

Animals in the Food Supply Chain:
Suggested Guidelines for Animals Raised for Food

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Senior Honors Research Project

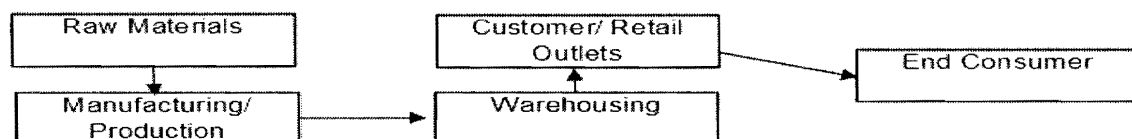
Philosophy 407

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December 1, 2009

Supply chains enable us as consumers to get the goods we desire. A basic supply chain goes from raw materials to the end consumer (and sometimes back up the supply chain in a reverse flow). Encompassing procurement, raw materials, production, warehousing, distribution/transportation, retail outlets, and consumption, supply chains can be almost infinitely complex. Figure 1 is an example of a basic supply chain, where the arrows represent the flow of goods via transportation, and each box represents a process in the supply chain. Almost every product goes through some sort of supply chain. Supply chains can travel across state, country, and continental boundaries. Many supply chains for consumer goods span the world, with products designed in the United States, raw materials sourced from any number of continents, shipped to and produced in Asia, and then shipped from Asia to the markets they will be sold in, which could be anywhere in the world. Globally, consumers are becoming aware of the impacts of their purchases on the environment; there is a movement toward ethically sourced products, which considers the environment as well as other ethical matters when determining a source for raw materials. Consumer awareness and opinion influences any manufacturer hoping to sell a product, and consumers are just beginning to care and seek knowledge about where their food comes from.

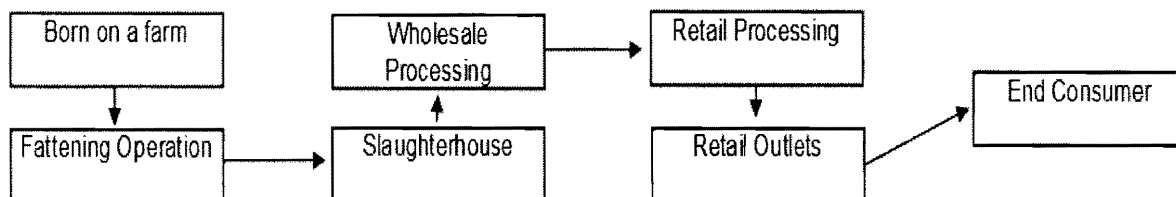
Figure 1



Food supply chains look much like any other supply chain. Figure 2 shows a typical food supply chain, with the boxes representing the life of an animal destined for the table. Since this

paper concerns animals in the food supply chain, I will describe what an animal supply chain can look like. Animals are either raised by the company that will sell them, as in the case of poultry, or are raised on factory farms, then sold for fattening. Once an animal being raised for slaughter has reached slaughter weight, it is then sent to the slaughterhouse where it is killed, and then taken to a processor who will process wholesale cuts of meat. The wholesaler will then process retail and foodservice cuts of meat which are sold to restaurants and retail outlets, such as grocery stores. They are then ordered by consumers at restaurants, or bought by moms at the grocery store to be cooked for dinner and eaten by families across America.

Figure 2



These animals don't move from one step in the supply chain to another automatically. Transfer from process to process is undertaken by our network of tractor-trailers on interstate systems. Cows are typically not raised near their feedlots, and feedlots may not be near slaughterhouses. At every juncture in the supply chain there is a trailer waiting to move cattle (or any other animals raised for slaughter) to their next destination.

Not enough is being done to minimize suffering for animals farmed for food. This paper seeks to address the suffering of animals and set out new guidelines needed for the meat industry. Having described the food supply chain, this paper will then give a brief synopsis of the current theories of animal ethics, and proceed with Singer's preference utilitarian ethic while evaluating current standards for meat production.

There is a lot to be said about factory farmed animals today. Approximately 190 pounds of meat per person are consumed each year (Nolt 174). Singer estimates that 100 million cows, pigs, and sheep are raised and slaughtered in the United States are consumed each year, and 5 billion chickens are raised and slaughtered each year (95). Beef cattle are not allowed to move around, because to move around would waste calories, and the goal is to fatten quickly for slaughter. They are raised on a diet of grain and antibiotics, though their natural diet is grass and roughage, and the grain disrupts their stomach. The antibiotics are meant to take care of infections, though the infections are from living in cramped, unnatural conditions, and not all the cows are in need of medicine. These antibiotics are passed on to consumers in the meat we buy and eat. Once cattle reach slaughter weight, they are sent to slaughterhouses, having to ride in a trailer for hundreds of miles, without time to stretch, sometimes without food or water (Singer 137, 139-41).

Hogs aren't treated much differently, though they will spend their entire lives indoors. Sows are forced to live in a pen known as the "iron maiden" which does not allow them to move around at all, and their piglets are taken from them at only 3 to 4 weeks (Nolt 196). Those sows not being fattened for market are fed less than 60% of what they would normally eat. Pigs have intelligence comparable to that of a dog, they get bored easily and are prone to biting each

other's tails when confined without entertainment, so hog producers "dock" the pigs' tails (Singer 121-29).

