Appellate Moot Court Competition

2013
Memorandum Opinion

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UNITED STATES DISTRICT COURT

SOUTHERN DISTRICT OF NEW YORK

NATIONAL MEAT PRODUCERS ASSOCIATION, Plaintiff, v. COMMISSIONER, NEW YORK STATE DEPARTMENT OF AGRICULTURE AND MARKETS AND THE NEW YORK STATE DEPARTMENT OF AGRICULTURE AND MARKETS, Defendants.	Case No. CV 11-55440 NCA (ABC)

Plaintiff, the National Meat Producers Association ("NMPA"), a national trade association of meat producers, brought an action for declaratory judgment and injunctive relief claiming that the Animal Products Consumer Information Act ("APCIA"), N.Y. Agric. & Mkts. Law § 1000, is unconstitutional. [1] NMPA alleges that the placard requirement for meat products

[1] Although the State statute attempts to regulate information accompanying the sale of all animal products including beef, pork, poultry, seafood, eggs, and dairy, this case is limited to the application of the law to beef and pork products. The poultry, seafood, egg, and dairy industries have brought separate cases.

violates the Supremacy Clause of the U.S. Constitution by requiring a label that is "in addition to or different than" those specified in the Federal Meat Inspection Act ("FMIA"), 21 U.S.C. §§ 601–678. The Complaint also alleges that the APCIA discriminates against out-of-state meat processors and imposes an unreasonable burden on interstate commerce in violation of the Commerce Clause.

Briefly, the APCIA requires all retailers to display a sign wherever animal products intended for human consumption are offered for sale stating:

> "PUBLIC INTEREST WARNING: Many chronic diseases, including heart disease, can largely be prevented and, in many cases, reversed by avoiding the consumption of animal products and eating a whole food, plant based diet. Industrial animal agriculture is also a major source of pollution. Some animal handling and confinement techniques also lead to animal suffering. The State encourages its citizens to conduct research and make informed choices when purchasing and consuming animal products. For more information, visit www.informedchoice.ny.gov.[2]"

N.Y. Agric. & Mkts. Law § 1000.4.1. The entire text of the statute is set out in addendum A to this opinion.

The FMIA states that "[m]arking, labeling, packaging, or ingredient requirements in addition to, or different than, those made under this chapter may not be imposed by any State." 21 U.S.C. § 678. "The term 'labeling' means all labels and other written, printed, or graphic matter (1) upon any article or any of its containers or wrappers, or (2) accompanying such article." 21 U.S.C. § 601(p). In addition, the FMIA states, "[t]his chapter shall not preclude any State or Territory or the District of Columbia from making requirement or taking other action, consistent with this chapter, with respect to any other matters regulated under this chapter." 21 U.S.C. § 678.

This matter is now before this Court on the NMPA's motion for summary judgment under Fed. R. Civ. Pro. 56.

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[2] *For purposes of this moot court problem, assume this website is a working website which contains the information described in the factual background section of this opinion.*

II. Factual Background

The APCIA was enacted in 2010 to "protect the citizens of this state by providing and encouraging the dissemination of information about how animal agriculture and the consumption of animal products negatively affects health, the environment, and imposes unnecessary suffering on animals." N.Y. Agric. & Mkts. Law § 1000.3. Faced with significant budget constraints and financial problems, the New York legislature empowered a number of multi-topic congressional committees to look into ways in which the state could reduce its costs. One committee was tasked with examining possible actions the legislature could take to reduce long-term government costs without a significant reduction in state benefits: The Long-Term Reduction of Government Costs Without Cutting Benefits Committee. This committee and its subcommittees heard over 1,000 hours of expert testimony, mainly focused on health care and the environment. The committee eventually recommended over 500 different cost-savings measures, of which 20 advocated new regulations on the animal agriculture industry. One recommendation led to the New York law at issue in this case: the Committee recommended that the legislature "encourage the reduction of the public's consumption of animal products which would in turn reduce the long-term health care and environmental costs to the State." The committee cited a number of studies which demonstrated that better educated consumers buy products that are environmentally friendly, healthy, and do not involve animal cruelty. As the legislature expected other regulations to take time to implement, it passed the APCIA to encourage consumer education before widespread regulation of the industrial farm animal industry could be implemented.

During numerous hearings on the APCIA, the legislature heard additional testimony concerning the cruelty to animals in large-scale animal agriculture. Finding the humane treatment of animals to be an important public interest, the legislature added the following language to the placard's text: "Some animal handling and confinement techniques also lead to animal suffering."

The state sponsored website, www.informedchoice.ny.gov, referenced on the placard and in the New York statute's language, provides detailed information on the health effects of consuming animal products and the impact of animal agriculture on the environment and animal suffering. The information on the New York sponsored website was provided and approved by experts who testified before the Committee. The website also provided a list of farms that New York determined were environmentally sustainable and employed humane welfare standards. The only farms listed as environmentally sustainable and humane were located within New York.

Many of the medical and environmental experts who testified before The Long-Term Reduction of Government Costs Without Cutting Benefits Committee and during the legislative hearings on the Animal Products Consumer Information Act also submitted affidavits in support of the defendants' reply to plaintiff's motion for summary judgment. Summaries of their statements are below.

A. Impact of Consumption of Animal Products on Health

The majority of health and nutrition experts concluded that a reduction in the consumption of animal products would result in the prevention and, in many cases reversal of, heart disease, cancers, type 2 diabetes, stroke, and hypertension. Four of these diseases are in the top seven causes of death in the United States each year (with heart disease at #1 and cancer at #2). The experts also described how animal agriculture is linked to the increased number of infectious diseases. The experts explained how a reduction in these diseases would lead to a reduction in the costs of health care, both for individuals and for the State of New York.

T. Colin Campbell PhD, an expert in nutrition and the author of The China Study, testified before the New York committees and provided an affidavit in support of defendants'

reply to plaintiff's motion for summary judgment.[3] The following quotations are pulled from Dr. Campbell's affidavit:[4]

> There is nothing better the government could do that would prevent more pain and suffering in this country than telling Americans unequivocally to eat less animal products, less highly-refined plant products and more whole, plant based foods. It is a message soundly based on the breadth and depth of scientific evidence, and the government could make this clear, as it did with cigarettes. Cigarettes kill, and so do these bad foods….Expert panels have said it, the surgeon general has said it and academic scientists have said it. More people die because of the way they eat than by tobacco use, accidents or any other lifestyle or environmental factor.[5]

Dr. Campbell directed

> the most comprehensive study of diet, lifestyle and disease ever done with humans in the history of biomedical research. It was a massive undertaking jointly arranged through Cornell University, Oxford University and the Chinese Academy of Preventive Medicine…[T]his project produced more than 8,000 statistically significant associations between various dietary factors and disease! What made this project especially remarkable is that, among the many associations that are relevant to diet and disease, so many pointed to the same finding: people who ate the most animal-based food got the most chronic disease. Even relatively small intakes of animal-based food were associated with adverse effects. People who ate the most plant-based foods were the healthiest and tended to avoid chronic disease…. These findings… show that heart disease, diabetes and obesity can be reversed by a healthy diet. Other research shows that various cancers, autoimmune diseases, bone health, kidney health, vision and brain disorders in old age (like cognitive dysfunction and Alzheimer's) are convincingly influenced by diet. Most importantly, the diet that has time and again been shown to reverse and/or prevent these diseases is the same whole foods, plant based diet that I had found to promote optimal health in my laboratory research.[6]

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[3] Dr. Campbell is the Jacob Gould Schurman Professor Emeritus of Nutritional Biochemestry at Cornell University. He has received more than seventy grant-years of peer-reviewed research funding and authored more than 300 research papers. Dr. Campbell is an expert in nutrition and has been certified as such for the purposes of this case.

