic, embodying emotion and affection across species is not only displayed, but also encouraged and openly discussed. Furthermore, we argue that while production size is important, the size of an operation does not imply that

intentional shared suffering will occur, which is supported by past research (see e.g. Ellis and Irvine 2010).

Data Sites

Michigan State University (MSU) provides the ideal environment to apply and extend the theory of shared suffering in animal production as the university operates both an indoor swine production facility, known as the Swine Teaching and Research Center (STRC), and an organic pasture pig operation on the Student Organic Farm (SOF). Both have the same institutional governing body, MSU, serve a teaching and research function and are located within close proximity to each other (less than one mile).

Although the main building of the STRC was completed in 1997, swine production has a long history at MSU. This facility is a full shower-in and shower-out operation. It has a breeding room, four farrowing, four nursery and four finishing rooms with roughly six boars and approximately 200 sows. Approximately 2,000 swine are "finished" at the facility each year. The breeding herd is maintained from within - no outside pigs are admitted into the system. Beyond the production infrastructure, the facility also has administrative areas for teaching, research and management. There are two full-time employees and six to eight student workers each semester.

The SOF was founded in 1999, as a result of student interest in learning sustainable methods of farming no longer taught in the agricultural program. The SOF heads The Organic Farmer Training Program (OFTP), and involves volunteers ranging from students to local community members in its nine-month farming activities. In 2009, the SOF negotiated the first transfer of three pigs from the STRC to the SOF. In 2010, 12 piglets were transferred, in 2011 two sows were transferred from STRC and gave birth to 18 piglets on the

SOF[2]. Since we have a wealth of data, we have chosen to focus our attention on two years of data, which were the first two years of sow transfers. Farm employees, student volunteers, and faculty from a variety of backgrounds work to monitor and research the development and impact of the pigs on the SOF. The pigs are raised on green pasture by using crop-rotating techniques. They are fed a mixture of grain and fresh produce, along with what they root and graze off the land and are provided with a hoop-style shelter for nesting and refuge. The sows arrive in February of each year and give birth in April. The piglets are sent to slaughter, after achieving a specified weight, usually in October.

Methods

Participant Observation

We engaged in two[3] intensive rounds of observation of swine production at the SOF. articipant observation commenced in May 2010 with the birth of 12 piglets at the STRC who were moved to the SOF at four weeks of age, and ended in October 2010 with the departure of the pigs from the SOF for slaughter. The second round of production commenced in March 2011 with the transportation of two pregnant sows from the STRC to the SOF and concluded in October 2011 when their piglets were transported to slaughter. Collectively, we spent over 150 hours assisting with animal care, and interacting with participants from both the SOF and the STRC. Participant observation notes were documented and hand coded for themes.

Semi-Structured Interviews

[2] The success of this program has meant that sows have continued to be transferred from the STRC to the SOF since 2010. In 2012 two sows were again transferred to give birth to 27 piglets, in 2013 two sows were again transferred to the SOF to give birth to 9, and in 2014 two sows from the STRC gave birth to 17 piglets on the SOF. At least one author of this paper has been involved in all years of the program.

[3] Two years were selected for intensive study for three reasons: 1) large variance in experience in transferring piglets versus pregnant sows, 2) these were introduction years and 3) first years of STRC and SOF interactions.

Interview protocols were IRB approved and consent forms were utilized to gain interviewee permission. All interviews lasted approximately 45 minutes and were conducted in a location and at a time chosen by the interviewee. Interviews were documented by digital recording and transcribed by the interviewer. Interview data were hand-coded and reviewed by all three researchers. Key informants from each site were chosen. Those who were interviewed included volunteers, faculty, and employees from the STRC (five), the SOF (five), affiliated with both (three) and non-affiliated parties (two) over a period of 18 months, bringing our total to 15 interviews. Table 1 lists the affiliation, involvement and major/department of the individuals we interviewed.

