

Introduction

I am an economist who researches the farm animal welfare debate. The vast majority of my work is in partnership with my colleague Jayson Lusk. The bulk of this research is aimed at the consumer side: (a) What are consumer perceptions about farm types and animal welfare? (b) How much money are they willing to pay for animal welfare improvements? and (c) How is this demand parsed between the private and public good aspects of animal welfare. My interest lies in all facets of the debate though. In a forthcoming book (coauthored with Jayson Lusk), titled *Compassion by the Pound: The Economics of Farm Animal Welfare*, we explore the historical relationship between man and livestock, the history of modern livestock production and animal activism, we are bold (or arrogant) enough to interpret for ourselves what science asserts about the relationship between farm type and animal happiness (and yes, we are bold or naïve enough to say 'animal happiness'), ethical philosophy, and of course, a lot of economics. The economic component focuses on original consumer experiments we conducted in three cities with about three hundred subjects, with some input from a nationwide telephone survey.

This presentation will concentrate on the *results* of my research, with little detail on the methods used. I am allotted a very short period, so I feel it is best to describe what we have found and ignore *how* the results were discovered. Were I to also discuss the scientific methods used, it would create great confusion and the audience will extract little information.

All of the results I present is based on scientific studies though. Whether it be a telephone survey of Americans or the economic experiments we conducted, the corresponding scientific papers are readily available at my website¹ so that interested readers can study the survey / experimental methods as well as the economic models used to interpret the survey / experiments.

This presentation will consider farm animal welfare as a commodity to be purchased, and considered as an ethical issue. The question of whether animal welfare should be driven by markets or legislation depends critically on whether farm animal welfare is viewed as a commodity or an ethical issue. Because it is impossible to say whether animal welfare is *best* deemed a commodity or ethical issue, we must explore the farm animal welfare debate in both contexts. However, many readers may agree that the farm animal welfare debate is being debated as an ethical issue, and thus these readers may believe consumers' views of farm animal welfare when thought of as an ethical issue has greater weight than when considered a commodity.

It is a maintained assumption, as well as my belief, that laying hens and hogs can be raised in a farm setting that improves their well-being, but at a higher cost. It is also a maintained assumption that legislation should reflect the views of a majority of citizens, and not what *I* think is ethical or unethical.

Animal Welfare as a Commodity and as Morality

One can conceptualize improvements in the treatment of livestock as a “commodity” that delivers personal benefits to the citizen. When viewed as a commodity, improvements in livestock well-being

¹ <http://asp.okstate.edu/baileynorwood/Survey4/Default.aspx> . Note the website may still refer to my forthcoming book under its old title, *Ham and Eggonomics*. And yes, *Ham and Eggonomics* is a better title!

can be explored using a cost-benefit framework, where the individual asks, “*How much do I benefit from a happier animal, and do I benefit more than the cost?*” One may also ask, “*Does society as a collection of individuals benefit from a happier more than the costs to society?*” In a cost-benefit framework, my research allows us to provide direct answers to questions of whether we should raise hens and hogs in an environment more conducive to their well-being, as well as whether these changes should be driven by markets or legislation.

Most people probably view animal welfare questions as questions of morality though; this makes the topic enormously complicated. Morality is a tortuous topic, as we know very little about how individuals and society determine what they believe to be moral or immoral. In fact, when pressured, not even the individual can determine for themselves why an act is thought to be moral or immoral – how is a scientist to study social morality in a scientific manner when the scientist does not even comprehend their own views of morality? The scientist cannot, and when animal welfare is viewed as an ethical issue, neither I nor anyone else can provide direct and unambiguous answers to whether we should improve the lives of livestock and how. I can, however, provide glimpses of ethical truths, and thus do so with the best of my ability and a profound sense of humility.

Animal Welfare as a Commodity: Private and Public Goods

First, let us conceptualize animal welfare as a good, or commodity. Most every good has a *private good* dimension and a *public good* dimension.. A private good is a good that is solely consumed by an individual, where the individual's consumption has little impact on others. If I purchase an iPod you cannot use that same iPod simultaneously – you must buy your own. Moreover, my use of the iPod has little impact on you, except for cases where I may drive restlessly by fiddling for a new song and cause a wreck.