[4] *All of the quotations from Dr. Campbell are taken directly from his book, T. Colin Campbell & Thomas M. Campbell II, The China Study, (Benbella Books, 2006) with no alteration. For purposes of this moot court problem, assume the quotations are from an affidavit submitted in support of defendants' reply to plaintiff's motion for summary judgment.*

[5] *Campbell & Campbell, The China Study, at 305.*

[6] *Campbell & Campbell, The China Study, at 7.*

An expert from the Union of Concerned Scientists[7] testified before the New York committees and provided an affidavit in support of defendants' reply to plaintiff's motion for summary judgment. The following quotations are pulled from this expert's affidavit: [8]

> Estimates have suggested that considerably greater amounts of antibiotics are used for livestock production than for the treatment of human disease in the United States. The massive use of antibiotics in CAFOs, especially for non-therapeutic purposes such as growth promotion, contributes to the development of antibiotic-resistant pathogens that are more difficult to treat.
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> Many of the bacteria found on livestock (such as *Salmonella, Escherichia coli,* and *Campylobacter)* can cause food-borne diseases in humans. Furthermore, recent evidence strongly suggests that some methicillin-resistant *Staphylococcus aureus* (MRSA) and uropathogenic *E. coli* infections may also be caused by animal sources. These pathogens collectively cause tens of millions of infections and many thousands of hospitalizations and deaths every year.
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> The costs associated with *Salmonella* alone have been estimated at about $2.5 billion per year— about 88 percent of which is related to premature deaths. Because an appreciable degree of antibiotic resistance in animal-associated pathogens is likely due to the overuse of antibiotics in CAFOs, the resulting costs are likely to be high.

Dr. Michael Greger, an expert in public health and nutrition, testified before the New York committees and provided an affidavit in support of defendants' reply to plaintiff's motion for summary judgment.[9] The following quotations are pulled from Dr. Greger's affidavit:[10]

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[7] The Union of Concerned Scientists was started at the Massachusetts Institute of Technology in 1969. It is the leading science-based nonprofit working for a healthy environment and a safer world. UCS combines independent scientific research and citizen action to develop innovative, practical solutions and to secure responsible changes in government policy, corporate practices, and consumer choices. The expert from the UCS is an expert in environmental and health studies and has been certified as such for the purposes of this case.

[8] *All of the information from the Union of Concerned Scientists was taken from the Union of Concerned Scientists, "CAFOs Uncovered: The Untold Costs of Confined Animal Feeding Operations," (2008) with no altercation. For purposes of this moot court problem, assume the quotations are from an affidavit submitted in support of defendants' reply to plaintiff's motion for summary judgment.*

[9] Dr. Michael Greger is a physician specializing in public health and clinical nutrition. Dr. Greger focuses his work on the human health implications of intensive animal agriculture, including the routine use of non-therapeutic antibiotics and growth hormones in animals raised for food, and the public health threats of industrial factory farms. He also works on food safety

We've seen an unprecedented rise in infectious diseases in recent decades, 75 percent of which are "zoonotic," meaning they come from animals. About 300 new animal-to-human diseases have emerged in the last 60 years.

This summer, the International Livestock Research Institute released a report estimating that zoonotic diseases cause 2.5 billion cases of human illness each year and 2.7 million human deaths worldwide. Most of these illnesses and deaths are caused by diseases spread from farm animals.

Meanwhile, we've seen a dramatic spike in pork and poultry production. Tens to hundreds of thousands of caged animals under a single roof allow for zoonotic diseases to emerge, amplify and spread. Of all the emerging threats, the greatest concern is influenza, the only known virus with the potential to infect millions of people within months.

New chicken and pig flu viruses have emerged at an alarming rate in recent decades. The latest swine flu virus, dubbed H3N2v, claimed its first human victim last month in Ohio. Up until the 1990s, only about a dozen human cases of swine flu infection had ever been reported. In the last year alone, in contrast, H3N2v has infected 300 people, sending 15 to the hospital and one to the morgue. The H1N1 virus that emerged from pigs in 2009 infected an estimated 60 million Americans, resulting in 12,000 deaths, according to the Centers for Disease Control and Prevention.

Both H3N2v and the pandemic H1N1 share genetic origins with the "triple reassortant" strain that spread throughout the U.S. pork industry in 1999, a virus that combined genes from bird, pig, and human strains. Our first discovered hybrid strain – a human-pig mutant – was found in August 1998 in an industrial pig operation in Newton Grove, N.C. It may be no coincidence that the new strain was found in a region with the single highest pig population in the nation, or that it was found in a "sow stall" operation, in which thousands of pregnant sows were confined in crates barely larger than their bodies. (The stress of life-long confinement is thought to make animals more susceptible to infection).

Bird flu followed a similar trajectory, from rare cases to a multitude of new chicken flu viruses now causing sporadic human outbreaks around the world. The

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issues. Dr. Greger is a graduate of the Cornell University School of Agriculture and the Tufts University School of Medicine. Dr. Greger is an expert in public health and nutrition and has been certified as such for the purposes of this case.

[10] *All of the information from Dr. Greger was taken from Michael Greger," The looming zoonotic danger" CNN, Sept. 26, 2012, available at http://globalpublicsquare.blogs.cnn.com/2012/09/26/the-looming-zoonotic-danger/, with no altercation. For purposes of this moot court problem, assume the quotations are from an affidavit submitted in support of defendants' reply to plaintiff's motion for summary judgment.*

> greatest concern is that with increasing numbers of circulating pig and chicken flu viruses capable of infecting humans, a virus with the human transmissibility of H1N1 could combine with a virus with the human lethality of H5N1, a bird flu virus that has killed 359 of its 608 known human victims. Imagine the implications of 60 million Americans coming down with flu with a 60 percent mortality rate. . . .
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> For years, the public health community has warned about the risks of intensive livestock confinement. In 2003, the American Public Health Association called for a moratorium on concentrated animal feeding operations. In 2008, the Pew Commission on Industrial Farm Animal Production, which included a former U.S. Secretary of Agriculture, concluded that industrialized animal agriculture posed "unacceptable" risks to public health. A key recommendation was the phasing out of extreme confinement practices such as gestation crates, which "induce high levels of stress in the animals and threaten their health," the commissioners wrote, "which in turn may threaten human health."

B. Impact of Animal Agriculture on the Environment

A number of environmental experts testified before the New York committees and offered affidavits in support of defendants' reply to plaintiff's motion for summary judgment. All of the environmental experts concluded that concentrated animal feeding operations ("CAFOs," also known as "factory farms") in the United States have a negative effect on the environment. An expert from the Union of Concerned Scientists offered the following information on the impact of animal agriculture on the environment in an affidavit in support of defendants' reply to plaintiff's motion for summary judgment:

> Until recently, food animal production was integrated with crop production in a balanced way that was generally beneficial to farmers and society as a whole. But livestock production has undergone a transformation in which a small number of very large CAFOs (confined animal feeding operations) predominate. These CAFOs have imposed significant—but largely unaccounted for—costs on taxpayers and communities throughout the United States.
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> CAFOs are characterized by large numbers of animals crowded into a confined space—an unnatural and unhealthy condition that concentrates too much manure in too small an area. Many of the costly problems caused by CAFOs can be attributed to the storage and disposal of this manure and the overuse of antibiotics in livestock to stave off disease…

Water pollution from manure.

