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**Economic Research and Animal
Welfare Issues:
Are They Compatible?**

by

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Economic Research and Animal Welfare Issues Are They Compatible?

The issue of animal welfare has received a great deal of attention during the past 10 years. The methods employed in commercial livestock production are being subjected to increasing scrutiny by both the general public as well as lawmakers. Some consumer and animal rights groups have opposed many of the intensive production practices employed in the cattle, swine, and poultry industries. Of particular concern are the use of antibiotics and hormones in beef cattle, the confinement practices of farrowing operations in the pork industry, and confinement in the broiler industry. Since 1964, veal production and battery (caged) egg laying operations have also been the subject of much criticism (Harrison; Brambell).

Calls are being made for legislation to change certain U.S. animal agriculture production practices. Most people now live in cities, often neither having seen nor understanding how farm animals are raised. Representative Charles W. Stenholm (D-TX), Chairman of the Subcommittee on Livestock, Dairy and Poultry of the House Agriculture Committee stated that "agriculture must recognize how public perceptions shape political reality, whether these perceptions are correct or not. What we are facing is a constant struggle between perception and fact." Two approaches to deal with the issues are public education (i.e., countering charges, farm tours for children, farm leaders and media) and reexamination of husbandry charges by the producers, effecting changes when needed (Schwartz). Scientific responses to farm animal welfare (Baker) as well as care and use (Curtis et al.) have been offered.

In the past two or three years media attention to animal welfare issues has lessened somewhat being replaced by such issues as the environment, the economic recession, the gulf war and the presidential election. Despite taking a back seat to these other issues, animal

welfare is expected to resurface as a major issue during the next decade, in part because of the zeal of some of the animal rights groups, but also because the issue fits within the larger concerns about how mankind interacts with his environment. Even though animal welfare has been recognized by many as an important issue, to date there has been little research on the economic impacts associated with changes in farming practices designed to promote animal welfare. The reasons why so little work has been done are related to the confusion over what the appropriate issues are. There has been no general agreement about the definition and measurement of animal welfare. Even if researchers agree on how to measure welfare, the question remains as to how to devise agricultural production systems which enhance animal welfare. There is also a lack of agreement about what kind of economic questions are appropriate and researchable. Finally, there has not been a consistent source of funding for this type of research.

Animal Rights or Animal Welfare

Before beginning a discussion on the various animal welfare issues, some definitions are warranted. The first distinction to be made is the difference between animal rights and animal welfare. While the two concepts can be related, the proponents of each camp pursue very different goals.

Proponents of animal rights hold that animals are endowed with rights much as humans are. They maintain that to hold that rights are available only to animals of certain intelligence and abilities is a form of bigotry called "speciesism". They argue that man has no right to use

animals for whatever purpose he wishes and that the keeping of animals by man for his use constitutes a type of slavery. Hence, proponents of animal rights hold that it is inherently wrong for man to use animals for food, medical testing, cosmetic testing, clothing, or any purpose, and that all such activities should be ceased. The groups are divided as to whether it is acceptable for humans to keep animals as pets. The type of individuals who belong to the animal rights camp varies widely but there are strong tendencies for its proponents to be vegetarian, from urban areas, female, possessing incomes well above the U.S. average, sympathetic to feminist causes, 24-40 years old, and without children. Frequent confusion arises in the public minds between animal rights and animal welfare, because it is the animal rights people who are more vocal and engage in sometimes militant tactics to make their case. These actions get the attention of the press. The public response when they hear the term animal welfare may invoke images of these militant animal rights activists, and may promote the notion in the minds of the public that these issues are taken up only by the lunatic fringe. Animal rights activists maintain that the debate over whether animal rights should be respected is a matter of right or wrong; hence, economic impacts are not relevant.

Proponents of animal welfare are concerned with the care and treatment of animals. Man's use of animals for his own purposes is not viewed as inherently wrong as long as the animals are treated and cared for in an appropriate manner. Specific uses of animals may be deemed as unacceptable if they involved cruelty and/or are of no benefit to mankind. While the main focus of this group has been on humane care and treatment of laboratory animals, animal agriculture is also under scrutiny. Questions have been raised regarding intensive confinement of animals in modern, large-scale farm operations. The animal welfare movement has seen

considerably more activity in Europe than in the United States, but will probably become more important here in the years ahead; not only because of our own citizens concerns, but also because of our need to meet European consumers' demands in order to sell food in their markets. With respect to animal agriculture, producer-originated animal suffering can be divided into three categories (Albright):

- neglect* where an animal is confined and then denied a vital requirement such as food or water;
- abuse* where there is obvious cruelty involving willful harm of the animal; and
- deprivation* where something is missing from the animal's environment and the animals are stressed, bored, or otherwise unhappy.