Though all farm animals are treated poorly, chickens may get the shortest end of the stick. Chickens are typically placed in battery cages, wire mesh cages with less than half a square foot of space per chicken. Typically five or more chickens are placed in one wire cage for the entire seven weeks of their life. They are bred to grow twice as fast and twice as large as traditional chickens, which puts a strain on their hearts and lungs, which do not grow at the same pace (Nolt 199). Their environment is controlled to cause more weight gain in less time and on less feed. Food and water are dispensed automatically and lighting adjusted to make the chickens grow and decrease aggression. The crowded conditions in which chickens are kept causes aggression between the chickens, so their beaks are cut off in a process called "debeaking." Flocks of up to 90 chickens can live peacefully, because they establish a pecking order, but when 10,000 to 50,000 birds are in one shed, there is no way to establish pecking order, and the stress and fighting will occur. Laying chickens have a strong desire to nest, and not giving them this opportunity creates stress. The high levels of ammonia in the air hurt their lungs (Singer 98-120).

It is apparent that these animals suffer throughout their lives before being killed. They are raised for the purpose of feeding those of us who enjoy the taste of meat on our dinner plates, without concern for how the meat came to be on our plates. The next section will explore three ethical theories for treatment of animals, determine which of these we should use, and set out guidelines for what should change in the food supply chain.

Peter Singer's *Animal Liberation* (1975) advocates equal consideration of animals and people. Singer establishes the principle of equality which requires equal consideration for equal

interests. “The basic element – the taking into account of the interests of the being, whatever those interests may be – must, according to the principle of equality, be extended to all beings, black or white, masculine or feminine, human or nonhuman” (Singer 5). The principle of equality does not state that all people and animals are equal as individuals, but that we should consider their interests equally. It implies that our concern for others should not depend on what they are like, or what abilities they have (Singer 5). All sentient individuals, both people and animals, have an interest in not suffering. Singer believes that intelligence does not matter; pain is the same in both humans and animals. While humans have ways of suffering animals do not, animals have ways of suffering humans are not capable of. Singer calls our prejudice against animals *speciesism*. He compares speciesism to racism and sexism, saying that discrimination based on arbitrary characteristics has no basis (Singer 6). Singer’s principle of equality says we must consider the suffering of every being as having the same weight as suffering affecting any other being. Any individual’s suffering should be considered equal to any other individual’s suffering, whether those sentient individuals are human or non-human animals. He goes on to say that many animals are caused unnecessary suffering through animal research and animal agriculture, solely for human benefit; actions that cause suffering to animals for benefits to humans that could be achieved without suffering are wrong. Singer advocates preference utilitarianism, saying that we ought to choose the action that will provide the least amount of preference frustration, or suffering, for all individuals involved. He focuses on minimizing suffering, rather than maximizing pleasure; the same focus of most ethicists, as minimizing suffering is the more urgent task.

Singer makes no argument that animals are capable of acting morally, only that the moral principle of equal consideration for equal interests applies to animals. He argues that we give

equal consideration for equal interests to young children and other humans who do not have the mental capacity for moral choice (Singer 225).

Singer's only argument against killing animals for food, as opposed to causing them to suffer, is that it makes us think of them as "objects we can use casually for our own nonessential purposes" (Singer 229). This attitude can lead to disrespect and mistreatment of animals. Essentially, Singer comes to the conclusion that we should not eat factory farmed meat because the animals are caused suffering, but preference utilitarian arguments do not support arguments against eating meat when it can be produced without suffering. They do, however, support strong arguments against eating meat, as meat production causes suffering. Preference utilitarianism says that if we are going to eat meat, we ought to minimize the suffering involved in its production. Singer does make a deontological argument for not eating meat, saying that if we eat meat only to satisfy our taste buds, then the being we are eating is no more than a means to an end (Singer 160).

Written after Peter Singer's *Animal Liberation* in 1983, Tom Regan's book *The Case for Animal Rights* outlines why animals have rights and what those rights are. Animals have rights because they have welfare – the ability to fare well or ill. According to Regan, there are basic requirements that must be met for an individual who has the ability to live well to be able to do so. These requirements include animals' opportunities to exercise autonomy, take satisfaction in pursuing and getting what they prefer so long as what they pursue is in their interests, or satisfy desires without being interfered with.

Regan argues against Singer's direct duty view, meaning that we have duties owed to animals, on his path to prove his rights theory. He disputes preference utilitarianism, which he

sums up to say that we should aim to produce consequences that further the interests (preference satisfaction) of individuals and do not prevent individuals from furthering their interests (preference frustration). It should be noted that Singer's view of preference utilitarianism does not require maximizing pleasure, but only minimizing suffering. Regan doesn't like this view because it implies animals and anyone affected by consequences of an action is a mere receptacle of value. The term receptacle of value, coined by Regan, means that an individual does not have any value of its own, until we decide to attribute value to it through our actions (such as minimizing suffering). Regan states that when we treat individuals as mere receptacles, we are treating them as if they have no inherent value in and of themselves (Regan 205).

Regan also criticizes Singer's principle of preference utility (aggregate amount of preference satisfaction minus preference frustration), saying it depends on the principle of equality (equal consideration of interests), but moral principles must be derivable from the principle of utility, so the principle of equality is derivable from the principle of utility (Regan 206-08). Simply put, Regan is arguing that Singer's principle of equality cannot be used as a moral principle because it is not derived from the principle of utility. This is a flawed argument against Singer, however, because there is no moral or philosophical reason why Singer cannot advocate both the principle of equality and the principle of utility.

Regan's own theory is that individual moral agents have a distinctive kind of value. The inherent value of moral agents (those with the ability to make moral decisions) cannot be earned or lost, and does not increase or decrease depending on degree of utility; it is also independent of whether they are the object of anyone else's interests, because they have inherent value and are not mere receptacles of value (Regan 236). So, if a moral agent has inherent value, harm done to

the moral agent cannot be justified by producing the best consequences based on the outcome (because it has value in and of itself and therefore has rights that cannot be overridden except by greater rights). This makes this view in opposition to preference utilitarianism, which uses moral agents as mere receptacles of consequences.