> Disposal of CAFO manure on an insufficient amount of land results in the runoff and leaching of waste into surface and groundwater, which has contaminated drinking water in many rural areas, and the volatilization of ammonia (i.e., the transfer of this substance from manure into the atmosphere). Several manure lagoons have also experienced catastrophic failures, sending tens of millions of gallons of raw manure into streams and estuaries and killing millions of fish. Smaller but more numerous spills cause substantial losses as well.
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> Remediation of the leaching under dairy and hog CAFOs in New York[11] has been projected to cost taxpayers $56 million—and New York is not one of the country's top dairy or hog producing states. Based on these data, a rough estimate of the total cost of cleaning up the soil under U.S. hog and dairy CAFOs could approach $4.1 billion.
>
> The two primary pollutants from manure, nitrogen and phosphorus, can cause eutrophication (the proliferation and subsequent death of aquatic plant life that robs freshwater and marine environments of the oxygen that fish and many other aquatic organisms need to survive). For example, runoff and leaching from animal sources including CAFOs is believed to contribute about 15 percent of the nutrient pollution that reaches the Gulf of Mexico, where a large "dead zone"—devoid of fish and commercially important seafood such as shrimp—has developed. CAFO manure also contributes to similar dead zones in the Chesapeake Bay (another important source of fish and shellfish) and other important estuaries along the East Coast. The Chesapeake Bay's blue crab industry, which had a dockside value of about $52 million in 2002, has declined drastically in recent years along with other important catches such as striped bass, partly due to the decline in water quality caused in part by CAFOs. Although it is difficult to account for all of the social benefits (such as fisheries and drinking water) lost due to CAFO pollution, it is reasonable to assume the losses are substantial.

A representative of the New York Department of Environmental Conservation provided an affidavit in support of defendants' reply to plaintiff's motion for summary judgment stating

> [e]xcessive nutrients and eutrophication are identified as a major source in 23% of all water bodies assessed as impaired in New York State. In another 29% of impaired water, nutrients and eutrophication are contributing sources (though not the most significant sources). In addition, for 54% of the waters with less severe

[11] *These statistics are real numbers for Kansas. They have been changed to New York for purposes of this moot court problem.*

> minor impacts or threats nutrients and eutrophication are noted as major contributing sources of impact.[12]

An expert from the Union of Concerned Scientists offered the following information on air pollution from manure in an affidavit in support of defendants' reply to plaintiff's motion for summary judgment:

> Airborne ammonia is a respiratory irritant and can combine with other air pollutants to form fine particulate matter that can cause respiratory disease. And because ammonia is also re-deposited onto the ground, mostly within the region from which it originates, ammonia nitrogen deposited on soils that have evolved under low-nitrogen conditions may reduce biodiversity and find its way into water sources. Ammonium ion deposition also contributes to the acidification of some forest soils.
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> Animal agriculture is the major contributor of ammonia to the atmosphere, and the substantial majority of this ammonia likely comes from confinement operations, since manure deposited by livestock on pasture contributes proportionately much less ammonia to the atmosphere than manure from CAFOs. Up to 70 percent of the nitrogen in CAFO manure can be lost to the atmosphere depending on manure storage and field application measures. Over the past several decades, the amount of airborne ammonia deposition in many areas of the United States with large numbers of CAFOs has been rising dramatically, and may often exceed the capacity of forests and other environments to utilize it without harm.

A representative from the Food and Agriculture Organization (FAO) of the United Nations (UN)[13] offered the following statement about the effect of animal agriculture on global warming in an affidavit in support of defendants' reply to plaintiff's motion for summary judgment:[14] animal agriculture is a major emitter of all three important greenhouse gases: carbon

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[12] *This information was taken directly from the New York State Department of Environmental Conservation, "Nutrient Loading and Eutrophication," available at www.dec.ny.gov/chemical/69489 without altercation. For purposes of this moot court problem, assume the quotations are from an affidavit submitted in support of defendants' reply to plaintiff's motion for summary judgment.*

[13] The representative from FAOUN is an expert in environmental studies, with a specialty in global warming, and has been certified as such for the purposes of this case.

[14] *All of the information from FAOUN was taken from United Nations' Food and Agriculture Organization of the United Nations, "Livestock's Long Shadow: Environmental Issues and Options," (2006) without altercation. For purposes of this moot court problem, assume the quotations are from an affidavit submitted in support of defendants' reply to plaintiff's motion for summary judgment.*

dioxide (CO2), methane (CH4), and nitrous oxide (N2O). Meat, egg, and milk production are responsible for an estimated 18%, or nearly one-fifth, of human-induced greenhouses gases. In addition, the experts projected that climate changing impacts of the farm animal sector will be significant for decades to come.

C. Unnecessary Suffering of Animals

Dr. Bernard Rollin[15] provided an affidavit in support of Defendants' reply to plaintiff's motion for summary judgment. An excerpt of his affidavit is provided in Addendum B to this opinion.

III. Analysis

A. Preemption

The first issue this Court must address is whether the APCIA is preempted by the FMIA and is thus unconstitutional for violating the Supremacy Clause. Article VI of the Constitution provides that the "Constitution and the Laws of the United States which shall be made in Pursuance thereof; and the Treaties made, or which shall be made under the Authority of the Unites States, shall be the Supreme Law of the Land." If there is an irreconcilable conflict between federal law and state or local law, the latter is deemed preempted.

The Federal Meat Inspection Act clearly states that states that ". . . labeling . . . requirements in addition to, or different than, those made under this chapter may not be imposed by any State. . . ." 21 U.S.C.A. §678. "The term 'labeling' means all labels and other written, printed, or graphic matter (1) upon any article or any of its containers or wrappers, or (2) accompanying such article." 21 U.S.C. § 601(p). The first question is whether the APCIA's

[15] Dr. Rollin is a University Distinguished Professor, University Bioethicist, and Professor of Philosophy, Biomedical Sciences, and Animal Sciences at Colorado State University, a Commissioner on the Pew Commission on Industrial Farm Animal Production, and Chair of the Global Animal Partnership Board of Directors. He has published more than 500 papers and 17 books, as well as lectured extensively and internationally on such topics as animal ethics, animal pain, and animal agriculture. Dr. Rollin is an expert in animal welfare and has been certified as such for the purposes of this case.

placard requirement constitutes labeling. If the placard requirement constitutes labeling, then the Court must determine if the APCIA is preempted by the FMIA. If the APCIA is preempted by the FMIA, then the state law is unconstitutional for violating the Supremacy Clause.

1. The APCIA Placard Requirement Constitutes "Labeling"

The FMIA prohibits states from requiring "labels and other written, printed, or graphic matter" on any article of meat, meat container, meat wrapper or "accompanying such article." 21 U.S.C. § 601(p); 21 U.S.C.A. §678. The APCIA does not require any additional material on the meat itself or on its container or wrapper. The question is thus whether the APCIA's placard requirement constitutes matter "accompanying" the meat products. Courts have been split on this issue. *See e.g. Meaunrit v. ConAgra Foods Inc.*, 2010 WL 2867393, *8 (N.D. Cal. 2010) (holding that an in-store poster was a label as defined by the FMIA); *Gershengorin v. Vienna Beef, Ltd.*, 2007 WL 2840476, *3 (N.D. Ill. 2007) ("The FMIA does not preempt regulation of signage separate from the marking or labeling on meat packaging itself."); *American Meat Institute v. Ball*, 424 F.Supp. 758 (D. Mich. 1976) (notices required by Michigan law did not constitute "labeling" as that term is defined by the Federal Wholesome Meat Act).