Name (Pseudo)	Affiliation	Involvement	Major/Department
Maria	STRC/SOF	Faculty	Animal Science
Elmer	STRC	Faculty	Animal Science
Albert	STRC/SOF	Faculty	Philosophy
Earl	STRC/SOF	Faculty	Animal Science
Dave	SOF	Farm Manager	MSU Employee
Janelle	SOF	Student Volunteer	Political Science
Donna	SOF	Student Volunteer	English
Heidi	Not applicable	Organic Farmer Training Program	Not applicable
Brittany	SOF	Student Volunteer	Political Science
Gwen	SOF	Organic Farmer Training Program	Not applicable
Lisa	STRC	Unaffiliated	Library Science
Chris	STRC	Student Employee	Animal Science
Jason	STRC	Student Employee	Animal Science
Alicia	STRC	Student Employee	Animal Science
Ashley	Not applicable	Unaffiliated	Sociology

Table 1: affiliation, involvement, and department of key participants.

Results

Although a number of themes surfaced, we have selected to focus on bonding behaviors among and across species at our two designated sites (SOF and STRC) in order to identify places where intentional and unintentional shared suffering occurs. Given that shared suffering cannot occur without some form of bonding, we consider how bonding is defined. While bonding is generally considered a close relationship between friends or a physical

attachment occurring between a parent and offspring, for the purpose of this paper we will identify bonding as the connection between individuals (human and animal) in physical proximity or geographical orientation that demands dual recognition of shared space by both parties. We chose the word bonding and the respective definition in reverence to how it was identified and articulated by our interviewees. Additionally, how bonding behaviors are allowed to transpire forms the foundation for what we identify as an "ethic of intentional shared suffering."

Although shared suffering between species is inevitable (see e.g., Porcher 2011) and is readily seen in the connection between human and animal violence (Ascione 1999), how bonding is enacted depends largely on the structural components of the physical environment. Marino, et al. (2015) found that pigs are capable of "complex ethological traits similar, but not identical, to dogs and chimpanzees" (15). These include, but are not limited to, individual personalities, the ability to express emotions, to discriminate between familiar individuals and strangers, to learn and to engage in play. These attributes of the pig contribute to the potential for humans to bond with pigs, and for pigs to bond with each other, when the environment permits.

As we demonstrate in this section, the governing body or manager of our animal production sites dictated and formally modeled bonding behaviors, socializing volunteers and employees into a specific culture that embodied the social norms around the development of relationships between and among species. In examining bonding in each of these sites we identified three formal enactments. First, bonding occurred between humans. This demonstration was present at both sites and often encouraged as a means to promote social cohesion in the workplace. Second, bonding was witnessed between pigs and humans. The degree to which this was engaged in and encouraged varied. However, interviewees at both sites discussed bonds with specific animals even though word selection and recognition of

this bond was quite different between sites. Finally, bonding behaviors between pigs were documented through long-term participant observations. We begin this section by distinguishing the three types of bonding behaviors observed separately at the two sites. Next, we distinguish how the interaction between these two communities facilitated growth within the communities. Finally, we identify how two seemingly different animal production systems can find common ground through shared suffering, enhancing our relationships with animals.

Human-Human Bonding

In this section we explore the structural components leading to the formation of bonds among humans and how these relationships facilitated or hindered intentional or unintentional shared suffering at our pig/swine production sites. Bonding occurred among humans at both sites, however, how and why individuals formed relationships with other humans differed. Three themes were identified as integral components of relationship formation. First, the physical environment dictated how and where bonding occurred. Second, an individual's reason for being involved as interest in an actual process or technique for pig/swine production versus a broader interest in sustainability contributed to bonding. Finally, individuals observed and mimicked the bonding behaviors of site leaders.

