

Knocking Out Pain in Livestock: Can Technology Succeed Where Morality Has Stalled?

by Adam Shriver (*Neuroethics*, 2009)

Introduction

Peter Singer's philosophy-infused popular book *Animal Liberation* [1] has been credited with jump-starting the animal liberation movement in the United States. Singer argued, among other things, that people have an ethical obligation to become vegetarians given the intense suffering that is caused by modern factory farming conditions. Since 1975, the animal liberation movement has been successful in many respects, with estimates that over 4.7 million people are now vegetarian [2] and many new legal restrictions in place that dictate how people may treat other animals. Nonetheless, there is inarguably more suffering today as a result of factory farming than there was when the book was written, as per capita meat consumption in the United States has risen from 190 lbs/person in 1975 to 222 lbs/person in 2007 [3, 4] and the population itself has increased.

Given that the animal liberation movement's growth has failed to outpace increases in human population and per capita meat consumption, those who are concerned with the reduction of unnecessary suffering of animals may need to consider additional approaches. In this paper, I argue that there might be a technological solution to the problem of animal suffering in intensive factory farming operations. In particular, I suggest that recent research indicates that we may be very close to, if not already at, the point where we can genetically engineer factory-farmed livestock with a reduced or completely eliminated capacity to suffer. In as much as animal suffering is the principal concern that motivates the animal welfare movement, this development should be of central interest to its adherents. Moreover, I will argue that all people concerned with animal welfare should agree that we ought to replace the animals currently used in factory farming with animals whose ability to suffer is diminished if we are able to do so.

Reducing Unnecessary Suffering

Singer's argument against eating meat is often erroneously described by popular critics as an argument for "animal rights," but in actuality is based on consequentialist principles¹ [5]. In *Practical Ethics*, where he more fully develops his position, Singer argues for the principle of equal consideration of interests which states that we ought to "give equal weight in our moral deliberations to the like interests of all those affected by our actions," ([6] p. 19). As Singer suggests, one way of understanding this principle provides a good reason to adopt a utilitarian position: since each interest is treated the same regardless of whom the interest belongs to, a natural suggestion for determining the optimal ethical choice would be to ascertain the choice most likely to maximize the satisfaction

¹ Singer did often talk of "animal rights" in *Animal Liberation*, but as a utilitarian he is in fact committed to a position that is opposed to the existence of rights as they are commonly construed in ethics. He explicitly states this position in *Practical Ethics* [6].

of the interests of all those affected ([6] p. 12).² Since an interest in avoiding a life of suffering is presumably stronger than an interest in a particular gustatory preference, it follows on this account that we should choose not to eat meat that comes from factory farms where animals endure a substantial amount of suffering.

My primary strategy in this paper will be to argue that replacing current livestock with genetically modified livestock who have a reduced capacity to suffer would lead to better consequences than maintaining the status quo: specifically, it would lead to a world in which there is much less unnecessary suffering. Hence, my argument will be directly relevant to utilitarian (or, more broadly, consequentialist) positions such as Singer's. ... Of course, on consequentialist theories the fact that a position produces better consequences provides not just reasons but overriding reasons to favor that position, whereas nonconsequentialist theories might have other considerations that "trump" the fact that better consequences will be produced. Thus, I aim to show not only that genetically engineering livestock will produce a world with better consequences, but also that doing so will not introduce any new "wrongs" into the world that will be offensive to other ethical theories.

Though the following argument may initially seem counterintuitive for most people who call themselves animal welfare advocates, I will argue that anyone who thinks consequences matter in our ethical choices should take the argument very seriously and, indeed, should ultimately evaluate it based on the strength of the empirical assertions that it is based upon. ...

Knocking Out Pain

Would eliminating the affective dimension of pain have any real beneficial effect for livestock? Sows and veal calves who spend much of their time unable to move can develop severe joint damage [30]. While there might be different estimates of how effective slaughter methods actually are, there is no doubt that things occasionally go wrong and animals are not immediately killed. In such cases, they are left instead to suffer extremely painful deaths. And even dairy cows, who might mistakenly be thought to have it relatively easy, are reported to show signs of distress after their calves are taken from them [31], which happens approximately once a year in order to keep them producing milk. ... When considering such cases along with the massive scale of contemporary factory farming, eliminating the affective component of pain would almost certainly prevent a great deal of suffering. Thus, creating genetically engineered animals that lack the affective dimension of pain has the potential to eliminate a great amount of suffering. ...