Public goods are goods that can be consumed by many people at one time, such as a fireworks display or military protection against Canadian aggression. Public goods also occur when one person's consumption of a good impacts others. Many of you may have seen the recent documentary *Gasland*, describing how extraction of natural gas *may* pollute ground and surface waters. If a pond in which I regularly fish and swim can now be set afire as a result of natural gas extraction, your consumption of natural gas impacts *me* – thus the term *public good*.

Animal welfare has private and public good components – all goods do, but animal welfare has an unusually large mixture of both components. Consider a group of people who are concerned about the misery or merriment of livestock raised for food. I may pay particular attention to the food that I eat and its corresponding impact on hog happiness. Not wanting to be held responsible for animal misery, I choose products with higher welfare or adopt a vegan diet. Paying a higher price for better animal treatment because *I* do not wish to be held responsible for animal misery is like a private good purchase – the good is better animal treatment.

However, if I am concerned about animal misery, it may matter little whether the animal was raised for *my* consumption or *your* consumption. If an animal lives on a hard concrete slab, unable to even turn-around, and that bothers me, should I even care who ate the food that resulted from animal misery? When individuals donate to animal advocacy groups or vote for policies they believe

promote animal cruelty, that is like a public good purchase – again, the good is better animal treatment.

I argue that, conceptually, animal welfare is largely a public good. Hence the numerous referenda attempting to regulate livestock production – the citizen wishes to improve animal happiness regardless of who eats the food produced from the animal. We should therefore not be surprised that many citizens prefer regulation over markets in addressing the welfare of livestock. That being said, when you observe consumer behavior, you find that the private good component of animal welfare overwhelms the public good component.

Private Good Demand

Let us ask: what would happen if all consumers were *informed* about the different types of egg & pork production systems available, and were allowed to purchase egg & pork products from these different systems? The only difference between the food products is the level of animal welfare. Suppose also that the price premium attached to products with higher standards of animal care exactly equals the estimated cost premiums. What would happen?

We carried out this experiment with three hundred consumers from three U.S. cities, where the subjects used their own, real money in an auction to purchase egg & pork products from different farm types.² These egg & pork products differed only by the level of animal welfare provided, and the subjects attended presentations regarding the conditions in which the animals were raised.³ These are products that the consumer and their family would personally consume, and thus largely concerns the private good aspect of farm animal welfare.

The results argue that most consumers believe hens in a cage-free system (with some outdoor access) to be 'happy', while hens in a cage system 'suffer'.⁴ The majority of consumers were also willing to pay the extra money needed to purchase cage-free eggs.⁵ Similar results were found for hogs. Hogs in a shelter-pasture system are thought to be 'happy' while their counterparts in a confinement-crate system 'suffer.' As with hens, consumers were willing to pay the additional price necessary to cover the cost of the better animal treatment.

In summary: informed consumers want the hens and hogs who produce their food to be raised in conditions better than the conventional farm type, and are willing to compensate the farmer for their extra cost.

Does this tell us how uninformed consumers would behave? No. If the products in said experiments were offered in a grocery store to regular, *uninformed* consumers, it may be the case that

2 Two scientific papers regarding these experiments are available at <http://asp.okstate.edu/baileynorwood/Survey4/Default.aspx?name=Research>.

3 The presentations given to the subjects and the experimental instruments can be viewed at <http://asp.okstate.edu/baileynorwood/Survey4/Default.aspx?name=surveys>.

4 As determined by a series of Likert scale questions, after the subjects viewed presentations informing them about livestock production.

5 As determined by auctions of various food products where subjects bid for the products using their own, real money. The costs of raising hens in a cage-free versus cage systems, as well as the corresponding costs for improving hog well-being, were determined by us through a number of sources. These sources are described in detail at the website in footnotes 2 and 3.

very few people purchase products with better animal care. Does this tell us how informed consumers would behave outside of an experimental setting and inside a grocery store? No. People behave differently as their setting differs. In the grocery store they behave more like consumers, whereas in experiments and voting booths they behave more like citizens. These experiments provide some, but not all the answers.