SOF human-human bonding

Interviewees described the physical environment of the SOF as "warm" and "welcoming." A covered area with tables was also mentioned as a "welcoming" feature that facilitated community engagement and interaction. Pictures of past pigs from the project and signage also contributed to the ambiance. On most days, SOF staff and volunteers were observed sharing breaks and meals at communal tables. Interviewees mentioned the environment as a connection point to meet new people who share similar interests, while participation observation notes reflect how engaged the surrounding community is, given that

numerous community members also visited the pig project. Most importantly, the open environment allowing for community discussion around food prompted intentional suffering discussions. These were observed in the context of individuals discussing their experiences, feelings and expectations of the pig project. For instance, a student was observed discussing her growing bond with the pigs and how she uses her morning time with the pigs as a reflexive meditation exercise. She lamented her emotional attachment, concerned that the pigs will be eventually put to slaughter.

Second, all SOF members encountered by the research team held an interest in sustainability farming or animal welfare. Many were involved with the pig project as members of various undergraduate educational programs (including sociology, anthropology, animal science, political science, community sustainability, and animal science among others). Individuals talked about this shared interest, in terms of returning to the land with an ethic of intentionality and reacquainting themselves with their food, the natural world, and with each other. For many, "sustainability" was inseparable from their personal, emotional, and ethical selves.

Third, because of this shared interest, the leaders (faculty/staff) in this setting tended to openly discuss their own emotional management processes and elicit emotional reflexivity among the community - fully acknowledging the shared suffering of which all experience when working with animals. For instance, the director of the SOF encouraged volunteers and workers to spend unstructured quality time with the pigs, such as observing them in a game of tag, rubbing their bellies, or spraying them with the water sprinkler. The students were present to watch the pigs experience pleasure and enjoy life, as well as to experience the pain and heartbreak - of both pig and human - that accompanied the slaughter. When asked about community bonding or the formation of relationships among humans and pigs, those from the SOF readily identified the formation of their relationships in comparison to their perception

of the emotional management and emotional expression of their leaders. For instance Janelle noted, "Both the student volunteers and particularly the faculty PI [principal investigator] were extremely emotional with the pigs. They named them, identified their personalities, played with them and at times even laid in the mud with them." It was through this open environment that individuals were able to explore their emotions with other community members. Through participant observation at the SOF we found a number of instances in which individuals were seen and heard discussing their feelings about the project, however, this largely coincided with behaviors modeled by SOF leaders.

All three components: environment, shared interest, and leadership all contributed to an ethic of intentionality about suffering. The fact that suffering across and between species is occurring was readily discussed among participants at the SOF. More importantly, this openness contributed to (human-human) bonding among students, faculty and staff at the SOF.

STRC Human-Human Bonding

The same elements that facilitate bonding at the SOF had unique impacts on bonding behaviors at the STRC. First, The environment of the STRC is institutionalized and sterile, resembling a typical confined operation. Most swine are confined to small holding facilities like farrowing and gestation creates. Their natural behaviors are restricted as is human and animal interaction. Unlike most confined operations, this particular facility is open to the public for tours since it is housed at a research university. However, before entering the facility all individuals must "shower in." This arrangement is designed to protect swine from outside contaminants. However, it also has the effect of creating a physical barrier between the humans and swine. Because of the structured nature of the environment there is limited room for spontaneous interaction, volunteers or community members. For instance, you cannot form a relationship with a particular animal and visit him/her repeatedly throughout

the week. Nonetheless, participant observation at the facility found small hints of "swine love," such as drawn cartoon swine portraits on the files that relate to individual animals and "names" in place of the numbers assigned to each production animal. These behaviors were hidden from the structural process, but still visible.

Second, counter to the SOF, sustainability is not the leading reason people mention for being involved. STRC workers are primarily engaged to facilitate career development. Work at the STRC was often discussed as part of an educational program in Animal Science. Surprisingly, STRC interviewees do not express a strong preference for swine as animals or swine meat over other agricultural animals and their products. Those working at the STRC are generally enrolled in swine-related animal science classes and almost exclusively learn about the confinement process for raising swine. The workers come from the swine specialization courses, sharing a background that lacks any training, discourse, or otherwise engagement with emotional management as part of the curriculum. For instance, one of the instructors, Earl, told us that when he teaches his animal science classes, the language he uses is somewhat "cold and insensitive." For example, he uses terms such as "52% yield" or "5.5% intramuscular fat." In this sense, the students are encouraged to view the animals more as units of production and less as sentient creatures. Earl openly expressed his regret of this form of teaching, admitting his own personal connections and respect for swine, but he also noted that this is a product of the system.

