

UNIVERSITY OF ESSEX
SCHOOL OF LAW

DISSERTATION

LLM/MA IN: MA Theory and Practice of Human Rights

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DISSERTATION TITLE

Human Rights Violations in the Era of Industrialized Animal Agriculture

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Supervisor:

Andrew Fagan

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Human Rights Violations in the Era of Industrialized Animal Agriculture
: A look at health and labor on US factory farms

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Thank you to my supervisor, Andrew Fagan, and to my sister, without whom this would not have been possible.

Introduction:

Most people like to imagine their meat and dairy as being produced in idyllic conditions with cows out to pasture in green fields for most of the year and pigs running around in a large muddy pen. However, the reality of animal agriculture¹ around the world is much bleaker. An overall increase in demand and consumption (particularly outside of the west)-coupled with the industrialization of the process of rearing and slaughtering animals in the past century-has created an industry rife with human rights violations. As humans, we want to look at progress as a positive process only: each advancement in technology providing better lives for each generation. This outlook has been used to sell the idea of commercially run and industrialized large-scale farms. The rationale is that large farms with corporate interests would be able to provide more efficient output and keep up with regulations on cleanliness and workplace safety. However, this has created an industry which regularly compromises the rights of its workers and threatens the safety of the wider community in its quest to generate more profit. In the past century, the industry in many countries has gone from small independent farmers to commercial farms. Though there are still independent butchers, most people purchase their meat from grocery chains in which their desired product can be found among rows of neatly packaged meat wrapped in plastic. The chain of production has been streamlined for maximum consistency in supply and pricing. At its most consolidated, this means a corporate connection in the breeding, rearing, slaughtering, packing, and even feed growing of the production chain: complete vertical integration. To make this efficient process companies have maximized herd/flock size, replaced skilled butchers with minimum wage workers who repeat the same slicing motion hundreds of times an hour, replaced farmers with machinery, fresh air with confined spaces, individual care with blanket antibiotics, unionized workers with those unable to voice complaint, and local products with all you can eat cheap meat.

While this is a global issue, examining the entire global industry in this work would not allow for a thorough examination of the human rights violations prevalent within animal agriculture. Therefore, this work will focus on the United States of America. The United States is a useful choice for many reasons: the first is that there is a wealth of studies and inside information on the industry in the US, and the second is that the US has a level of regulation that falls somewhere between the levels found

¹ Animal agriculture refers to the breeding, rearing, and slaughtering of animals for the production of meat, poultry, fish, and animal products like eggs and dairy.

in EU countries and developing nations. While small family farms still exist many places, most of the animal agricultural industry in the United States is dominated by what is called 'factory farms'. 'Factory farm' is a more casual term for a large Confined Animal Feeding Operation (CAFO)². According to the Environmental Protection Agency (EPA) of the United States, a CAFO is an operation in which a large number of animals are confined for a period longer than 45 days³. The number of animals vary by species, but a large CAFO would have more than 1,000 cattle or 125,000 broiler chickens⁴. This system of definition is based on production of pollutants mainly; however, it also refers to the scale and the confined nature of these farms. The majority of CAFOs are commercial farms. A factory farm is not your neighbor Jackie who has 100 head of dairy cows and sells the milk locally. In fact, many Americans will insist that they make sure they only buy locally raised, organic, or humane meat thinking that these buzzwords used to sell products correlate to the conditions in which the animals were reared. However, the reality is that the level of consumption around the world, including the United States, has increased dramatically in the past fifty years. As a result, the purchase of meat must come mainly from factory farms⁵. The increase in consumption goes hand in hand with the mechanization and consolidation of animal farming over the same period of time. For example, the poultry industry in 1950 was made up of 95% independent producers, by 1997 99% of poultry was produced by corporate or contracted farmers⁶. Contracted farmers do not own the chickens they raise, nor do they set the rules for how they are raised. So, while their operations may be smaller, they still follow industry standards for factory farms. These industry standards are disturbing on a number of levels not only those of animal welfare. In fact, much of the animal welfare concerns are directly connected to larger concerns of labor rights violations, individual health risk for workers, and for public health in general. The animal agriculture industry, both in the United States and other countries, relies heavily on immigrant labor, labor of local communities, undocumented labor, and even forced labor. This has, in some parts of the industry like slaughterhouses, been a constant in the

² R Jason Richards and Erica L Richards, 'Cheap Meat: How Factory Farming Is Harming Our Health, the Environment, and the Economy' (2011) 4 Kentucky Journal of Equine, Agriculture, & Natural Resources 31, 33.

³ 'Regulatory Definitions of Large CAFOs, Medium CAFO, and Small CAFO' (*Environmental Protection Agency*, 2015) <https://www.epa.gov/sites/production/files/2015-08/documents/sector_table.pdf> accessed 30 July 2019.

⁴ *ibid.*

⁵ Hannah Ritchie and Max Roser, 'Meat and Seafood Production and Consumption' (2019) <<https://ourworldindata.org/meat-and-seafood-production-consumption>> accessed 30 July 2019.

⁶ Brian Levy, 'When the Farmer Makes the Rules' [2000] *The New Rules* 4 <<https://ilsr.org/wp-content/uploads/files/images/nrfall00.pdf>> accessed 30 July 2019.

industry since Upton Sinclair wrote *The Jungle* in 1906. Though the book is remembered for the horrific descriptions of food safety and its influence on the creation of the Meat Inspection Act, the book was intended to expose the manipulation and abuse of immigrant populations in America. Part of this manipulation and abuse is the use of their labor in unsafe and unsanitary conditions for low pay. The reception of *The Jungle* in 1906 is reflective of many attitudes towards the industry today: a concern for public health, but not one for workers. Additionally, there is little discussion outside of animal activist circles of the inherent violence and human risk within factory farming. The first section will look at labor: the normative and legal foundations for labor rights and by extension health, the alienation of the workforce, and the commodification of workers and the subsequent impact on their ability realize their rights. The violation of labor rights directly impacts the health of workers, which, in some cases, is included under the umbrella of labor rights. There are a multitude of health implications from the industry, both directly connected to labor and not. Firstly, the nature of the work, either in concentrated animal feeding lots or in slaughterhouses, requires close contact with biological and hazardous material and, thus, an increased risk for infection and illness. Secondly, the industry as a whole represents a public health risk due to contamination of meat with biological material, pollution of the surrounding environment with biological material, creation of new epidemic threats, and a service as a breeding ground for antibiotic resistant bacteria. Thirdly, the work, particularly in the slaughterhouses, can cause mental health issues in employees. Finally, the nature of the work is physically demanding and is high risk for workplace related injury and disability. The first section of this paper sets forth to examine these issues as inherent aspects to the modern animal agriculture industry and the moral dilemma of justifying these risks as a necessary sacrifice to feed humans. There is startling scientific evidence and investigative reports detailing the health violations and labor violations in the animal agriculture industry, but there is also a philosophical question about the harm and the alienation that is innate in an industry that relies on death.

Section I: The relationship between labor and factory farming

When discussing human rights violations, tradition and instinct typically calls for an evaluation of legal obligations to uphold certain rights, as well as establishing a normative and legislative foundation for what constitutes a human right. The International Covenant on Economic, Social, and

Cultural Rights (ICESCR) firmly codifies the rights to health and labor rights. More specifically, the ICESCR establishes that labor rights include the right to choose your work and that the right to health includes healthy occupational and environmental conditions. The United States has not ratified the ICESCR and, therefore, have not agreed to legal obligations to uphold these rights as such. However, the US has agreed with the principles set forth in the Universal Declaration of Human Rights (UDHR), which is considered the fundamental foundation document for international human rights law. The UDHR does not establish the right to health; however, it does establish a basis for labor laws which directly effect health in the context of workplaces in article 23. Two parts of article 23 are directly relevant to the content of this work. Firstly, the UDHR states that everyone has the rights ‘to free choice of employment’ and ‘favorable conditions of work’⁷. Secondly, it states that ‘everyone has the right to form and to join trade unions for the protection of his interests’⁸. Though it is not explicitly stated in the UDHR, favorable conditions of work would for most people include health and safety measures that protect workers from injury and illness as it was elaborated to include in the ICESCR. Additionally, the protection of trade unions is important to protecting workers ability to improve work conditions, fight for healthcare, and report violations knowing they have the power to create consequences. In these ways, health and labor rights are inextricably linked for workers. There are a multitude of jobs in which there is a risk for workers’ health and safety that is an acknowledged part of the job. Ideally, these risks are minimized as much as possible, workers are given care when their health is affected by their work, the compensation reflects the dangerous nature of the work, and workers are informed of the risks and able to decide whether to work the job anyway. Unfortunately, many industries hide dangers from potential employees and minimize risk only as it is required by law or profit. Other industries can never entirely eliminate risk but are known as risky. The animal agriculture industry is neither recognized for the inherent risk its workers face nor does respect the labor and health rights of its workers.

Section I.I: Alienation in the labor force

The 19th century saw the industrialization of production: the shift from small production and skilled labor to large scale manufacturing and unskilled labor. The animal agriculture industry was

⁷ Universal Declaration of Human Rights (adopted 10 December 1948 UNGA Res 217 A(III) (UDHR) art 23.

⁸ Universal Declaration of Human Rights | United Nations 1948 (General Assembly resolution).

partially impacted by this industrialization, notably in the creation of large slaughterhouses with assembly line style butchering that were centered in urban areas with immigrant populations (such as Chicago and Cincinnati, residents of which still proudly refer to their past reputation as slaughtering cities). However, it was not until the 20th century that ‘factory farms’ came into existence. Different sectors went through the process of industrialization at different points; nevertheless, there are essential similarities for all. From the 19th into the 20th century there was increasing urbanization and movement from the countryside into the city. This meant the open slaughter that was previously standard was increasingly drawing complaints from the rapidly growing urban public. It also meant that there needed to be organized movement from rural growing areas to cities where food supplies were less consistent and animal husbandry was less and less possible for individuals to engage in. At the same time, there were major advances in vaccines, the discovery of antibiotics, and the creation of vitamins: all of which enabled farmers to keep larger herd/flock size. Vaccines and antibiotics meant less risk for outbreaks (financial ruin) and less focus on individual animal care. Vitamins, and the increasing ability to transport goods long distances, meant animals no longer had to graze or rummage outside. Instead farmers could purchase (usually) corn-based feeds fortified with vitamins. When all of these chips were in place, the economic boom of Post-WWII America meant Americans who formerly suffered during the great depression were now able to purchase animal products like never before⁹. At this point post-WWII, slaughtering and processing of animals was already mechanized and many of the large names we now associate with animal products had been established. Tyson Foods, the biggest name in chicken, and Smithfield Foods, the biggest name in pork, were both established in the 1930s. They both started in processing, then in the 1960s they both began the process of vertical integration by contracting farmers in order to ensure consistent supply for their processing plants¹⁰. Uncontracted farmers couldn’t compete, and the market narrowed. Finally, in the 1980s these companies started horizontal integration: buying out their weaker counterparts¹¹. The fundamental shifts to take away from this history lesson are the mechanization

⁹ This is unique to America, Europe was economically devastated, and many countries were focused on decolonialization. In the UK, industrialization of animal agriculture was motivated by a desire to reduce dependence on imports. In other countries, population growth and competition has motivated a shift to factory farming.