Neglect and abuse are relatively easy to identify and there has already been considerable legal precedence for protecting farm animals from this type of suffering. For example, laws regarding transport of animals, as well as humane slaughter laws, are a response to these more obvious acts which are detrimental to animal welfare. Also, the public is generally supportive of legislation to protect farm and other animals from neglect and abuse. Cases of deprivation are more difficult because they involve animal needs which are perhaps less vital and which have not been definitely established (Albright). Much of the concern and debate regarding farm animal welfare today relates to this issue of deprivation rather than to abuse or neglect. This is in part because abuse and neglect have already been addressed to some extent, and in part because as we become more knowledgeable about how animals respond to their environment,

deprivation can be more easily defined and measured. It has been argued that modern agriculture with its intensive rearing and confinement of livestock leads to animal suffering that is categorized as deprivation. Hence, it is precisely this area that cries for research both by animal scientists and by agricultural economists.

Measurement of Animal Welfare

The question of what constitutes good farm animal welfare is one that is hotly contested (Moberg). The arguments range from the animal rights activists, who basically conclude that man's use of animals for food or medical research is morally wrong, to many in the farm animal industry who claim what is best for the animal's welfare is in the farmer's best interest because it results in greater production efficiency and profitability. Advocates on the one side have sometimes let their feelings, coupled with limited knowledge, cause them to argue that common sense alone should dictate strict regulation of production practices, while those on the other side let their devotion to their animals, coupled with zealous pride, cause them to argue that producers faced with a national cheap food policy are doing as well as can be done (Curtis). Both sides ignore the need for scientific inquiry into these issues.

Returning to our previous notion regarding deprivation, animals are deprived if their farm environment leaves them stressed or unhappy. We, as humans, have no way of directly observing if farm animals are stressed or unhappy. We cannot simply ask them how they feel. One can argue that there is something wrong with a production system if the animal starts losing weight or if its health is in some way compromised, but we cannot conclude that an animal is

not stressed or is happy simply because it appears to be in good health. One could be tempted to ask the question: "How would I feel if I were kept under the conditions under which farm animals are currently being kept?" If one then assumes that animals feel the same way that humans would, he or she would be guilty of anthropomorphism, which is the assigning of human traits, values, feelings, and emotions to other species. There is little evidence that such assumptions are valid. Hence, we need some other method of determining what constitutes good animal welfare.

It could be argued that we can devise codes that will improve animal welfare by protecting them from abuse and neglect. Again the issue of deprivation is a more difficult one to define, but some have suggested that animal behavior is altered when they are deprived of something that is normal, but not necessarily essential, to their environment. In the United Kingdom, Codes of Recommendation for the Welfare of Livestock have been produced for cattle, pigs, sheep, chickens, turkeys, ducks and rabbits. Provisions deemed as necessary include (Ewbank):

1. Comfort and shelter
2. Readily accessible fresh water and a diet to maintain the animals in full health and vigor
3. Freedom of movement
4. The company of other animals, particularly of like kind
5. The opportunity to exercise most normal patterns of behavior

6. Light during hours of daylight and lighting readily available to enable the animals to be inspected at any time
7. Flooring which neither harms the animals or causes undue strain
8. The prevention and rapid diagnosis and treatment of vice, injury, parasitic infection and disease
9. The avoidance of unnecessary malnutrition
10. Emergency arrangements to cover outbreaks of fire, the breakdown of essential mechanical services and the disruption of supplies.

Code number five maintains that animals should have the opportunity to exercise most normal patterns of behavior. Hence, if this is to be a necessary criteria for animal welfare, it becomes necessary to determine what is a normal pattern of behavior and how the behavior of animals in modern agricultural systems compares to the normal pattern. One of the reasons why little economic research on animal welfare issues has been done is because of the lack of agreement on what kinds of changes in animal agriculture are necessary to promote animal welfare. The research by animal scientists and veterinarians on ways of improving animal health, as well as behavioral indicators of animal well-being will identify the necessary changes in farming practices. Such research is an essential precursor to economic research on animal welfare. Once this initial research has been done, the economic impacts of these changes can be assessed.

