The Well-Being of Farm Animals
Challenges and Solutions

Edited by
G. John Benson
Bernard E. Rollin

Issues in Animal Bioethics Series
Bernard E. Rollin, Series Editor

Blackwell Publishing
The Well-Being of Farm Animals
Challenges and Solutions
To the farmers and ranchers who,
through animal husbandry,
renew and preserve our ancient contract
with farm animals
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Blackwell Publishing Professional
2121 State Avenue, Ames, Iowa 50014, USA

Orders: 1-800-862-6657 Fax: 1-515-292-3348

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Printed on acid-free paper in the United States of America

First edition, 2004

Library of Congress Cataloging-in-Publication Data

    p. cm.— (Issues in animal bioethics)
    Includes bibliographical references (p.).
    ISBN-10: 0-8138-0473-6 (alk. paper)
    SF745.W45 2004
    636.0893—dc22 2003020487

The last digit is the print number: 9 8 7 6 5 4 3 2
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Preface

Over the last 30 years, animal treatment has emerged as a major social concern across the Western world. From the proliferation of legislation governing animal research in virtually every civilized society to recent laws raising the value of pets well beyond economic value, social ethics is changing to meet that concern.

While Europe has forged ahead in assuring the welfare of farm animals—witness the Swedish law of 1988, which the New York Times called "a bill of rights for farm animals," wherein the Swedish parliament abolished confinement agriculture as we know it in the United States, and European Union regulations—the United States has not yet experienced a major social effort in that direction. This is probably because the U.S. public still believes that farms are the Old McDonald's farms that are nostalgically depicted in children's books, and is ignorant of "factory farming." (How else can one explain one large confinement producer running advertisements for years showing the classic mixed animal barnyard scene, and intoning that he raises "happy chickens"?) Animal activists are working assiduously to raise public awareness; but despite the lessons of Europe, the industry has not instituted reforms except when forced to do so by pressure from PETA (People for the Ethical Treatment of Animals) on chain restaurants and grocers.

Part of the problem is the absence of sound literature on relieving farm animal suffering. A year ago one of us (BR), who had published one of the few extant U.S. books on the welfare of farm animals—Farm Animal Welfare (Iowa State University Press, 1995)—was shocked to learn how little research was available on farm animal analgesia despite the many painful procedures done on millions of farm animals, and sought to rectify this lacuna. Rather naively, Rollin looked for a veterinary anesthesiologist as a coeditor. He was again shocked to find that few anesthesiologists wished to risk the wrath of the industry by writing on analgesic regimens, and that there was far too little information for a book. Eventually, he found John Benson, who for 30 years had worked on relieving animal pain, including producing a major textbook of anesthesia and analgesia (Lumm and Jones, 1996, Veterinary Anesthesia, Third Edition, Pub. Williams and Wilkens). Benson, who fears no one, willingly agreed that a book on animal suffering was sorely needed and agreed to coedit this volume.

In order to create this volume, we recruited many of the world's finest scholars in the science of animal welfare. We are grateful that no one refused our offer, and all wrote original pieces for this volume. We believe we have thereby collected state-of-the-art, authoritative
papers on many of the seminal and practical issues that need to be addressed to reduce farm animal suffering.

This book should be of interest to agriculturalists and animal welfare advocates alike, and particularly to those who actively work with animals. If we have created the groundwork for dialogue on these issues as well as some practical reforms, we will have succeeded in our goals.

We are grateful to our authors for the serious thought and effort that went into their contributions. We are especially appreciative of the efforts of David Rosenbaum, former acquisition editor extraordinaire, polymath, partner in dialogue, coach, and cheerleader at Iowa State Press (Blackwell Publishing), without whose enthusiasm and support this book would not have come to be.
G. John Benson received his DVM degree from the University of Illinois in 1971. Following three years of general practice in Petersburg, Illinois, involving primarily beef cattle and swine, he returned to the University of Illinois to pursue a Master’s degree and residency in anesthesiology, becoming certified by the American College of Veterinary Anesthesiologists in 1979. He is a past president of the American College of Veterinary Anesthesiologists. Since then he has been a member of the Anesthesia Section in the Department of Veterinary Clinical Medicine and holds joint appointments in the Departments of Veterinary Pathobiology (Comparative Medicine Division) and Veterinary Biosciences (Pharmacology Division). Dr. Benson is presently Professor and Chief of the Anesthesia Section.

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I

Theoretical Framework
The Ethical Imperative to Control Pain and Suffering in Farm Animals

Bernard E. Rollin

It is easy to forget that the concept expressed in the term *profession* extends over many more instances than the usual array of law, medicine, veterinary medicine, and dentistry. If we think of a profession as comprising a group of individuals charged with doing a job deemed of paramount importance by society and given special privileges and autonomy to do that job, we realize that professional ethics is a far more important concept than it is usually considered to be.

Consider a standard example: Veterinarians are charged with ministering to the health of animals, be they companion animals, farm animals, or laboratory animals. To perform that function, they are given special privileges, for example, writing prescriptions and performing surgery. Though these are onerous responsibilities, society is loath to regulate them in detail, since laypeople (among whom are legislators) do not understand what is involved in surgery or prescribing medicine. So, society says to veterinarians, “you regulate yourselves the way we would regulate you if we understood in detail what you do—which we don’t. But, we will know if you violate that trust, and if you do, you will pay for that breach of trust by loss of autonomy and having to endure regulations imposed on you by us.” A classic example of this situation occurred in the 1980s when society became aware that some veterinarians were cavalierly prescribing antibiotics to animal agriculture for growth promotion. This practice was driving the evolution of bacterial resistance to antibiotics, and potentially endangering human and animal health. At that point, Congress was prepared to legislate an end to veterinarians’ writing extra-label prescriptions, a restriction that would have destroyed veterinary medicine as we know it.