¹⁰ Note, ‘Challenging Concentration of Control in the American Meat Industry’ (2004) 117 Harvard Law Review 2643, 2649 <<https://www.jstor.org/stable/4093409?origin=crossref>> accessed 9 September 2019.

¹¹ *ibid* 2648.

and consolidation. Mechanization effectively shifted the labor from well-paid and skilled to low-paying and unskilled. Consolidation created a power concentration in the hands of a few companies allowing them to set the standards for working conditions and practices.

In the United States, factory farms employ socially and economically disadvantaged groups because these are the groups willing to do undesirable work for low wages. Why? Because these groups have few other options for employment. It started as soon as industrialization began in slaughterhouses which hired mainly recent immigrants from Europe, like the Lithuanian protagonist of *The Jungle*, and African Americans, many of whom were fleeing from violence in the post-Civil War south. Pork and chicken processing were focused in the south (with the large exception of pork in Iowa), areas that, up until the 1990s, were demographically composed of white and African American populations and the industry reflected this¹². In each sector (pork, poultry, cattle), workers began to unionize and mostly successfully bargained for higher wages. This process happened at varying times depending on the point in the mechanization and consolidation process each industry was in. Then in the 1980s and 1990s, like many other industries, there were organized plans by companies to eliminate unionized workers. For some this was done by closing plants in urban centers and relocating to rural areas in which there was a new, captive, unionized labor pool. Others, like many of the plants in the south, benefited from the demographic change caused by waves of immigration from South and Central America. In each case, companies were able to lower wages and strip benefits and still find workers for their plants¹³. The 1980s was also a time of even further mechanization in the industry. A lot of credit for the changes goes to the Iowa Beef Processors (IBP) who were arguably the first to mechanize enough of the process to eliminate any of the remaining skill required for butchering work¹⁴. This allowed them to ditch skilled union workers and switch to nonunionized and largely immigrant labor. This shift was reflected in wages: in 1980 meatpackers wages were 17% higher than the average manufacturing wage¹⁵. By 1985 their wages fell to 15% below the average manufacturing wage and it has been a steady decline since, hitting 24% lower in 2002¹⁶. Just as

¹² Human Rights Watch, 'Blood, Sweat, and Fear' (2005) 18-19

<<https://www.hrw.org/reports/2005/usa0105/usa0105.pdf>> accessed 26 June 2019.

¹³ It is important to note that much of these trends take place primarily in the processing sector of the animal agriculture industry, however, these processing companies control the majority of the market, including production.

¹⁴ Watch (n 12) 22.

¹⁵ *ibid* 22.

¹⁶ *ibid* 23.

wages fell, rates of workplace injury rose. When the industry was unionized, workplace injury rates were comparable to other manufacturing jobs, but by the 1990s and early 2000s they had become some of the highest injury rates in manufacturing¹⁷. These changes reproduce changes observed in labor during the industrial revolution. The removal of skill and creativity from labor effectively removed the value in the laborers themselves. Marx described the phenomenon in 1844:

The worker becomes all the poorer the more wealth he produces, the more his production increases in power and size. The worker becomes an ever cheaper commodity the more commodities he creates. The devaluation of the world of men is in direct proportion to the increasing value of the world of things. Labor produces not only commodities; it produces itself and the worker as a commodity...¹⁸.

According to Marx, this leads to one of the four forms of alienation. One's labor is put into an object that exists outside of him and of which he has no control. This is alienation of one's own labor. The object created with labor has value imbued in it by the worker, but the worker has lost their own value in the process. In meat processing plants, workers put their labor into meat products. But as the process becomes more efficient and profitable for owners, workers are increasingly at risk for injury and illness which causes them to be dismissed from their jobs. They have, at that point, put all their labor into creating value in a product and have lost their own value: the final objectification of the worker. In this way, the process of worker's alienation from their products is connected to the disregard for workers health in industrialized animal agriculture. This alienation does not occur for an independent farmer. He can control the products he puts his labor into, and he receives the full value of his labor. So, while independent farmers can still be at risk for work-related health issues, they maintain their value and are neither alienated from their product nor objectified. The objectification of factory farm workers is promoted by the mechanization of the industry, which not only removes skill from the work, making it mindless and repetitive, but also it places human workers as assistants to machinery. The consequences of alienation for the factory farm worker are a loss of health and a distortion of their nature. On top of the alienation described by Marx, which occurs in all factory jobs, there is the element of violence. Industrialized animal agriculture is an industry which relies on

¹⁷ *ibid* 24.

¹⁸ Karl Marx, *Economic & Philosophic Manuscripts of 1844* (Martin Mulligan trans, Progress Publishers 1959) 1 <<https://www.marxists.org/archive/marx/works/1844/manuscripts/labour.htm>> accessed 1 September 2019.

violence towards animals. It forces workers to perform this violence, against most humans' nature, to create their product. Making workers perform violence can not only damage their health, but also rob them of their compassion which aids in the objectification of the worker.

Another form of alienation described by Marx, is the alienation of the worker from his work. The worker's alienation from his labor as described above and the negative effect of his work on his mental state causes him to not enjoy his work and thus his work is coerced¹⁹. In clearer and more expansive terms, as Bertell Ollman puts it, man can no longer exercise agency in choosing his work²⁰. For many working in animal agriculture, this alienation is present *before* the alienation from their product occurs. If, by Marx's definition, coerced or forced labor includes all labor which workers perform as a 'means to satisfy needs external to it [work]'²¹ then nearly all those working in the industry are coerced. There are very few people who work at a poultry processing plant because they find the work satisfying or rewarding in itself, though there are likely more who feel this way in the feeding operations. Additionally, even excluding those who perform the labor to satisfy external needs (i.e. financial needs), there are workers who fit more traditional definitions of coerced labor. For instance, undocumented immigrant labor might literally be unable to get other work due to legal status or might fear being reported by management to law enforcement as a punishment²². Prison labor, which is used through work release programs by poultry processing plants in the South, provides a captive workforce that is unable to unionize or switch jobs. The state of alienation is unnatural. Ollman says alienation is to illness as unalienation is to health²³. Alienation, like any unnatural state, causes distress. It is in itself, an unfavorable working condition. The state of alienation from one's work describes the elimination of free choice in work. Both favorable working conditions and free choice in work are described by the UDHR as human rights. In essence, the alienation of factory farm workers in one way in which the industry can be understood to violate normative understandings of human rights.

¹⁹ *ibid* 3.

²⁰ Bertell Ollman, *Alienation: Marx's Conception of Man in Capitalist Society* (2nd edn, Cambridge University Press 1972) 133.

²¹ Marx (n 18) 3.

²² Will Tucker, 'The Kill Line' *Southern Poverty Law Center* (26 July 2018)

<<https://www.splcenter.org/news/2018/07/26/kill-line>>.

²³ Ollman (n 20) 132.

Section I.II: Dehumanization, hierarchies, and working environment

One of the consequences of alienation is the commodification of workers. The unskilled, repetitive, and mindless work makes the worker an extension of machinery. The workers are faceless, replaceable, and valueless. All the value of the worker has been absorbed by the products. There is duality to this as the animals, whose lives are disrespected and destroyed for a product, become something of value as labor is performed. Yet, at the same time, the workers value as humans is slowly destroyed as their physical capabilities deteriorate from giving value through labor to animals. The transition of value is reflected in the reasons why the kill line may be slowed down. The line is slowed down when the product is compromised, yet when workers complain of pain, injury, or the need for a break there is no pause. According to a survey of poultry workers by the Southern Poverty Law Center (SPLC), 99% of workers said they had no control of the line speed, 12% said supervisors sped up line speed when asked to slow it down, and 8% reported incidents in which employees were threatened or fired for asking to reduce line speed²⁴. Factory farm work is neither prestigious nor well paid, something which increases profits for an industry whose heart and soul is maximizing profit. It also means that companies can capitalize on the existing social hierarchies within the society around them. Naturally, low paying and undesirable work will attract low-skilled, desperate, or marginalized groups. These groups are towards the bottom of the social hierarchy. They are not only poor and working class, but they are largely people of color (African American and Hispanic primarily), immigrants, and some even prisoners. That order is largely the hierarchy as well, people of color are disadvantaged and discriminated against in the US; however, their citizenship provides some protection. Immigrants are regularly abused by employers, who know workers will put up with worse conditions for fear they will lose their visas (or if undocumented, be reported and deported). Additionally, immigrants in the US are increasingly vulnerable to draconian immigration laws and abuse from policing forces. Immigrants may be unable to communicate with managers, be unable to read their employment contracts, be unaware of their rights, or be unaware of how to report abuses. Finally, prisoners (who are disproportionately people of color) are, not only the group treated most poorly and the least able to find other work, but they are also subject of derision from society. This

²⁴Tom Fritzsche, 'Unsafe at These Speeds: Alabama's Poultry Industry and Its Disposable Workers' (2013) 11-12 <https://www.splcenter.org/sites/default/files/Unsafe_at_These_Speeds_web.pdf> accessed 30 July 2019.

can, in the extreme, mean societal disregard for the rights and treatment of criminals²⁵. The system then reinforces these hierarchies through the dehumanization of workers, furthering their self-perception of powerlessness. Dehumanization occurs through alienation, through the disregard for workers health and safety, and through forcing repetitive violence. Workers can internalize these feelings, and some seek to reassert a sense power and dominance through violence against those below them, animals. So, it can become a cycle of violence and reinforcing hierarchies that feeds itself on an endless supply of impoverished workers and helpless animals. Using vulnerable labor pools deters reporting by workers, and it means less interest or care from wider society due to social hierarchies. In the end, alienated, dehumanized, and socially disdained workers coming from already vulnerable background and working in environments that actively cultivate fear, are not likely to organize for their own interests. Even if organization occurs, as long as the pool of possible workers remains large enough, it will ultimately be unsuccessful. Without organization, workers cannot realize their right to form unions to pursue their interests. One of these interests is workplace health and safety. Thus, the cycle continues, and factory farm workers find their health continually put at risk.