In determining what is common across all individuals with inherent value, Regan says they are all subjects-of-a-life. Humans who are moral patients (unable to make a moral decision) are given the same rights as humans who are moral agents, because they are subjects-of-a-life; Regan sees no reason not to extend the same rights to animals who are moral patients. Subjects-of-a-life must have beliefs and desires, a sense of self and the future, emotional life with feelings of pleasure and pain, preference and welfare-interests, the ability to initiate action in pursuit of goals, and an individual welfare. Animals have all these preferences and abilities, and are therefore considered subjects-of-a-life (Regan 243-44).

Regan asserts a respect principle which states that we should treat individuals with inherent value (so, all subjects-of-a-life) in ways that respect that inherent value. In acting in such a way as to bring about the best aggregate consequences (preference utilitarianism), even though it causes harm to an individual with inherent value, we are not displaying respect, because we are treating that individual as a mere receptacle of value if we are concerned only with the consequences and not with the individual himself. We also have the prima facie duty to assist those with inherent value who are being treated unjustly. The respect principle does not, however, charge us with the duty to count equal preferences and pleasures equally, but to give each and every moral agent the same respectful treatment due to any other moral agent (Regan 248-49).

Regan's argument is based on the statement that moral rights are universal, equal, and do not arise as a result of the creative acts of any one individual or group (Regan 267-68). One's having a right puts that individual in a position to claim something is owed to them. As moral agents we all have unacquired duties, which, according to Rawls, "Apply to us without regard to our voluntary acts," and hold, "irrespective of institutional arrangements." We have a duty of justice, and therefore the right to just treatment is a basic right (Regan 273). The claim to respectful treatment is no stronger or weaker in the case of patients than it is for moral agents (Regan 276). All moral agents have the power to treat moral patients with the respect they are due, and there is no reason why moral rights of moral patients should be any different than moral rights of moral agents, but only moral agents can have duties. One who would harm another or allow harm to occur must be able to do so by appealing to other moral principles and show these principles morally outweigh the right not to be harmed (Regan 279-80).

According to Regan, animals are not moral agents because they do not have the ability to do what is right or what is wrong; therefore they cannot do anything that merits treatment that is *prima facie* a violation of their rights. Regan believes animal agriculture is unjust because it fails to treat farm animals with the respect they are due; instead treating them as renewable resources with value only relative to human interests.

Singer and Regan both agree that factory farming causes harms to animals and is not ethically defensible. Regan, however, makes an argument within his ethic about the morality of killing an animal, and gives all individuals inherent moral worth, meaning it is not acceptable to cause them harm or take their life, even if the consequences are small.

Most recently, David DeGrazia wrote *Taking Animals Seriously* (1996) to find an ethic that did not have the shortcomings of Singer and Regan. DeGrazia felt that Singer failed to address many important issues, such as the nature of suffering and how it relates to mental states, difficulties with utilitarianism, and a shaky defense of equal consideration for animals being compatible with the belief that the lives of normal humans are ordinarily more valuable than the lives of animals (DeGrazia 3).

DeGrazia criticizes Singer for not discussing the nature of suffering and how suffering is related to mental states. DeGrazia thinks that the amount of suffering an individual can feel depends on the individual's mental capacity. Singer does not believe that suffering is dependent on the intelligence of an individual; all sentient individuals have the capacity to suffer.

DeGrazia's next criticism of Singer's argument is against utilitarianism. DeGrazia says Singer's utilitarianism "implies that not only animals – but humans – lack moral rights, because *there is no such thing* as a moral right; the only ultimate moral standard is the principle of utility." Since the principle of utility calls for maximizing the greatest good, we could sometimes be called upon to ignore an individual's interests for the greater good (DeGrazia 4). However, Singer advocates a negative utilitarianism which does not call for maximizing the greatest good, but rather minimizing the amount of harms done. This negative principle of utility would not call for overriding an individual's interests in the name of the greater good. But Singer's view would override an individual's interests in order to prevent greater suffering.

Finally, DeGrazia says Singer's defense of equal consideration being compatible with the common belief that human life is more valuable than animal life is shaky. Many people believe that human life is more valuable than animal life, and Singer accepts this fact, given the principle

of equality, DeGrazia thinks Singer should explain how he accepts it. Singer does say that human preference is no greater than animal preference. Though DeGrazia gives us a laundry list of complaints about Singer, Singer's view is still ethically acceptable. Singer does not set out to solve all of the problems, only to minimize the suffering of animals.

DeGrazia tells us that equal consideration does not entail identical rights for humans and animals, a moral requirement to treat humans and animals equally, or an absence of morally interesting differences between animals and humans (DeGrazia 37-38). Neither Singer nor Regan disagree with this statement. Singer says equal consideration means equal consideration for equal interests, which does not mean that we should treat humans and animals equally, but that we should consider their interests equally. Regan does not suggest equal consideration, nor does he suggest identical rights for humans and animals, but he does say we ought to respect the rights of animals, which include an equal right to life, and an equal right to noninterference by moral agents. The principle of equal consideration rules out routine overriding of animals' relevantly similar interests in the name of human benefit. Equal treatment is not required by either Singer or Regan, because animals have different needs, just like they have different interests, so animals do not need the same treatment as humans. Singer and Regan also both agree that there are significant moral differences between humans and animals, but Regan puts value on life itself and on respect for rights, while Singer places value on the avoidance of suffering. Universalizability and formal justice imply that we should grant equal moral weight to everyone's relevantly similar interests, unless there is a relevant difference between the beings in question (DeGrazia 51).