Unfortunately, throughout most of the twentieth century, professional ethics has not been seriously studied. It has instead devolved largely into intraprofessional etiquette, dealing with issues such as advertising, criticizing a colleague, fee splitting, and so on. Yet ignoring the true ethical dimensions of professions can lead to loss of the professional autonomy that comes from understanding the scope of professional activity better than legislators do. Despite the clarity of this point, it has been largely ignored. In 2002, in the wake of revelations of abuse of professional authority by accountants in the Enron case (specifically the accounting giant Arthur Andersen), accounting will be more strictly regulated by external authorities. Arthur Andersen abused the fact that no legislation or regulation existed curbing conflict of interest; instead, avoiding such conflict was left to the
profession. When it became known to the public that Arthur Andersen audited Enron’s books while being highly paid as a local consultant to Enron, creating a patent conflict of interest between the two sides, society felt it could no longer trust the accounting profession to self-regulate. What regulatory rules will emerge is not yet clear, but we can be certain that accounting will lose some of the freedom it previously enjoyed.

The same sort of thing has happened in the last three decades to biomedical and social-scientific researchers using animal subjects and human subjects. In the wake of clear evidence emerging in the 1980s that the animal research profession was not providing the best care possible to research animals, despite protestations to the contrary, society imposed strong federal laws on researchers. More recently, revelations of cavalier treatment by researchers toward human subjects leading to unnecessary death and disease is moving the federal government toward restrictive regulations. For example, in the past, local review committees, chartered by the federal government, prospectively audited research protocols and assumed that researchers would keep their word. Now these rules demand a mechanism by which committees will need to inspect the actual conduct of research, a major erosion of researcher autonomy. Researchers are, we should recall, professionals as defined above. They can, for the sake of advancing scientific knowledge, risk the life, health, and suffering of research subjects, human and animal. Proven failure to meet the moral demands emerging from that privilege brought on draconian external regulation, which, most researchers agree, could have been even worse!

Plainly, agriculture is a profession as defined above—people in agriculture are entrusted with creating the U.S. food supply in a safe, environmentally sound way that also accords with demands regarding animal well-being, a task arguably as important as any of those entrusted to more standard occupations called professions. And perhaps the most overarching demand to all professionals—be they agriculturalists or physicians—is that they operate in accord with the extant and emerging social consensus ethic. We must recall that every society wishes to avoid chaos and anarchy in order to keep social life from being, in Thomas Hobbes’s unparalleled phrasing, “nasty, miserable, brutish and short.” As a result, those things that are deemed essential to harmonious social life and social justice are encoded in what we may aptly call the social consensus ethic. Such moral principles as the prohibition against murder, rape, robbery, theft, perjury, embezzlement, sexual harassment, and the like become, as Plato says, “written large” in laws and regulations, and adherence to them by all members of society, laypeople and professionals, is presupposed.

As societies evolve, moral principles may be added to, or dropped from, the social consensus ethic. For example, before the 1960s, the social ethic left the sale and rental of real property to individuals, or rather to their personal ethic regarding what they viewed as moral and immoral, right and proper. But when society perceives that leaving things up to individual morality leads to widespread unfairness and injustice, it will, as it does in professional ethics, remove the responsibilities in question from the realm of people’s personal ethics, and instead encode them in law. For example, when society realized that leaving sale and rental of real estate to an individual’s ethics resulted in failure to sell or rent such property to minorities, it removed that privilege from personal ethics and created strict rules, enforced by law, to stop such discriminatory practices. Society may, of course,
also move in the other direction, relinquishing social control over choices it decides are best left to personal ethics. Such behaviors as homosexuality or abortion have pretty much been dropped from social control, and relinquished to individuals’ personal ethics.

Thus, professionals and individuals wishing to preserve their autonomy must constantly monitor the social ethic to make sure that their behavior accords with changing social ethical concerns in an anticipatory way, lest they lose that autonomy.

It should be patent to anyone who even superficially examines ethical concerns across Western societies that moral concern for animals—how they are treated—and concern for their pain and suffering have been emerging as major issues during the past 30 years. According to both the National Cattlemen’s Association and the National Institutes of Health, Congress received more letters, faxes, telephone calls, and so on dealing with animal welfare between 1980 and 1995 than any other issue. In 1991, a poll conducted by Parents magazine found that 85 percent of its readers affirmed that animals had rights (Parents, 1989).

Whereas, 25 years ago, the U.S. Congress saw no bills dealing with animal welfare, the last few years have witnessed legislative proposals numbering in the scores. According to an official of the American Quarter Horse Association, the largest equine association in the United States, the organization’s largest expense in the late 1990s was hiring a research firm to monitor state and local legislation pertaining to equine welfare. In California, a law has been passed making shipping horses to slaughter a felony, as is knowingly selling a horse to someone who will so ship it. Animal cruelty has been made a felony in over 30 states, and some two dozen law schools now include courses in animal law, with numerous legal scholars working to raise the status of animals from property to quasi-personhood. Activist cities like San Francisco and Boulder, Colorado, have floated ordinances declaring that people who have pets are not owners of these animals, but guardians.

Europe has witnessed a steady increase in concern for farm animal welfare in recent years, largely due to careful scrutiny of intensive, industrialized confinement agriculture. Americans are generally surprised at the degree to which factory farming has captured public concern in Europe. Sweden passed a law in 1988 phasing out the high-confinement agriculture we take for granted in North America, which the New York Times called a “Bill of Rights for Farm Animals” (New York Times, 1988). Britain and the European Union have followed suit, with the latter announcing the elimination of sow stalls within a decade.