Section II: The unique health risks posed by factory farming

Factory farming creates cheap affordable meat so the average American can walk into a Walmart or Kroger and buy a pound of ground beef for \$2.96. But behind the scenes is the process to create a product with the lowest possible overhead. In the past 70 years American agriculture, both animal and otherwise, has been consumed by large argo-corps that have either put family farms out of business or put them on a contact. The result of this can be seen in the increase in numbers of animals contained in operations and the decrease in the space and care given to animals. It has created massive chicken farms in which chickens live on top of each other, surrounded by their own waste and filled with antibiotics to prevent infections that are an unavoidable consequence of keeping animals in such conditions²⁶. The processes in much of the industry have been increasingly mechanized, and some have suggested further mechanization as a solution to the health risks that

²⁵ Take for example, the prevalence of prison rape jokes that normalize violence against criminals and strip them of their humanity. Or taking away the right to vote from felons. These are examples of the cultural disregard for the rights of prisoners.

²⁶ Richards and Richards (n 2) 32.

will be presented further on. However, there is still human contact with animals that presents an opportunity for harm to occur to human health.

Section II.I: Worker's exposure to hazardous materials

Working on either small family farms or large industrialized farms in animal production, there is an observed risk to exposure to infectious material due to the biological material in animal waste, fluids, and dander. This can mean anything from allergen issues (imagine entering a barn filled with cows over winter and the dust they would produce) to serious infectious diseases that can cause permanent health issues or death. The mechanization of the industry has in some ways minimized this particular risk by having things like slotted floors or enforcing wearing protective gear. A 1980 study of Vermont dairymen found that farmers from smaller farms were more likely to be 'older, have more respiratory symptoms, less satisfactory pulmonary function, and more serologic evidence of exposure to farmer's lung antigens' than farmers from larger farms²⁷. Though the study does not provide further analysis of this, it would make sense that farmers on smaller farms are more likely to have personal stake in the farm that would motivate them to work past when others might leave the industry. The same study showed that non-smoking dairy farmers had 30 percent more wheezing and shortness of breath and 37 percent more chronic sputum production than their factory working counterparts²⁸. There is no exhaustive research into the long-term effects of working on dairy farms in terms of effects on the farmers overall health or indeed the long-term costs of chronic respiratory distress financially. Such findings would be useful, particularly as the healthcare system in the United States is known for its high costs of care. The correlation between length of employment and chance of infection is a natural one, as generally speaking, the longer one is exposed to infectious material the more chances there are for infection. A 2018 study in Nigeria of slaughterhouse workers found this to be true. They found that rates of blood prevalence of anti-*Toxoplasma gondii* were higher the longer workers were employed, higher in immune-compromised HIV positive workers, and higher in those involved in the actual flaying and evisceration of the animals²⁹. Abattoir workers, while there is not research comparing their infection rates to feed lot workers, are exposed most directly to

²⁷ FL Babbott and others, 'Respiratory Symptoms and Lung Function in a Sample of Vermont Dairymen and Industrial Workers' (1980) 70 American Journal of Public Health 241, 241.

²⁸ *ibid* 244.

²⁹ US Ekanem and others, 'Seroprevalence of Anti-Toxoplasma Gondii IgG Antibody and Risk Factors among Abattoir Workers in Uyo, Southern Nigeria' (2018) 21 Nigerian Journal of Clinical Practice 1662.

infectious material as the slaughtering of the animals exposes the workers to feces and blood. Though there are ways to minimize contact, through protective gear, sterilization, and style of slaughter, there is no way to eliminate risk. There have been a multitude of studies showing that workers in industrial hog operations are not only exposed to *Staphylococcus aureus* on a regular basis but carry the bacteria in their nostrils. This on its own should not be particularly alarming as the bacteria can be found in many people's nostrils normally. However, due to the antibiotic dosing practices of industrial pig farming, there are now strains of anti-biotic resistant *Staph.* present as well³⁰. Antibiotic resistant strains of bacteria, particularly one as widespread and risky as *Staph.* presents a potential health crisis in the future for both farm workers and their families. A 40-day study of industrial hog farm workers and their family members studied the presence of MDRSA (multiple drug resistant *Staphylococcus aureus*) and found increased presence of the bacteria strains in hog workers and their families compared to the general population³¹. The study also found a decreased risk correspondent with the use of face masks and the pressure washing of the barn, while an increased risk was found in workers who came in direct contact with the hogs through injecting the hogs with medicine³². This suggests that exposure for human populations to anti-biotic resistant strains of bacteria can be reduced through the use of proper protective respiratory gear, reduced animal contact, and cleaning procedures. However, the exposure is still there and the issue of creating new strains of antibiotic resistant bacteria through the industry standard of heavy antibiotic use to prevent animal illness, remains. As does the issue of workers carrying the strains home to their families and the greater population in general. Unfortunately, though this and other studies conducted in the United States suggests face masks and protective gear carry a positive effect on nasal passage carriage of bacteria, there are three studies conducted in Europe which show an opposite correlation³³. One of these studies tested pig farmers from nine different countries across the world

³⁰ Maya L Nadimpalli and others, 'Face Mask Use and Persistence of Livestock-Associated *Staphylococcus Aureus* Nasal Carriage among Industrial Hog Operation Workers and Household Contacts, USA' (2018) 126 *Environmental health perspectives*.

³¹ *ibid.*

³² *ibid.*

³³ Olivier Denis and others, 'Methicillin-Resistant *Staphylococcus Aureus* ST398 in Swine Farm Personnel, Belgium.' (2009) 15 *Emerging infectious diseases* 1098 <<http://www.ncbi.nlm.nih.gov/pubmed/19624929>> accessed 18 August 2019; MWH Wulf and others, 'Prevalence of Methicillin-Resistant *Staphylococcus Aureus* among Veterinarians: An International Study.' (2008) 14 *Clinical microbiology and infection : the official publication of the European Society of Clinical Microbiology and Infectious Diseases* 29 <<http://www.ncbi.nlm.nih.gov/pubmed/17986212>> accessed 18 August 2019; BAGL Van Cleef and others, 'High Prevalence of Nasal MRSA Carriage in

and found MRSA strands present in over 12% of participants with the majority coming from Europe (both participants and those who tested positive)³⁴. These strands of MRSA found are evolutionarily different from strains found in hospitals and according to the authors of the study represent a new 'zoonotic' source of infection and a serious international health threat, particularly for those working in contact with swine³⁵. The risk for farm workers in terms of exposure can also be expanded to other hazardous materials besides infectious ones. For instance, those produced by animal waste, mainly ammonia and hydrogen sulfide. Short-term ammonia exposure can cause respiratory distress while long-term exposure can result in permanent damage to the lungs, blindness, or death. Short-term exposure to hydrogen sulfide can cause headache, nausea, and eye and throat irritation and long-term exposure can cause serious damage to the central nervous system. This year there was a long-term study published measuring the exposure risk to these gases for swine workers in confined housing facilities. The study found that while feeding and weighing the pigs, workers exceeded the short-term exposure limits to ammonia and hydrogen sulfide³⁶. The short-term exposure limit for hydrogen sulfide was also exceeded by workers when moving manure³⁷. Though respirators should be used, in this case the only solution for preserving the health of workers is to shorten the amount of time they are required to work on each task.

The nature of animal farming means concentrated levels of biological material, this material can be transferred to human workers through direct contact with animals or animal bodily fluids/waste. As in any enclosed space, animal enclosures are filled with dust and just as dust found in a human home is composed of biological and inorganic particles so is the dust inside animal housing facilities. Large scale confinement for food animal production has not always been the industry norm. The industrialization and commercialization of the industry in the past century has meant a change in the rearing practices, including confinement. Starting in the 1970s there was a shift in US hog production from open lot and pasture to completely confined³⁸. This change went hand-in-hand with consolidation

Slaughterhouse Workers in Contact with Live Pigs in The Netherlands.' (2010) 138 *Epidemiology and Infection* 756 <<http://www.ncbi.nlm.nih.gov/pubmed/20141647>> accessed 18 August 2019.

³⁴ Wulf and others (n 33).

³⁵ *ibid.*

³⁶ Alvin C Alvarado and Bernardo Z Predicala, 'Occupational Exposure Risk for Swine Workers in Confined Housing Facilities.' (2019) 25 *Journal of Agricultural Safety and Health* 37 <<http://www.ncbi.nlm.nih.gov/pubmed/30893975>> accessed 29 July 2019.

³⁷ *ibid.*

³⁸ Kendall M Thu, 'Public Health Concerns for Neighbors of Large-Scale Swine Production Operations' (2002) 8 *Journal of Agricultural Safety and Health* 175, 176.

of the industry as shown by the decline in numbers of hog producers in the second half of the 20th century while hog production numbers were static³⁹. The full-scale confinement of hogs, and other animals meant an increase in dust. Workers on farms began to be exposed to much higher levels of dust inhalation, which is a health risk on its own. Additionally, the dust found in animal housing facilities contains large amounts of bacteria that present a moving risk to workers health. One way to measure the risk level is through measuring the endotoxin concentrations in dust samples collected from inside farms⁴⁰. Both the endotoxins and the dust itself must be kept below certain inhalation levels to be deemed safe, going above these levels means increasing risk of infection and of Organic Dust Toxic Syndrome (ODTS)⁴¹. Since the 1970s there have been over 30 studies on ODTS and other dust related illness in swine workers that have consistently shown a significantly increased risk for ODTS and respiratory illness in swine workers⁴². One study from 1990, found that 34% of swine workers had ODTS, while 20% had a chronic cough, and 87% reported a work-related cough (cough was only present while in confinement)⁴³. It is clear from these studies that dust levels and the subsequent inhalation of dust by animal farm workers present a substantial and consistent threat to workers health. To minimize this risk to workers there needs to first be monitoring of dust levels in confined spaces. There is not a set industry standard for risk levels with endotoxin concentrations in dust. However, there are recommended levels for various conditions, which according to O'Shaughnessy are, '10 000–20 000 EU m-3 [for ODTS]; acute bronchitis can occur at levels of 1000–2000 EU m-3; and mucous membrane irritation occurs at levels of 200– 500 EU m-3'⁴⁴. His study of swine finishing operations looked at five typical farms in central Iowa over the course of two years with a hog capacity of 1248⁴⁵. The study found that all of the farms had levels measuring over 1000 EU m-3, when workers were involved in the tasks of hog load out (loading the hogs onto the

³⁹ *ibid.*

⁴⁰ Endotoxins are a part of the exterior wall of gram-negative bacterial pathogens (for example e coli and salmonella). Their presence indicates the presence of such bacteria and can represent a risk of infection from those bacteria or in themselves.