To determine the meaning of the term "labeling" as used in the statute, the best place to begin is obviously the language of the statute itself and the definition utilized by Congress. If the statutory language were unambiguous, there would be no need to go further. Courts should read the language of statutes with common sense but also by looking to the intention of the authors.

This Court finds that the definition of "accompanying" must mean any printed material displayed with the intent of conveying information about the product, whether that information is displayed on the product itself, its packaging, or in signs, placards, or posters near the product. Any other definition would undermine the Federal labeling requirements and render the "accompanying such article" language meaningless.

2. The APCIA Is Not Preempted By The FMIA

There are two potential reasons for a judicial finding that a state law is preempted by a

federal statute. The first basis for invalidation of a state law is where a federal law expressly preempts the state or local law at issue. State laws are also invalid where preemption is implied by a clear congressional intent to preempt state law. In *Gade v. National Solid Waste Management Association*, the Court summarized the tests for preemption:

> Preemption may be either express or implied, and is compelled whether Congress' command is explicitly stated in the statute's language or implicitly contained in its structure and purpose. Absent explicit preemptive language, we have recognized at least two types of implied preemption: field preemption, where the scheme of federal regulation is so pervasive as to make reasonable the inference that Congress left no room for the States to supplement it, and conflict preemption, where compliance with both federal and state regulations is a physical impossibility, or where state law stands as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress.

505 U.S. 88, 98 (1992). The Supreme Court has recognized that in both express and implied preemption, the sole issue is discerning congressional intent. *See Cal. Fed. Sav. & Loan v. Guerra,* 479 U.S. 282, 280 (1987) (When addressing preemption claims, "our sole task is to ascertain the intent of Congress."); *Gade v. Nat'l Solid Waste Mgmt Ass'n,* 505 U.S. at 96 ("The question of whether a certain state action is preempted by federal law is one of Congressional intent."); *Medtronic Inc. v. Lohr,* 518 U.S. 470, 485 (1996), quoting *Retail Clerks v. Schermerhorn,* 375 U.S. 96, 103 (1963) ("'The purpose of Congress is the ultimate touchstone' in every preemption case.").

The Supreme Court has frequently said that congressional intent must be clear to find preemption because of a desire, stemming from federalism concerns, to minimize invalidation of state and local laws. Thus, the Court has observed: "Congress…should manifest its intention [to preempt state and local laws] clearly.…The exercise of federal supremacy is not lightly to be presumed." *N.Y. St. Dep't of Soc. Services v. Dublino,* 413 U.S. 405, 413 (1973). "[B]ecause the States are independent sovereigns in our federal system, we have long presumed that Congress does not cavalierly preempt state-law causes of action. In all preemption cases, and particularly in those in which Congress has legislated in a field which the States have traditionally occupied, we 'start with the assumption that the historic police powers of the States were not to be

superseded by the Federal Act unless what was the clear and manifest purpose of Congress.'" *Medtronic Inc. v. Lohr,* 518 U.S. 470, 485 (1996), quoting *Hillsborough County v. Automated Medical Laboratories Inc.,* 471 U.S. 707, 715 (1985).

The primary intent of the federal labeling requirements is to protect the health and welfare of consumers from fraudulent or deceptive practices by manufacturers and distributors of meat products. The Congressional Statement of Findings, included in the statute itself, shows both the intent to benefit consumers and the context in which Congress sought to regulate labeling. It states in part:

> . . . It is essential in the public interest that the health and welfare of consumers be protected by assuring that meat and meat food products distributed to them are wholesome, not adulterated, and properly marked, labeled, and packaged. Unwholesome, adulterated, or misbranded meat or meat food products impair the effective regulation of meat and meat food products in interstate or foreign commerce, are injurious to the public welfare, destroy markets for wholesome, not adulterated, and properly labeled and packaged meat and meat food products, and result in . . . injury to consumers. The unwholesome, adulterated, mislabeled, or deceptively packaged articles can be sold at lower prices and compete unfairly with the wholesome, not adulterated, and properly labeled and packaged articles, to the detriment of consumers and the public generally. . . .

21 U.S.C. 602.

Congress did not intend to control information about the effects of eating animal products on consumers' health, information about the effect of animal production on the environment, or the dissemination of information on animal handling practices, which is the intent of the New York law. The goal of the New York law is to "protect the citizens of this state by providing and encouraging the dissemination of information about how animal agriculture and the consumption of animal products negatively affects health, the environment, and imposes unnecessary suffering on animals." N.Y. Agric. & Mkts. Law § 1000.3**.** The FMIA's preemption clause is more naturally interpreted as regulating the quality of the product and the information provided by the producers and distributers, matters which the New York law is entirely unconcerned with. The New York law does not infringe on the territory preserved for the Federal government by the FMIA's preemption clause. The FMIA does not expressly

prevent the states from providing their citizens with information on the effects wholesome, not adulterated, and properly labeled animal products have on their health, the environment, or animal welfare.

In addition, Congress did not intend to preempt the entire field of meat commerce under the FMIA. Field preemption requires a clear congressional intent. *Guerra,* 479 U.S. at 281, 107 S.Ct. 683. Field preemption occurs when a federal statute's scope "indicates that Congress intended federal law to occupy a field exclusively." *Freightliner Corp. v. Myrick,* 514 U.S. 280, 287 (1995). The FMIA specifically indicates that it did not intend to preempt the field of meat commerce entirely, stating that it "shall not preclude any State ... from making requirements or taking other action, consistent with this chapter, with respect to any other matters regulated under this chapter." 21 U.S.C. § 678. Furthermore, the FMIA contains a narrow inspection and labeling preemption clause, and "Congress' enactment of a provision defining the pre-emptive reach of a statute implies that matters beyond that reach are not pre-empted." *Cipollone v. Liggett Group, Inc.,* 505 U.S. 504, 517 (1992).

In addition, the title of the FMIA refers specifically to meat *inspection,* rather than a more comprehensive scheme of regulating information on meat. The need for uniform requirements for meat packaging, inspection and labeling regulations is strong, otherwise meat producers would be forced to comply with various operating techniques and packaging requirements in every state in which their products are sold. The New York law does not impose such a burden on meat producers. The burden is entirely on New York meat distributors who sell directly to the public, and even then, they are not required to comply with different operating techniques. The burden of displaying an additional placard where animal products are sold is minimal and with which it is easy to comply.

Nor does the FMIA preempt the New York law by conflict. Conflict preemption requires that it would be "physically impossible" for a private party to comply with both federal and state law, or that the law "stand as an obstacle to the accomplishment and execution of the full

purposes and objectives of Congress." *See Planned Parenthood of Houston & Se. Tex. v. Sanchez,* 403 F.3d 324, 336 (5th Cir. 2005). It is certainly not physically impossible to comply with the FMIA and the New York law. Complying with the State law by displaying the necessary placard would not breach any provision in the FMIA nor cause any confusion about differing ingredient standards. The New York law does not stand as an obstacle to realizing the FMIA objectives of "assuring that meat and meat food products distributed to [consumers] are wholesome, not adulterated, and properly marked, labeled and packaged." 21 U.S.C. § 602. The New York law merely supplies the public with additional information on different subject matter than that provided in the FMIA mandated labels. By complying with the State law, there is no additional risk that adulterated or mislabeled meat would reach consumers.