The principle of nonmaleficence, advocated by DeGrazia, states that we have a duty not to harm others; we also have obligations not to cause unnecessary suffering (DeGrazia 259). These obligations give us a list of ways we ought and ought not treat animals, with humans, great apes, and dolphins garnering more consideration than other sentient beings; DeGrazia believes those higher mammals have the capacity for moral agency (199). Using scientific research, DeGrazia presents the evidence that many animals have feelings, desires, and beliefs. In order to present an individual with moral agency, one must be capable of deliberating on the basis of moral reasons, acting on the basis of deliberation, and justifying one's decision with an argument appealing to moral reasons. Other animals besides humans, great apes, and dolphins do not have the capacity for moral agency, because they cannot use language and have not shown the ability to act morally, so the presumption of their rights is weaker than that for higher animals, but still should be considered. DeGrazia makes a list of principles that define how we ought and ought not treat animals that includes not causing unnecessary harm, and making efforts not to provide financial support for those institutions (such as factory farms) that cause unnecessary harm, it also includes not causing significant suffering for the sake of yours or others' enjoyment, not killing or confining sentient animals unnecessarily, nor disabling sentient animals (DeGrazia 279). Conditions of any justified confinement must be responsive to the animal's needs. Factory farms obviously violate these conditions – they cause significant suffering, kill sentient animals unnecessarily, and needlessly disable sentient animals. None of the harms inflicted on factory farmed animals can be considered necessary. Humans do not need meat in their diet to survive, so an omnivorous diet is unnecessary for humans. Family farms are more ethically defensible than factory farms, but are still not completely ethically defensible. Some farming practices still

cause unnecessary suffering of the farm animals, such as castration and branding, and the killing of sentient animals is still regarded by DeGrazia as unnecessary (DeGrazia 279-88).

DeGrazia and Singer both agree that causing suffering to animals is bad, but DeGrazia believes the moral badness comes in degrees, depending on the moral agency of the animal in question. It is worse to cause a harm to a being with the capacity to act morally (human, great ape, dolphin) than it is to cause the same harm to a being without capacity for moral agency (dog, bird).

Regan says Singer's view treats animals as mere receptacles of value, and fails to give them inherent value. DeGrazia says animals' desires and beliefs should be considered, and the capacity for moral agency defines how much moral consideration ought to be given to individuals. Regan and DeGrazia are concerned with the moral implications of ending an animals' life, not solely with the suffering of the animal. Singer admits his ethic is incomplete, but is solely concerned with the suffering of animals, not with the morality of ending their lives. This paper will not use Singer's deontological argument for vegetarianism, instead I opt to only use Singer's preference utilitarian argument for minimizing suffering. In response to Regan's objection to Singer treating individuals as mere receptacles of value, Singer says that argument is too controversial for him to discuss.

Singer's view, though deemed inadequate by DeGrazia and Regan, is the one this paper will use to set out standards and guidelines for the ethical treatment of animals in the food supply chain. The minimization of suffering is minimally required of us as human beings and moral agents. Though it would be grand to imagine that everyone will immediately stop eating factory farmed meat, I am too practical to imagine that. I will not use Regan's or DeGrazia's framework

in this paper to defend what I am saying ought to happen. I will use the minimal ethic in hopes that it is more well-received by those on whom it has an impact.

Now that we have acknowledged that there is an ethical problem with the way animals are currently treated on factory farms, what should we do about the problem? Many countries in the European Union have established stringent laws for the treatment of farm animals, and a few states (Arizona, Florida, California, Colorado, Michigan, and Oregon) here in the United States have recently passed legislation protecting farm animals. Most of this legislation requires that farm animals being raised for food are not confined to the degree that they cannot turn in a circle and lie down comfortably. Battery cages for chickens are also being phased out. This is a good start, but it is not enough. Nebraska is the only state to have voted down legislation protecting the welfare of farm animals. Many organizations have set out guidelines for humane treatment of animals. I will take my lead from them.

There are many animals that I could discuss guidelines for, but in this paper I will look at beef cattle, laying hens, and pigs. The industry standard does not set forth even a minimum consideration for the welfare of animals, so it is insufficient. Instead, we will look at independent standards set out by various programs to determine a set of guidelines to make current farming practices more morally acceptable. The Certified Humane Program (HFAC), American Humane Certified (AHA), Animal Welfare Approved (AWA), and Global Animal Partnership are all certifications that can be applied to meat that meets the standards of these sponsoring organizations. The Global Animal Partnership has a five-step program that allows producers to become certified one step at a time, with each following step providing more stringent guidelines for animal treatment. Though each of the organizations mentioned is looking out for the best

interests of animals, they do not agree on every item of concern. For instance, when considering beef cattle's access to pasture, the Certified Humane Program and American Humane Certification do not require pasture access and allow animals to be kept in feedlots, while the Global Animal Partnership's Step 5 Plus requires that cattle must live continuously on range or pasture. All the certifications prohibit the spaying of heifers, and while the Animal Welfare Approval certification prohibits electric prod use, the other certifications allow it in emergency instances. In my opinion, the best solution is to continually work toward a natural life that allows for the instinctual behavior without human interference or inflicted suffering for the animals. Working towards natural life for animals will minimize suffering caused by humans to the point that one day all suffering for animals caused by humans might be eliminated. This cannot be achieved all at once, but by taking it a step at a time, producers can improve animals' lives in a cost-effective and humane manner.