No area of animal use has failed to feel the effects of moral concern for animals. Animal circuses have lost the support of the public, with Cirque de Soleil, a show that does not use animals, the most popular in America. The American public’s disaffection with wildlife authorities’ management of wildlife populations for hunters, spring bear hunts that can lead to the death of a lactating mother bear and the consequent death by dehydration of her cubs, steel-jawed traps, lethal control of predators and pests, and mountain lion hunts have all resulted in what one authority called “management by referendum,” with the public, by right of referendum, usurping the job of wildlife managers. Funds for “pest control” are ever-increasingly directed toward contraception and other nonlethal methods.
Somewhat surprisingly, PETA and other groups have found the public generally sympathetic when they target the welfare of aquatic animals, even fish. The fish importing industry was sufficiently concerned with this issue to invite me to lecture to two international meetings two years in a row. Sale of lobsters in Great Britain dropped precipitously until the industry developed a “lobster stunner” so that housewives did not have to drop a live, conscious animal into boiling water. The sale of live fish has precipitated major protests in San Francisco’s Chinatown. Disavowal of animal testing for toxicity of cosmetics has propelled the Body Shop into a billion-dollar industry. As early as 1978, the readership of *Glamour Magazine*, when polled, affirmed that a new cosmetic does not justify the animal suffering required to develop it.

Most surprising, perhaps, was the virtually worldwide development of laws protecting laboratory animals, mostly rats and mice. In Switzerland, a law was promulgated by referendum banning animal research, which would have passed, according to polls, had the pharmaceutical industry not spent large sums of money at the last minute defending animal research. Laws in virtually all Western countries now mandate researcher control of animal distress. In many countries (e.g., Britain), an animal suffering intractable pain that cannot be controlled must be killed. (In the United States, the animals *may be* killed at the discretion of the Animal Care and Use Committee at a research institution.) In America, these laws address not only physical pain but also “distress,” and they mandate exercise for dogs and environments for nonhuman primates that “enhance their psychological well-being.” The National Institutes of Health *Guide to the Care and Use of Laboratory Animals* strongly urges enriching the captive environment for all laboratory animals, and trade journals regularly cover these issues. Zoos, also, have been forced by public concern into taking cognizance of animals’ behavioral needs. In Germany, a constitutional amendment passed in the spring of 2002 protects animals from all but the most exigent reasons for inflicting pain.

One could list examples endlessly, but the point has been made. Society is concerned about the pain, suffering, and distress of all animals used for its benefit. The extent of such concern may be gleaned from the dramatic story of U.S. laboratory animal legislation. The research and medical communities were dead set against these laws, as were such ancillary groups as the American Associations of Medical Colleges, Veterinary Colleges, Land Grant Universities, and the pharmaceutical industry. In cleverly orchestrated campaigns, these powerful groups threatened the public with danger to human health if laws protecting research animals passed. Most extraordinary was a film entitled “Will I Be All Right, Doctor?” which said in essence that children’s health was threatened by protection of laboratory animals. The public simply did not believe these preposterous claims, and in 1985 two laws were passed to that end.

Why, one may ask, have we not seen a similar furor regarding the protection of farm animals? The answer is simple—public ignorance. For reasons unclear to me, there seems to be a media blackout on issues of farm animal welfare. Even when the swine industry was being examined for environmental despoliations, no allusion was made to the related animal welfare issues. According to reporters I spoke to at the time, editors tend to see animal welfare as “fringe.” Neither mass media nor the agricultural press cover these issues,
and the ignorance of U.S. farmers and agricultural scientists as well as the general public on these issues in Europe is appalling.

The result is, as Paul Thompson has remarked, that the U.S. public still thinks that farms are Old McDonald’s Farm—mixed, extensive, family-run small businesses (Thompson, 1991). For many years, high-confinement poultry producer Frank Perdue helped to perpetuate this misperception by running advertisements showing chickens pecking in a barnyard, complete with red barn and rising red sun, while a voiceover declared, “At Perdue, we raise happy chickens.” In short, the public is largely clueless about how food animals are produced, though when the media did cover severe confinement of veal calves, the confinement veal industry was virtually destroyed.

The agriculture industry’s response to all of this is curious. Rather than admitting that confinement agriculture raises welfare problems, spokesmen for the industry (but not farmers themselves) tend to fall back on the non sequitur that the public needs to know where its food comes from. “People think bacon and eggs come from the supermarket,” I often hear. “We need to show them where it comes from.” Needless to say, I have serious doubts about this claim. If people were to tour confinement egg production facilities and see the hens in small cages, debeaked, one sometimes walking and defecating on top of the other in an effort by the industry to get more production per cage; or if people could view confinement swine facilities, with a 600 pound sow forced into a “crate” that measures two and a half feet high by seven feet long by three feet wide (sometimes two feet wide in an effort to force more crates into a barn), where she can’t lie down straight, much less turn around, they would not be happy. If they saw newborn baby pigs castrated and tattooed, with teeth clipped all without anesthesia, then saw them raised in pens that get more and more tight as they grow, never seeing daylight and breathing air that sometimes requires that employees wear respirators, they would be even less happy. If they saw pig and chicken shipping and slaughter, I doubt it would make them appreciate the industry more than they do now! What public ignorance entails is a grace period for the confinement industries to clean up their own acts, with Europe for a model. What the emerging ethic for animals demands for farm animals is pretty clear from the examples of Europe and Britain. Before exploring this in depth, however, it behooves us to examine why animal issues have suddenly come into focus internationally.