Finally, as Earl expressed above there is limited room to discuss or engage in bonding between species at the STRC. Although Earl recognized a need for the expanded education, he did not necessarily feel comfortable engaging students in this educational process. He noted that he lacked the knowledge and background to train students in a different way. Because of this, students and workers were often observed mimicking or modeling the

language and behaviors of Earl and others from the leadership team. This concept is further highlighted in the central focus of the STRC.

Central to the STRC is the concept of swine as products for consumption and economical gain. As Elmer another member from the leadership team states, "whether you want to think of it or not, raising swine is financially driven." The emotional disconnect between human and animal was further present in the language that Elmer used suggesting that, "[The SOF], or most of them, tend to look at each of those animal as…as a relative or an exact person…Its role is to provide protein to humans." Elmer's perception of the "use value" is not unique to the industry, what could be distinguished from the interviews was that as a leader, Elmer's perceptions had an influence on his workers, limiting their capacity to explore their own emotions regarding swine production. Counter to the SOF, swine were referred to as a collective. Boars had recognizable ear tag numbers, but they had a larger life cycle in the facility, often three or more years. Discussions regarding swine as individuals had to be directly elicited via interview questions and were often answered in strained and hesitant language. Unintentional shared suffering is clearly taking place among the interviewees from the STRC, but the environment is not conducive to managing this process as an intentional reflexive process. Therefore, the bonding that occurred among participants was in absence of the swine as a focal point, which is in direct contract to the SOF facility.

Human-Pig Bonding

We argue that regardless of human acknowledgment bonds are formed among individuals whenever space is shared. This bond facilitates the sharing of both joy and suffering. How we, as humans, come to recognize this bond and consider our agency in strengthening and supporting this bond dictates how we engage in intentional shared suffering. How individuals formed and maintained bonds with animals was not only unique at each site, but was also largely moderated by leaders. Similar to bonding among humans,

we again explore how the: 1) environment, 2) shared interest among members and 3) leadership facilitates bonding across species. Of particular importance to this sequence is the ever-present notion that the animals being raised in both facilities would be slaughtered.

SOF Human-Pig Bonding

All elements: environment, interest and leadership all contributed to intimate connections between humans and pigs at the SOF. Most, individuals from the SOF identified the pigs as pets, or spoke of them as such. However, the attachment to them as pets was also meditated by the reality that they would eventually put to slaughter. For instance when asked about her bonding with the pigs Brittany replied, "I would say that I saw them as a pet, but I knew at the end of the summer they would still end up getting sold…I definitely thought of them as pets." Although Janelle also thought of them as pets she quantified her response, "They aren't pets in the traditional sense." Heidi who repeatedly compared her bond with the pigs to her bond with her dogs, shared a similar sentiment, "I knew that these animals would eventually die. I tried not to get too attached. I did not go to slaughter because I could not handle to see them killed." In the mind of the interviewee, the production animal is given a pseudo-pet status, where development of a 'pet' status is mediated by the reality of the situation. This finding is consistent with others who have studied relationships between human and agricultural animals (e.g. Ellis and Irvine 2010). In recognizing the animal as a pet, even as a pseudo-pet meant for consumption, the awareness of the individual animal and their existence as an animal who feels pain and pleasure assures the individual experiencing this bond inhabits the realm of intentional shared suffering.