All the animal welfare guidelines addressed in this paper have their basis in the Five Freedoms, defined by the Farm Animal Welfare Council (FAWC). The concept of the Five Freedoms originated from the Report of the Technical Committee to Enquire into the Welfare of Animals kept under Intensive Livestock Husbandry Systems, the Brambell Report, December 1965. This original report stated that animals should have freedom "to stand up, lie down, turn around, groom themselves, and stretch their limbs." These new five freedoms provide the basis for the Five Freedoms of the FAWC today. These five freedoms "define ideal states rather than standards for acceptable welfare" forming a framework for analysis of the welfare of animals.

The five freedoms are:

1. **Freedom from hunger and thirst** – by ready access to fresh water and a diet to maintain full health and vigor.
2. **Freedom from discomfort** – by providing an appropriate environment including shelter and a comfortable resting area.
3. **Freedom from pain, injury, or disease** – by prevention or rapid diagnosis and treatment.
4. **Freedom to express normal behavior** – by providing sufficient space, proper facilities, and company of the animal's own kind.
5. **Freedom from fear and distress** – by ensuring conditions and treatments that avoid mental suffering. (FAWC)

These five freedoms have their origins in both science and ethics; we will explore how these ideals, with scientific support, fit our ethical model of preference utilitarianism, and evaluate the guidelines for animal welfare standards according to our ethical theory. All five freedoms can be justified by utilitarianism, since mental suffering is a form of preference frustration. Animals do have interests in being satiating hunger and thirst; avoiding discomfort, pain, injury, and disease; and to act on instinctual behaviors. These five freedoms work to minimize preference frustration, but do they do enough?

As the preference utilitarian perspective on farm animals is the minimalist ethic, we need only to find the bare minimum for the animals, which involves ensuring the minimization preference frustration (suffering) of animals and also taking into account worker safety. Utilitarianism, even when concerned with animals, must take all individuals who will be affected

by actions into account. We can use the five freedoms as a good foundation for understanding the preferences of farm animals.

Egg-Laying Hens

First, we will evaluate egg-laying hens. Chickens have instincts to “walk around, scratch the ground, bathe in dust, build nests, or stretch their wings. Those raised on factory farms are not part of a flock. They cannot keep out of each other’s way, and weaker birds have no escape from the attacks of stronger ones” (Singer 113). Hens instinctually want to build a nest and lay their eggs. They will postpone laying their eggs in front of their cagemates for as long as is possible (114). Dustbathing helps chickens maintain feather quality. This is done by forming a hollow in fine soil, fluffing soil into the feathers, and then shaking to remove the dust (116). Chickens have a natural “pecking order” which is a hierarchy that allows them to determine who gets to feed first, and who has priority within the group. There are sometimes conflicts within the group before pecking order is established, but once it is established, there are no conflicts. However, within a group of more than 90 hens, there is no way to maintain a stable pecking order and the extreme crowding causes chickens to resort to such vices as feather-pecking and cannibalism (Singer 99,100). The animal welfare standard guidelines (see Appendix A) for chickens includes antibiotics, ammonia levels, access to outdoors, minimum space per hen, continuous confinement to wire cages, litter for dustbath/nest boxes, indoor lighting, and forced molting.

Some animal welfare certifications (and all organic food certifications) prohibit the use of antibiotics for animals. Other certifications call for it only in the treatment of illness. The third of the five freedoms calls for the treatment of disease, which can sometimes be accomplished

through treatment with antibiotics. We must consider the impacts of antibiotics in creating disease-resistant strains of bacteria in determining whether or not to give animals antibiotics. It is almost certain that giving animals antibiotics as a matter of precaution is to be frowned upon, but in the long run, is it better for all individuals (human and non-human animals) to treat sick animals with antibiotics, or not? As long as the antibiotics are not overused, it is in the animals' best interests to be treated for disease. We must minimize suffering, and allowing an animal to suffer from a disease we have the capability to treat is inherently wrong. Better antibiotic practices by humans (not over prescribing them, taking the entire prescription, not sharing antibiotics) and by those who are treating animals would help eliminate the issue of antibiotic-resistant strains of bacteria.

In the case of pigs and egg-laying hens, ammonia levels must be considered. High levels of ammonia can lead to breathing problems and mucus membrane irritation in both workers and the animals. It can also cause blurred vision and nausea, among other side effects in the farm workers. The OSHA guideline for ammonia exposure for workers is less than 50 PPM over an eight hour period. For these reasons, ammonia levels should be kept to less than 50 PPM over the work day with shelters designed for ventilation and air circulation, which is a combination of the recommended standards, for the health and safety of workers.

Access to the outdoors is not strictly necessary for hens, but continuous confinement to wire cages should be prohibited, when chickens must be housed in cages, those cages must provide adequate room for socializing, exercising, stretching, and moving about; the second freedom from discomfort encourages this. These should give at least 1.25 square feet per hen (enough room to stretch wings) or 1.0 to 1.2 square feet per hen if there is an overhead perch

available. Wire cages ought not be used, as chicken's feet have been known to grow around the wire, and the constant motion of rubbing against the wire has been known to remove the feathers. Hens should be given at least eight hours per day of dim light, and six to eight hours per day of complete darkness. Forced molting by withholding of food should be strictly prohibited, as it causes great stress on the chickens.

The fourth freedom, freedom to express normal behavior, requires that chickens have litter for dustbathing, the act of getting the dust in between their feathers helps them stay clean and keep their feathers separated. Chickens confined to wire cages will dustbathe on the wire floor, removing the feathers on their stomachs and causing skin problems there as well (116). Chickens should be given the opportunity to nest, another instinctual activity that can cause frustration in the animals if they aren't given the chance. A community nesting area with dividers is sufficient, or one nesting box for no more than five hens. Depriving animals of the environment needed to perform instinctual activities causes suffering, both mental and physical.