II

There are several reasons why animal issues have seized the public imagination during the last three decades. Most obvious, perhaps, is demographic change. Although a century ago over half the population made a living producing food, this has dramatically changed. Today, barely 1.7 percent of the population works in production agriculture, with perhaps half of that group or less in animal agriculture. Furthermore, few members of the population have relatives on farms either. As a result, concepts of animals have changed. A hundred years ago, if one ran a word association test on the rural or urban population asking what the word animal evokes, people would likely say horse, cow, work, food. As late as
the 1960s, over 80 percent of veterinarians were employed by agriculture. Now, such veterinarians constitute less than 8 percent of veterinarians, most of whom work in the area of companion animals who are, in fact, the new paradigm for animals in society. (One rancher friend of mine was shocked when, upon bringing a range cow into our veterinary hospital, he was asked by the female and urban students, “What is her name?”) Companion animals dominate the social mind, with almost 100 percent of the public claiming to view their pets as “members of the family.” Such a paradigm is considerably jarred by farm animals in confinement.

Second, since we are largely removed from animals and animal life, we yearn for closer proximity, interaction, and knowledge. This is supplied by the mass media, who are quite cognizant, as one reporter told me, that “animals sell papers.” My cable system has two 24-hour-a-day Animal Planet stations, and many other channels endlessly cover animal stories. (One large-city TV news producer told me that he routinely will begin the news with an animal story teaser and not finish the story until the end of the newscast, to hold viewers.) Recall that when two whales were trapped in an ice floe, they were freed by Soviet icebreakers! Was this an overflowing of Soviet compassion (surely an oxymoron for those who gave us pogroms, Stalin, and the Gulag)? It was rather that someone in the Kremlin was smart enough to realize that releasing the whales was a cheap way to win kudos from the U.S. public. If the U.S. public had been unaware of these whales, the Russians would probably have sent whaling boats, not icebreakers!

Third, the U.S. (and world) public has had 50 years of ethical sensitivity priming. The last 50 years have seen the rise of civil rights for minorities, women’s rights, gay rights, children’s rights, student rights, patients’ rights, the rights of indigenous populations, environmentalism, and the rights of the disabled. Concern about the weakest and most disenfranchised part of human society, animals, was inevitable. Indeed, leaders of activist animal groups often come from other social movements such as civil rights, labor, the women’s movement, the gay movement, and so on. These people take seriously the dictum that the morality of a society is best judged by how it treats its least enfranchised. Exploitation of animals is definitely politically incorrect.

Fourth, the nature of animal use changed quickly and dramatically at mid-twentieth century. Historically, the major use of animals in society was agriculture—food, fiber, locomotion, and power. The key to agricultural success was animal husbandry, from the old Norse word *hus/bond*—bonded to one’s household. Animal husbandry betokened an ancient and symbiotic contract between humans and domestic animals, perhaps best expressed by western American cattle ranchers, the last large group of husbandmen in the United States, when they intone, “we take care of the animals and they take care of us.” One of my colleagues, a rancher and beef specialist, has declared that the worst thing that ever happened to his department was betokened by the name change from Department of Animal Husbandry to Department of Animal Science. Animal husbandry was about putting square pegs into square holes, round pegs into round holes, and creating as little friction as possible while doing so. Animal science is about efficiency and productivity. The husbandman put the animal into optimal conditions of the sort the animal was evolved for, and then augmented the animal’s natural ability to survive and thrive by providing the an-
imal with food during famine, water during drought, medical attention, help in birthing, help during natural disasters, and so on. The animals gave us their products, their toil, and sometimes their lives; we gave them better, more comfortable lives. Not only was husbandry reinforced by practicality, it was also taught as an articulated ethic. So powerful was this ethic, that when the psalmist wished to create a metaphor for God’s ideal relationship to people, he chose the image of the shepherd in the Twenty-third Psalm: “The lord is my shepherd; I shall not want. He maketh me to lie down in green pastures; he leadeth me beside the still waters. He restoreth my soul.” We want no more from God than the shepherd gives his sheep!

This lovely ethic can still be seen among western ranchers, for whom husbandry is as much a way of life as it is a way of making a living. Cowboys routinely spend more on a sick calf than is economically justified; most ranchers and ranch wives will sit up all night with a sick or marginal calf in their kitchen. If this were a matter of economics alone, they would value their labor and sleep time at pennies an hour. Beyond economics, there is generally a strong love for the animals and a strong sense of duty. I know one cowboy who unhesitatingly plunged into a frozen pond to save a calf who had fallen through the ice, and who afterward incurred devastating lung problems. “And I would do it again,” he wheezed.

Confinement agriculture sprang up in mid—twentieth century, when values of efficiency and productivity—business values—prevailed over values of husbandry and way of life. Intensification was born of fear that people were forsaking agriculture after the Dust Bowl and the depression. It was born of fear of loss of agricultural workers to better-paying urban jobs. It was born of fear that burgeoning population would encroach on agricultural land and make feeding that population by traditional means untenable. The issue of animal welfare, if considered at all, was erroneously thought to be assured by animal productivity. Alas! This was only true for husbandry agriculture, which, as we said earlier, was about putting square pegs into square holes and creating as little friction as possible. The producer did well if and only if the animal did well. This is not to say that there was no animal pain in husbandry agriculture—that claim is belied by knife castration, branding, and dehorning. But these were short-term insults seen as inevitable and as ones from which the animals recovered rapidly. Confinement agriculture was based on a brand new model, that of using technological sanders to help force square pegs into round holes. Whereas a nineteenth-century attempt to raise a hundred thousand chickens in one building would have ended abruptly with the deaths of the animals, technology gave us antibiotics, vaccines, bacterins, and air-handling systems, which allowed the animals to survive and produce, while still experiencing severely truncated welfare. Such compromised welfare was irrelevant to profitability and productivity of the operation as a whole.