² Though this is one way of interpreting the implications of the principle of equal consideration of interests, it is by no means the only way (as Singer recognizes). Kantian theories and strict animal rights theories can also endorse the principle. As David Degrazia writes, "when seen from the proper perspective, utilitarianism and animal-rights views appear far more alike than different. Crucially, both extend to animals a principle of equal consideration. Any such principle requires that we (in some significant way) give equal moral weight to comparable interests, regardless of who has those interests" ([8] p. 112, emphasis in original).

A Potential Argument

I am now in a position to formulate an argument for the genetic engineering of animals reared in intensive factory farming environments:

- (1) We should prevent unnecessary suffering when possible.
- (2) Intensive factory farming is responsible for a considerable amount of unnecessary suffering.
- (3) Replacing the current animals used in factory farming with genetically engineered animals who lack the affective dimension of pain would decrease the amount of suffering caused by factory farms.
- (4) Not enough people are willing to become vegetarian to completely eliminate the suffering caused by intensive factory farming.
- (5) People would be willing to eat genetically engineered food if it meant they were no longer responsible for suffering and if it did not impose too much of a burden on their lives.
- (6) Animals can be genetically engineered and used in food production in a way that does not impose much of a burden on people's lives.
- (7) Given (2), (3), (4), (5), and (6), replacing current livestock with genetically engineered animals who lack the affective dimension of pain would prevent unnecessary suffering.

Conclusion From (1), and (7), we ought to replace current livestock with genetically engineered animals who lack the affective dimension of pain.

Several of these premises are empirical claims whose truth cannot be determined by armchair speculation alone. For example, any of the claims (3), (4), (5) and (6) could turn out to be false. Hence I am not trying to claim that the above argument is conclusive, but rather that the conclusion is likely enough that we should explore the empirical claims it is based upon in more detail. The rest of this article will be devoted to considering potential objections to this argument and to several of the premises. ...

Pure Vegetarianism Advocacy vs. a Mixed Strategy

Many of the people who have been invested in the fight against factory farms from an animal welfare perspective (myself included) would probably say that, in an ideal world, it would be preferable that people refrain from eating factory-farmed meat entirely rather than switching to genetically engineered meat that does not suffer as much. In fact, there are plenty of other reasons independent of animal welfare concerns to want to do away with intensive livestock operations, including potential health risks to humans and damage to the environment.³ My argument is not an argument against vegetarianism; it is simply an argument that if we are going to eat meat from factory farms, the animals that provide that meat should be engineered to have a reduced capacity to suffer. Nevertheless, one might still argue against it by claiming that the best way to truly reduce suffering is to advocate purely for vegetarianism. Thus, the strength of my argument

³ Unfortunately, I do not have the space to address these possibilities here, but I do note that any full consideration of the consequences would need to take their potential implications very seriously.

crucially depends upon the claim that it is more likely that people would be willing to eat GM livestock than to give up meat entirely, and that making such a switch would result in a diminishment of suffering that made up for the other costs. ...

Deontological Considerations

As mentioned above, some ethical theorists might accept that this proposal would result in better consequences than the status quo but nevertheless find it unacceptable. One reason for taking such a position would be to believe that genetically engineering animals and using them in factory farms violates the animals' rights. Tom Regan, for example, has argued that all sentient animals have a right to be treated with respect, and that when we fail to provide this respect by treating the animals as mere things, we have harmed them and thus are morally blameworthy. One can easily see how on such a view genetically modifying farm animals' pain perception does not make the practice of meat consumption any more defensible. However, I think the differences between such views and what I am proposing become much less dramatic when we consider one of the central claims I am suggesting: namely, the claim that people are not in fact going to stop eating meat to a great enough extent to end factory farming. If this claim is true, then the question for animal rights proponents is not whether we will be violating animals' rights, but rather whether we will be violating their rights and causing suffering or just violating their rights. If this is the question, then I think even most rights theorists and deontologists more generally, will lack strong arguments against GM livestock, unless they believe there is something wrong with genetic modification in particular. ...