To the guidelines provided by the current certifying organizations, I believe we should add battery cages, debeaking, the size of flocks, and the discarding of male chicks. Debeaking is the process of removing the beak of the chicken, typically with a hot iron or guillotine-type tool. This is considered necessary, because chickens that exhibit stress will engage in feather-pecking and cannibalism (Singer 101,107). The removal of the beak typically causes great pain in the animal and can sometimes prevent the animal from eating for several days. Many of these problems induced by stress (feather-pecking, cannibalism, reluctance to lay, aggression) could be eliminated if flock sizes were kept to less than 90 hens, so that a pecking order could be established.

Profit must be considered, of course, and if chickens are kept in smaller groups, then the price to raise the chickens will increase substantially, and therefore the cost to consumers will also face a substantial increase. The question is whether the financial implications should outweigh the suffering of the animals, when the suffering could easily be greatly reduced or eliminated. I could consider the ability of all families to afford chicken once prices are raised, since it is one of the more affordable meats, but since we don't need meat to survive, I see no need to do so. Protein can easily be found in beans, nuts, and whole grains. If the chickens are kept in smaller groups, it could potentially require more workers to care for them, increasing job opportunities, so my recommendation is that we allow chickens to be kept in groups small enough to create pecking orders, which eliminates the need for debeaking, and if the other recommendations are followed, eliminates nearly all suffering.

Finally, many male chicks are discarded when they are born by being tossed in a garbage bag, ground up alive, or gassed, because they cannot lay eggs and are therefore considered worthless. Male chicks have no economic value in egg operations, so I propose that if homes cannot be found for them they be killed in a humane manner, not simply dumped in a trash can to suffocate under others of their kind.

Pigs

"Of all the animals commonly eaten in the Western world, the pig is without a doubt the most intelligent" (Singer 119). Pigs are also the most sensitive animals typically raised for human food. As with chickens, there are several instinctual activities pigs in a normal habitat participate in. Pigs form social groups, build communal nests, use areas away from their communal nests to relieve themselves, and they spend most of their days rooting. Sows who are

ready to give birth build their own nest, and stay there for approximately nine days after giving birth before returning with the piglets to the communal nest. When living in crowded conditions, pigs exhibit vices and stress in a similar way to chickens. Rather than feather-pecking, pigs resort to tail biting. We have evaluated standards for antibiotics and ammonia levels; we will now evaluate standards (Appendix B) for access to outdoors, tethers/gestation crates/farrowing crates, minimum farrowing space per sow, bedding, slatted/wire floors, and indoor lighting.

Pigs should be granted access to the outdoors, but as with chickens, this is not strictly necessary. This has benefit for the animals, and causes no harm for those humans involved in the farming. The second freedom from discomfort prohibits gestation crates, tethers, and slatted, wire, or concrete floors. Gestation crates are unacceptable; however, it is acceptable for sows to be kept in farrowing crates (of at least 48 square feet) if there is room to turn around and they are not kept constantly confined. Tethers are unacceptable, as they inhibit the hog's ability to move around, and pigs kept tethered have been known to bite at the tether for lack of anything else to do. Slatted, wire, and concrete floors cause serious damage to the feet and legs of pigs and should not be used; rather, a straw bed is preferable for pigs to make their nest. Clean and dry bedding is required, indoors and out, year-round. Artificial light is allowed, no more than 16 hours per day, daylight is preferable.

In addition to the considerations above, we should think about feed restriction for breeding animals, minimum weaning age, and tail docking. The first freedom, and the most basic, is freedom from hunger and thirst. Many breeding animals are kept hungry, given only the rations needed to survive, since they aren't being fattened for slaughter; food restriction/intentional starvation should not be allowed, pigs must have access to food each day,

except when the veterinarian says otherwise (for the pig's own health). Ideally, pigs should have access to forage between meals. The minimum weaning age for piglets is no less than eight weeks, but should be closer to 12 weeks, as the natural weaning age of piglets is 3 months. Stress is caused both to the piglets and the sow when the piglets are weaned too early. Routine tail docking is prohibited except when health and welfare reasons allow for it. If pigs are not aggressive, then there is no reason to dock their tails, and without creating stressful situations through overcrowding and confinement, then they won't be aggressive. Allowing pigs the opportunities to form social groups, as they instinctually do when left to their own natural desires is essential in raising them, as it eliminates nearly all of the suffering caused by factory farming.

Beef Cattle

While beef cattle cannot be considered the most intelligent species of non-human animals, they still have the ability to suffer. And while they do not display as many distinct instinctual and social behaviors as egg-laying hens and pigs, they still have basic needs that must be attended to. Here, we will be evaluating antibiotics, growth hormones, access to pasture, identification, castration, debudding/dehorning, spaying of heifers, minimum weaning age, and electric prod use (from Appendix C).

In the case of beef cattle, growth hormones can cause harm and suffering to the animals, and those hormones can also be passed along in the meat to consumers (Nolt 175-76). Without growth hormones, the cattle will grow more slowly, which could potentially have a marginal profit impact, but the potential effects on human consumers and on the animals themselves outweighs the profit loss. While many of the certifying organizations for ethically produced meat allow for feedlots, the crowded conditions of feedlots lead to disease, discomfort, and digestive

ailments for the animals. However, there is not enough pasture in the United States to allow all the beef cows to be pasture-raised, so we must allow feedlots, but place some expectations on their conditions. Hot iron branding and ear cutting are not acceptable methods of identification, but ear tagging is acceptable. Castration at the earliest age possible is allowable, anesthesia should always be used to prevent the suffering of the animal. Debudding and dehorning is painful for animals, but essential for both worker and animal safety, so it should be done within the first four months, using a hot iron, for efficiency and anesthesia to prevent pain. Electric prod use also causes harm to animals, but is essential for worker safety, so it is allowable in emergency situations. Spaying is unnecessary suffering, and therefore prohibited. Cows should be weaned no earlier than six to nine months.