Confinement swine producers do not jump into ponds to save animals. In fact, they don’t even treat sick animals; rather they knock them in the head, since the value of each animal is too small to bother with. Although each animal may be miserable, the operation as a whole is economically solvent. No wonder that cowboys hate factory farms! As the president of the Colorado Cattlemen’s Association once said at an agricultural meeting, “If I had to raise animals like the veal people do, I’d get the hell out of the business.”
The Western world became aware that Old McDonald’s Farm had become Old McDonald’s Factory in the mid-1960s when journalist Ruth Harrison (Harrison, 1964) published her *Animal Machines* (significantly prefaced by Rachel Carson). Harrison’s writings, buttressed by other journalists such as Elspeth Huxley, caused a furor among the British public, whose strong negative reaction led the British government to charter a commission of inquiry, the Brambell Committee (Brambell, 1965), headed by Sir Rogers Brambell. Though having no political authority, the Brambell Committee report immediately became a moral beacon for Britain and Europe when it stated that any agricultural system that failed to allow animals to perform the behaviors dictated by their biological natures was morally unacceptable, morally foreshadowing the Swedish law of 1988, and laying the basis for the conservative (rather than radical!) demand for husbandry we have called the emerging social ethic for animals.

### III

The nature of the new ethic that would emerge in response to the new agriculture, as well as to the vastly increased mid-twentieth-century use of animals for research and toxicity testing (a use that violated the fair bargain found in husbandry agriculture, since we burned, poisoned, wounded, and inflicted disease upon animals for our benefit or for the benefit of other animals with no compensatory benefit to the research animals themselves) was quite rational and predictable. I did indeed foresee its development in my writings of the late 1970s and early 80s (Rollin, 1981). The traditional social ethic for animals—embodied in anticruelty laws—presupposed husbandry and thus could not replace it. The anticruelty ethic existed to deal with those (mainly sadists and psychopaths) who were not motivated by self-interest. These laws were directed against sadistic, deviant, intentional, and willful infliction of pain and suffering on an animal for fun or out of perverted desires, not normal social use or consumption of animals. For this reason, these laws could not be shaped to cover research or factory farming or steel-jawed traps. However, if one considers a pie chart representing all the suffering animals currently experience at human hands, one will quickly realize that only a tiny fraction of that chart—1 percent or less, my audiences typically estimate—is the result of deliberate, sadistic cruelty. Most comes, in fact, from the new approaches to agriculture and research enumerated above. It is estimated that U.S. confined broiler chickens go to slaughter with 80 percent of the eight billion produced bruised or fractured. If this is true, we have in that industry about 6.4 billion cases of suffering. Thank heavens, there is probably nothing like that number of acts of deliberate cruelty in the whole world. Thus, a new ethic is needed to replace the connected ethics of husbandry and anticruelty.

It was clear to me, as Plato taught, that new ethics doesn’t come from nowhere, but builds on established ethics. It was thus also obvious to me that society would turn to our established ethic for humans to serve as the basis for our newly sought animal ethic. And our human ethic had indeed addressed the fundamental conflict of the good of the majority group of humans against the benefit of the minority. This is a perennial problem in human ethics that recurs in every society. If it benefits society as a whole (i.e., the majority) to tax the wealthy, is it morally acceptable? If the entire society is upset by my verbal message, may I ethically be silenced? If a disease needs to be studied and no one volun-
teers to be a research subject, is it ethically acceptable to force someone to serve? And so on. In absolutistic, totalitarian societies, there is no issue—sacrifice the minority. But in democratic societies like ours we endeavor to do minimum damage even to small minorities, a stance growing out of our making the individual the primary focus of moral concern. Pursuant to this goal, we build protective fences around key aspects of an individual human to protect his or her nature, or fundamental interests, from being submerged even for the general welfare. These fundamental protections for the individual from being submerged for the sake of the majority are called “rights.” Those interests guarded by rights are the ones seen as fundamental to human life and human nature—not being tortured, being allowed to express oneself, holding on to one’s property, being able to behave religiously (or not believe) as one chooses, being allowed to form associations by choice, and so on—and are fundamental human interests encoded in the Bill of Rights. This is, in essence, a theory of human nature. Other rights may be deduced from these and from more vague rights, such as “due process,” as social conditions change.

Clearly, as the Brambell Committee noted, animals have natures, the thwarting of which matters to them as much as the thwarting of our interests matters to us. Under husbandry, protection of these interests was not an issue. Failure to nurture those interests led to diminished productivity. But now that husbandry has been replaced by industry, these “rights” are no longer naturally protected. Thus, the society would eventually demand that these rights be artificially imposed (i.e., protected in the legal system). This is why the New York Times, as we saw, designated the 1988 Swedish law as “a bill of rights for farm animals.”

A nice example of what we are discussing can be found in a 1985 legal case brought by the Animal Legal Defense Fund (formerly Attorneys for Animals Rights) against the New York State Department of Environmental Conservation, which administers public land use in New York State. The lawyers attempted to argue that the department was guilty of violating the cruelty laws by failing to stipulate time requirements for those using the steel-jawed trap on public lands to check their traps. Lack of such a stipulation meant that an animal could be trapped with no food or water or medical attention if injured for an indefinite amount of time, which was alleged to count as neglect, given the anticruelty laws (Animal Legal Defense Fund, 1985). The judge’s reason was fascinating. While condemning the traps, he affirmed that the society had not spoken against it, and thus it was a socially acceptable instrument. If people wished to ban the trap, he opined, they should go to the legislature, not the judiciary, to create new protections (i.e., rights) for animals to protect the needs flowing from their nature (or telos, as I have called it following Aristotle). This, as we saw earlier, is exactly what society has been doing! It is interesting support of our theory that the chief administrators from NIH and USDA responsible for enforcing the laboratory laws of 1985 asserted that these laws created new rights for animals, that is, their right to have the pain caused by research manipulations controlled!