Public Good Demand

Similar experiments were carried out where consumers could pay money to ensure hens and hogs that provided food for *other people* lived a better life. For example, one auction allowed people to bid money. The person winning the auction would then be given the opportunity to pay money ensuring 100 sows and their offspring lived on a shelter-pasture system instead of a confinement-crate system. This was one of a series of public good auctions. They were all *real* auctions, using real changes in the raising of actual animals, and real money.

Using a model and a series of assumptions, we estimated that the consumers as a group were indeed willing to pay the cost to ensure eggs & pork that *other people eat* are raised in an environment more conducive to animal welfare. At first, this would suggest that – to the extent these consumers represent the U.S. population – U.S. citizens desire for all hens to be raised in a cage-free system and all hogs raised in a shelter-pasture system, not even counting the private good demand for better animal care. There is a caveat though: the average willingness-to-pay for the group was largely determined by the extreme values of a few people.

This requires elaboration. If a referendum were held that required all hens in a cage system to be instead raised on a cage-free system (with some outdoor access), and all consumers paid an identical tax necessary to compensate farmers for the additional cost, less than five percent of citizens would approve the measure. Again, this assumes all citizens were informed about egg and hog production.

However, suppose that each citizen sent the government a check, whose amount equaled the maximum amount of money they would pay to transition all hens in a cage system to a cage-free system (with some outdoor access). Then, the government compared this sum of money with the amount of money needed to cover the cost of this transition. In this thought experiment, the amount of money collected would more than offset the costs.

The difference between this thought experiment and the voting experiment is that when people vote, all votes count equally. But when people can express their desire for improved animal welfare in the form of money, a few people are willing to depart with a large – very large – amount of money to cover the cost of improving the care of hens and hogs.

A metaphor for this difference is found in internet coverage of the farm animal welfare issue. If one *google's* farm animal welfare topics one will encounter an enormous volume of interest. However, the typical American knows very little about the issue, and does very little in their lives to improve the well-being of farm animals. The few Americans who care about animal welfare express their concern in many, many webpages, making it appear as if farm animal welfare was of great concern to Americans. The average American will read almost no webpages about the issue. Internet coverage provides a skewed view of the *actual* American, who knows and cares much less than the individuals

who create the webpages.

We can now attempt an answer to the question: how large is the public good value of farm animal welfare, for informed consumers? The collective value is large, larger than the cost. The per-person value relative to the per-person cost, however, is low.

Private Versus Public Goods

While farm animal welfare is conceptually a public good, this is not how consumers in economic experiments think. For most individuals, farm animal welfare is a good that concerns the food *that person eats*. The value the average American places on improving the state of care for animals that provide food for other people is low.

This, taken alone, suggests that markets are a preferred mechanism to regulation for improving animal care.

Animal Welfare as an Ethical Issue

An individual's assessment of whether an activity is ethical or unethical is partly guided by information and reason, but is largely guided by intuition. The mind can readily make ethical assessments, but the conscious portion of the mind is not allowed access to the process that provides this intuition. Thus, we can measure what people deem to be ethical and unethical, but not the thought process that causes these decisions.

It is self-evident that democratic nations largely seek to enact laws that reflect the ethics of the people. All through school we are taught that when our ethics differ from established laws, it is the person's patriotic duty to change those laws. Moreover, when when our sense of morality differs from society, we seek to impose our morality on others through changes in social norms. Who doesn't litter today without first making sure other people are not watching? This is why we attempted prohibition of alcohol decades ago, why we seek to support or oppose our beliefs about gay marriage on bumper stickers, why we fire tenure professors who make a politically incorrect statements, and why we vote. It should not be surprising that people who believe we treat livestock unfairly seek to regulate livestock farms and conduct public relations campaigns to convince others they are correct.

The farm animal welfare debate concerns much more than which food types should be available at the grocery store. It concerns who we are – as a people, and as a nation. Consequently, when we ask people about their ethical beliefs, and compare their statements to their behavior in economic experimental auctions, we see that one person has many different faces.