⁴¹ Patrick O'Shaughnessy and others, 'Assessment of Swine Worker Exposures to Dust and Endotoxin during Hog Load-out and Power Washing' (2012) 56 *Annals of Occupational Hygiene* 843.

⁴² Thu (n 24) 176.

⁴³ Kelley J Donham and others, 'Preventing Respiratory Disease in Swine Confinement Workers: Intervention through Applied Epidemiology, Education, and Consultation.' (1990) 18 *American Journal of Industrial Medicine* 241 <<http://www.ncbi.nlm.nih.gov/pubmed/2220828>> accessed 19 August 2019.

⁴⁴ O'Shaughnessy and others (n 41).

⁴⁵ *ibid.*

trucks that take them to slaughter) and power-washing⁴⁶. Considering the earlier report that showed a reduced rate of nasal cavity MRSA levels with power-washing, this report shows a risk in a task designed to limit risk, this is a worrying contradiction. Power-washing is an important step in maintaining the cleanliness of the barns and minimizing the quantity of particulates, however, the act itself causes whatever particulates that were on the ground to be partially aerosolized. Identifying the activities during which workers are most at risk for contact with dust, endotoxins, bacteria, and gases can be the first step in implementing higher safety precautions and minimizing the risk of these activities. However, these safety precautions are not proven to be effective in all circumstances, and in case of power-washing, can be proven to be moment of risk in themselves. Large animal breeding and rearing operations require a multitude of tasks that put workers in direct contact with animals and the byproducts of the confinement of large number of animals indoors. As previously mentioned, this means exposure to potentially dangerous bacteria and gases. These issues of production (of gases and bacteria) cannot be eliminated as they are unavoidable by products of the large animal production that is required to sustain the human demand for animal product consumption. While there is some hope that the risk posed to workers can be minimized by regulations on workplace procedures, there is no hope that the risk can be reduced to a point where the threat to workers becomes statistically insignificant from a standpoint of workers exposure and health risk.

Section II.II: Public health risk

The risk directly borne by workers is greater than that borne by the general population. However, there are public health crises and general risks to public health which can be directly linked to the animal agriculture industry even as the industry has grown more regulated and mechanized. The main areas that the industry represents a threat to public health are: as incubators of pandemics, contaminated food products, creation zones for anti-biotic resistant bacteria, and environmental pollutants. Animal to human contact is associated with risk for zoonotic infection, which can happen with wild animal populations and domestic animal populations. Naturally, human contact with domesticated animals is higher than human contact with wild animals. Animal pathogens are a significant concern to human health as 40% of emerging pathogens affecting humans have been

⁴⁶ *ibid.*

determined to have animal or animal product origins in the past decade⁴⁷. Though there is some concern for wild zoonotic origins, the main area of concern is domesticated animals in food production. As previously mentioned, the emergence large animal operations in the 20th century has created an environment which amplifies the issues inherent in food animal production while creating new issues as the process becomes more mechanized. Domesticated food animals are hosts to pathogens originating in their environment as well as for pathogens transferred from wild animals. In the past century there have been seven global pandemics with origins in domesticated food animal production⁴⁸. The death count for influenza pandemics with domestic animal origins is in the millions. Though humans have interacted with domesticated animals since domesticating our food sources occurred, the advent of large-scale industrial farms presents a greater threat than before. According to Graham et al., 'there is substantial evidence of pathogen movement between and among these industrial facilities, release to the external environment, and exposure to farm workers' which contradicts the view that industrial facilities are more 'bio secure' than small scale or family run farms⁴⁹. Though human to animal contact is lower (as mechanization means fewer farmers) on large farms, the concentration of pathogens and biological material is much higher, which makes the contact that does occur riskier⁵⁰. Even if the industry managed to mechanize production to the point of no human animal contact or only contact while wearing intensive protective gear, there are other vectors for domestic animal to human pathogen transmission. Animal operations do not exist in isolation and as such there is interaction between domestic food animals (and their waste) with wild animals, namely avian and insects⁵¹. There are recorded instances of this occurring among wild bird and poultry farms in which low pathogenic avian influenza is transferred from wild fowl to domesticated poultry through direct and indirect contact⁵². The low pathogenic avian influenza can mutate into high pathogenic avian influenza and the environment provided by industrial poultry

⁴⁷ Louise H Taylor, Sophia M Latham and Mark EJ Woolhouse, 'Risk Factors for Human Disease Emergence' (2001) 356 *Philosophical Transactions of the Royal Society B: Biological Sciences* 983.

⁴⁸ JE Hollenbeck, 'Concentrated Animal Feeding Operations (CAFOs) As Potential Incubators for Influenza Outbreaks' (2013) 11 *Trakia Journal Of Sciences* 205.

⁴⁹ Jay P Graham and others, 'The Animal-Human Interface and Infectious Disease in Industrial Food Animal Production: Rethinking Biosecurity and Biocontainment' (2008) 123 *Public Health Reports* 282.

⁵⁰ *ibid* 282.

⁵¹ Jessica H Leibler and others, 'Industrial Food Animal Production and Global Health Risks: Exploring the Ecosystems and Economics of Avian Influenza.' (2009) 6 *EcoHealth* 58 <<http://www.ncbi.nlm.nih.gov/pubmed/19437076>> accessed 19 August 2019.

⁵² *ibid*.

production, that of thousands of confined birds, is ideal for the rapid viral replication that allows the mutation to occur⁵³. This is just one example of the possible threat that industrial animal food production poses to public health in the realm of biosecurity and pandemics. These types of viral pathogenic outbreaks are difficult to minimize, though safety gear for individual workers is necessary to minimize risk, it does not solve the problem of biocontainment. There is so much effort put into trying to suggest solutions for the health risks created by industrialized animal agriculture, but little implementation of suggestions nor analysis of changing food production completely. The industry's impact on public health and the health of its workers stems almost entirely from or is multiplied by, the industrialization of the process. Increasing the size of production and switching from small farms to large corporate farms means consolidation geographically. Instead of small chicken, pig, and beef/dairy farms spread throughout the country, poultry production is concentrated in the southeast (mainly Alabama, Arkansas, Georgia, and Mississippi), pig production is mainly in Iowa and North Carolina, and cattle are found mainly in the southwest for beef and California and Wisconsin for dairy. The geographical concentration and the concentration of large numbers of confined animals has already been established as a ground zero for viral pathogens and viral replication, in the same way it is a ground zero for anti-biotic resistance bacteria. The enclosure and crowding of hundreds or thousands of animals in conditions we would find appalling for non-food animals leads to injured and sick animals. Due to how common this occurrence is, instead of individually treating each animal, factory farms dose feeds and water supplies with antimicrobials (including antibiotics). This practice has long been recognized as irresponsible as it leads to imprecise dosing as well as the creation of antibiotic resistance in different bacterial strains⁵⁴. The United States Federal Drug Administration reported in 2011 that 80% of microbials in the US were sold for animals⁵⁵. There are millions more animals in the United States than humans and those animals often weigh more therefore this fact is not alarming in itself. However, it also means that animals are a significant source of antibiotic resistance. According to the Center for Disease Control, one in five antibiotic resistant infections are caused by bacteria from food and animals⁵⁶. There are two main bacterial strains that the CDC has

⁵³ *ibid.*

⁵⁴ David C Love and others, 'Dose Imprecision and Resistance: Free-Choice Medicated Feeds in Industrial Food Animal Production in the United States' (2011) 119 *Environmental Health Perspectives* 279.

⁵⁵ FDA, 'Antimicrobials Sold or Distributed for Use in Food-Producing Animals' [2016] FDA Report.

⁵⁶ CDC, 'Antibiotic Resistance: From the Farm to the Table' (CDC, 2014) <<https://www.cdc.gov/foodsafety/pdfs/ar-infographic-508c.pdf>> accessed 22 August 2019.

named the antibiotic resistance threat level as 'serious' those being: *Campylobacter* and non-typhoidal *Salmonella*⁵⁷. Antibiotic resistant *Campylobacter* infected an estimated 310,000 Americans in 2013 and is directly linked to antibiotic use in animals with the bacteria spread through contaminated food (like undercooked chicken) and through contaminated water⁵⁸. A 1992 study of grocery store boiler chicken found *Campylobacter* on 49 of 50 carcasses⁵⁹. Though this was thankfully not the antibiotic resistant strain, the prevalence of the bacteria on chicken carcasses shows the same potential for the existence of antibiotic resistance strains, particularly as they grow more common. Non-typhoidal *Salmonella* is a common threat of raw eggs, undercooked chicken, and contaminated foods across the globe. In 2013 there were 100,000 cases of infections of antibiotic resistant non-typhoidal *Salmonella* for which the medical costs totaled \$365,000,000⁶⁰. That is a significant financial burden, particularly in a country in which there is no socialized healthcare system. Both of these bacterial infections typically cause abdominal cramping, (bloody) diarrhea, and fever⁶¹. The mortality rate for infection is low, but resistance to antibiotics is especially dangerous for those experiencing severe cases that require hospitalization (as antibiotic strains are more likely to do) and in people more medically at risk (i.e. the elderly, children, immunocompromised)⁶². Though the medical community is continuously searching for new treatments for bacteria infections, antibiotic resistance threatens to cause illness and deaths from diseases that have been diminished by the discovery of antibiotics. There is some positive news for antibiotic use in industrial animal farming in both the US and the EU. Up until 2017, antimicrobials were used in the US animal agriculture industry for growth promotion but have since been made illegal without a prescription from a veterinarian⁶³. Unfortunately, antibiotics may still be used in the name of 'disease prevention' something that allows the widespread and near indiscriminate use of antimicrobials for animals to continue⁶⁴. The United

⁵⁷ CDC, 'ANTIBIOTIC RESISTANCE THREATS in the United States' (2013) <<https://www.cdc.gov/drugresistance/threat-report-2013/pdf/ar-threats-2013-508.pdf>>.