Brittany described the friendship and companionship she found in relationships with the pigs. "I think maybe because I can't have a pet now, but sometimes I am alone. It was nice to fill that void…to have someone there all the time, to have a friend." What was uniquely interesting about the individuals at the SOF was that they all had a similar

conceptualization of the slaughter not as the end of the bonding process, but as the meat no longer possessing the animal. Gwen noting that, "As soon as the animal is dead and processed there is a disconnect that occurs in my thinking…I have a hard time remembering them as an animal and I just view the meat as a product." This is similar to how many people experience and visualize the end product of meat, what makes this unique is that the similar responses were collected from all who used the term 'pet' to describe a human-pig connection.

The environment at the SOF fosters human-animal bonding through play, direct interaction, and the creation of a space that encourages engagement of emotions. This constant acknowledgement of emotion and the recognition of shared suffering culminated dramatically in a scene not commonly found in an educational institution – faculty/staff and community members openly weeping and physically comforting each other when each group of pigs were sent to slaughter. The SOF members witnessing this slaughter from a nearby area similarly held each other and wept as each pig met his end – severing not only the throat of the living being, but the deeply emotional relationship developed over the span of his lifetime at the SOF. The openness of the environment encouraged the direct discussion of emotional management and the process of suffering.

STRC Human-Pig Bonding

STRC workers never referred to the swine as pets, but often identified the caretaking process as a similar to one's relationship with a pet. Chris explained, "I can't really say that you can have the same bond with animals you eat and animals you keep for pets because eventually they are going to be consumed, but you still gotta care for those animals." He continued by asserting that, "I am going to care for them in the same way that I care for my pets, but I am not going to have the same attachment because they will be used for meat consumption." Chris's interpretation of bonding between himself and the swine was not

unique. Alicia described a similar process. “I don’t know if I necessarily create a bond. I understand you know, that a majority of these pigs, their purpose is that they’re going to market and, you know, so I purposely don’t form connections with them.” Again, this statement shows how the recognition of eventual slaughter mediates the relationship individuals at both facilities could develop with the pigs/swine. In asserting that a bond is avoided, the shared suffering that inevitably occurs between producers and produced is unintentional in its form.

Continuing with this line of thought, Alicia stated, “But, as far as connections, I haven’t really formed any personal connections with any pigs out at the farm… I was raised just to separate, you know, the agricultural animals are serving this purpose whereas like my pets are just companions and so they serve that purpose.” However, later in the interview Alicia shared a story about her personal bond with a one-eyed pig, whom she watched move through the system. “... he has one eye, he’s my one-eyed pig but he went to market last week, so you know, he’s gone and I wasn’t too upset about it, I just, you know…But I kind of kept track of him like through nursery…” While Alicia clearly cared for this pig enough to watch him grow, refer to him as “my” pig, amongst countless other pigs in the facility, she was certain to distinguish that he had recently gone to market and that she was not “too upset” about his departure. Her hesitant language and use of hedging, or language that makes a statement’s meaning fuzzy (Itani1995) (i.e. “too upset”; “kind of have certain pigs like that”), reveals her perception of this pig as special, yet conflicting with the indoctrinated perceptions of swine encouraged at the STRC. This recognition of the shared suffering that occurred between her and her one-eyed pig was met with a natural response to avoid dealing with the emotional issues that arise from such a natural bond. The responses from STRC students and workers clearly demonstrate recognition of the “individual” even when teaching counters this approach.

SOF Pig-Pig Bonding

As expected the pigs at the SOF developed natural bonds between each other. A critique of open facilities is that pigs can become aggressive and territorial. However, this is often due to a lack of space. Given the size of the enclosure in an open pasture, the pigs at the SOF had no trouble running, playing, rooting and expressing other natural behaviors. Aggression between pigs was not observed, however minor altercations and vocalizations did occur in relation to food or toys, but was not deemed "aggressive." We observed the pigs running and playing with each other on a daily basis. For example, on one particularly cool summer evening, the pigs were observed engrossed in a form of tag, or follow-the-leader. One pig would take off running and the other pigs would follow along, heading around their hoop houses and then back around the edge of their enclosure, creating a loose figure eight. There was no noticeable reason for running other than for the pure enjoyment of the impromptu game. All pigs participated, though it came to a halt when a. approaching human diverted their attention.

