

Calista Donohoe

Departmental Credit by Exam

English 1020

6 August 2021

### Flesh and Blood: Animal Ethics and Factory Farming

A mother cries out at the loss of her child. A newborn lies shackled in a cage. Millions are starved, crowded in their own filth, and they may go their entire lives without seeing the sun. These are the realities of factory farms. As humans, we have each felt tedium. We all know disgust, horror, and fear. Our hearts race; we cower from familiar harm and scream at unbearable pain. We recognize that these conditions are some of the most agonizing and traumatizing that life has to offer. Why is it commonly believed that our experiences are more valid than those other living beings? How is the distinction made between the companion and the consumed?

In this essay, I will argue from an animal rights perspective that the mass consumption of animal products is unethical in modern society. I will discuss the philosophy of animal ethics as it applies to industrial farming practices. I will also counter the arguments which are in favor of animal-based production practices while establishing important details regarding animal sentience. Further, I will outline the conditions of numerous factory-farmed animals, consider the inhumane nature of their treatment, and discuss the legislation which enables such practices.

In normative applied ethical philosophy, morality is quantifiable. The discipline considers the foundations and assembly of moral principles, and it ultimately strives to define the essential core of morality itself. This branch of philosophy also concerns itself with establishing the moral status of a given entity, and it typically assumes that humans have the highest moral standing. If

a being has any moral standing, it can be wronged; wronged, in this case, refers to a harm which causes one distress, pain, or suffering. When the idea of moral standing is applied to animals<sup>1</sup>, then, numerous schools of thought emerge. Some philosophers argue that any being with experiences which evoke pain or pleasure has sentience, and therefore it has moral standing as a result of that sentience. Other philosophers do not believe that merely existing as a sentient being is enough to constitute moral standing. They argue instead that these beings must also care about these experiences (Dittmer). It is in this latter philosophical theory that animals are often disregarded from the concept of moral standing.

Under the principles of morality which I will establish, one of the most omnipresent and immoral practices is that of industrial farm animal production. This is the agricultural industry's preferred terminology; "factory farming", a more descriptive name for the practice, is typically used by its opponents ("Putting" 5). Factory farming refers to the large-scale industrial system of breeding, using, and slaughtering animals for various consumer demands. As the scope of demand increases, the quality of life for the creatures involved sharply declines. These operations are massive, especially in the United States<sup>2</sup>, and the animals involved endure unethical and inhumane conditions for the duration of their stunted lives ("Putting" 31). Ignoring the immorality of these circumstances has disturbing implications and practical consequences.

Philosopher and professor Timothy Hsiao, for instance, questions the morality of animals. In an argument dismissing animal cruelty in industrial farming, he writes, "Since animals are

---

<sup>1</sup>The use of the term "animals" in this paper refers specifically to non-human entities. It should be recognized and considered throughout this piece that human beings are also members of the mammalian animal kingdom.

<sup>2</sup> For this reason, the information provided throughout this essay will focus on United States factory farming practices unless otherwise noted.

incapable of acting for moral reasons, it follows that animals do not have moral standing” (46). He believes that animal behavior is merely “in pursuit of preference satisfaction . . . [a] kind of self-perfective activity” (43). This is a common line of thought among those who reject the notion of moral standing of animals. They believe that animal behavior reflects a lack of choice, and much of human superiority lies in our ability to make decisions on a moral basis. These decisions are equated with caring about our experiences.

Claims such as Hsiao’s follow a long historical tradition beginning with Aristotle which outlines a hierarchy of living beings, placing those with reason – humankind – at the very top. Immanuel Kant took this further by arguing that animals’ lack of will means that they are not autonomous. Even more extreme is René Descartes’ assertion that animals lack sentience entirely. He believed their behavior is fully automated; echoes of this sentiment exist in Hsiao’s above argument (Wilson). This line of thinking is, as I will demonstrate here, inherently flawed.

Descartes’ beliefs were based on the most basic, observable mechanics of animal behavior. Since animals cannot tangibly communicate an inner life, he asserted that it could be assumed they did not have one. More recent versions of Descartes’ theory suggest that it is a mistake to assume that like responses to stimuli across humans and animals are analagous (Wilson). However, a look into recent biological research suggests that the opposite is true.