Snapshots of Ethical Beliefs

Through questions posed to subjects in our experiments, and through questions asked of a different sample in telephone surveys,⁶ I will now provide a brief list of people's ethical views on livestock production.

6 Note that people in the experiments were provided information on how livestock are and can be raised, while those in telephone surveys are not given this information. The former thus represents informed consumers, and the latter represents uninformed consumers. Scientific articles on the telephone survey can be found at <http://asp.okstate.edu/baileynorwood/Survey4/Default.aspx?name=Research>

1. Consumers oppose placing animals in small, barren cages. Battery cages, gestation crates, and gestation pens are *unethical* according to most U.S. citizens. Educating consumers – by providing objective information – only makes them oppose these cages more.
2. Compared to food safety and the environment, farm animal welfare is of little relative concern as a social issue.
3. One-third of Americans believe that animals have a soul.
4. Sixty-four percent of Americans believe that God wants humans to be good stewards of animals, and placing animals in small cages does not constitute good stewardship.
5. One-third of Americans simply do not care about animal misery or merriment.
6. When people learn about how we raise hens and pigs, they find we are treating animals in a more unethical manner than they originally thought.
7. A slight majority of people desire to ban livestock practices they believe unethical, even if products from animals raised in an ethical manner are available to them.
8. A majority of people will and have voted in referendums when the referendum reads as if it is for the benefit of animals.
9. Most Americans do not want livestock to suffer, but care very little about making animals happy.

Logical Reasoning and the Repugnant Conclusion

In my forthcoming book, *Compassion by the Pound*, I devote an entire chapter to building an *Ethical Eating Tool*⁷ that can be used for making ethical judgments about the relationship between the food one eats and the corresponding impact on animal welfare. The objective of this tool is to provide readers with a logical apparatus for making personal food decisions. The model requires the user to state their perceptions about animal misery or merriment in different farm systems, calculates how changes in diet affect the number of animals raised in particular farm systems (using data on livestock production and supply and demand characteristics of food markets), and employs a series of mathematical formulas to connect the relationship between a person's diet and the state of animal well-being. Although it employs sound reasoning, the results of the model can seem repugnant, thus questioning the extent to which we can use science in conjunction with logic to make ethical judgments about different farm types and diets. Consider four examples of conclusions that may seem repugnant to some readers.

1. Who is more immoral: (1) Someone whose diet causes the existence of animals that live in misery, or (2) someone whose diet prohibits the existence of animals who would live an overall pleasant life? The *Ethical Eating Tool* argues that this answer depends on the number of animals in misery or merriment, and the intensity of that misery or merriment. Some people may believe, however, that this comparison does not “feel” right – it is not consistent with their ethical intuitions. Many vegans have no problem with a world where livestock are extinct, which may sound strange for someone who supposedly cares for farm animals.

⁷ A web version of this tool is under construction, and will be made available at <http://asp.okstate.edu/baileynorwood/Survey4/Default.aspx?name=eatingguide> .

2. If someone believes that hens are happier in a cage-free system, but also believes hens suffer in cage and cage-free systems, that person *may* still prefer to eat eggs from a cage system. The logic is that although hens suffer more in a cage system, their increased productivity implies that it takes fewer hens to produce one egg. This person may prefer a few hens to suffer greatly than many hens who suffer, but suffer less. That may seem repugnant to the person, though it follows from hard logic.
3. Suppose one believes that beef cows live a much better life than dairy cows, broilers, hogs, or hens. Suppose one also believes that broilers experience more positive than negative emotions, but is not near as happy as beef cows. The ethical eating tool may suggest that a person best promotes animal happiness not by eating beef, but by eating broilers. The logic is that eating one hundred pounds of chicken corresponds to many broilers who eke out barely happy lives, whereas one hundred pounds of beef corresponds to less than one beef cow who lives a happy life. Logic may dictate that it is better for many animals to eke out a barely happy life than one animal to live a happy life: is 1×100 not larger than 75×0.2 ? It follows from logic, but some may feel that a repugnant conclusion.
4. If we decide to discourage livestock production because the animals are unhappy, and if we decide animals in the wild also live miserable lives, should we not also bomb natural habitats to oblivion? How repugnant, though logical, does this conclusion seem?