Numerous courts have held that the FMIA preempts state laws that attempt to regulate information on meat products. None of these cases however, deal with information similar to the mandated language of the New York statute. *See e.g. Grocery Mfrs. of America, Inc. v. Gerace*, 766 F.2d 993 (2nd Cir. 1985) (holding that a state law requiring labeling of "imitation cheese" was preempted by the FMIA because including the term "imitation" on the label of a nutritionally superior product in order to comply with the New York law would render the product misbranded under the federal law thus making it impossible to comply with both the state and federal requirements); *Armour &Co. v. Ball*, 468 F.2d 76 (6th Cir. 1972) (holding a Michigan law was preempted by the FMIA because the Michigan ingredient standards for meat products were different than the federal standards). More importantly, only one Supreme Court case has addressed whether the labeling requirement under the FMIA preempts state law: *Jones v. Rath Packing Co. et al.,* 430 U.S. 519 (1977). This case did not hold that the FMIA preempts all state law labels on meat products. Rather, the Court specifically limited its preemption holding to the facts. *Id.* at 532 ("We therefore conclude that with respect to [the defendant's] packaged bacon, [the state statutes] are pre-empted by [the FMIA]."). In *Jones*, the state instituted a weight-labeling requirement that required that the average weight of packages in any

lot of any commodity should not be less at the time of sale than the net weight standard on the packages. The FMIA, on the other hand, allows for "reasonable variations" between the actual weight and the weight stated on the label. Thus, the state was imposing requirements that conflicted with the FMIA requirements.

It is this Court's conclusion that a consumer has the right to be informed of the nature and substance of the food he or she ingests. Consumers are interested in information regarding the effect of their purchases on their health, the environment, and other living beings. The type of information provided on the placard is not directly available to the consumer at the time of purchase. The placard also does not purport to contain all information on the subject matter and encourages the consumer to conduct their own research and arrive at their own conclusions. Physicians and nutritionists, as well as state and federal health agencies, emphasize the increasing awareness of the importance of a healthy diet by providing the consumer with essential information about how what they eat affects their long-term health. Environmentalists also advocate the dissemination of information on how consumer choices affect the world in which we live. The same is true for animal handling techniques. It would be a paradox to conclude that this information could not be presented in the marketplace or that the state legislature could not act in the public interest by providing accurate information to the consumer at the time of purchase.

The meat industry and its lobbying associations are very influential and have taken numerous steps to ensure information about its practices and effects do not reach the public. For example, the meat industry has advocated the introduction of numerous "ag-gag" laws that would prohibit the making of undercover videos, photographs, and sound recordings at farms. These laws would prevent recorded information about the practices of animal handling through the most effective media – video and photographs. In addition, the meat industry is so powerful, that the USDA retracted a statement that encouraged employees to abstain from eating meat on Mondays as "a simple way to reduce your environmental impact" after a call from the National

Cattlemen's Beef Association.[16]

In light of the strong and legitimate state interest in consumer education and protection, the underlying purposes of the FMIA, and the presumption of constitutionality of state statutes, this Court finds the New York law is not preempted by the FMIA.

C. The Commerce Clause

The Complaint also alleges that the Animal Products Consumer Information Act discriminates against out of state meat processors and imposes an unreasonable burden on interstate commerce in violation of the Commerce Clause.

The Commerce Clause provides that Congress has the power to "regulate Commerce ... among the several States." U.S. Const. art. I, § 8, cl. 3. This clause also contains a negative component, referred to as the dormant Commerce Clause, which limits the extent to which States can interfere with interstate commerce. This dormant Commerce Clause keeps states from "plac[ing] burdens on the flow of commerce across its borders that commerce wholly within those borders would not bear." *Am. Trucking Ass'n, Inc. v. Michigan Pub. Serv. Comm'n,* 545 U.S. 429, 433 (2005), *citing Oklahoma Tax Comm'n v. Jefferson Lines, Inc.,* 514 U.S. 175, 180 (1995).

The New York law does not itself run afoul of the dormant Commerce Clause. It treats both intrastate and interstate animal products equally. The information on the placards applies to all animal products sold within New York, not just those from out of state producers. The law will likely reduce the overall sales of animal products within New York, in fact, that is its intention, but the reduction in sales will occur from both intra-state and out of state sources equally. The New York law also does not place a burden on out of State producers because the placard is not placed on the product itself. It is the responsibility of the New York retailer to display the placard.

[16] *See* Sydney Lupkin, "Meat Industry Has Beef with Meatless Monday, Forces USDA to Retract Newsletter," ABC News, (July 26, 2012).

But when we take into account the information provided on the New York sponsored website, www.informedchoice.ny.gov, which is specifically mentioned in the text of the Statute, New York is promoting the purchase of animal products from within the state over products from outside the state. The statute states: "The State encourages its citizens to conduct research and make informed choices when purchasing and consuming animal products. For more information, visit www.informedchoice.ny.gov." N.Y. Agric. & Mkts. Law § 1000.4.1. The website provided detailed information supporting the health, environmental, and animal welfare statements made in the statute's language including the same information provided in the expert affidavits submitted in support of defendant's reply to plaintiffs' motion for summary judgment. In order to assist the public in their purchasing choices, New York provided the names of farms that had been certified by the state as environmentally sustainable with humane animal welfare standards. The website only listed farms located within New York under the category of environmentally sustainable and humane. As the statute specifically referenced the website as a location for citizens to conduct additional research on the impact of their animal product purchases, the statute itself is advocating the purchase of in state products over the purchase of out of state products.

When a state law was enacted to "effectuate a legitimate local public interest, and its effects on interstate commerce are only incidental, it will be upheld unless the burden imposed on such commerce is clearly excessive in relation to the putative local benefits." *Pike v. Bruce Church, Inc.*, 397 U.S. 137, 142 (1970). In this case, the law was enacted for the legitimate public interest to "protect the citizens of this state by providing and encouraging the dissemination of information about how animal agriculture and the consumption of animal products negatively affects health, the environment, and imposes unnecessary suffering on animals." N.Y. Agric. & Mkts. Law § 1000.3. The protection of health and the environment are legitimate state public interests. The protection of animals from cruelty is also a legitimate public interest. *See e.g. U.S. v. Stevens*, 130 S.Ct. 1577, 1585 (2010) ("the prohibition of animal

cruelty itself has a long history in American law."); *McGill v. Parker*, 582 N.Y.S. 2d 91, 96 (1992) ("treatment of carriage horses has been a matter of public concern"); *Safarets Inc. v. Gannett Co., Inc.* 361 N.Y.S. 2d 276, 280 (1974) (humane treatment of animals is in the public interest); *Farm Sanctuary, Inc. v. Dep't of Food & Agric.,* 63 Cal. App. 4th 495, 504 (1998) (statute requiring that animals be treated humanely is in the public interest).

If the state law was enacted for a legitimate public interest, then the Court conducts a balancing test between the state's interest and the burden on interstate commerce. *Pike v. Bruce Church, Inc.*, 397 U.S. at 142. "And the extent of the burden that will be tolerated will of course depend on the nature of the local interest involved, and on whether it could be promoted as well with a lesser impact on interstate activities." *Id.* In this case, the interests in promoting the health of its citizens, the environment, and farm animals are important local interests. However, there are numerous ways New York could promote the same interests with a "lesser impact" on interstate activities. For example, the state could add the names of farms from outside of New York to its list of environmentally sustainable and humane farms on www.informedchoice.ny.gov, which would serve the goal of the statute by providing additional information to consumers. The defendants argue that adding additional information on non-New York farms would significantly increase the costs to the New York Department of Agriculture and Markets because the Department would have to gather information on farms from out of state and analyze them under New York environmental and welfare standards. The defendants argue that the information on New York farms was already available to the state and easy to provide on their website. Defendants' argument ignores the fact that there are other ways the state could have decreased the burden on interstate commerce such as not providing any names of any farms as environmentally sustainable or humane on its website. The defendants argue that not providing any information on environmentally sustainable and humane farms would negate the purpose of the statute, which is to provide information to the public. The state could have also enacted other legislation to protect the health of its citizens, farm animals, and the

environment which would not have had an impact on interstate commerce. Since there are other ways in which the state could have promoted the same local interests without burdening interstate commerce, the New York law is unconstitutional for violating the Commerce Clause.