⁵⁸ CDC, 'Antibiotic Resistance: From the Farm to the Table' (n 42) 61-62.

⁵⁹ Norman J Stern and J Eric Line, 'Comparison of Three Methods for Recovery of *Campylobacter* Spp. from Broiler Carcasses.' (1992) 55 *Journal of food protection* 663 <<http://www.ncbi.nlm.nih.gov/pubmed/31084121>> accessed 22 August 2019.

⁶⁰ CDC, 'ANTIBIOTIC RESISTANCE THREATS in the United States' (n 43) 71.

⁶¹ *ibid* 61 and 71.

⁶² *ibid* 62 and 72.

⁶³ Maisie Ganzler, 'Europe's Move on Antibiotic Use in Livestock Leaves US in the Dust Again' *Forbes* (1 November 2018) <<https://www.forbes.com/sites/maisieganzler/2018/11/01/europes-move-on-antibiotic-use-in-livestock-leaves-u-s-in-the-dust-again/#65c259661a53>> accessed 21 July 2019.

⁶⁴ Michael J Martin, Sapna E Thottathil and Thomas B Newman, 'Antibiotics Overuse in Animal Agriculture: A Call to Action for Health Care Providers' (2015) 105 *American Journal of Public Health* 2409.

States is one of the largest producers in the world of animal products and sets the industry standard for many developing countries who have begun the process of industrializing or mechanizing their industry. That is part of the reason why any steps the United States takes in improving the industry can have an impact outside its borders and why what happens in the US is reflective of the industry elsewhere. The European Union is currently leading the way in regulations and has passed a bill for 2023, that aims to limit the abuse of antibiotics specifically as a way to compensate for poor conditions and to minimize the growth of antibiotic resistant bacteria⁶⁵. Unlike the American law passed in 2017, the EU will forbid the use of antibiotics as a preventative measure and only allow it to be used as prescribed by veterinarians for individual animals⁶⁶. These are all steps in the right direction, however, they bring to light another issue for public health caused by industrial animal agriculture: waste disposal.

The waste by-product of the animal agriculture industry is massive, for perspective, daily hog waste from farms in 1996 in eastern North Carolina was as much as the human waste from the entire state of California (31 million at the time)⁶⁷. Farms becoming geographically and numerically concentrated in the past century has created a change in waste disposal. Animal manure continues to be the fertilizer of choice for agriculture. There are three categories of systems of animal waste disposal: solid, slurry, and lagoon. Solids are mainly composed of bedding and feces and can go straight to application on agricultural land, while slurry and lagoons have a higher water content from urine, secretions, and drinking or flush water and can be used for irrigation or fertilization⁶⁸. As one can imagine, these waste products contain a massive amount of biological material, including the infectious material mentioned previously as well as unprocessed antibiotics or other medications. This means if not treated or improperly treated the waste can contaminate the food grown where it was used as irrigation or fertilizer. Last year there was an outbreak of *e. coli* associated with romaine lettuce grown in California. The outbreak was tracked to an agricultural water reservoir, though the CDC did not discover the source of contamination of the reservoir precisely, it is a zoonotic source

⁶⁵ Ganzler (n 63).

⁶⁶ *ibid.*

⁶⁷ John D Burns, 'The Eight Million Little Pigs-A Cautionary Tale: Statutory and Regulatory Responses to Concentrated Hog Farming' (1996) 31 Wake Forest Law Review 851, 852 <www.NationalAgLawCenter.org> accessed 22 July 2019.

⁶⁸ X Jiang, Z Chen and M Dharmasena, 'The Role of Animal Manure in the Contamination of Fresh Food' in John Sofos (ed), *Advances in Microbial Food Safety*, vol 2 (Woodhead Publishing 2015) 314.

and the water likely is partially made up of animal waste⁶⁹. There are outbreaks of *e. coli* and *Salmonella* in both meat and produce every year, but the source is nearly always zoonotic in origin⁷⁰. The pathogens are not limited to bacteria like *e. coli* and *Salmonella* but also viruses, protozoans, and helminths⁷¹. Treatment and management of animal waste is an important part of managing outbreaks of foodborne illness and the CDC does a great job investigating outbreaks as they occur and minimizing risk. However, the risk does not only lie in applying waste as irrigation water or fertilizer. The lagoon type management system has grown more popular as animal facilities have expanded. The lagoons are essentially ponds of animal feces, urine, bedding, hair, secretions, and water (used to clean out the barns or slaughterhouses). These ponds emit a stench that permeates the surrounding community while contaminating groundwater with pathogens through absorption, overflow in rainy weather, and evaporation in the sun⁷²⁷³. The people who live near CAFO's and agricultural fields, which use fertilizer from CAFO's are exposed to the biological material in the waste, particularly as these operations have a reputation for polluting water sources⁷⁴. Pollutants to the air from CAFOs can cause respiratory illness in those who live near CAFOs⁷⁵. The chemical compounds emitted by CAFOs can also cause neurological symptoms, and a 1995 study found that subjects living near CAFOs and able to smell them 'reported significantly more tension, more depression, more anger, less vigor, more fatigue, and more confusion than control subjects as measured by the POMS [Profile of Mood States]'⁷⁶. The water and air pollution are currently under the purvey of the Environmental Protection Agency (EPA). However, animal agriculture seems to get the right to play by their own rules. For instance, there are three laws governing air pollution from CAFOs: Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA, also known as the Superfund Act), the Emergency Planning & Community Right to Know Act (EPCRA), and the

⁶⁹ CDC, 'Outbreak of E. Coli Infections Linked to Romaine Lettuce' (CDC, 2019)

<<https://www.cdc.gov/ecoli/2018/o157h7-11-18/index.html>> accessed 30 July 2019.

⁷⁰ There have also been outbreaks in pre-cut or packaged foods that have been contaminated as a result of human mishandling along the supply chain. An 2012 report looked specifically at norovirus outbreaks (not bacterial infections) https://wwwnc.cdc.gov/eid/article/18/10/12-0833_article.

⁷¹ Jiang, Chen and Dharmasena (n 54) 316.

⁷² Burns (n 67).

⁷³ Jiang, Chen and Dharmasena (n 68).

⁷⁴ Richards and Richards (n 2) 46.

⁷⁵ Pew Campaign on Human Health and Industrial Farming, 'Putting Meat On The Table: Industrial Farm Animal Production In America' (2008) 17

<https://www.pewtrusts.org/~media/legacy/uploadedfiles/phg/content_level_pages/reports/pcifapfinal.pdf.pdf> accessed 24 August 2019.

⁷⁶ Susan S Schiffman and others, 'The Effect of Environmental Odors Emanating from Commercial Swine Operations on the Mood of Nearby Residents' (1995) 37 Brain Research Bulletin 369, 369.

Clean Air Act (CAA)⁷⁷. The EPA then passed a law allowing CAFOs to be exempt from reporting emissions under CERCLA⁷⁸. This was officially codified by the EPA in 2018, then in June of 2019 the EPA codified an amendment to EPCRA exempting factory farms from reporting emissions from animal waste⁷⁹. The current administration has a practice of weakening EPA legislation across many sectors, particularly when it means large corporations will be able to profit. Sadly, this means that rural Americans are being left to suffer the consequences to their health. Considering the higher rates of poverty found in rural American and the lack of healthcare infrastructure (and high healthcare costs) the impact of CAFOs on already struggling people is particularly worrying⁸⁰. Many of these CAFOs are the biggest or only employer in the area, which makes local governments hesitant to go after them legally and mean workers have little choice in employment.

Public health is threatened from sources directly connected to industrialized animal agriculture. From pandemics, food safety, and pollution, animal agriculture practices have put people in danger, cost the lives of millions, and cost unknown (but likely massive) amounts in medical care. Increased regulation seems to be the default response to all issues connected to the industry. However, even if regulation manages to be passed, not only in the United States but worldwide, the ways in which the industry functions will continue to create massive issues that can only be minimized at best. The concentration of animals in feeding and slaughtering operations has created great opportunity for the growth and distribution of pathogens and pollutants. The waste created by animals will continue to pose a problem for disposal and treatment, and the rapid viral replication will continue to occur when thousands of animals are confined in a space together. The real question is: is the profit created by industrial animal farming and our supply of cheap meat worth the cost to the health of our communities?

Section II.III: Mental health of workers

⁷⁷ Carrie Hribar, 'Understanding Concentrated Animal Feeding Operations and Their Impact on Communities' (2010) 7 <https://www.cdc.gov/nceh/ehs/docs/understanding_cafos_nalboh.pdf> accessed 24 August 2019.

⁷⁸ *ibid* 7.

⁷⁹ EPA, 'CERCLA and EPCRA Reporting Requirements for Air Releases of Hazardous Substances from Animal Waste at Farms' (*EPA*, 2019) <<https://www.epa.gov/epcra/cercla-and-epcra-reporting-requirements-air-releases-hazardous-substances-animal-waste-farms>> accessed 24 August 2019.

⁸⁰ Campaign on Human Health and Farming (n 61) 41.