When sows were first introduced onto the SOF in 2011, a year after a group of piglets were transferred to the SOF, the director chose two sows that were crate mates in the STRC, meaning they were in crates next to each other. When the sows were transferred out of the STRC and onto the SOF they immediately embraced their environment and began to root in the soil. They also embraced each other. They stood together, moved together and laid cuddled in the wooden barn created for them. They vocalized in unison and altered each other to new and unseen phenomena. It was obvious they had spent a great deal of time together and that they shared a particular bond.

The bond between pigs was made more prominent during the slaughter. In an unexpected setup at a local slaughterhouse, the pig brothers were forced to watch their kin's

slaughter as they waited their turn. The pigs inched close together, laying their heads upon each other for comfort and solidarity as the process continued.

Environments that allow animals to express their natural behaviors contribute to our understanding of intentional shared suffering. In these environments, we engage with the animals as individuals, seeing full well that they have exceptional qualities that are unlike mere commodities. Watching them play, as we would, forces us to assess the moral and ethical responsibilities we have to other living non-human beings. In these moments, we systematically substitute our identities and attempt to assess what it means to be pig. We saw this in the language individuals used to discuss the bonding witnessed between pigs. For instance a student was noted saying, "I wrestle with my brother just like that…Get him!" Not only is this a shared recognition, but also there is an assessment that family is systematically important for pigs as it is for us.

STRC Swine-Swine Bonding

The swine at the STRC are not often allowed to commingle. Most often, swine are separated into holding crates with limited interaction with others. Outside of eye-to-eye contact with those pigs across the walkway, or brief touching through the bars of an adjacent crate, these pigs of the STRC live isolated from their brethren younger pigs were in close quarters with each other, with little room to move about and no forms of enrichment. When touring the STRC we observed the isolated swine nibbling on cage bars and rubbing nasal or oral secretions on the floor or on bars. These behaviors represent stereotypic behavior in confined pigs. We also observed vocalizations (of which we perceived as "not happy," based on our collective experience at the SOF). Stress vocalizations have also been studied and recorded in production facilities (Moura et. al. 2008).

Given that witnessing bonding between the pigs as a intricate part of observation at the SOF we would assume that the lack of witnessing such bonding between animals has a

profound impact on one's ability to recognize suffering across species. Indeed, during interviews with STRC staff and volunteers it became clear that the overall perception was that pigs do well isolated, as they are aggressive when placed together. We questioned the limited contact between swine and were told multiple times that, "When swine are put in pens together they fight." This was especially the case when discussing sows. We did not observe this behavior during our tours at the STRC. However, we did note that those younger swine who were placed in an enclosure together were commonly afflicted with scratches and other light wounds on their skin.

Conclusion

The focus of our study was to establish what contributes to the manifestation of intentional and unintentional shared suffering in two distinct animal production environments: STRC and SOF, both operated by a large research university. We extend the idea of shared suffering from Haraway (2008) and applied by Porcher (2011) to assert that shared suffering should be assessed as two distinct components, intentional and unintentional. While all spaces that rely on human labor in the use of animals as commodities have suffering that is shared across species, this suffering can be diminished and used as a teaching and learning tool if an intentional ethic is employed. This means that cross-species suffering should be readily engaged through discussion and reflexive endeavors. Given that bonding is an essential component of sharing suffering, we began our study by outlining the three forms of bonding we encountered at our two facilities: human-human, human-swine, and swine-swine. We assessed how intentional and unintentional shared suffering manifested at the intersection of these bonds. Most notably perceptions of consumption, language and welfare were mentioned by interviewees when discussing the intentional and unintentional development of shared suffering - particularly in coming to terms with the eventual slaughter of the pigs.