IV

Thus agriculture must accord with the emerging social ethic for animals or risk losing its autonomy and being legislated as research was. As difficult as it was to legislate for science without destroying the creativity, freedom, and spontaneity essential to it, it would be
Regarding the theoretical framework, the legislation to enforce agriculture in a manner that is both enforceable and economically feasible is considerably more difficult. Such legislation would need to cover extensive management practices such as castration, branding, and dehorning. This legislation must eliminate various aspects of confinement agriculture that cause pain, suffering, and distress. It would be far wiser for producers to preempt legislation and soften systems injurious to animal welfare. Much of the work necessary to achieve this change has been done in Europe; for example, in Sweden and Britain. U.S. knowledge of such research is extremely limited. One thing the animal welfare movement could do is establish exchange programs between the United States and Europe so that American agriculture can learn from Europe’s experience in softening confinement systems. It is extremely unlikely that confinement can be fully reversed, but we can vector animals’ welfare into the design of these systems and modify them to fit animals’ needs and natures.

Indeed, even if we were to return to fully extensive agriculture, we could not be sure that our managing the animals was optimal for assuring their well-being. Although extensive systems require general satisfaction of the animals’ needs and natures, no one to my knowledge had ascertained that the system in question was the best it could be vis-à-vis animal welfare and profitability. For example, although beef cattle production on western rangeland is the best of all current systems, from a welfare point of view, it could probably be better. Certainly, the management practices mentioned earlier—hot-iron branding, dehorning, and castration—could be improved or replaced. No one has done the research, but it may well be that the use of minimally expensive local anesthesia for castration not only decreases “shrink” (stress-induced weight loss) but also reduces disease susceptibility due to stress. And transportation of beef cattle has been known for a century to cause both welfare problems for the animals and losses for producers via shipping fever, bruising, and immunosuppression. As another example, it may be economically advantageous, as well as welfare advantageous, for ranchers using open range in hot climates to provide shade, cutting down on heat stress. In fact, in extensive systems, the more welfare is increased, the more likely is increased productivity.

One can argue that systems that are at the extreme end of extensive, such as turning cattle loose on enormous, harsh acreage like desert Australia where they cannot be at all under human surveillance, are deleterious to welfare because human husbandry assistance is rendered impossible, for example, in finding water. Similarly, the “survival of the fittest” approach, which has characterized sheep management in New Zealand, though extensive, clearly does not maximize animal welfare. For example, help is intentionally not given to animals in birthing, even under inclement conditions, since it is believed that one will thereby produce hardier animals. This may be the case, but it produces major welfare costs to individual animals. In short, we must recall that husbandry involves both putting the animals into conditions as close as possible to the ideal conditions they are evolved for and helping them when they need help.

The lesson is that merely managing animals extensively is no guarantee of welfare. Relationships with humans are also important, as papers in this volume point out. The problem is that in current confinement systems neither conditions for which they have evolved nor human “animal-smart” attention (cf. the good shepherd) are provided to them. Any “in-
telligence” is built into the system, making it inflexible and devoid of husbandry. Hence, we see the contrast between western cattle ranchers, who sometimes spend more in money or time than the animal is worth (e.g., on sick or marginal calves) as compared with confinement swine operations that treat disease by knocking the animals in the head!

One can, in fact, agree that the optimal production system, like the old small family dairy farm, is a balance between the extremes of extensive and intensive. In cold areas, barns were provided, which the animals voluntarily entered in inclement weather, even though pasture was available. At the same time, dairymen often gave each animal a name and knew their individual variations, with good and gentle treatment and herdsman personality assuring maximum milk production. In such operations, cows and owners bonded, and the animals lived for ten or more lactations. Today, with breeding cattle for maximal productivity and, in many cases, adding exogenous BST or BGH (bovine somatotropin or bovine growth hormone, which partitions nutrients into milk production), the animals last two lactations and “burn out,” requiring replacement, which may not be economically sound and is certainly not welfare friendly.

Thus, contrary to industry caricature, welfare-friendly agriculture does not mean turning the animals loose on land we don’t have. It does mean having husbandry-smart people to work with them. A friend of mine who grew morally sick of raising sows in total confinement moved to a system employing large sow pens and Quonset huts for the animals. His revenue remained the same and even grew some because his pork was more appealing to Japanese markets. One can find in agricultural magazines and newspapers ads requesting “pasture pork—top dollar paid.” My friend was able to do this, and confinement factories could not, he said, because he employed three generations of Iowa “pig-smart” people—a grandfather, father, and son. Total confinement operations employ minimum-wage immigrants, ignorant labor that does not know—or care about—animal needs.

At a time when social concern for animal welfare is high, and people flee the cities, it might well behoove society to provide husbandry training to a new generation of young people. As Tim Blackwell and Dave Linton in Ontario have shown (Blackwell et al., 2002), pig-smart husbandmen can create and manage welfare-friendly barns, which are cheaper to capitalize and run and thus create more profit for the producer. In Colorado, for example, where corporate swine factories have been banished for environmental reasons, the lacuna created by their absence could help generate a renaissance in small husbandry-based swine operations, which could in turn revivify small communities turned into ghost towns by confinement operations, and restore the 80 percent of small producers displaced since the early 1970s by the large operators. (Small, partially extensive operations utilize manure as pasture fertilizer, turning what is an insoluble problem for huge confinement operations into an asset.)