One of the behaviors considered a warning sign for serial killers and violent repeat offenders is the torture, mutilation, and killing of animals. This behavior is something that has been long been documented in killers and is widely known. It may be controversial and emotive to compare the torture of animals by serial killers to the mechanized slaughter of animals by hardworking Americans. However, there needs to be discussion about the potential psychological consequences of requiring people to kill hundreds to thousands of animals a day. How can Americans look at organizations like PETA with disgust because they euthanize thousands of abandoned shelter animals a year, but don't look at the animal agriculture industry the same way? There are two distinctions that people use to separate the examples of kill shelters and animal abusers from the killing that occurs in slaughterhouses and meatpacking: purposeful killing versus non-purposeful killing and 'humane' killing versus prolonged/torture killing. The first argument is driven by the idea that our consumption of meat, and therefore the slaughter of food animals, is necessary for human survival. That idea in itself is debated by vegan and plant-based eaters, but even so, many argue that human desire for meat consumption is enough of justification regardless of necessity. There has been quite a bit written about the morality of animal agriculture and of animal rights, which is relevant in a discussion about the animal agriculture industry. Notably, Peter Singer popularized the philosophical idea of animal rights in his 1975 book *Animal Liberation* in which he argues that the sentience and ability to feel pain in animals should grant them equal consideration to humans⁸¹. In a work that is attempting to examine affronts to human rights in factory farming it may seem inappropriate to incorporate discussion about the rights of animals. In the interest of staying on topic, the first point about the necessity of eating meat and the debate surrounding diets, human desire, and animal sentience cannot be thoroughly examined. However, there is a connection with the philosophical justifications used to support mass slaughter of food animals and the possible psychological effects slaughtering. The favoring of one's own species over other species of animal is called 'speciesism', which Singer suggests is analogous with racism and should similarly be recognized as unjust⁸². Speciesism can be gradient, just as racism can be, for instance we might highly value animal companions lives and safety while viewing cows as cute but ultimately a food source and then seeing pigeons as worthless pests. Human animals place themselves at the top of the hierarchy, with most people typically considering

⁸¹ Peter Singer, *Animal Liberation: The Definitive Classic of the Animal Movement* (3rd edn, Open Road Integrated Media 2015).

⁸² *ibid* 32.

companion animals (mainly dogs and cats) secondary but worthy of protective legislation. In the same way, people might see wild animals worthy of protection but only when they are endangered. A dog, a cow, and a pigeon are all capable of feeling pain and all have shown intelligent behavior. The justification for valuing the cow over the pigeon and the dog over the cow are based on a belief (usually culturally or emotively formed) that one species is better than another. In this way there are similarities between racism and sexism. Comparing racism and sexism to speciesism is ridiculous to many, often those who are fighting for equality and see the comparison as trivializing the suffering and struggles caused by racism and sexism. Singer, and many animal activists would counter that, the suffering faced by non-human animals is significantly higher than the suffering of human just by sheer numbers. However, our speciesist mindset sees the lives of non-human animals as being worth too little to warrant such a comparison. So how is speciesism significant to the mental health of factory farm workers? Engaging in behaviors that legitimize and normalize personal beliefs further entrench and sanction those beliefs. Workers, particularly meatpackers, in industrial animal agriculture must justify the treatment of animals that their work requires of them. For meatpackers/slaughterhouse workers this means killing and cutting apart hundreds to thousands of animals daily in a mechanized fashion. If it were humans being systemically slaughtered in this fashion, we would describe the process that allowed workers to compartmentalize or justify the killing of innocents as 'dehumanization'. However, when the 'victims' are animals, they are already dehumanized and speciesism says that their lack of personhood means they can be dominated, used, and killed as humans please. It is not surprising that animal rights philosophers have suggested a positive correlation between speciesism and other forms of bigotry like racism, homophobia, and sexism. Just how these belief systems interact is difficult to fully understand, but Peter Singer described one type of intersection:

We have strong hierarchical tendencies. We like to think that there is always someone below us, and for many people, having power over others seems, regrettably, to reaffirm their sense of self-importance and thus to make them feel good. That may be a psychic need that finds an outlet in racism. For some people, it also finds an outlet in the abuse of animals. In particular, jobs in factory farms and poultry processing plants are poorly paid, high pressure and low status. That may be why, year after year, undercover investigators in factory farms and slaughterhouses

continue to find evidence of the most atrocious abuse, like workers bashing pigs with steel pipes, or using live chickens as footballs⁸³.

The need for power and affirmation of self-importance manifests itself through abuse, whether that abuse is against animals and supported by speciesism or against a woman supported by sexism⁸⁴. There has been almost no work examining the connection between racism/sexism and speciesism beyond that done by animal welfare and rights philosophers like Bernard Rollin and Peter Singer. However, this year a group of moral philosophy and psychology academics released a study that found 'positive correlations between speciesism and prejudicial attitudes such as racism, sexism, homophobia, along with ideological constructs associated with prejudice'⁸⁵. I was unable to find studies that examined the interplay, for instance if people had speciesist beliefs validated and encouraged would that have a causative effect on prejudicial attitudes? Therefore, it cannot be said unequivocally that workers in animal agriculture, an industry and work that unquestionably relies on speciesist beliefs to function, are correspondingly encouraged in their other prejudices. Nevertheless, the implications of the study suggest that there are unexamined psychological implications of speciesism, particularly as it is used for justifying socially accepted and mechanized violence toward animals by workers. Performative violence that is rationalized by a hierarchical system based on emotional distinctions of superiority may perhaps have implications for workers interactions with the outside world, hierarchies within that world, and the legitimacy of violence within their believed hierarchies.

The comparison of animal abusers to meatpackers is one that might seem unkind to workers and hysterical to consumers. For one, workers do not kill animals because they enjoy killing animals, they do it because it pays their bills. Secondly, the animals are not tortured to death or subjected to prolonged deaths. Unfortunately, something done for work does not negate the psychological effects of the actions and those actions often include the intentional or unintentional suffering of animals. People react largely with disgust when they hear of animal abuse, and the past decades have seen

⁸³ Peter Singer and George Yancy, 'Peter Singer: On Racism, Animal Rights and Human Rights' *New York Times Opinion* (New York, 27 May 2015) <<https://opinionator.blogs.nytimes.com/2015/05/27/peter-singer-on-speciesism-and-racism/>> accessed 4 September 2019.

⁸⁴ For animals this abuse is physical, obviously abuse towards other humans goes far beyond physical abuse and can be verbal, mental, and financial abuse.

⁸⁵ Lucius Caviola, Jim AC Everett and Nadira S Faber, 'The Moral Standing of Animals: Towards a Psychology of Speciesism' (2019) 116 *Journal of Personality and Social Psychology* 1011.

many countries introduce legislation that punishes abusers of domestic animals. In the United States, these laws vary on a state to state basis, however, most have exceptions for farmed animals. There are two federal laws that include protections for farmed animals. The first is the “28 Hour Law” which refers to the time before animals being transported for slaughter must be allowed to exercise and be given food and water. The second is “The Humane Slaughter Act” of 1958, which requires that animals be stunned before slaughter, so they do not feel pain, by single blow, bolt gun or electrical stunning⁸⁶. Both these laws have exemptions for poultry animals, so poultry, the largest category of food animals, can be treated and killed in any manner workers or management please. Undercover investigations and interviews with workers have revealed horrendous abuses of animals across the industry, but particularly with poultry animals who have no protections under the law. These investigations have revealed both legal abuses (injured animals, crowding, living in waste, abuse of chickens) and illegal abuses (beating pigs with metal rods). These conditions are not observed only in the United States, a recent investigation of several UK farms with additional high welfare certifications revealed, not only chickens in unacceptable conditions (EU legislation does have protection for farmed animals from abuse and requires proper euthanasia of injured animals and removal of carcasses), but also active animal abuse by farm workers⁸⁷. The descriptions of abuse of horrifying: leaving animals to die slowly and painfully when carrying out welfare checks, violently throwing chickens on the ground and in cages, workers kicking chicks, crushing their wings and legs, workers laughing and cursing at suffering birds, a worker urinating into a bucket before tossing injured chicks into it⁸⁸. There is no talk of legal consequences for these farms, only of giving them 28 days to comply to rules of euthanasia and ‘proper training’ for employees. The conditions of these chickens are a consequence of industrialized animal agriculture. The crowding, sickness, injury, filth, and death are all normal aspects of the industry. It is presumed that workers will remove injured chickens and ‘humanely’ kill them as required by EU law (though not by US law, nor many other countries with little or no animal welfare laws). The reality is, that workers treat the animals as they are perceived by the industry, as numbers, commodities, objects, and lesser beings whose lives are valuable only in the

⁸⁶ Singer (n 67) 198.

⁸⁷ Conrad Duncan, ‘Tesco Suspends Chicken Sales from “Ethical” Farm after Video Shows Injured Birds Being Kicked and Hurlled into Crates’ *The Independent* (1 July 2019)

<<https://www.independent.co.uk/news/uk/home-news/chicken-tesco-animal-abuse-video-investigation-rspca-red-tractor-a8982861.html>> accessed 6 September 2019.

⁸⁸ *ibid.*

financial value they represent. Consider again a man caught leaving an injured puppy to drown in a bucket of urine, how would society perceive him? Most of us would react with disgust, anger, or even fear. The underlying implication within our mind being: if he can treat an innocent animal so cruelly, how might he treat another human being? And that question is valid, violence against animals, whether they are companion animals or farm animals, has been correlated with other worrying psychological attributes. One study found a positive correlation between attitude towards animals and empathy towards humans⁸⁹. This study did not establish causation, however, the interlinkage between negative valuation and propensity for violence and the linkage between abuse of animals and abuse of humans shows there are psychological connections that need to be explored further. Could the normalization of violence and the requirement for workers to numb their empathy for animals, effect workers perception of violence and empathy in their everyday lives? It seems to do so for soldiers and police officers, two careers which normalize violence and hierarchical perceptions of value and which can cause trauma. Criminologist Piers Beirne supports this view of power dynamics and violence spillover from work, saying, 'whenever human-animal relationships are marked by authority and power, and thus by institutionalized social distance, there is an aggravated possibility of extra-institutional violence'⁹⁰. An interesting study of counties with slaughterhouses found a correlation between the presence of slaughterhouse workers and increased crime rates⁹¹.

The behaviors exhibited of causing pain and humiliation to farmed animals can be separated into two categories: the mechanized and normalized violence that is considered part of duties (i.e. docking tails and removing teeth without pain relief, separating mother and child pairs, and slaughtering) and the gratuitous and abusive violence that is sought out by some workers (i.e. beating animals, urinating on them, prolonging their suffering, and making their deaths a game). The line between the two can become blurred, particularly in cases like prolonging suffering, in which the callousness needed to function in the job can create a state in which a person no longer recognizes or empathizes with the pain of a sick or dying animal. There are certainly workers who enter the animal

⁸⁹ Tania D Signal and Nicola Taylor, 'Attitude to Animals and Empathy: Comparing Animal Protection and General Community Samples' (2007) 20 *Anthrozoos* 125.