Conclusion

In this paper, I have outlined research that suggests that we might not be far away from being able to genetically engineer animals with a reduced capacity to suffer. Depending on how much of the full range of suffering can be eliminated and a host of other complications, people who are concerned with eliminating unnecessary suffering ought to consider GM livestock a serious option. In some ways it would be very sad to see technology succeed where pure appeals to morality have not, but nevertheless those with a true desire to eliminate the suffering caused by human society must keep all options on the table.

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The Opposite of Human Enhancement: Nanotechnology and the Blind Chicken Problem

by Paul B. Thompson (*Nanoethics*, 2008)

Introduction

Like genetic manipulation, but perhaps with more realistic possibilities, nanotechnology is linked to a variety of post-human futures, where consciousness can be “downloaded” onto electronic media, where human sensory apparatus will be linked to spatially dispersed information gathering devices, where intelligence will be distributed amongst various brains and computing capabilities and where the vagaries of the human body will be bolstered by devices that increase its physical power and resistance to external threats. This paper will not engage the ethical and ontological issues of the distant post-human future directly. Instead, I will probe its opposite: the disenchantment of non-human animals’ capabilities in the present and near term, a set of technological possibilities exemplified by the blind chicken problem, discussed below. Here we have a set of ethical quandaries that have already been widely discussed, and yet, I will argue, little progress has been made in articulating exactly what the ethical issue actually is. I make no overt claims about the ethics of human enhancement, though my suspicion is that similarly inchoate concerns pervade this area as well.

A surprisingly large literature has developed in response to proposals for relieving distress that animals experience in certain food commodity production environments by means of technological alteration of animals’ ability to experience distress. Blind chickens, who suffer less in crowded conditions than sighted birds, are emblematic of these proposals. They are discussed in the opening section of the paper. Although these proposals typically provoke powerful and highly negative moral responses, the animal welfare arguments in support of them should be taken seriously, as argued in the second section. ... The first group of critics argues against all genetic engineering of animals. They may be less relevant to the topic at hand than the second group, who argue that disenchantment itself is problematic, rather than the technical means for accomplishing it. Nevertheless, the larger point in reviewing this debate in the context of nanotechnology enabled human enhancement is to illustrate its inconclusiveness, so it is useful to touch on the full range of views. ... In the concluding section, I argue that none of the philosophical attempts to resolve the contradiction between intuition and reasoned argument have been successful, and speculate that at least some responses to nanotechnology enabled enhancement of human cognitive capabilities will mimic the tensions and contradictions exhibited by this literature on the blind chicken problem.

Of Blind Hens

Viewed philosophically, the blind chicken problem dates to a 1999 paper written by a group of Danish researchers led by philosopher Peter Sandøe [29]. The paper discussed ethical issues raised by research on a strain of congenitally blind chickens that were less likely to exhibit signs of stress or agitation under crowded

conditions. This suggested that blind chickens might be a response to some of the animal welfare problems in poultry production, notably the aggressive behavior of hens crowded together in the battery cage system of egg production that is, at this writing, still the most widely used approach in North America.

The range of possible reactions was exhibited following a 2001 National Public Radio broadcast of the Morning Edition program focused on animal biotechnology where I said the following:

There's a strain of chickens that are blind, and this was not produced through biotechnology. It was actually an accident that got developed into a particular strain of chickens. Now blind chickens, it turns out, don't mind being crowded together so much as normal chickens do. And so one suggestion is that, 'Well, we ought to shift over to all blind chickens as a solution to our animal welfare problems that are associated with crowding in the poultry industry.' Is this permissible on animal welfare grounds?

Here, we have what I think is a real philosophical conundrum. If you think that it's the welfare of the individual animal that really matters here, how the animals are doing, then it would be more humane to have these blind chickens. On the other hand, almost everybody that you ask thinks that this is an absolutely horrendous thing to do [13].