Specific Animal Welfare Issues in Meat Animals

Specific animal welfare in each of the different meat animal industries are discussed briefly. These issues represent some of the animal agriculture practices that are most often criticized on welfare grounds.

Poultry

Methods of catching, loading, and transporting poultry place the animals under extreme stress. The birds are often physically damaged and subjected to severe pain during these processes, as their hips may be dislocated, wings and legs may be broken, and the birds may be severely bruised.

Feed additives and growth promotants have been used to increase the resistance of birds to disease and to promote faster growth resulting in lower production costs for the farmer. The use of antibiotics is made necessary, some argue because of overcrowding and not changing the litter often enough (Druce). The resulting infirmities which may occur include colisepticemia, stunting syndrome, salmonella, and keratoconjunctivitis.

The low environmental complexity of broiler pens results in boredom-related vices in poultry. Overcrowding and poor floor quality as well as over-stimulation due to artificial light lead some birds to peck at or attack other birds, resulting in bird deaths. There are also some health problems associated with excessive growth rates. Leg and feet deformities and increased rates of heart attacks have been blamed on breeding for fast growth.

Swine

The farrowing environment can have consequences for piglet mortality. A considerable portion of piglets die each year before weaning, due primarily to starvation, chilling, and injury by the dam (Expert Committee on Farm Animal Welfare and Behavior). These deaths represent a pertinent animal welfare issue as well as an important commercial problem.

Close confinement of sows preceding and during farrowing, when sows are normally quite active has been criticized for its behavioral effects on the animals. Sows are often observed biting the metal bars of their farrowing crates. Larger sows may find it difficult to lie down, and the cramped quarters can cause spinal disorders due to pressure on the spine instead of the leg muscles, while lying down (Gold). The surface of the floor can also cause problems. Certain types of slatted floors can result in foot discomfort, and solid floors can result in the sow lying in manure and urine.

Skip feeding refers to the practice of feeding sows once every two or three days. In intensive housing operations, this practice is quite likely to result in discomfort and excessive excitability at feeding time.

Confinement housing of feeder pigs can create problems with respect to temperature control, air quality, proper flooring, and disease prevention. Confinement systems with high stocking densities are said to induce abnormal behavior such as tail-biting, ear-biting, and excessive fighting.

Cattle

Calf-rearing practices for veal seem to have attracted the most attention in this livestock commodity group. However, a number of issues related to fed beef production have been raised as well like castration, dehorning, vaccination, etc. As mentioned earlier, there is concern over antibiotics in beef. It has been argued that feedlot beef systems necessitate the use of antibiotics to control liver abscesses from high concentrate diets. Also, the use of growth hormones to promote faster growth and greater feeding efficiency has been strongly criticized by activists as being both cruel and unnecessary.

Suggested Changes in Animal Agriculture

Most of the changes in animal agriculture proposed by proponents of animal welfare involve a reduction in confinement and stocking densities, as well as a decrease in the use of unnecessary pharmaceuticals and biochemical growth promotants. Specific alternative housing systems for cattle, swine, and poultry have been proposed by Sainsbury, the Animal Welfare Institute (1987), and others. These proposals suggest a reversal of the trend toward fewer and larger farm operations and a return to more small and medium-sized animal rearing units.

On the legislative front, it seems that most of the activity has been in Europe. Highlights of a recent Swedish animal protection law include the following (Swedish Ministry of Agriculture):

1. All cattle are entitled to be put out to graze

2. Poultry are to be let out of cages
3. Hens for egg production shall not be housed in cages
4. Sows are no longer to be tethered. They are to have sufficient room to move with separate bedding, feeding, and voiding places provided
5. Cows and pigs are to have access to straw and litter in stalls and boxes
6. The government is empowered to forbid the use of genetic engineering and growth hormones what may mutate our domestic animals.