Conclusions

When improvements in animal welfare are viewed as a commodity, informed citizens want farmers to improve the lives of laying hens and hogs who produce animals they eat. Moreover, they are willing to pay the higher cost of production that corresponds with happier animals.

When animal welfare is viewed as a commodity, markets are the preferred mechanism for delivering welfare improvements, as the average person cares very little to influence the food decisions of others.

When animal welfare is thought of as an ethical issue, most all consumers disapprove of conventional egg and pork production methods. They want it banned, and replaced with better systems.

Most Americans approve of raising livestock for food, but do not wish the animals to suffer.

The vast majority of Americans only want livestock to not suffer. They care very little that the animals are "happy."

I argue that animal welfare is largely an ethical issue, not an issue of what foods are available in the grocery store. Hence the intense battle for public support between animal advocacy groups and livestock groups, and hence the little interest in animal-friendly products in the grocery store.

One can attempt to make food purchasing decisions based on hard logic, but the conclusions of that logic often interfere with our intuitive sense of what is ethical and unethical.

People disagree on the extent to which ethical decisions are derived from logic or intuition, but the evidence suggests the latter.

Thus, animal welfare is *supposed* to be an intense, often illogical, public battle. Animal welfare is

supposed to be debated in referendums, political lobbying, and appeals to public support.

It is impossible to discern whether markets or regulation are the *preferred* mechanism for addressing animal welfare. Moreover, wherever intellectuals fall on the market / regulation spectrum is irrelevant. No matter what we think, animal welfare will be debated as an ethical issue. Look for it in the ballot box, public relations battles, and lobbying. Many times, the debate will not make logical sense, but what public issue does? The animal welfare debate will be held in grocery stores, but not with the intensity it will be held in the public arena.

Should Animal Welfare be Law or Market Driven?

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Background material on this presentation can be found at Norwood's website and in the forthcoming book:
Compassion by the Pound: The Economics of Farm Animal Welfare.

Norwood's website: <http://asp.okstate.edu/baileynorwood/Survey4/Default.aspx>

A narrative version of this presentation is available at

<http://asp.okstate.edu/baileynorwood/Survey4/Default.aspx?name=Research>

Should Animal Welfare be Law or Market Driven?

This presentation will describe the *results* of numerous, original studies, the details of which can be found at my website (given on first page).

Let us conceptualize animal welfare improvements as
(1) A Commodity – What are the benefits to me or society, in dollars, and what are the costs?

(2) An Ethical Issue – Is conventional egg & pork production ethical, and is it more ethical to raise laying hens and hogs differently?

The difference matters, as any one individual behaves very different when animal welfare is presented as a commodity or as an ethical issue.

Animal Welfare as a Commodity: *Private* good component of animal welfare

What if we had informed consumers who were presented with egg & pork products that differed only by the level of animal welfare provided. Suppose that the price differences between the products represented only the differences in production costs.

To the average American: Would you prefer to purchase cage-free or cage eggs? **Answer: cage-free eggs.**

To the average American: Would you prefer to purchase pork from hogs raised in a shelter-pasture system or pork raised from a confinement-crate system? **Answer: shelter-pasture pork.**

Animal Welfare as a Commodity: *Public* good component of animal welfare

An informed American who desires and has access to cage-free eggs *for their consumption* faces a referendum. All cage systems for are banned and replaced with cage-free systems. The additional cost of egg production would be paid in an equal amount by each taxpayer, and this amount is indicated in the referendum.

Would the average American vote for the referendum? No.

What about a similar referendum, replacing confinement-crate pork production with shelter-pasture pork? No.

Animal Welfare as a Commodity: Private or Public Good?

Americans strongly desire for the eggs & pork they eat to be raised in a more animal-friendly environment.