Not only did I hear from acquaintances I had not seen in 20 years, I was subjected to numerous inquiries from strangers and a few angry phone calls from the U. S. poultry industry. Poultry producers challenged the suggestion that blind chickens were even being studied (they were wrong) and were irate at the suggestion that they would actually use them, but they were not the only ones who were hostile. For a time, an animal protection group posted a website claiming that I had advocated blinding chickens, urging their membership to write NPR in protest. One can still find a number of disapproving websites where I am described as a "philosopher" in quotation marks.

My critics seemed to think that I was actually promoting the use of blind chickens, though the original context of the David Kastenbaum story makes it even clearer than the quotation above that I was calling attention to the ethical reaction that most people experience when they hear this kind of experiment described. Perhaps they were objecting to the fact that I described it as a "conundrum." How could he think blind chickens could be more humane under any circumstances? But seeing that the blind chicken problem really is a conundrum is critical to the relevance that this problem has for nanotechnology and the ethics of enhancement. Blind chickens are not products of nanotechnology, but we can expect to see an ever-lengthening list of converging technologies that mimic the ethical tensions of the blind chicken problem. I submit that a closer examination of blind chickens reveals a philosophical problem that will not easily be solved, and that will be the source of much confusion and possible mischief in future discussions of human enhancement. By framing the problem in connection to blind chickens instead of human enhancement, we may see that at least some dimensions of the philosophical problem can be generalized beyond ethical

intuitions that we associate specifically with the human species. The fact that blind chickens currently exist and have been created using classical techniques of animal breeding indicates both that the kind of problem I have in mind is not “science fiction,” and also that it is not uniquely tied to our ability to manipulate matter at the nano scale. ...

[T]hough the main point of this article does not depend upon the existence of nanotechnologies to accomplish ends analogous to congenitally blind hens, it is actually quite plausible to expect a connection between human enhancement nanotechnology and animal disenchantment, at least when considered in terms of technical capability. Some human enhancement technologies envision an interface with neurological activity. There is every reason to expect that the development of an interface technology for “nanoaugmentation” could also be utilized to selectively disrupt specific neural activities, including pain receptors or even sight. What is more, the initial development of such an interface will certainly be done on animal, rather than human brains. Any number of medical technologies, from vaccination to embryo transfer, have been developed and deployed in veterinary contexts well before their use in the human species. This is not to say that we should expect short-term application of neural interface technologies in agricultural settings. Costs may well be prohibitive over the short run, and might remain so. What is more, the conundrum noted above itself might dissuade food animal producers from adopting nanodisenchantment, should it become technically and economically feasible, just as they have thus far resisted blind hens.

Why Change Animal Nature?

In fact, the conundrum is both practical and philosophical. The practical dimensions may indeed be less relevant to nanotechnology and enhancement than the philosophical ones, but it may still be useful to develop the context in which technologies that seek the opposite of enhancement might realistically be deployed. Blind chickens are emblematic of a potentially large class of animals that are modified in response to so-called “production disease.” Production diseases are animal pathologies that occur as a result of or in association with livestock production practices. Hens confined at high density in battery cages are prone to feather pecking and cannibalism, aggressive behaviors that may have a defensive, territorial function in the wild. In egg production systems, such behavior is harmful to other hens and leads to injuries that impose cost on the producer in the form of reduced production and increased veterinary care. Beak-trimming is one response to this “production disease,” but trimming each individual hen’s beak to limit pecking is itself harmful and costly. Other animals and other production practices lead to different production diseases. Large-breasted broiler chickens are susceptible to leg and muscle problems. High producing dairy cows are susceptible to mastitis. Many animals kept in confined settings exhibit obsessive, repetitive movements called stereotypies. In the wake of a global movement toward more humane animal production, researchers are involved in a constant search for responses to these problems. Currently researchers are applying the techniques of genetic engineering, cloning, and cellular manipulation in search of ways to reduce both the suffering and economic

cost associated with production disease, (see [35]), and surgical techniques, such as beak trimming, are widely used in industry. Nano-enabled devices or methods for disrupting an animal's ability to experience pain or distress would certainly be adopted if they were available on a cost-effective basis. Or would they?