Mammals and birds in particular have nervous systems extremely similar to that of human beings (Johnson 21). The diencephalon is a part of the brain primarily responsible for sensory reception, emotion, and base impulses. It is present in innumerable creatures across the animal kingdom, and it is particularly well-developed in mammalian and avian species (Singer 42). Considering our growing knowledge of animal neurology in conjunction with studies of

their similarities to human stimuli responses (which will be referenced below), it is a far more logical conclusion that animals indeed have sentience.

With animal sentience in consideration, the ethical argument against claims such as Hsiao's is simple. Assuming that all humans have an equal moral status, a basis must be established for this full morality. If reason is necessary for a being to have moral status, then what grants moral status to the marginal cases of humanity who lack reason? That is to say, under the counterargument's established principles, what is it that sets apart infants, the senile, those with severe cognitive disabilities, and other marginal cases from animals (Wilson)? It is obvious that these groups are not lesser beings. But why?

It is necessary to establish that reason – and by extension, intelligence - are not the only factors which determine the worth of a being's experience. Peter Singer, a renowned philosopher and ethicist, outlines a basic ethical principle of equality which argues that all sentient beings deserve equal consideration in their treatment and in the way their interests are impacted by our actions (Wilson). Singer makes this point regarding intelligence: "If possessing a higher degree of intelligence does not entitle one human to use another for his or her own ends, how can it entitle humans to exploit nonhumans for the same purpose?" (35). Since reason is clearly not sufficient for granting moral status, further qualifiers must be explored.

A principle put forth by Jeremy Bentham, the founder of modern utilitarianism, states that a living being need only possess the ability to suffer in order to be granted moral status (Singer 36). Using this concept, it is important to consider that our treatment of the aforementioned marginal cases of humanity disregards their inability to reason. We still recognize their capacity

to experience pain or pleasure, and we aim to minimize their suffering. In Singer's piece *Animal Liberation*, he makes the following point:

If a being suffers there can be no moral justification for refusing to take that suffering into consideration. No matter what the nature of the being, the principle of equality requires that its suffering be counted equally with the like suffering – insofar as rough comparisons can be made – of any other being. If a being is not capable of suffering, or of experiencing enjoyment or happiness, there is nothing to be taken into account. So the limit of sentience (using the term as a convenient if not strictly accurate shorthand for the capacity to suffer and/or experience enjoyment) is the only defensible boundary of concern for the interests of others. To mark this boundary by some other characteristic like intelligence or rationality would be to mark it in an arbitrary manner. Why not choose some other characteristic, like skin color? (38)

As animals lack speech, it is our moral responsibility to determine whether they can suffer. Tangible markers for the embodiment of emotions – fear or pleasure, for instance – are crucial, then, to determining moral status. As previously mentioned, the suffering of animals is often discounted; to illustrate the point of these animals' experiences as valid and deserving of our consideration, this essay will explore numerous studies and surveys conducted to measure the extent of their sentience.

While a wide range of animals have measurably demonstrated sentience, this section will focus on three of the most common factory-farmed: the chicken, the cow, and the pig. In a comprehensive review of chicken cognition, biopsychologist Dr. Lori Marino notes that a stigma

surrounds these creatures: “Unlike many other birds, chickens are categorized as a commodity, devoid of authenticity as a real animal with an evolutionary history and phylogenetic context. Thus, perceptions of chickens shape their use as commodities which, in turn, then reinforces those original perceptions” (127). Contrary to these popular belief systems, chickens demonstrate an understanding of time, as well as complex emotional responses and social behaviors. In one study, the birds were taught to differentiate three different noises for three different outcomes (positive, neutral, and negative). The sound would occur, followed by a delay, and then the corresponding outcome to that sound would happen. During that delay, the birds showed appropriate emotional responses to the anticipated outcome; this, paired with further investigations, suggests that chickens have a conception of their immediate future (Marino 132). This ability to look ahead is especially relevant; being able to anticipate pain inherently points to a capacity to suffer.