IV. Conclusion

For the reasons set forth herein, this Court GRANTS Plaintiff's motion for summary judgment because the APCIA violates the Commerce Clause of the United States Constitution.

IT IS SO ORDERED this 15th day of September, 2012.

Hon. Nathaniel C. Alexander
United States District Judge

ADDENDUM A to MEMORANDUM OPINION

N.Y. Agric. & Mkts. Law & 1000

SECTION 1. SHORT TITLE

This Act may be cited as the ‘‘Animal Products Consumer Information Act’’.

SECTION 2: DEFINITION

“Animal products” refers to meat, fish, diary, and eggs.

SECTION 3: STATEMENT OF PURPOSE

This Act is designed to protect the citizens of this state by providing and encouraging the dissemination of information about how animal agriculture and the consumption of animal products negatively affects health, the environment, and imposes unnecessary suffering on animals.

SECTION 4: LABELLING REQUIREMENT

(1) The following language must be prominently displayed wherever animal products intended for human consumption are offered for sale: “PUBLIC INTEREST WARNING: Many chronic diseases, including heart disease, can largely be prevented and, in many cases, reversed by avoiding the consumption of animal products and eating a whole food, plant based diet. Industrial animal agriculture is also a major source of pollution. Animal handling techniques also lead to animal suffering. The State encourages its citizens to conduct research and make informed choices when purchasing and consuming animal products. For more information, visit www.informedchoice.ny.gov.”

(2) The identification shall consist of a sign not less than 18 by 24 inches and printed in letters not less than 1 1/2 inches high. All letters in the sign shall be in red on a yellow background.

(3) When offered for sale from a retail sales display, vending machine, or bulk container, the required placard shall be clearly visible to a customer viewing the animal products.

(4) When offered for sale in a food service establishment or other public eating place, the required information must be on a placard as described above, clearly visible to all customers, or printed on a menu in type and lettering similar to, and as prominent as, that normally used to designate the serving of other food items.

SECTION 4: PENALTY.

The punishment for a violation of section 4 is a fine of $1,000 per day.

ADDENDUM B to MEMORANDUM OPINION[17]

Excerpts of Dr. Bernard Rollin's Affidavit in Support of Defendants' Reply to Plaintiffs' Motion for Summary Judgment

THE BEEF INDUSTRY

Branding

The animal welfare problem with branding is, of course, that it creates a third-degree burn on the animals. This burn is not only painful; it is a significant stressor that can cause weight loss, or shrink, due to animals going off feed. Furthermore, as ownership of animals is transferred, animals may be repeatedly branded – as many as four or more times. . . .

Castration

Castration presents another welfare problem, for it is accomplished with no anesthesia or analgesia. Castration is done for tenderness of meat and for manageability of the animals, castrates being easier to handle than bulls.

[I] asked [a group of ranchers] to comment on the claim, common in scientific ideology, that the animals did not feel pain, or did not really feel pain, during these procedures, specifically focusing on castration. One rancher responded in a manner that drew cheers from his peers. Drawing his pocketknife, he asked me, 'How'd you like *yours* cut off with this?"

Although most range castration is done with a knife, there are a variety of other methods. None, however, is painless, and none can be viewed as an absolutely humane alternative to the knife. These methods include the use of Burdizzos, or emasculators, which are essentially pincers or pliers that crush or sever the spermatic cord and the blood vessels that supply the testicle. The lack of blood supply to the testicles leads to their deterioration. A similar mechanism underlies the use of the elastrator, which stretches a rubber ring over the testes, thereby shutting off blood supply and creating necrosis, eventuating in sloughing off of the testicles. . . . The most rational and elegant solution to the issue of castration is simply not castrating.

Dehorning

The presence of horns on commercial cattle is considered a problem because horns inevitably lead to damaged hides and bruising of cattle under range and feedlot conditions, especially during transportation. Cattle with horns also require more space in trucks and in feed bunks. Furthermore, some horned cattle become aggressive and bully other cattle away from feed and shelter. Though both horned and hornless cattle establish a dominance hierarchy, the problem is exacerbated by the presence of horns. Packers usually dock horned cattle.

Horns have been managed in a variety of ways, and it is obviously best to deal with them when the calf is young and the horn bud or button is very small. Probably the least invasive and traumatic method for removing horns is chemical, which should be done as

[17] *Appendix B was taken directly from Bernard Rollin, "Farm Animal Welfare: Social, Bioethical, and Research Issues," (Iowa State Press 1995). Internal citations have been removed.*

early as possible in the calf's life. The caustic chemical, applied to the horn button, prevents further growth of the horn. Since the chemical is caustic, however, it can be irritating to the calves.

A second method, also feasible only when the calf is relatively young (under 5 months of age) is the use of a hot iron to burn the horn button. This procedure is not painless, since the interior of the horn is innervated.

A third strategy involves using devices such as the dehorning spoon or tube, which gouge or lever the horn out of the skull. The older the animal, the more developed the horn and the more traumatic the operation. In an animal that is relatively mature, such horn removal is, in the words of one veterinarian, "a bloody mess." When performed with clippers or saws, the procedure is again bloody and traumatic. Most dehorning is done by stockmen, not veterinarians, and local anesthesia is virtually never used, except by certain veterinarians who insist on it after a certain age in calves. Generally, the procedure is done under physical restraint.

Dehorning inevitably causes some pain and distress to the animals, ranging from irritation if chemicals are used to significant pain and trauma if mature animals are dehorned. Dehorning is sufficiently traumatic to have negative economic implications. A 1958 study from South Dakota showed that, when yearling steers were dehorned, two weeks were needed for them to catch up to their weight at dehorning; because of shrink arising from the trauma, the dehorned steers never caught up in weight to their horned counterparts. The significance of this statistic was underlined by a 1968 study of more than half a million cattle in twenty-four states, which showed that the average age of cattle at the time of dehorning was 5.2 months, old enough for the procedure to be traumatic.

Cattle Handling

The handling of cattle at all levels of the industry, from cow-calf to slaughter, has major implications both for animal welfare and for profit. Poor handling can result in significant stress, pain, and injury, leading to animal suffering and distress. . . .

Several historical reasons exist for poor handling. One is cultural—there is a long precedent of "cowboying" the animals among some ranchers, though most producers know that "gentling" is best. Such rough and rowdy handling, roping, and wrestling of animals is, for some ranch workers, the very soul of working cattle. One expert in ranch management told me of a consulting job he had done for a large Montana ranch, where he was asked to observe ranch activities and make recommendations for cutting costs and making operations more efficient. At the end of two weeks of scrutiny, the consultant called in the ranch owner and told him that the largest single source of inefficiency was cowboying the animals. For example, in roping a sick or injured calf, one should strive for gentleness and minimal excitement, yet some ranch hands did precisely the opposite, riding hell-for-leather and roping the animal at high speed. "Hell," replied the owner, "if I couldn't cowboy the animals, I wouldn't want to be in the business."