It is useful to distinguish two conceptually different but equally radical routes to the technological solution to production disease. One might be called the Dumb Down approach. Here researchers identify the genetic or neurological basis for certain characteristics or abilities (such as sight), and produce animals that lack them by removing or otherwise disabling them either genetically or through a nano-mechanical intervention in cellular or neurological processes. The end result of a genetic process might be the headless commodity-producing organism described as "football birds" by Fred Gifford [9], though I believe that this is exceedingly unlikely. Surgeries that disrupt neurological processes, on the other hand, might well be feasible, and the question is whether some form of nano- or converging technology would make them cost effective. The alternative might be called the Build Up approach. Here, researchers work with cells in vitro, designing scaffolding and other mechanisms that might be produced according to instructions encoded in DNA, to wind up with an organism that yields the animal products (meat, milk and eggs) currently produced using pigs, cows and chickens, [7]. This approach might truly yield a quasi-living system that might even involve some elements of animate neural control of organ functions or muscle tension, but without a central nervous system or brain. The practical conundrum is that the need for a response to production disease suggests that agricultural researchers and the animal products industry should be pursuing both Build Up and Dumb Down research streams, though the potential for "yuck factor" responses on the part of the public suggest that perhaps they should not.

There is a philosophical conundrum here because our leading theories of animal ethics tell us that this would be a good thing to do, but our moral intuitions tell us that it is an absolutely horrendous thing to do. Philosophers have used the word 'intuition' in many ways, but here I refer to a large class of seemingly immediate and involuntary cognitive experiences. Perceptual intuitions are raw sensations, like the cylindrical white shape I now see against a dull gray background. The white shape is my coffee cup and the background is my desk. However, seeing them as my coffee cup and desk may involve additional processing that I could defer at will, but it is hard to imagine how I could not see these shapes, so long as I can see at all. Linguistic intuitions are the "sense" that we make of words and sentences when they are spoken or visually presented to us. Here, too, there is an involuntariness, a compulsive character that cannot be resisted. If someone says "Move over, loser," I can pretend that I have not heard, but I cannot actually choose whether or not I want to understand, (though I must, of course, understand English idioms to have this linguistic intuition). Moral intuitions are similar in that they are immediate, seemingly involuntary, and do not involve any conscious or thoughtful judgment. When confronted with a given situation (either in practice or, as above, by description), we just react to it as "wrong." It is quite possible that, as in the case of language, we are culturally educated into our

moral intuitions, but this does not alter the fact that we seem unable to choose whether or not we will have them.

To use the term 'intuition' in this sense does not imply a commitment to intuitionism or any other moral theory holding that intuitions are morally authoritative. Indeed, the normal case is that intuitions blend seamlessly into more carefully considered judgments. In the case of moral intuitions, we typically experience no dissonance between our immediate reaction and the judgment we reach when we thoughtfully review a situation in light of moral principles. But despite their immediacy, intuitions are not always reliable. Sometimes we realize that what we thought we saw or heard was not in fact what was there, or what was actually said was not at all what we thought we heard. The same is true for moral intuitions. In many cases where our first reaction is to think that something is morally wrong, we may be brought around to the idea that it is not wrong after all by reasoning carefully about the situation and considering all of the relevant details. But some moral intuitions are quite robust, and our sense of rightness or wrongness about them may remain even when thinking more carefully about them fails to support the initial reaction. Such intuitions produce conundrums.

The thought of blind chickens producing our table eggs is repulsive; it just strikes us as wrong. But leading theories of animal ethics do not support this judgment. Peter Singer's approach to animal welfare, for example, tells us that we should give equal consideration to interests, without regard to the animal that has these interests. We should take the suffering of animals into account in making our decisions and should not favor choices that produce trivial human benefits simply because the harm or suffering these choices cause happen to occur in nonhuman animals [32]. Relevant in the present case are interests in avoiding the suffering that is associated with production disease. Conventional animals have these interests, and experience the suffering. Modified animals lack the interests and do not experience the suffering. If our goal is to minimize the unnecessary suffering in the world, as utilitarian philosophers have advocated for over 200 years, the choice seems direct. Organisms that lack the capacity to suffer cannot be harmed, so taking steps to create such organisms seems to be what a utilitarian would have us do.