Another factor in the suffering that chickens may experience is their capability to experience boredom and frustration. Studies have been conducted which exhibit chickens’ strong preference for new and novel experiences (Newberry 317). This high motivation for interacting with new stimuli suggests a capacity for boredom. The living circumstances of factory-farmed chickens is extremely monotonous, and boredom evidently causes chickens immense frustration as well. The behavior of egg-laying hens, for example, greatly differs between natural and factory-farmed circumstances. Restless and with their instinctual habits stunted – as they are in an industrial farming environment, which will be further outlined in this piece – chickens exhibit dramatic stress markers. Hens are typically quite peaceful and do not tend towards much vocalization unless they are confronted with a threat. Factory farm laying operations, though,

have been described as “hysterical” and “pandemonium” (Singer 178-179). The observable differences between natural and industrially-farmed chickens, paired with the studies which demonstrate their emotional scope, make it clear that chickens can – and do – suffer.

Many animals have the capacity to learn; cows are one example of farmed livestock with an exceptional propensity to do so. Not only can they be trained to follow commands in a manner similar to dogs, but they can also teach themselves to complete certain tasks. Cows have been studied independently learning to operate water pumps in order to fetch well water. They also have been shown to make decisions based on observed behavior; when presented with a lever that will produce extra feed, they will press it unprompted (Johnson 78). Furthermore, they are able to distinguish familiar and unfamiliar individuals. They show a strong preference for their established social partners in a manner akin to human friendships (Nawroth 4). This selective social behavior indicates a capacity for pleasure beyond basic instinctual needs. Furthermore, cows – like chickens - have demonstrated a concept of their near future (Johnson 90). These abilities to experience pleasure and suffering, once again, are important exemplifiers of the moral standing of these animals.

Finally, perhaps one of the most often-cited examples of animal sentience is that of the pig. These animals exhibit exceptional similarities to domesticated dogs, though their intelligence may actually far surpass these companion animals. Like chickens, they feel boredom. This can be exacerbated in monotonous circumstances, as their strong learning capabilities go unfulfilled (Singer 186-87). Numerous studies have also shown that pigs have an advanced sense of self-awareness and complex relational behaviors (Judd and Rocha 5-6). They regularly engage in play, which Judd and Rocha explain is significant because “it suggests a

choice to do something that is not directly based in the animal's biological drives" (12). In other words, pigs can feel pleasure and joy, and they actively seek those experiences. Furthermore, pigs are proven to have episodic memory, which means that they can specifically recall personal experiences and apply past knowledge to new situations (Judd and Rocha 8). This specific ability to make self-referential recollections leaves them especially vulnerable to suffering as they anticipate and endure ongoing inhumane treatment.

There is clear evidence for animal sentience and moral standing. Their demonstrated capability to suffer is by itself enough to warrant our consideration. However, a final counterargument to this concept is one of the most common refrains used to dismiss animal rights: why should we care about animal suffering when there is so much human suffering to address? This argument creates a false dichotomy.

Working to reduce the suffering of one group does not inherently lead to the abandonment of another. In fact, diminishing inhumane animal practices – with specific regard to factory farming – has global benefits. A comprehensive report on the harms of industrial farming by the Pew Commission in 2009 found that livestock operations emit even more greenhouse gasses than the transportation sector ("Putting" 27). Plant-based diets are significantly more sustainable with a substantially smaller carbon footprint. Rather than growing crops to feed animals which will, in turn, be killed for food, that energy and space can instead be directed towards growing crops for human consumption (Chai 14). For example, cattle raised for their flesh require forty-two times the amount of land that staple protein plants do (Chai 11). Furthermore, factory farming is responsible for pollution of "local and regional water, air, and soil resources" ("Putting" 28). A conservative estimate shows that at least one million people in



the United States have moderate to severely contaminated drinking water as a result of the waste produced by factory farms, which can cause a myriad of health problems (“Putting” 28). If the climate consequences of factory farming continue to go underaddressed and underregulated, human suffering will only continue to increase.