In order to create welfare-compatible systems, we must overcome a number of barriers. Most formidable, perhaps, is the virtually universal acceptance among scientists, particularly in agricultural sciences, of what I have elsewhere called scientific ideology, the set of
assumptions taught to nascent scientists along with the facts and theories relevant to their respective disciplines. All fields of human activity must begin with a set of assumptions because, as Aristotle pointed out, if we attempt to prove everything, we are led to an infinite regress, proving our assumptions on the basis of other assumptions, which are proven on the basis of other assumptions, and so on. Thus, as in the paradigm case of geometry, we just take certain assumptions for granted! That, however, does not mean that the assumptions cannot be challenged, examined, and discarded for good reasons, as Einstein ushered in contemporary physics by challenging Newton’s assumptions about the existence of absolute space and time.

Sometimes, however, one’s assumptions include the assumption that one’s assumptions are not subject to questioning or criticism. Such a hardening creates an ideology where the assumptions are insulated from examination. Those raised in dogmatic Catholicism (including the belief that certain things cannot be rationally justified or explained—the Trinity, for example) can be fairly said to adhere to Catholic ideology. Ideology not only does not entertain criticism, it is very openly hostile to it. We most often use the term when talking about religious belief systems or political ones—Marxism, Nazism, Orthodox Judaism, Christian Biblical Fundamentalism are all views of the world that resist self-criticism. “God said it, I believe it, that’s all there is to it,” as one bumper sticker goes. Under the hold of ideology, one may do things that ordinary conscience finds unspeakable—burning infidels, torturing people to save their souls, or as Daniel Goldhagen (1996) has pointed out, exterminating Jews who one has been taught are “germs,” infecting the body politic as bacteria invade the human body, and must be ruthlessly extirpated.

Two features of scientific ideology germane to our discussion must be noted. One is the claim that science is “value-free,” that is, does not make value judgments in general nor ethical judgments in particular. One can find this view directly announced in science textbooks, and in pronouncements by leading scientists such as James Wyngaarden, then director of NIH, who announced in 1989 that though new areas of science such as genetic engineering are always controversial, science should “never be hindered by ethical considerations” (Michigan State News, 1989). When society questioned the morality of research animal use in the 1970s and 1980s, one often heard from researchers that animal use was not a moral issue but a “scientific necessity,” as if that ended the issue. One heard similar defenses of research on humans that society found morally wrong, such as the Tuskegee syphilis experiments or the Willowbrook hepatitis studies. Such ideology was commonly used as a defense by researchers who worked on the atomic bomb and was also indirectly taught to science students by teachers, journals, and conferences failing to discuss or even raise ethical issues naturally growing out of science. Resistance by students to performing invasive experiments on animals was enough to cause a student to fail a class, or elicit threats to the effect that the student did not belong in science, or veterinary medicine, or human medicine. One associate dean of a medical school actually said in my presence in reference to a required hemorrhagic shock lab exercise on a dog that “our faculty does not believe you can be a good doctor unless you first kill a dog.”

The second element of scientific ideology relevant to our discussion is the claim that one cannot know or study consciousness or states of awareness such as pain, fear, anxiety,
boredom, or loneliness in animals or in people. This, in turn, led to a science that did not acknowledge felt pain in animals even in the study of anesthesia! The first textbook of veterinary anesthesia published in the United States in 1973 does not even mention control of felt pain as a reason for anesthesia (Lumb and Jones, 1973), and animal analgesia was essentially unknown until scientific attention was focused on it by federal legal mandate in 1985 to control pain in research animals.

The reason behind scientific ideology was laudable—to provide a clear criterion of demarcation between what is scientifically legitimate to talk about and what isn’t. That criterion became observability, testability, and measurability in the early twentieth century. It was used to banish, as we saw, absolute space and time and aether from physics, and “life force” from biology. Since, as Wittgenstein once remarked, if we take an inventory of all the facts in the universe, we won’t find it a fact that killing is wrong, science must also be value free. Since we cannot study states of consciousness or feelings objectively, they too must be banished from scientific discourse.

A moment’s reflection reveals that scientific ideology must be wrong. Science makes value judgments such as, “double-blind studies are better sources of knowledge than are anecdotes,” and ethical judgments when it affirms that the value of an invasive experiment on animals outweighs the pain and suffering or death of the animal. Further, not everything in science can be proven—neither the Big Bang nor the reality of an external world existing independently of our perceptions can be tested. Further, we cannot dismiss private experience from science, because our only approach to the “objective world” is by way of our subjective perceptions!

The ways in which these ideological components impact on farm animal welfare issues is clear. In the first place, the concept of welfare in animals cannot be evaluated without reference to value judgments. Consider: science can give us facts relevant to animal welfare—it can tell us whether the animal is or is not gaining weight, has or doesn’t have a salmonella infection, has or doesn’t have intestinal parasites, behaves in repetitive stereotypical ways or not, etc. However, to say the animal is “well-off” or “not well-off” requires a value judgment on what counts as well-off! (This is true of humans as well.) Historically, under confinement agriculture, agricultural scientists assumed that if an animal was well fed, free of infection, and gaining weight, it must be well-off. The Brambell Committee, on the other hand, affirmed that a social animal must be with others of its own kind to be well-off. The U.S. Congress, in framing the 1985 laboratory laws, affirmed that a dog could not be well-off without exercise, nor could a primate without an “enriched environment to enhance its psychological well-being”! So clearly, what constitutes welfare is going to be in part valuational; which values drive what facts are relevant to an animal’s having positive welfare!