Perhaps, one might think, a stronger animal rights view would not support this. The position advocated by Tom Regan, for example, would not support the use of blind chickens, for example, because even blind chickens still have an internal life experience, a sense of present and past, and a capacity to live their lives in a manner conducive to their own individual proclivities and interests. They are, as Regan would have it, subjects-of-a-life, and it would be wrong to treat them solely as for our own purposes [19, 21]. Gifford's football bird, however, eliminates the capability of experiencing an internal life experience altogether. By Regan's own reasoning, animals (such as insects or protozoa) that lack any conscious capability altogether are not subjects-of-a-life. If we can develop an animal that produces meat, milk or eggs and is not a subject-of-a-life, there is nothing or no one to be harmed by doing so. Further, if doing that is a step toward removing ordinary pigs, cattle and chickens from the production circumstances where their rights are, in Regan's view, currently being violated, it would seem

that his ethic of “empty cages” weighs in on the side of developing such literally mindless animals. Thus, to repeat, at least some versions of the blind chicken strategy seem to be supported by animal ethics, but almost everyone thinks that this would be an absolutely horrendous thing to do. ...

Against Genetically Engineered Animals

Critics in the first group argue that genetic engineering of animals is intrinsically wrong and have sought some form of argument that at least mimics a Kantian categorical imperative. ...

Rob De Vries [37] has undertaken a careful analysis of the way that the term ‘animal integrity’ has been applied to the evaluation of genetic engineering. His analysis shows that for authors who use these terms, ‘dignity’, ‘integrity’ or ‘*telos*’ must be regarded as something characteristic of species or kinds, perhaps as articulated in the genome, and understood as capable of being harmed or disrespected even in cases where the individual is benefited.

In examining whether the tests De Vries notes can be met in a coherent manner it is worth following out the animal rights logic in a bit more detail. As noted already, it is unlikely that blind hens will win any endorsements from Tom Regan, yet the problem lies not with the fact that they are less capable than sighted chickens. *Any* chicken kept in a cage will violate Regan’s ethic of animal rights. What would a rights theorist say about the comparison between blind and sighted hens in egg production? Both cases violate rights, but isn’t it a worse offense to inflict suffering on top of that? One general problem in applying rights theory to production disease is that the theoretical commitments of the rights view are so firmly opposed to the very idea of animal production that they seem wholly inapplicable to the ethics of making the best of a bad situation. But the blind chicken problem is not simply eliciting the intuition that keeping chickens in crowded environments is wrong. It is the further intuition that making the best of a bad situation (from the standpoint of the animal’s subjective experience) is actually the wrong thing to do. This means that considerations relevant to species or kinds would override the rights of actual animals (i.e., the individuals who instantiate those species or kinds), and this is something that Regan has argued against time and time again [19, 20]. ...

One [objection to this line of reasoning] is that biotechnology can be used to help people *and* animals, to better their lives. Appeals to integrity and dignity can become pompous when thrown in the face of creatures (of whatever species) who are actively enduring suffering right now. Second, the claim that it is wrong to violate species integrity, the dignity of the creature or *telos* seems to overstate the case. At a minimum, critics would need to explain whether such arguments would also forbid routine forms of animal breeding [28]. ... Even if it makes sense to say that there is something to debate with respect to species integrity or dignity, it is a confusion to presume that this has anything at all to do with the integrity or dignity of individual animals. ...

The Trouble With Disenhancement

This brings us to the second and third groups of critics ... These critics are not explicitly attempting to develop arguments that would oppose all forms of genetic engineering applied to animals, though it is not entirely clear what forms of modification would be acceptable. Importantly for the present case, the focus of the argument is on modifications that can be understood as disenhancements.

As noted above, one possible response is simply to accept the disquieting intuitions as definitive: we feel like this is wrong, so it is. This form of argument was put forward by Leon Kass in a widely read response to animal cloning entitled "The Wisdom of Repugnance" [12] and was reiterated as a general indictment of biotechnology ... In simply siding with our intuitions, however, authors like Kass ... appear to accept an analysis which admits that there are no operative reasons at work and no real moral argument that can be deployed to support the conclusion they wish to endorse. ...