Clearly, to make any human or animal suffer is an injustice. The torture of animals, though, is immense and largely enabled by current legislature and consumer demand. In order to demonstrate the proliferation of this cruelty, this essay will detail the standard lives and conditions of the three previously discussed factory-farmed animals: the egg-laying chicken, the dairy cow, and the pig.

The egg-laying chicken is hatched in a crowded incubator, long separated from its mother. If it is male, it is culled within the first days of life since it cannot produce eggs, nor will it grow large enough for meat-related agriculture. This culling may occur in one of three ways. The chick may be shredded alive in an industrial grinder, suffocated and crushed alongside many other chicks in large plastic bags, or placed in a gas chamber (DeGrazia 151; Singer 170). Culling wastes the lives of seven billion chicks per year, even though imaging technology exists to determine the sex of a chick before it is ever hatched (Krautwald-Junghanns 755). The surviving female chicks will endure further inhumane practices.

Handlers sever a section of the female chick’s beak with a modified soldering iron. This is a painful procedure, but the industry largely deems it necessary to reduce cannibalism among the hordes of confined birds. Chicken cannibalism is only observed within stressful and overcrowded environments. Once a bird’s beak is cut, she is released into precisely those circumstances: she will live in a packed warehouse with other young birds until she matures to

an egg-laying age. The dulled beak prevents her from pecking those around her – a consequence of traumatic conditions – but it also prevents her from being able to clean herself. It may even disrupt her ability to eat for several weeks as a result of the lingering pain and blisters (Singer 159-62). Upon reaching maturation, the hen is relocated to a laying facility. Most often, this means being confined with a minimum of three other birds in a wire cage the size of a standard sheet of paper (Fiber-Ostrow and Lovell 235). This is how she will spend the rest of life.

For two years – assuming that the hen does not succumb to disease, as birds in these conditions often do - she will be unable to turn around or to stretch her wings, and her feet will slowly become crippled from having a cage without a solid bottom (Fiber-Ostrow and Lovell 236). She will rub against her cage-mates until her feathers begin to fall off in patches, and her raw pink skin will be exposed to pests (Singer 182). Her instinct to build a nest in secrecy and hide her eggs is completely ignored; she anxiously struggles to find her way out of the crowded cage in order to lay (Singer 179). Birds who are raised “cage-free” are still subjected to overcrowded conditions and spend the entirety of their lives in a warehouse (Matheny and Leary 344). These warehouses do not have windows; this way, the producer can control every aspect of the birds’ surroundings.

The laying hen is periodically starved, and shelter lighting is manipulated to simulate winter. This forces the bird’s body into molting conditions to increase egg production; consequently, factory-farmed chickens lay over ten times the amount of eggs per year compared with a wild hen (Fiber-Ostrow and Lovell 236). This kind of output is especially taxing, and she will almost definitely develop osteoporosis. Her bones fracture, and her small body withers until she no longer can produce enough eggs to be considered a viable hen (Matheny and Leary 331).

At this point, the bird is exposed to outside air for the first time in her short life. She will be crated up and transported without food or water to a slaughterhouse (DeGrazia 151). At the slaughterhouse, her legs are bound and she is hung from an overhead conveyor belt. Her wings flap, struggling, as it carries her to her fate. She is first subjected to mild electrocution with the intent of stunning her unconscious, though this practice is often imperfect. She then approaches a rotating blade, which slits her throat. If it kills her instantly, she is among the fortunate. Other birds may struggle enough that the blade only partially completes its job; these birds will bleed from the wound until finally succumbing to the injury (Fiber-Ostrow and Lovell 236). Thus concludes the short, tortured life of the egg-laying hen.

The conditions for these birds are especially heinous, and they are essentially condoned by legislature. In 1958, the United States government passed the Humane Slaughter Act. This requires that livestock be subjected to slaughter that causes no unnecessary suffering, yet Fiber-Ostrow and Lovell point out in an expositional piece about agricultural legislation that “the law excludes chicken, turkey, and fish from its statutory definition of livestock which collectively are 95% of all animals slaughtered for food consumption” (237). This deliberate exclusion of livestock from animal cruelty laws is a staple of the modern agricultural industry, which will be discussed further along in this piece.