Thus, part of poor handling is attitudinal. This macho, domination attitude can be found throughout animal agriculture and, in the cattle business, in feedlots, salebarns, cattle transport, and packing houses, not only in cow-calf operations. . . . For example, in salebarns, one frequently sees employees—cowboy "wannabes"—beating and prodding animals unnecessarily with hotshots.

A second source of poor handling is lack of knowledge of cattle behavior. Many people in the cattle business have no idea of flight distance, balance point, reasons for balking or stampeding, and other fundaments of animal behavior. . . .

A third source of poor handling is poor equipment or improper use of extant equipment. Poor equipment is often attributable to a lack of knowledge of animal behavior—for example, many loading chutes are designed in a manner counterproductive to their

purpose. Some equipment may have sharp edges or hazards that bruise or startle the animals. . . . Many animals are injured, traumatized, or "spoiled" by improperly designed, used, or maintained squeeze chutes. . . .

Transportation

The welfare problems associated with transportation pervade the entire process. Loading and unloading are often accomplished with unnecessary roughness, hotshotting, and ballyhoo, which is frightening and stressful to the animals and can cause bruising. The actual transit conditions can expose the animals to extremes of temperature, depending on the season. The ride is generally rough, especially on rural roads, subjecting the animals to loss of balance, bruising, stress, shrink, difficulty of subsequent weight gain, and fear. Most of the animals are unaccustomed to being transported, and the very novelty of the experience is a significant stressor, especially in light of evidence that novelty of environment is more stressful to cattle than electric shock. It is not uncommon to see animals on a higher truck deck defecating and urinating on lower animals. Not only is this probably a stressor, since animals tend to avoid one another's excrement; it is a mobile advertisement against the beef industry. I recall my son, at age six, viewing such a scene with horror and saying, "That's not right!"—surely a universal reaction.

Downer Cattle

The marketing of sick, crippled, or "downer," nonambulatory cattle is a major welfare problem in the cattle business. . . . There are few sights more outrageous than watching a crippled or downer animal being dragged off a truck by a tractor. . . .

Downer animals should be moved on some mechanical conveyance when they arrive at their destination. Many downer animals are cows culled from dairies. Others are sick or injured animals who have not received or responded to medical treatment, or emaciated animals. Still others are male Holstein calves newly born. Producers should be fined for shipping such animals, as is done in portions of Canada. As one rancher told me, "We should eat our mistakes." Suffering animals should be euthanized immediately at the farm, or, if they have gone down during transport, as soon as they arrive at their destination.

Slaughter

The most pressing problems associated with slaughter grow out of the absence of preslaughter stunning in Muslim (halal) and kosher (schechita) slaughter. In both these areas, stunning is forbidden by current interpretation of religious law. Despite the fact that some countries ban such slaughter, it persists in the United States.

Dr. Rollin discussed a study of animals' loss of senses between animals that were stunned and those that were killed by throat-cutting in ritual slaughter. The study indicated "what is plain to common sense is correct: being stunned is preferable to not being stunned. (We are here assuming that consciousness during bleeding out is not pleasant.)"

Adding insult to injury, some kosher slaughter plants continue to shackle and hoist conscious animals for efficiency in processing, despite the fact that such activity seems to violate both the letter and spirit of the religious law underlying kosher slaughter.

Gomer Bulls

Ranchers need to know when cows are in heat. Because bulls have an obvious vested interest in heat detection, using them to detect heat is a time-honored approach. In order to keep the detector bulls from impregnating the heat cows, the bulls are surgically altered in a

variety of ways. The penis may be redirected to one side, creating so-called sidewinders. The penis may be amputated, retracted and fixed, or surgically adhered to the lower abdominal wall. Fistulation of the preputial cavity following closure of the preputial orifice, installation of mechanical preputial blocking devices, and the placement of an artificial thrombus in the corpus cavernosum penis are also used. When the altered bull mounts the cow, a marking device hung from his chin marks the cow in heat. All these methods produce some pain and much distress growing out of frustration, though the methods that redirect the position of the penis still allow the animal to ejaculate as a consequence of frottage. American men, when informed of these sorts of alterations, see them as the worst possible abuse.

There are alternatives for detecting heat that do not cause welfare problems, such as patches that are applied to cows, visual inspection, and use of cows or steers given testosterone, but most cattle owners believe bulls are the least fallible.

Feedlot Problems

In the feeder portion of the industry, many of the problems mentioned earlier can surface in an amplified way. Late castration, branding, and dehorning of animals in the feedlot create major welfare issues, as well as economic setbacks. Proper handling and equipment is also a relevant concern.

There are also welfare problems unique to feedlots. One major issue is feedlot design. Poorly designed drainage systems compromise both welfare and productivity. Relatively little easily accessible information is available on designing and managing feed yards to accommodate young bulls. Design of chutes, ramps, and loading docks can be improved . . . . Research into elimination of liver abscesses caused by feeding "hot," high-concentrate, low-roughage diets would benefit both animals and producers. Closer attention to the health of individual animals would improve both welfare and economic returns.

Feedlots are the most animal-friendly of confinement systems, since they allow the animals significant room to move as well as social opportunities. Research could make them more animal-friendly. Shelter from wind, dust, sun, and snow would benefit animals and producers, as would sprinkling to cool animals and keep down dust.

THE SWINE INDUSTRY

Historically, the pig was the first farm mammal to be subjected to extremely intensive housing and management, a trend that has greatly accelerated. Over 90 percent of pigs are raised in some kind of confinement. At the same time, swine are almost universally considered the most intelligent of farm animals, possessed of a good deal of curiosity, learning ability, and a complex behavioral repertoire, and are thus "easily bored," as Ronald Kilgour puts it. The complexity of pig behavior raises a host of issues relevant to rearing these animals under austere confinement conditions. Such conditions give rise to a significant range of behavioral anomalies in confined pigs. . . .

Swine Behavior

. . . [In their natural habitat], it was found that pigs built a series of communal nests in a cooperative way. These nests displayed certain common features, including walls to protect the animals against prevailing winds and a wide view that allowed the pigs to see what was approaching. These nests were far from the feeding sites. Before retiring to the nest, the animals brought additional nesting material for the walls and rearranged the nest. On arising in the morning, the animals walked at least 7 meters before urinating and defecating. Defecation occurred on paths so that excreta ran between bushes. Pigs learned to mark trees in allelomimetic fashion. The pigs formed complex social bonds between certain

animals, and new animals introduced to the area took a long time to be assimilated. Some formed special relationships—for example, a pair of sows would join together for several days after farrowing, and forage and sleep together. Members of a litter of the same sex tended to stay together and to pay attention to one another's exploratory behavior. Young males also attended to the behavior of older males. Juveniles of both sexes exhibited manipulative play. In autumn, 51 percent of the day was devoted to rooting.

Pregnant sows would choose a nest site several hours before giving birth, a significant distance from the communal nest (6 kilometers in one case). Nests were built, sometimes even with log walls. The sow would not allow other pigs to intrude for several days but might eventually allow another sow with a litter, with which she had previously established a bond, to share the nest, though no cross-suckling was ever noted. Piglets began exploring the environment at about 5 days of age and weaned themselves at somewhere between 12 and 15 weeks. Sows came into estrus and conceived while lactating. One of Wood-Gush's comments is telling: "Generally the behavior of ... pigs, born and reared in an intensive system, once they had the appropriate environment, resembled that of the European wild boar." In other words, there is good reason to believe that domestic swine are not far removed from their nondomestic counterparts. . . .