Critics in third group want to claim that disenhancements are, in fact forms of harm to actual animals. ... Allan Holland [11] and Mike Appleby [1], frame the critique in terms of the need to respect what it is animals, by nature, typically are. ... Appleby's claim is that animal natures are defined by species typical norms. Thus, blind chickens are worse off than sighted chickens simply because they are blind. ... Holland's quasi-Kantian argument suggests that we are disrespecting the animal itself when we undertake measures that alleviate suffering so that we may continue in what is, at bottom, an exploitative relationship. Thus, blind chicken strategies are like offering assembly line workers an aspirin in lieu of better working conditions. Both are responses that ameliorate distress, but do so in a way that is an affront to the dignity of the distressed individual. ...

'Integrity' or 'animal nature' may give us terms on which to hang our considered moral intuition that there is something wrong with blind chickens, football birds and the Dumb Down strategy in general, but it is a response that invites us to conflate actions that actually cause harm to real, live farm animals with actions that actually relieve harm, when compared to the alternative that would be most likely to prevail. It is only when our understanding of actual welfare associated with possible alternative courses of action is in view that the considerations of animal ethics have force. All of the options thus far considered for explaining why blind chickens and the Dumb Down approach might be morally wrong do so by taking our attention away from the conditions in which animals *actually* live.

Resolving the Conundrum or Admitting Defeat

[T]he intuitive rejection of Dumb Down strategies puts morality into play in a way that (*prima facie*, at least) counters the arguments from animal welfare: it's not only disgusting and distasteful, it's morally wrong. The persistence of this intuition suggests that the blind chicken problem is a problem for human conduct in itself and not in regard to its impact on animals. ... The problem seems to be that the

entire project exhibits the vices of pride, of arrogance, of coldness and of calculating venality. ... To put the point another way, it is not the disrespect that animals *suffer* that is focus of what is wrong with blind chicken strategies. It is disrespectfulness as a pattern of behavior or a character trait on the part of the agent that is at the heart of the issue. ...

[R]espectfulness is a virtue that can describe the character of a person even when their actions in particular circumstances achieve less than they might like. To revisit one last time the analogy to assembly line workers whose dignity is offended by the offer of aspirin in lieu of better working conditions, we might perceive a factory owner up against the wall of economic competition far more favorably than the market leader who sets the terms of competition. It is not that workers in the latter's factory are harmed in a manner that workers in the former's are not. It is the relative virtue or character of each owner that is at issue in marking the moral difference.

Can we then say that our intuitions about the wrongness of blind chickens are captured when we articulate this as a problem in human virtue, a problem with the kind of moral character that people who would do such a thing might have? If so, does this answer carry over to the qualms that may be felt about human enhancement? I am not sanguine with a positive response to either question, though at present I have nothing more insightful to offer. The suggestion that we can draw upon virtue ethics resituates the philosophical problem by shifting our attention away from a better account of harm to animals and toward those practices and traditions we associate with good and bad moral character. But it is hardly clear that resituating the argument this way makes it any more convincing. We are still left with the practical problem of suffering from production disease and thus we are still left with a conundrum. ...

Is it possible to resolve the blind chicken conundrum? In fact, I think not, but there are a number of lingering points that must be addressed before admitting defeat. First, we must recognize that a driving factor behind the persistence of our intuition that there is something wrong here may well be the presumption that there are other, more straightforward ways to address livestock production disease. Why not give the chickens more room? In fact, the answer to a question like this is very similar to the answer that factory owners might give to someone who takes them to task for offering aspirin rather than improving working conditions: it's easier said than done. In fact, chickens in non-cage systems also experience stress associated with visual stimulation, though in their case it may have more to do with large group size than crowding. In any case, beak trimming is believed to be necessary in virtually all egg production systems that operate at a commercially-viable scale [27, 33]. ...

To the extent that political and economic realities remain what they are, it is important for anyone involved in livestock production to at least consider the argument for blind chickens. Thus if one possibility is simply to go with the "wisdom of repugnance," another possibility is to accept the possibility that what ethical theory tells us is right, and that our intuitions are simply mistaken in this family of cases. ...

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