The dairy cow, much like our egg-laying hen, may also spend her entire life indoors. The dairy cow’s milk production begins with the birth of her first calf; mother and child are almost immediately separated. A male calf, analogous to the offspring of egg-laying hens, will be whisked away for a different fate (DeGrazia 152). He will be placed in an empty wooden stall scarcely larger than his body so that he cannot turn around, and a tether may be placed around his

neck to further immobilize him (Matheny and Leary 332). In order to produce a light-colored flesh – the meat known as ‘veal’ – he will be deprived of necessary nutrients and fed a fatty liquid diet for the sixteen weeks that he will live in this dark, tight crate (Singer 203). The male calf will become restless, and the veal producer will attempt to stave off his boredom by keeping the animal in complete darkness (Singer 206). As with the egg-laying hen, the veal calf will only ever feel sunlight on his way to the slaughterhouse.

The dairy cow, upon being separated from her baby, immediately has her milk processed. Her calf, long gone, will never nurse from her. When the cow is returned to her cramped stall, she will anxiously search for child; she may even cry out for it in distress (Fiber-Ostrow and Lovell 235). Her udders will still produce milk for months after the separation. As her output diminishes in the absence of a calf, she is injected with hormones to encourage further lactation. The hormones wreak havoc on her body. She develops painful inflammations in her mammary glands, and her body is unable to keep up with the demand that the hormones place on her system. Bovine growth hormones necessitate that a cow receive greater quantities of food and nutrients, which the cow may not receive in factory-farmed conditions. As a result of nutritional deficiencies, her body will begin to break down her own healthy tissues to produce milk (Singer 210). After three months of excessive output, she is artificially inseminated to begin the process over again. This process is exceedingly taxing on her body. Though she may live twenty years or more in natural circumstances, these conditions exhaust her body within four. When it is time for slaughter, she is stunned with an air-powered gun on a conveyer. These guns are often ineffective, but the belt operator will not stop to properly anesthetize one cow. Some of her companions will be hung upside down, alive and conscious, as their throats are slit, and some of

those will still fight consciousness as they are skinned and dismembered (DeGrazia 152). This concludes the hindered life of the dairy cow.

Finally, to address the life of the pig. A breeding sow's primary purpose is to produce male pigs, which will be raised for slaughter. In most states, it is still legal for a pregnant sow to be confined in a metal stall only inches larger than the pig herself for the duration of her pregnancy. In the later stages of gestation, the pig's swelling stomach may grow to the full size of her cage (Singer 16). Her confinement only worsens when she gives birth; she is placed in an iron frame which completely restricts her from moving. This imprisonment causes the sow extreme distress. She thrashes and screams and tries to escape, sometimes for hours, sometimes until finally collapsing in exhaustion (Singer 195-96). Since she is only being used for reproductive purposes, the pig is starved for her entire life. She is fed the bare minimum to keep her alive so that the producer can save money and channel the bulk of the food costs to the slaughter market pigs (Singer 198). Her piglets are taken away from her within the first week of their life; this ensures that she will quickly stop lactating and become fertile again for another pregnancy (Singer 193). The artificially-inseminated pig only walks a few steps in her entire lifetime (Singer 197). Her male piglets, too, are destined for sickening fates.

The male piglet, less than a month into life, is systematically maimed. With no anesthesia, a part of his ear is removed, his sharpest teeth are cut off, his tail is severed, and he is castrated (Johnson 108). He must share a small pen with other piglets; they become aggressive with one another due to the packed space (Singer 188). As he matures, he is placed in a solitary unit. His stall consists of nothing but metal walls and concrete floors (Fiber-Ostrow and Lovell 235). Lacking stimulation, the boredom and frustration cause him immense stress. Some of his

counterparts will even succumb to a condition dubbed “porcine stress syndrome”; they pant wildly, their pink skin becomes blotchy, their bodies go rigid – and, overcome with their torturous circumstances, they drop dead in their filthy concrete stalls (Singer 189). The pig is given a growth hormone, and it encourages him to feed far beyond his fill (DeGrazia 152; Singer 198). When he reaches the producer’s target weight, he is taken to the slaughterhouse.