⁹⁰ Piers Beirne, 'From Animal Abuse to Interhuman Violence? A Critical Review of the Progression Thesis' (2004) 12 *Society & Animals* 39, 54 <<http://digitalcommons.usm.maine.edu/criminology>> accessed 8 September 2019.

⁹¹ Amy J Fitzgerald, Linda Kalof and Thomas Dietz, 'Slaughterhouses and Increased Crime Rates: An Empirical Analysis of the Spillover from "The Jungle" into the Surrounding Community' (2009) 22 *Organization and Environment* 158.

agriculture industry with predispositions towards violence, disdain for animals, or who take pleasure in causing pain and it is ridiculous to suggest that all the workers enjoy or engage in such behaviors. However, all workers must engage in violence towards animals and may witness the abuses that other workers inflict beyond their duties. How does performing and witnessing violence effect the mental state of workers? There are several documented effects of performing and witnessing violence on people's mental state. Most notably for slaughterhouse workers (and to a lesser extent workers in rearing) is Perpetration-Induced Traumatic Stress (PITS) and vicarious trauma⁹². The former is a syndrome related to PTSD but is induced not by witnessing or having violence inflicted upon oneself but through inflicting it upon others. The discussion surrounding PITS is somewhat controversial, as there is understandable hesitancy in a 'sympathetic' angle towards those committing violence⁹³. Rachel MacNair was the first to explore the idea of inflicting trauma causing trauma, even as perpetrators may enjoy inflicting it (she compares this to the self-destructive nature of drug addiction)⁹⁴. The high gained from stressful situations can cause revictimization, in which people seek out to recreate the feeling of their trauma, for PITS sufferers this may mean committing violent crimes⁹⁵. MacNair describes one of the symptoms (present in PTSD as well) as 'playing the drama like a video in their head' with themes of being killed by their victims, being accused by their victims, and self-attacking or killing themselves⁹⁶. Consider those symptoms during the following anecdote. Virgil Butler was a slaughterhouse worker turned animal activist whose decision to go public on his blog with his personal experiences on a Tyson poultry processing plant from 1997 to 2002, has revealed the possible mental consequences of animal killing. Butler described incidences of cruelty towards chickens, who are under no legal protections from violence. He talks about employees playing 'games' with the dead carcasses of chickens, ripping the heads from live chickens and using their bodies and finger puppets, another game where the object was to squeeze a live chicken violently enough to vacate its bowels on your coworker⁹⁷. In another post, Butler goes into his feelings

⁹² Vicarious trauma, can in extreme and repetitive cases, led to PTSD. However, PTSD has very strict and specific guidelines which make the use of the term without a diagnoses or intimate information, suspect. Therefore, I will not be using the term PTSD to describe the behavioral manifestations of trauma in workers. Instead I will use PTSD-like symptoms and trauma induced.

⁹³ Rachel M MacNair, 'Causing Trauma as a Form of Trauma' (2015) 21 *Peace and Conflict* 313, 313.

⁹⁴ *ibid*.

⁹⁵ *ibid* 316.

⁹⁶ *ibid* 316.

⁹⁷ Ashitha Nagesh, 'The Harrowing Psychological Toll of Slaughterhouse Work' *Metro* (December 2017) <<https://metro.co.uk/2017/12/31/how-killing-animals-everyday-leaves-slaughterhouse-workers-traumatised-7175087/>> accessed 26 June 2019.

of isolation, he views himself as a mass murderer, now capable of violence when angered⁹⁸. He describes himself on the killing floor, covered in the blood of the thousands he has killed unable to express his pain to his coworkers for fear of being seen as weak or to his family and friends due to them being disturbed⁹⁹. Overwhelmingly, he feels guilt and isolation, something which he believes to be felt by his coworkers, one of which, according to Butler, was committed to a hospital after having reoccurring nightmares of being hunted down by chickens¹⁰⁰. With a few changes, the words of Butler could be mistaken for that of a combat veteran or executioner. The propensity for violence, the isolation, the guilt, are all indicative of trauma induced through the perpetration of violence. Butler has many posts describing the tortures workers engaged in for fun while managers turned a blind eye. These descriptions are so horrific that they rival accounts of genocidal war crimes¹⁰¹. Anyone witnessing this kind of violence with human victims (or even companion animals) and describing that emotional state would immediately be recognized by most of us as needing psychiatric care.

Virgil Butler is just one worker, his story is just one story, but it provides an intimate and emotional representation of slaughterhouse work. Whether or not there is clear statistical evidence of work related PTSD or PITD in slaughterhouse workers, there is no doubt that the work traumatizes a number of people engaged in it. As Jennifer Dillard wrote in her work on the psychological harm experienced by slaughterhouse workers, most people are averse to killing animals as a natural preference and violating that preference repetitively, workers are 'very likely adversely psychologically impacted'¹⁰². There needs to be significantly more research into the psychological effects of animal slaughtering to establish recommendations for mental health care for workers and provide a better picture of the societal and individual ramifications of the industry. The recommendations for improvement of this industry always include regulations, in this case work place health and safety (mental health care), animal welfare (humane slaughter and abuse protection), and mechanization

⁹⁸ Virgil Butler, 'Inside the Mind of a Killer' (*The Cyberactivist*, 2003) <<https://cyberactivist.blogspot.com/2003/08/inside-mind-of-killer.html>> accessed 26 June 2019.

⁹⁹ *ibid.*

¹⁰⁰ Nagesh (n 97).

¹⁰¹ Author's Note: I have not included these descriptions because I found them to be emotionally disturbing enough to have lasting effects on a reader's mental state. However, if a reader feels prepared, I do recommend reading the torture posts on Virgil Butler's blog.

¹⁰² Jennifer Dillard, 'A Slaughterhouse Nightmare : Psychological Harm Suffered by Slaughterhouse Employees and the Possibility of Redress through Legal Reform' (2008) XV *Georgetown Journal on Poverty Law & Policy* 1, 11 <http://www.jenniferdillard.com/SSRN_slaughterhouse_paper.pdf> accessed 9 August 2019.

(lower the amount of human to animal interaction). While these are, for the most part, important steps that can improve conditions for workers, an industry which requires workers to take part directly (even indirectly) with the captivity, suffering, and killing of animals cannot ever excuse itself from having negative psychological consequences for its workers. Mechanizing the killing process is already happening, the kill line of poultry processing plants involves steps entirely devoid of human to animal contact, however, humans are brought in to fix the mistakes made by machines. To deal the death blow on an animal still alive after a kill cut. Even if it were possible to create an ideal process in which humans do not have to witness the death or suffering of animals, they simply press a button to begin that process, there is ultimately a human worker who must take on the emotional responsibility and burden of pressing the button. It is the difference of a Nazi guard who allows the gas in the chamber full of person versus the one who beats a person to death. The traumatization may not be as severe, but in the end, there are always going to be workers with responsibility for or complicity in, the victimization and suffering of living beings. Thus, there will always be traumatization of workers in factory farming.

Section II.IV: Physical health of workers

The occupational risk for workers in animal agriculture is not limited to exposure to infectious material and hazardous materials. The industry also has created and exacerbated existing physical complications of animal farming to individual workers. The farming industry in general is one of the industries known for its demand on the human body. Like any career that requires physical labor, there are high injury rates and quick burnout. The transition from smaller family farms to large corporate or contract farms has shifted farmers from being owners and operators of their own businesses to replaceable parts within a massive machine. The older system had its own issues, for instance if you were injured and you couldn't do the work or pay a farmhand well the bank might just take your farm. If you are injured at a corporate farm you lose your job. The responses to on the job injury play directly into how the industry treats labor and from where they supply their labor from. Nevertheless, the physical toll on workers in animal agriculture is something well documented and notable particularly in the processing sector of the industry. The processing and slaughtering of animals have increasingly become mechanized with workers in assembly lines responsible for one

motion, one cut, over and over again, required to hit the high speeds and quotas set by management. The repetitive motion leads to muscular issues and pain that can often only be fixed by surgery while the high speeds increase risk of cuts and gashes¹⁰³. The poultry industry continually pushes to have the maximum line speed increased from the current 140-bird-per-minute limit to 175 arguing that the increase to production is necessary and that an increased speed poses no threats to worker safety¹⁰⁴. The processing line speed has dramatically increased in the past few decades, according to one worker in 1995 they had to process 32 birds per minute, that's a 437% increase in speed over the past twenty years¹⁰⁵. Industry spokespeople have argued that workplace injuries have declined, which is true, since 2003 there has been a steady decline in workplace injuries across the sector¹⁰⁶. However, in 2015 the rate of injury of 5.4 per 100 workers was still higher than all other manufacturing and private sector jobs¹⁰⁷. By OSHA numbers, from 2015 to 2018 there was a loss of limb or injury that sent workers to the hospital every other day in America¹⁰⁸. A report by the Southern Poverty Law Center (SPLC) in 2013 that focused on poultry workers in Alabama found that 73% of their respondents 'described suffering significant work-related injury or illness'¹⁰⁹. A rate that tells a dramatically different story from the one told government statistics. The report acknowledges this difference, explaining that the U.S. Occupational Safety and Health Administration (OSHA) has narrow guidelines for reporting injury¹¹⁰. Arguably another contributing factor to the disparity is a work culture that discourages its employees from reporting workplace injury, something which is aided by their use of non-unionized and at-risk labor. Of the injuries reported to OSHA and reported to the

¹⁰³ Tom Fritzsche, 'Unsafe at These Speeds: Alabama's Poultry Industry and Its Disposable Workers' (2013) 10-11 <https://www.splcenter.org/sites/default/files/Unsafe_at_These_Speeds_web.pdf> accessed 30 July 2019.

¹⁰⁴ Lynn Petrak, 'Poultry Processing Tech: The Importance of Speed' *Food Business News* (2 July 2019) <<https://www.foodbusinessnews.net/articles/13279-poultry-processing-tech-the-importance-of-speed>> accessed 24 August 2019.

¹⁰⁵ Human Rights Watch, 'Blood, Sweat, and Fear' (2005) 46 <<https://www.hrw.org/reports/2005/usa0105/usa0105.pdf>> accessed 26 July 2019.

¹⁰⁶ Sean M Smith, 'How Safe Are the Workers Who Process Our Food?' (*Monthly Labor Review*, 2017) <<https://www.bls.gov/opub/mlr/2017/article/how-safe-are-the-workers-who-process-our-food.htm>> accessed 24 August 2019.