Likewise, the European Parliament called for the establishment of community-wide standards for the intensive rearing of veal calves, laying hens, and swine (Animal Welfare Institute (1990)). The Parliament's 1987 Resolution on Animal Welfare Policy called into question the standard practices of the industry and offered several opinions on changes in such practices, which could become legislation after a period of more study on the issues. Europe may be only a few years ahead of the U.S. with respect to animal welfare legislation. It is likely that the issues and arguments being presented in the European forum will impact and shape the direction of animal welfare regulations in this country as well. With so many sources for proposed alternatives, it is possible to hypothesize the likely direction of animal welfare legislation in each of the cattle, swine, and poultry industries.

Economic Research Issues

What can the economist contribute to the analysis of farm animal welfare? Changes in farming practices which are designed to yield improvements in animal welfare are likely to involve a different mix of inputs than those currently used in livestock production, a different scale of operation, or both. In any case, such changes could involve using different technology than is currently standard in the livestock and poultry industries. Potential animal welfare benefits from such changes in technology may involve increases in the cost of livestock production. The impact of such cost increases on domestic consumption and export competitiveness should be determined to enable legislators and their constituents to make better-informed choices on animal welfare issues.

Reasons that Economic Research is Needed

Farmer groups claim that animals are treated well and that it is not in their best interest economically for their livestock to be subject to stresses which will result in lower production efficiency. They cite how current production practices result in the low-cost food that consumers enjoy. Animal welfare proponents stress that there are alternative agricultural practices available that will not result in significant increases in consumer food costs. To date, no rigorous analysis of the impact of potential animal welfare legislation on farm costs and consumer meat and poultry prices has been done. Some groups have offered numbers to support their case, but the objectivity of such estimates must be doubted given the authors' biases

regarding current animal agriculture practices. A more rigorous and objective analysis is needed for the following reasons.

1. The actual impacts of changes in meat animal production practices in accordance with potential animal welfare legislation on farm-level production costs and producer income have not been determined.
2. The impact of such changes on retail meat prices is also a question that needs to be answered. Many consumers may support changes in animal production practices and feel that they are a good idea, but there may be a limit on how much consumers are willing to pay in increased meat and poultry prices for improvements in the welfare of farm animals.
3. The feedback of changes in meat consumption brought about by changes in retail meat and poultry prices must be considered. If retail prices are increased because of mandated production practices, changes in consumption could result in substantial revenue losses to the entire meat industry at the farm, farm gate, packer, wholesale, and retail levels.
4. The impact of such changes on wholesale and retail meat and poultry prices is a necessary precursor to the consideration of how such changes will impact the ability of the U.S. meat and poultry industries to compete in export markets.

While all of these are important economic questions, it is the impact on farm-level production costs which presents the most obvious challenge to the agricultural economist. This challenge exists because of the uncertainties surrounding the animal welfare issue, many of which I have already discussed.

Possible Approaches for Determining Impacts of Animal Welfare Regulations on Production Costs

There are several alternatives to approaching the determination of production costs impacts. Some of these are listed below.

1. Calculate the change in production costs associated with some arbitrary reduction in stocking densities or the elimination of some specific pharmaceutical.
2. Attempt to interpret general codes like those in Europe and determine their impact on production costs in U.S. animal agriculture.
3. Wait until specific codes have been proposed or enacted, then determine the impact on production and/or marketing costs.
4. Work with animal scientists and veterinarians to define ways to measure animal welfare, design alternative production systems or changes to existing systems

which promote animal welfare relative to current ones, and evaluate the alternative systems in terms of their impact on production and/or marketing costs.

The first approach puts the economist in the position of being a speculator, making assumptions that such changes do indeed enhance animal welfare. This type of research is in danger of being irrelevant because there may be no basis for the parameters chosen. The second approach suffers from the same problems, but at least there is some basis for the kinds of changes in animal systems that are being examined. The third approach may provide useful information, but it shuts the economist out of having any input into the kinds of regulations or changes in animal agriculture systems that will be required. The final approach has all of the difficulties and rewards implicit in any type of multidisciplinary research, but it seems to present the best possibility for the economist to have meaningful input into the animal welfare issue and offers the best hope for relevant and useful research results.

Returning to the original question - are economic research and animal welfare issues compatible? I believe they are, but I am advocating a multidisciplinary approach to research in this area. The research questions are more complex in the multidisciplinary realm, but the results are potentially more useful. For research in this area to proceed economists must be willing to seek out colleagues in other disciplines, and administrative, industry, and government funding agencies must be willing to provide support for this type of research.

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