Here, he recognizes the scent of blood, and his intelligent mind seems to associate it with pain. Frightened, he struggles from his restraints. When human handlers are able to subdue him, he is strapped to a conveyer belt, then stunned unconscious, and finally, boiled in a large bath before he is butchered (DeGrazia 152). As with the chicken and the cow, it is not guaranteed that all of the pig’s companions will be unconscious before they are boiled alive (Fiber-Ostrow and Lovell 235). From birth to death, these creatures know nothing but misery.

Although these practices produce most of the animal products consumed around the world, the general public does not realize nor understand the extent of factory farming’s inhumanity. Numerous surveys have shown that Americans largely support legislature protecting farm animals from abuse, yet a 2003 poll reported “seventy-one percent of respondents believe that ‘in general, farm animals are fairly treated in the United States’” (Matheny and Leary 333). This ignorance is not entirely the fault of the public; the agricultural industry pushes to hide its practices from view. Since audio and video evidence are some of the most effective educational tools for animal activism, legislation is regularly introduced to criminalize recordings and undercover investigations at factory farming operations. These are commonly known as ‘Ag-Gag’ laws (Fiber-Ostrow and Lovell 231). Furthermore, industry lobbyists often afford factory farming operations statute exemptions which protect them from animal cruelty prosecution.

Fiber-Ostrow and Lovell, experts in political science and criminal justice, give this example regarding Connecticut's animal cruelty law:

[T]he statute also notes that, 'The provisions of this subsection shall not apply to ... any person ... following generally accepted agricultural practice' (Conn. Gen. Stat. § 53-247; emphasis in original). In essence, these exemptions for customary farming practices allow the industry to define which of its behaviors toward animals are standard. Thus, the practice of slamming a piglet's head against the ground to kill it (a practice known as 'thumping') has been successfully defended by the animal agriculture industry as 'common' and therefore not cruelty, even though the practice sometimes fails to cause the piglet instant death. Some 36 states exempt such customary farming practices as thumping from their statutes (237).

Even where meager protections do apply – like the aforementioned Humane Slaughter Act – violations are frequent, and they usually go unreported (Fiber-Ostrow 231; DeGrazia 152). These are only a few examples of the ways in which factory farms are obscured from the law. It is evident that the agricultural industry relies on public ignorance and enabling legislature to perpetuate this machination of cruelty.

In light of the facts illustrated here, there is no moral way to continue the mass consumption of animal products. To participate in this mass consumption is to enable the continuation of inhumane and unethical practices on sentient beings with moral standing. While it is no single individual's fault for the industrialized practice of factory farming, the collective

demand for eggs, milk, and flesh ensures that animals will continue to suffer for these human luxuries. We must lower this demand and increase public outcry.

We have a moral obligation to diminish suffering; this is one of the simplest choices that a person can make. Those armed with an understanding of animal sentience, moral standing, and factory farming conditions have a responsibility to these creatures. It is necessary to strive for plant-based lifestyles, to educate others about the topics discussed here, and to vote in local and national elections in the best interests of these animals' lives.

To skip a carton of eggs is to pry open the cage of a clucking hen who does not know sunlight. To pass by the cheese and milk is to put a hand on the head of a pale calf still crying for his mother. To go without bacon is to stroke the pregnant stomach of a pig, so large in her small cage that she has not been able to move for days. To reject the consumption of animal products is to see the suffering behind them and to refuse to let it continue. It is our moral and ethical duty, as individuals standing together, to make this pain fade into obsolescence.