To add to the guidelines above, I add exposure to the elements and diet. Beef cattle are typically raised exclusively on feedlots, which are not only uncomfortable on their feet, but also offer no shelter from the elements. Indoor confinement rearing is not the answer, but offering shade from the heat, and protection from snow and cold is essential, as in the second freedom, freedom from discomfort. Most beef cattle are hardy animals, able to withstand the cold as long as they are kept dry and have dry bedding. This can be accomplished by having solid fences, barns, or sheds. The body heat from the cattle will help keep them all warm. Cattle are typically fed high-energy concentrates that are difficult for the cow's digestive system to process. Bovine digestive systems are designed to process slowly fermenting grass (Singer 140). However, there isn't enough grass to feed all the cows in all the farming operations, so a combination of typical feed and grass and roughage should be fed to the cows to ensure their fiber intake is met and to aid in the digestive process.

In this paper, I have sought to describe the current situation on factory farms and suggest solutions for minimizing the harms and suffering caused to factory farmed animals. I have set out suggested new guidelines for the production of egg-laying hens, pigs, and beef cattle. While these guidelines will not completely eliminate the suffering of animals, they are steps in the right direction. Once these guidelines have been implemented and consumers have been made aware of the plight of animals, we can hope that factory farming and animal circumstances will continue to improve. Maybe in the future, there will be no need for factory farmed animals.

Appendix I: Comparison of Animal Welfare Standards by Program – EGG-LAYING HENS

Animal Welfare Standard	Industry Guidelines (UEP)	National Organic Program (USDA)	Certified Humane Program (HFAC)	American Humane Certified (AHA)	Animal Welfare Approved (AWA)
Antibiotics	Not prohibited	Prohibited	Permitted for treatment of disease only	Permitted for treatment of disease only	Permitted for disease treatment only
Ammonia Levels	Should not exceed 25 ppm; less than 10 ppm recommended	Shelter designed for ventilation & air circulation	Not to exceed 25 ppm; should be less than 10 ppm	Not to exceed 25 ppm	No limit specified; shelters and housing must be well ventilated and allow fresh air
Access to Outdoors	Not required	Required; temporary confinement allowed	Not required	Required as per National Organic Program regulations	Continuous outdoor ranging and foraging access required from age four weeks old onwards
Min. Space Per Hen	White hens: 67 square inches; Brown hens: 76 square inches	Not specifically addressed but must provide opportunity to exercise & freedom of movement	1.5 square feet; 1.0-1.2 square feet for houses with overhead perches	1.25 square feet; 1.0-1.2 square feet for houses with overhead perches	Not specified; chickens must at all times have adequate space to socialize, fly, walk, stretch, look for food and water, scratch the ground, and dust bathe
Continuous Confinement to Wire Cages	Permitted	Not addressed but prohibited due to exercise requirement	Prohibited	Prohibited	Prohibited
Litter for Dust Bath/ Nest Boxes	Not required	Not specifically addressed but clean, dry bedding required	Litter for dust bathing required; nest boxes no less than 1 per 5 hens or community nest area not less than 9 square feet per 100 birds	Litter for dust bathing required; nest boxes no less than 1 per 5 hens or community nest area with "adequate" space and dividers to ensure privacy	Litter for dust bathing required; nest boxes no less than 1 per five birds required
Indoor Lighting	Continuous subdued lighting permitted (0.5-11foot candle; approximately 5 to 10 lux)	Access to direct sunlight required	Minimum 8 hours dim light (average 10 lux); 6 hours darkness required per day	Minimum 8 hours dim light (average 10 lux); 6 hours darkness required per day	Light must average 15 lux during daylight hours, with at least 8 hours darkness
Forced Molting	Feed withdrawal prohibited; water must be provided	Not addressed but producers must provide "a total feed ration" and access to direct sunlight required	Feed withdrawal to induce molting prohibited	Feed withdrawal to induce molting prohibited	Prohibited

http://www.uepcertified.com/docs/new_advantages_of_cage_and_cage_free.pdf

Appendix A

From Farm Sanctuary's "The Facts About Farm Industry Welfare Standards"

Accessed September 10, 2009, from farmsanctuary.org, an organization working to end cruelty to animals.