¹⁰⁷ *ibid.*

¹⁰⁸ Brian Stauffer, "'When We're Dead and Buried, Our Bones Will Keep Hurting' Workers' Rights Under Threat in US Meat and Poultry Plants' (*Human Rights Watch*, 2019) <<https://www.hrw.org/report/2019/09/04/when-were-dead-and-buried-our-bones-will-keep-hurting/workers-rights-under-threat%0D>> accessed 4 September 2019.

¹⁰⁹ Fritzsche (n 89) 7.

¹¹⁰ *ibid* 7.

Southern Poverty Law Center, the majority were musculoskeletal disorders with 52% reported by OSHA and 66% reporting symptoms to SPLC¹¹¹¹¹² Musculoskeletal disorders includes:

cases in which the nature of the injury or illness is a pinched nerve; herniated disc; meniscus tear; sprains, strains, and tears; hernia (traumatic and nontraumatic); pain, swelling, and numbness; carpal or tarsal tunnel syndrome; Raynaud's syndrome or phenomenon; musculoskeletal system; and connective tissue diseases and disorders, when the event or exposure leading to the injury or illness is overexertion and bodily reaction, unspecified; overexertion involving outside sources; repetitive motion involving microtasks; other and multiple exertions or bodily reactions; and rubbed, abraded, or jarred by vibration¹¹³.

The repetitive motion of the processing line is the most likely culprit for the musculoskeletal injuries experienced by poultry plant workers. The recommended course for reducing such injuries is reducing the speed of motion and reducing the amount of time doing the motion. Considering the Poultry industry's push to raise maximum line speeds and even at one point to *eliminate them entirely* it is unlikely that workers will see slower lines to reduce their injury¹¹⁴. Human Rights Watch (HRW) released a report in 2005 on the animal agriculture industry in the United States. Their interviews with workers found similar complaints by workers as the SPLCO about line speed; these complaints stated that most of the injuries were caused by high line speed¹¹⁵. Even discounting the evidence compiled by the SPLC and HRW, the OSHA data shows that the injury rate for workers in poultry processing is still higher than that of comparable industries. Considering this, the industry attitude towards line speeds is concerning. It has been over a decade since the HRW report, yet line speeds have only increased. Large poultry processors are not addressing the issues inherent in their workplaces, to the detriment of their workers and to the benefit of their profits.

Of the different sectors of the animal agriculture industry, poultry processing has the highest injury rate for workers. However, there are also significant evidence of high industry rates among other sectors. Unsurprisingly, other animal processing workers reported similar injuries due to line speed. With larger mammals like cattle and swine, workers perform repetitive cutting and slicing

¹¹¹ Smith (n 106).

¹¹² Fritzsche (n 89) 8.

¹¹³ Smith (n 106).

¹¹⁴ Petrak (n 104).

¹¹⁵ Watch (n 91) 43.

motions also, but with heavier and larger pieces of flesh. There has also been increases in line speeds over the years, meaning workers are unable to take a moment to recover themselves or to sharpen their knives¹¹⁶. Performing slicing motions over and over with no breaks, not only causes the musculoskeletal injuries mentioned earlier, but also quickly dulls the instruments used to cut the carcasses. Anyone familiar with cooking will tell you that dull knives are more dangerous than sharp ones. The danger lies in having to increase force to be able to cut through with a dull knife, that is when you are most likely to slip and cut yourself¹¹⁷. Additionally, the more force workers have to use, the more likely they are to strain muscles or feel pain. Typically, these cuts are non-fatal, though there is little data about the severity of injuries. According to the workers interviewed by HRW, if the injury was not life-threatening, they were discouraged from leaving the line or from taking time off to recover¹¹⁸. Not allowing workers to receive proper medical treatment has serious implications for both food safety and the safety of the workers. One worker told the SPLC that after he was cut on the processing line, he was given a band-aid by company nurses and sent back to work, having his wound repeatedly soaked by the 'chicken water' coming off the chicken carcasses¹¹⁹. Eventually this worker's wound became infected and required proper treatment¹²⁰. Again, the data compiled by OSHA does not reflect the true severity of working conditions for meat processing workers. The reports by HRW in 2005 and by SPLC in 2013 describe much higher rates of injury. They also describe a working environment that used fear to keep workers from reporting injuries, management that refused to slow line speeds for worker's safety, and a general disregard for workers. Official government data cannot capture truth from a workforce such as this. The use of ununionized, often geographically isolated, and largely immigrant labor connects directly into the issue of workplace safety. Workers describe an environment of fear: fear of losing their jobs if they report injuries, fear of deportation, and fear of punishment from management¹²¹. Workers may not know their rights, they may not even be able to read their contracts due to language barrier or illiteracy¹²². These companies have low pay, and they know that this attracts those with few other employment options (immigrants,

¹¹⁶ *ibid* 45.

¹¹⁷ *ibid* 45.

¹¹⁸ *ibid* 45.

¹¹⁹ Fritzsche (n 89) 14.

¹²⁰ *ibid* 14.

¹²¹ *ibid*.

¹²² Nagesh (n 97).

unskilled, and uneducated workers) which they can then capitalize on¹²³. The pool of labor is large, and workers are replaceable. So, when workers are injured in an accident or develop a musculoskeletal condition like carpal tunnel, they are fired¹²⁴. Workplace injuries are increased by a lack of safety training for equipment use. Sadly, this has led to the death of workers. Frank Ellington was a 33-year-old African American man serving a sentence for armed robbery. In 2017 he participated in a work release program at a Koch Foods poultry processing plant, for which he was paid 40% less than his non-prisoner coworkers but had time taken off his sentence. On October 29th, 2017, Ellington was tasked with cleaning a running automatic rehanger, his arm was caught in the machine and he was pulled screaming into the machine¹²⁵. He died quickly. An investigation found the company liable for not training him properly on safety procedures, and Koch Foods was ordered to pay a \$2,000 fine¹²⁶. Additionally, there is a proposed fine of \$38,802 for Ellington's 14-year-old daughter. Koch Foods has a revenue of 3 billion dollars a year, but they have decided to consent this fine. They could not say any clearer that, though they are responsible for the death of Ellington, they do not see his life as worth \$38,802. Ellington's death reflects, what is evident from the treatment of injuries, workers are cogs in a machine. Other poultry plants in Georgia have shown in emails, dismissal of workers who complained of pain and organized disregard for proper medical in order to avoid records of hospital visits¹²⁷. Ellington is one of 8 workers who died every year between 2013 and 2017 in workplace accidents at processing plants¹²⁸.

The nature of processing work can cause musculoskeletal issues and cuts. Accidents with machinery can be almost entirely eliminated through proper regard of workplace safety protocols. Injuries in general cannot be eliminated, however, the treatment of labor and the hostile attitude of management toward responsibility for workplace safety has increased worker injury. Injuries will continue to occur. Because companies face no consequences for their actions, because companies want to keep OSHA's official workplace injury rates low so they can continue to increase line speed and production output. The demand for profit and production will continue to outweigh the rights of

¹²³ Approximately 1/3 of poultry workers are immigrants. Will Tucker, 'The Kill Line' *Southern Poverty Law Center* (26 July 2018) <<https://www.splcenter.org/news/2018/07/26/kill-line>> 26 June 2019.

¹²⁴ Fritzsche (n 89) 9.

¹²⁵ Tucker (n 22).

¹²⁶ *ibid.*

¹²⁷ *ibid.*

¹²⁸ Stauffer (n 108).

workers, until the industry is **forced** to change. That change may come from regulation. Considering the disregard for existing regulation, there would need to be increased inspections and consequences for violations. There also needs to be greater solidarity for immigrant laborers so they can voice their abuses, but this requires changing immigration laws, as many immigrant workers in agriculture are undocumented. Additionally, use of prison labor should be eliminated.

Conclusion:

The industrialization of the animal agriculture industry has led to a system which violates the labor and health rights of workers and risks the health of the general public. Factory farms are an epicenter for health violations, including exposure to bacteria, dust, and gases, the creation of antibiotic resistant bacteria and viral pandemics, traumatizing workers and damaging their mental health, and knowingly putting workers at risk for injury. The alienation and dehumanization of the labor force exacerbates these health violations and prevents workers from realizing their labor rights as described in article 23 of the UDHR. There are ways to mitigate these issues.

There are recommendations for improving labor rights and health risk for workers and the public:

- Strengthen unionization efforts for workers, through grassroots organization and enforcement of OSHA protections for unionization.
- Eliminate immigration enforcement and lessen penalties for undocumented immigrants so immigrant work forces can report issues and not be scared into silence.
- Increase penalties for OSHA violations and devote more resources to enforcement and inspections.
- Eliminate the use of prison labor or provide prisoners with better pay and more work options.
- Rotate jobs to minimize workers exposure time to hazardous materials and limit repetitive motions that cause injuries.
- Lower line speeds, and ensure workers have better ability to slow line speed during work.
- Reduce use of antibiotics in animals (should only be allowed for individual animals).

- Increase safety measures, such as respirators, face masks, protective clothing, power-washing, and on-site showers to decrease risk of infection and transportation of biological materials outside the farm/factory.
- Further research into the mental health consequences of factory farm work and implementation of subsequent recommendations for addressing issues.

In all, increased regulation of workplace safety measures and robust structural support for unionization of the workplace will greatly reduce the health risks and labor violations on factory farms. However, there is an essential nature to factory farming that cannot be changed. Factory farming must confine large numbers of animals in small spaces, which means much of the health threats, both public and to workers, will remain despite any safety precautions. It also must systematically and mechanically kill billions of animals a year, mentally damaging workers in the process. The alienation of workers and the destruction of lives are an essential aspect to the functionality of industrial animal farmers. Ultimately it begs the question, is our consumption of meat worth the devastation to human health and animal life? Instead of focusing efforts on maintaining this system, which has only fully emerged in the last 50 years, why do we not attempt to find alternative methods of production. The short answer is the industry is massively profitable and powerful. However, individuals can make efforts to reduce their consumption of animal products and increase their support of independent producers otherwise. There is no moral defense of industrialize animal agriculture. Its so-called efficiency creates plentiful output and huge profit margins, but sacrifices quality, compassion, environmental sustainability, and human health in the process. It is time to re-evaluate our modes of production and construct alternative possibilities for feeding an ever-growing population.

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