Americans are not willing to pay much money to ensure eggs & pork other people eat are raised in a more animal-friendly environment.

Hence, when animal welfare is viewed as a commodity, it is a *private* good, and it is in society's best interest for animal welfare to be addressed by markets.

BUT...

Animal Welfare as an Ethical Issue

When people are asked about farm animal welfare in an ethical context, they can act differently.

About Our Ethical Beliefs

- (1) Ethics is largely intuitive, not logical.
- (2) Ethics is more than what *I* should do. Ethics is largely about imposing our ethical views on others.
- (3) This is why we outlaw discriminatory hiring, place bumper stickers on our cars asserting our views on gay marriage, and fire tenured professors for politically incorrect statements.
- (4) We desire laws and social norms that reflect our personal ethics. We are taught that it is virtuous to introduce and influence legislation that allows us to impose our views on others.
- (5) Animal welfare is an ethical issue, and will thus affect laws – whether we believe it should or not.

Animal Welfare as an Ethical Issue: What do Americans believe?

There is no universal model, only hints about ethical intuitions. Here are some.

- (1) Most Americans dislike small cages. Battery cages and gestation crates, or even gestation pens, will never be ethical. Educating Americans make them oppose these cages more intensely.
- (2) One-third of Americans believe animals have a soul.
- (3) Sixty-four percent believe God wants us to be good stewards of livestock, and small restrictive cages is not good stewardship.
- (4) *But*, one-third of Americans simply do not care about animal feelings.
- (5) A slight majority of Americans wish to ban cruel practices, even if they have access to animal-friendly food.
- (6) Americans do not want livestock to suffer, but care very little about making the animal “happy.”

Ethics, Logic, and Repugnant Conclusions

In *Compassion by the Pound*, I attempt to create a logical model relating what you eat to animal happiness. This ethical eating tool, however strong the logic may be, can lead us to repugnant conclusions.

Examples

- (1) Who is more unethical:
 - (a) Someone whose diet brings into existence animals that live in misery, or
 - (b) Someone whose diet prohibits the existence of animals that live in merriment?

Some people dislike this comparison, and have no problem with a world were livestock species are extinct.

Ethics, Logic, and Repugnant Conclusions

(2) A person believes hens suffer in both cage and cage-free environments, but suffer less in cage-free.

They may still prefer cage eggs, because they may prefer a few hens suffering a lot, to many hens suffering a little.

Remember: it takes far less hens to produce one egg in a cage system.

Ethics, Logic, and Repugnant Conclusions

(3) A person believes beef cows are really happy, but broilers are only slightly happy. Broilers are more happy than sad, but not by much.

Logic dictates the person may prefer to eat broilers, because mathematics *may* imply that there is more happiness from

- (a) many, many broilers whose happiness is a small, positive number
- (b) than a few beef cows whose happiness numbers are large.

Remember: eating 100 pounds of chicken corresponds to many more animals than 100 pounds of beef.

Ethics, Logic, and Repugnant Conclusions

(4) If we decide to discourage livestock production because we believe the livestock suffer, and if we also believe animals in the wild suffer, should we not also bomb natural habitats to oblivion?

There are many reasons to think wild animals are miserable. Have you ever seen nature documentaries? Since we have the power to destroy natural habitats, the existence of wild animals is our choice.

Conclusion: Should animal welfare be driven by markets or regulation? There is no answer. Both?

- (1) When thought of as a commodity, informed Americans think of animal welfare as a private good, adequately addressed by markets.
- (2) When thought of as an ethical issue, a majority of Americans believe conventional cage and pork production to be unethical, and they wish to impose their views on others.
- (3) Animal welfare *is* an ethical issue, to be influenced profoundly by law – whether we like it or not.
- (4) There is no reason to expect the regulations addressing animal welfare to be [perfectly] logical. Instead, regulations will appeal to vague and mysterious intuitive (though sometimes logical) ethical beliefs.
- (5) We live in a quasi-capitalistic society, where our desire for private goods are provided nicely through free markets.
- (6) We are humans, and we impose our ethical beliefs on others through the evolution of social norms and the writing of laws.¹²