Appendix G: Comparison of Animal Welfare Standards by Program – PIGS

Animal Welfare Standard	Industry Guidelines (NFB)	National Organic Program (USDA)	Certified Humane Program (HFAC)	American Humane Certified (AHA)	Animal Welfare Approved (AWA)	Global Animal Partnership
Antibiotics	Not prohibited	Prohibited	Permitted for treatment of disease only	Permitted for treatment of disease only	Permitted for treatment of disease only	Prohibited (all steps)
Ammonia Levels	Should not exceed 50 ppm	Shelter designed for ventilation & air circulation	Not to exceed 25 ppm; should be less than 10 ppm	Not to exceed 25 ppm	Nothing specified; "shelters and housing must be well ventilated and allow for fresh air and natural light to enter"	No specific requirement; recommended not to exceed 10 ppm
Access to Outdoors	Not required	Required; temporary confinement allowed	Not required	Not required	Continuous access required from 10 days of age onward	Continuous access to foraging areas or pasture required
Tethers/ Gestation Crates/ Farrowing Crates	Permitted	Not specifically addressed but prohibited by the requirement for freedom of movement	Prohibited, except turn-around type farrowing pens allowed (must be at least 6x8 feet)	Prohibited, except turn-around type farrowing pens allowed (min. 5x7 feet) & gestation pens (minimum 20 square feet) during first 35 days allowed	All prohibited, including turn-around farrowing crates	Prohibited (all steps)
Min. Farrowing Space Per Sow	No limit	Not addressed	48 square feet required; 100 square feet preferred	35 square feet required	Minimum 64 square feet required bedding area, plus 32 square feet loafing area	Min 48 square feet required (all steps)
Bedding	Not required	Clean, dry bedding required	Required for housing indoors & outdoors	Required only for outdoor housing in winter	Required for housing indoors & outdoors	Required (all steps)
Slatted, Wire Floors	Permitted	Not addressed	Prohibited	Slatted floors permitted	Prohibited	Prohibited
Indoor Lighting	Subdued artificial light allowed	Access to direct sunlight required	Artificial light allowed (at level of at least 50 lux)	Artificial light allowed (at level of at least 50 lux)	Shelters and housing must have windows or openings that allow daylight; artificial light must not exceed 16 hours per day	Step 5 Plus animals live primarily outdoors with continuous access to shelter
Feed Restriction for Sows/Boars	Daily feed recommended, but controlling the amount encouraged	Not addressed; animals must be provided "a total feed ration"	Permitted, but dietary or environmental supplements must be provided	Swine must have access to food each day unless withheld on advice of a veterinarian	All pigs must have feeding plan to ensure appropriate nutrition; must have continuous access to forage to satisfy hunger between meals	Prohibited (all steps)
Min. Weaning Age	No limit	Not addressed	4 weeks	3 weeks	6 weeks	8 weeks
Tail Docking	Permitted	Permitted	Must not be done routinely; permitted only by veterinary recommendation and review by HFAC	Permitted until information on prevention of tail biting is available	Prohibited	Routine tail docking prohibited; may be done on individual animals for health or welfare reasons

Appendix B

From Farm Sanctuary's "The Facts About Farm Industry Welfare Standards"

Accessed September 10, 2009, from farmsanctuary.org, an organization working to end cruelty to animals.

Appendix D: Comparison of Animal Welfare Standards by Program – BEEF CATTLE

Animal Welfare Standard	Industry Guidelines (NCBA)	National Organic Program (USDA)	Certified Humane Program (HFAC)	American Humane Certified (AHA)	Animal Welfare Approved (AWA)	Global Animal Partnership Step 5 Plus
Antibiotics	Not prohibited	Prohibited	Permitted for treatment of disease only	Permitted for treatment of disease only	Permitted for treatment of disease only	Prohibited (all steps)
Growth Hormones	Not prohibited	Prohibited	Prohibited	Prohibited	Prohibited	Prohibited (all steps)
Access to Pasture	Not required; confinement to feedlots allowed	Required; temporary confinement allowed in some situations; feedlots prohibited	Not required; cattle may be maintained in feedlots	Not required; cattle may be maintained in feedlots	Access to pasture required throughout lifetime when climate permits	Cattle must live continuously on range or pasture
Identification	Hot branding and ear notching allowed; jaw brands are not to be used	Not addressed	Hot iron branding & ear cutting prohibited; ear tagging permitted	Hot iron branding & ear cutting prohibited; ear tagging permitted	Hot iron branding & ear cutting prohibited; ear tagging permitted	Branding, wattling and ear notching are prohibited; ear tagging permitted
Castration	Recommended be done before 4 months of age; no recommendation regarding anesthesia	Physical alterations must be performed as needed to promote animal welfare & in a manner that minimizes pain & stress	Recommend be done at earliest age possible; anesthesia required for surgical removal after 2 months of age	Recommend be done at earliest age possible; anesthesia required for surgical removal after 2 months of age	Recommend be done before 2 months of age; use of anesthesia required	Prohibited
Debudding/Dehorning	Recommended be done before 4 months of age; no recommendation regarding anesthesia	Physical alterations must be performed as needed to promote animal welfare & in a manner that minimizes pain & stress	Debudding in first 4 months using hot iron; anesthesia not required	Debudding in first 4 months using hot iron; anesthesia not required	Dehorning prohibited. Debudding only permitted on calves 2 months of age or younger	Dehorning prohibited (all steps); Debudding prohibited
Spaying of Heifers	Not prohibited	Not addressed	Prohibited	Prohibited	Prohibited	Prohibited (all steps)
Minimum Weaning Age	No limit; usually 7-8 months of age	Not addressed	Not addressed	Not addressed	6-9 months of age	Natural weaning is required
Electric Prod Use	Permitted, but voltage must be less than 50 volts	Not addressed	Permitted in emergencies only	Permitted in emergencies only	Prohibited	Permitted in emergencies only

Appendix C

From Farm Sanctuary's "The Facts About Farm Industry Welfare Standards"

Accessed September 10, 2009, from farmsanctuary.org, an organization working to end cruelty to animals.

Works Cited

- DeGrazia, David. *Taking Animals Seriously: Mental Life and Moral Status*. 1st ed. Cambridge, London: University of Cambridge Press, 1996. Print.
- "Farm Animal Welfare Council - 5 Freedoms." *Farm Animal Welfare Council*. Farm Animal Welfare Council, Web. 10 Sept 2009. <<http://www.fawc.org.uk/freedoms.htm>>.
- Nolt, John. *A Land Imperiled: The Declining Health of the Southern Appalachian Bioregion*. 1st ed. Knoxville, TN: The University of Tennessee Press, 2005. 173-220. Print.
- Regan, Tom. *The Case for Animal Rights*. 2nd ed. Berkeley, CA: University of California Press, 2004. Print.
- Singer, Peter. *Animal Liberation*. 2nd ed. New York, NY: Random House, Inc., 1990. Print.