Our findings clearly demonstrate that intentional shared suffering occurred at the SOF due to the physical environment, shared interest in sustainable practices among the members and because of the leadership. The same factors created an emotionally closed environment at the STRC, where cross-species suffering occurred, but was less likely to be recognized or engaged. A key component of this may be the gender of leadership. While men and women were leaders in both facilities, the director of the SOF is female, and the director of the STRC is male. It is important to note that as exchanges between the SOF and STRC increased, particularly in subsequent years after the SOF pig production inception that discussion about and interest in exploring the potential impact of suffering across species occurred. Likewise, exchanges between the two distinct groups sparked innovative discussions about best practices and procedures in pig production.

By far the most interesting finding is that these two communities were able to develop a relationship based on three key principles: 1) teaching undergraduates; 2) research practices and sustainable improvement and 3) a real interest in pig/swine production and management. As STRC workers interacted with SOF individuals, well-established notions were challenged and changes in perceptions among STRC workers were duly recognized. Whereas an STRC worker may only interact with swine in confined facilities, his or her direct, or indirect (speaking with SOF volunteers or learning about the project via presentations), experience with the SOF project provided exposure to pig behaviorisms and modes of swine production that would otherwise go unseen and unknown – such as pigs engaging in a game together or pregnant sows bonding cordially without crating. SOF workers brought reflexivity and a space to engage in dialogue about suffering, loss and connection to STRC workers. On the other hand, STRC workers provided technical and scientific knowledge to SOF workers. This cross-comparative exchange of knowledge has the potential to enrich the education of future swine production workers. We would also like to note that the professors who oversaw these

students were enthusiastic about the diversity in production methods to which the students could be exposed.

Similarly, those working or volunteering at the SOF have the chance to interact with professionals in swine production from birth to butchering. As many of these volunteers had little experience with agriculture and/or swine production prior to the SOF, providing these spaces of open dialogue between two distinct forms of swine production facilitated a multitude of myths dispelled and mutual understandings to develop. For example, we observed students discussing the positive benefits gestation crates could make in the first days of the piglets' lives. While keeping pigs outside of crates is certainly ideal within the SOF, the usefulness of the crates was made apparent during the 24-48 hour post birth period where volunteers continuously monitored the sows to prevent the piglets from bring accidently crushed.

Finally, the SOF is unique in that it creates an environment that promotes productive exchanges between varying production ideologies. There are few places where organic farmers can engage with industrial production members in a respectful manner based on a shared interest in the future of pig production. This unique opportunity to create crosspollination between small organic systems and large production farmers allows for innovative and reflexive frameworks to emerge, specifically in the realm of suffering. Discussions from the SOF translated into discussions about and within the STRC. As an educational community, the exploratory and open environment at the SOF attracted new students from within and outside of swine production courses, some of who develop their own on-site projects. These same students were then welcomed to tour and engage with the industrial production facility as a means to fully understand the historical and current process of pig production. Such reflective and emotionally open pig production in an educational context may enhance and encourage intentional shared suffering in both arenas.

We see three lines of inquiry that should be addressed in future research as extensions of our work. First, future studies need to assess how and when to incorporate components of shared suffered reflexivity into traditional swine production practices and if these incorporations lead to changes in both human and animal responses. Second, agricultural universities need to be aware of the far-reaching implications of single system instruction, which may effectively limit student development and understanding of the broad social, political and environmental issues associated with animal production.

From our findings, we propose that all animal production teaching programs expose students to the various ways that production occurs and allow students to systematically identify the similarities and differences across models. Third, constructive exchange and discussion can occur and should be encouraged among various stakeholders in animal production. In fact, large agricultural research universities are the best locations for these discussions to occur, as they not only have access to multiple streams of thought, but can also facilitate research-based educational programs. More importantly, universities are charged with providing the next generation of animal production leadership. Ideally, students who enter the workforce with a comprehensive understanding of various production methods and implications will be more likely to create structural changes within their own animal production environments.

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