## Works Cited

- Chai, Bingli Clark et al. "Which Diet Has the Least Environmental Impact on Our Planet? A Systematic Review of Vegan, Vegetarian and Omnivorous Diets." *Sustainability*, vol. 11, no. 15, 2019, pp. 1-18. *Crossref*, doi.org/10.3390/su11154110.
- DeGrazia, David. "Moral Vegetarianism from a Very Broad Basis." *Journal of Moral Philosophy*, vol. 6, 2009, pp. 143-65. *FEWD*, fewd.univie.ac.at/fileadmin/user\_upload/inst\_ethik\_wiss\_dialog/DeGrazia\_\_D.\_2009\_Moral\_Vegetarianism.pdf.
- Dittmer, Joel. "Applied Ethics." *Internet Encyclopedia of Philosophy: A Peer-Reviewed Academic Resource*, iep.utm.edu/ap-ethic/#SH4b. Accessed 24 July 2021.
- Fiber-Ostrow, Pamela and Jarret S. Lovell. "Behind a Veil of Secrecy: Animal Abuse, Factory Farms, and Ag-Gag Legislation." *Contemporary Justice Review*, vol. 19, no. 2, 14 Apr. 2016, pp. 230-49. *Taylor & Francis Online*, doi.org/10.1080/10282580.2016.1168257.
- Hsiao, Timothy. "Industrial Farming is Not Cruel to Animals." *Journal of Agricultural and Environmental Ethics*, vol. 30, no. 1, 2017, pp. 37-54. *ProQuest*, dx.doi.org.aurialibrary.idm.oclc.org/10.1007/s10806-017-9652-0.
- Johnson, L. Syd M., et al., editors. *Neuroethics and Nonhuman Animals*. Springer, 2020, *SpringerLink*, doi.org/10.1007/978-3-030-31011-0\_5, Accessed 2 Aug. 2021.
- Judd, David and James Rocha. "Autonomous Pigs." *Ethics & the Environment*, vol. 22, no. 1, 2017, pp. 1-18. *Project MUSE*, muse-jhu-edu.aurialibrary.idm.oclc.org/article/660548.

- Krautwald-Junghanns, M. et al. "Current Approaches to Avoid the Culling of Day-Old Male Chicks in the Layer Industry, with Special Reference to Spectroscopic Methods." *Poultry Science*, vol. 97, no. 3, 1 March 2018, pp. 749-57. *ScienceDirect*, doi.org/10.3382/ps/pex389.
- Marino, Lori. "Thinking Chickens: A Review of Cognition, Emotion, and Behavior in the Domestic Chicken." *Animal Cognition*, vol. 20, 2 Jan. 2017, pp. 127-47. *SpringerLink*, doi-org.aurarialibrary.idm.oclc.org/10.1007/s10071-016-1064-4.
- Matheny, Gaverick and Cheryl Leary. "Farm-Animal Welfare, Legislation, and Trade." *Law and Contemporary Problems*, vol. 70, no. 325, Winter 2007, pp. 325-58. *Gale Academic OneFile Select*, link.gale.com/apps/doc/A167305850/EAIM?u=auraria\_main&sid=summon&xid=c1c40e47.
- Nawroth, Christian et al. "Farm Animal Cognition-Linking Behavior, Welfare and Ethics." *Frontiers in Veterinary Science*, vol. 6, no. 24., 12 Feb. 2019, pp. 1-16. *National Center for Biotechnology Information*, doi:10.3389/fvets.2019.00024.
- Newberry, Ruth C. "Exploratory Behavior of Young Domestic Fowl." *Applied Animal Behavior Science*, vol. 16, 1999, pp. 311-21. *ScienceDirect*, doi-org.aurarialibrary.idm.oclc.org/10.1016/S0168-1591(99)00016-7.
- "Putting Meat on the Table: Industrial Farm Animal Production in America." Pew Research Center, Washington, D.C. (2009). [www.pcifapia.org/\\_images/PCIFAPSmry.pdf](http://www.pcifapia.org/_images/PCIFAPSmry.pdf).
- Singer, Peter. *Animal Liberation: The Definitive Classic of the Animal Movement*. 3rd ed., Open Road Media, 2015.

Wilson, Scott D. "Animals and Ethics." *Internet Encyclopedia of Philosophy: A Peer-Reviewed Academic Resource*, [iep.utm.edu/anim-eth/](http://iep.utm.edu/anim-eth/). Accessed 23 July 2021.