This, in turn, leads to the way in which denial of consciousness in science hindered research into—and even understanding of—animal welfare. For ordinary common sense, part of—indeed the main part of—a person’s or an animal’s being in a state of positive welfare is whether it is happy (i.e., is in part defined by reference to the being in question’s subjective state). We all know people with all the observable trappings of health, wealth, and success who are nonetheless miserable, and we would not say of such people
that they enjoyed positive well-being. (For example, this state is depicted in *Richard Cory* by poet E. A. Robinson.) Similarly with an animal. Common sense says of the sow in confinement that exhibits compulsive, repetitive stereotypical behaviors such as bar-biting, that the animal cannot be well-off or happy, because it is “bored,” or “driven crazy by the austere environment,” or “has no one to play with.” In my ethical writings, I have argued that in reference to animal welfare, how the animal feels subjectively, what it experiences, is the key feature of welfare or well-being. An irreducible component of being well-off is feeling well and not having enduring negative subjective experiences. But except for Marian Dawkins and Ian Duncan, most scientists working in this area have dismissed animal subjective experience in accord with the second component of scientific ideology articulated above.

This scientific ideology has in effect blocked agricultural scientists from viewing welfare as ordinary common sense (i.e., the general public) views it. Instead of thinking through the value judgments constituting welfare, the agricultural scientists have tended to assume that the productive animal is well-off or that having food and water and shelter suffices to guarantee animal welfare. Instead of looking at subjective states of happiness and unhappiness, the agricultural community has tended to lump all forms of subjective misery under the *psychological* rubric of “stress” as measured by cortisol, and to equate misery with levels of stress hormones. But it is plain that having certain levels of stress hormones such as cortisol is neither necessary nor sufficient to prove misery. Copulation and play, surely pleasant activities in animals and in humans, generate elevated stress hormones. Lack of such hormones does not prove that the animal is not miserable, as when animals achieve “learned helplessness.”

Indeed, the traditional animal science/agriculture view of stress until about 1990 was that the psychological stress response was either on or off, like a light switch. This was dogma, despite the fact that scientists like Jay Weiss (1972) in psychology and John Mason (1971) in psychiatry had clearly shown that this allegedly nonspecific response view of stress—that it was all or nothing—was false. These researchers showed that animal psychological stress responses were variable given the same stressor, depending on the animal’s subjective cognitive state regarding the stressor. Mason showed that if an animal could anticipate a stressor (elevated ambient temperature), it showed far less of a physiological stress response than when it was unable to anticipate the change. Similarly, Weiss showed that if an animal felt it could control a noxious stimulus (an electric shock), it showed far less of a physiological stress response to it than if it had no control over the stressor. Further augmenting the importance of an inherent psychological dimension of stress over its physical manifestations is the fact, long ago reported by Kilgour, that, for cattle, exposure to a new environment itself causes a greater psychological dimension of stress over its physical manifestations is the fact, long ago reported by Kilgour, that, for cattle, exposure to a new environment itself causes a greater psychological dimension of stress than does an electric shock (Kilgour, 1978)! This is again potentiated by research showing that how an animal is treated by caretakers can create a huge difference in an animal’s reproductive success (Hemsworth, 1998), as well as in its response to disease agents (e.g., a 2 percent cholesterol diet in rabbits, who developed far less atherosclerosis when treated with TLC [Nerein et al., 1980]).
In short, whoever designs new systems with the intention of increasing animal welfare of farm animals must proceed in accordance with society’s definition of animal welfare that can be reconstructed as something like this: Assuming that an animal has adequate welfare requires that it be in a position to actualize the needs and interests dictated by its biological and psychological nature or telos—the “cowness” of the cow, the “pigness” of the pig—and that, experientially, it does not experience prolonged noxious mental states, such as, fear, anxiety, boredom, loneliness, social isolation, and so on.

Though traditional scientific ideology scoffs at attributing such states to animals as at worst mystical and at least mindless anthropomorphism, those who live and work with animals cannot avoid such psychologistic locutions. In a classic study of zookeepers, psychologist David Hebb showed that they were unable to do their jobs if forbidden to use such mentalistic attributions (Hebb, 1946). My students who work with cattle have told me the same thing. The fact is that before the U.S. federal laboratory animal laws mandated the control of pain in laboratory animals, the scientific community complained that it could not even identify painful states in animals, much less control them (there were virtually no articles available on laboratory animal analgesia). Fifteen years later, articles on pain and treatment modalities for it have proliferated, as have useful pain classifications and the realization that, if we can study pain in animals as models for human pain, then what we know of human pain can be reciprocally employed to help understand animal pain!

Further, creative scientists have given us operational discussions and definitions of noxious mental states in animals. Wemelsfelder, for example, has discussed at great length the recognition, understanding and nature of boredom in farm animals and laboratory animals (Wemelsfelder, 1989). And the entire field of behavioral enrichment, as pioneered by ethologists like Hal Markowitz (1982), has pointed us in the direction of how to alleviate the noxious state of boredom. Others have studied play in animals, once thought to be a uniquely human phenomenon (Huizinga, 1950). Both NIH and USDA, in interpreting federal laws and regulations pertaining to the welfare of laboratory animals, are placing ever-increasing emphasis on the concepts of “distress” and “suffering,” catchall phrases used at a time when essentially no one was recognizing subjective states as legitimately studiable in animals. We can be morally certain that, if someone were to offer 50 million dollars in research money to study loneliness or fear or anxiety in animals (or all of those), the money would not go “a-begging.”

The U.S. public firmly believes in animal mental states and has a voracious appetite for knowing more about such states. Books like the Horse Whisperer, The Secret Life of Dogs, When Elephants Weep, Darwin’s classic The Expression of Emotion in Man and Animals, and others eloquently attest to this belief, as do the endless television programs dealing with animal emotion and cognition. Thus, the U.S. public will simply not accept scientific agnosticism about the animal mind, particularly as far as the mental states pertaining to animal welfare are concerned. Those who believe that they understand the emotions of their pets, and that their own emotions are reciprocally understood—and empathized with—by these animals, will not accept a huge bifurcation between pets and farm animals. A society that believes, as polls show, that an animal’s life matters to it as much as, and in the