Confinement of Sows

Virtually every expert with whom I have discussed the swine industry sees the confinement of dry sows as its major welfare problem. . . . In the United States, sows . . . are kept in gestation stalls while they are pregnant, for the vast majority of their productive lives, three to five years. The stall is approximately 2 feet wide, 7 feet long, and 3.3 feet high. This extreme confinement allows a great many sows to be housed in an environmentally controlled situation, fed and cared for by a minimal and unskilled labor force, and maintained with minimal feed, for energy is not wasted on thermoregulation or movement. Such a system allows maximal production efficiency. It further allows people who may not be "pig smart," as one expert puts it, to work in a facility where the system compensates for lack of stockmanship. On the other hand, management makes the difference between a viable confinement system and a total mess.

. . . [A]nimals who have evolved with bones and muscles need the opportunity to use them. As seen in our capsule discussion of swine behavior, pigs under extensive conditions spend a good deal of time moving about. If a system does not allow such an animal even the room to turn around, it is reasonable to view it as thwarting some very fundamental needs or tendencies, needs that have both a physical and a cognitive component, thus leading to negative welfare. Animals that like to move and are built to move are surely affected negatively if they cannot do so.

Closely connected with the inability to move is the element of monotony, lack of stimulation, or. . . boredom. Given the complexity of behavior and intelligence natural to the sow, the absence of possibilities in the gestation stall, and the emergence of stereotypes, it defies good sense to suppose that the animal is not bored. . . .

Farrowing Crates

Farrowing crates were devised to prevent sows from crushing piglets, a common phenomenon under extensive conditions. Generally, a sow spends about a month in a farrowing crate, from directly before parturition until weaning of the piglets. Since the point of farrowing crates is to restrict the movement of sows so they cannot turn around, and since the farrowing crates are about the same sin as gestation stalls, the same welfare

problems relating to restricted movement we have discussed vis-à-vis gestation stalls arise here. Farrowing crates have also been correlated with some pig diseases, including dystocia, agalactia. and wasting disease.

Because farrowing crates demonstrably provide a way for diminishing crushing of piglets. they could perhaps be justified to the social ethic if the sow were not confined at other times. . . .

The farrowing crate raises other welfare problems besides restricted movement. Most important, perhaps, is the frustration of normal maternal behavior, an extremely powerful instinct. Sows will continue to try to make nests, even in farrowing crates. Kilgour comments: "By frustrating and stressing the sow and disallowing her maternal responses, overall productivity may not show an improvement. . . ." Stookey echoes this sentiment: "The fact that nest building is so innate and that the sow continues to build the nest even in the absence of any material, suggests that the behavior has tremendous biological significance. No doubt survival of wild pigs is dependent upon a nest at farrowing."

Other Sow Welfare Problems

Confinement rearing of sows leads to additional welfare problems beyond those growing out of boredom, frustration, isolation, and inability to move.

Sows kept in confinement appear to have more reproductive problems, such as delay of estrus and failure of the animals to become pregnant after mating. . . . there was a higher incidence of mastitis, metritis, agalactia, prolonged farrowing time, and sow morbidity at farrowing in sows housed in confinement than in sows housed in group pens. It is plausible to suggest that these negative effects are a result of prolonged stress. . . .

Confined sows are more subject than unconfined sows to foot and leg problems, including the fracturing. . . . Pig farmers who have experience with both free and confined sow operations have told me that fracturing is far less common in sows that are allowed to move. Since activity is known to increase bone strength, it may well be that the immobility of confined sows renders them susceptible to leg breakage. . . leg injuries, lameness, and infections are related to types of flooring. Generally, slatted floors lead to more injuries than unslatted floors. . . .

Urinary tract disease appears to be more common in confined sows, probably because the animals lie in their excrement and because they drink less and urinate less, so that urine is more concentrated and bacteria act longer in the urinary tract. It is reasonable to attribute these problems to lack of activity. . . .

Finally . . . . the combination of total confinement, automation, and the large scale of swine operations makes for minimal inspection of individual animals, sows or finishers. Thus disease and injury may be undetected until they are quite advanced, especially in sows. Further, as we saw, the minimal labor force in many operations makes treatment difficult or impossible. Unquestionably, automation tends to be inimical to stockmanship or careful husbandry. . . .

Piglet Welfare

A number of significant welfare problems are associated with piglets in swine production. Between day I and day 10 after birth, piglets are subjected to a battery of invasive procedures: vaccination, ear-notching for identification (in some cases), teeth-clipping, tail-docking, and castration of males. . . .

Vaccination in and of itself is probably not an issue. Ear-notching, however, is surely painful, and alternatives to it exist. . . .

Teeth-clipping and tail-docking are management procedures. Incisor, or "needle," teeth are clipped in order to prevent laceration of sow udders and abrasion of the faces of

other piglets during competition for teats. The Universities Federation for Animal Welfare (UFAW) handbook, Management and Welfare of Farm Animals, argues, reasonably, that teeth-clipping should not be a routine procedure but rather should be done on an "as needed" basis, that is, where there is early evidence of damage from the teeth. Given the lack of surveillance of individual animals in large intensive operations, however, the degree of scrutiny demanded by this alternative is implausible; it is simply more economical to clip routinely. . . .

Docking of tails, a procedure that grew out of intensive systems, is done to prevent tail-biting, which generally increases once begun and spreads to biting other parts of the body. A victim of tail-biting gradually ceases to be reactive to being bitten, in a kind of learned helplessness. Infection often ensues and can become systemic.

Pigs have always had a tendency to tail-bite. Under extensive conditions, pigs have the space to get away from one another—it is only in confinement that tail-biting became a serious problem. The response of the producer has been to amputate the distal half of the tail, a surgical solution to a humanly induced problem arising from keeping the animals in a pathogenic environment. . . .

I do not consider surgical solutions to humanly caused animal problems morally acceptable. One ought to change the environment to a healthier one, not mutilate the animal. . . . [T]ail-biting can be prevented by changes in husbandry. Animals that tend to tail-bite can be grouped together, as they do not generally show this behavior when they are so grouped. Uncomfortable atmospheric factors need to be eliminated, such as high levels of ammonia, CO2, or humidity or low barometric pressure. Stocking density should be kept down. Better husbandry, provision of straw, and the opportunity to root all decrease tail-biting. . . . It thus appears that boredom is relevant to tail-biting. Like other stereotypies, then, tail-biting provides a clue to conditions that need improvement. To my knowledge, no one has tried painting tails with unpleasant-tasting material to curtail biting. . . . Even if it worked, however, the impulse leading to the behavior would remain—one would he treating symptoms.

Castration of piglets is clearly painful. As in beef cattle, castration is performed to diminish aggression and to prevent the development of adult male sexual pheromones, which give pork the "hoar taint" most pork consumers dislike. Most producers agree that intact males grow better, faster, and more efficiently and produce leaner meat and more meat. It can be argued that, given the age (5-6 months) at which most males attain market weight (about 250 lb), few of the animals have reached sexual maturity. Thus the need for castration, which is expensive and painful, is obviated, especially since a pheromone test is available to detect boar-tainted carcasses. In Europe, uncastrated males are the rule. The main obstacle to eliminating castration seems to be packer resistance, based on fear of consumer rejection of boar meat and lack of packer confidence in the pheromone test. . . .

A major issue in piglet welfare arises out of early weaning. Although pigs left to their own devices will wean at 12 to 15 weeks of age, industry practice weans piglets at 3 to 4 weeks of age. . . . [S]uch early weaning must have considerable effects on the piglets, leading to poor welfare. . . . We know now that early weaning leads to aberrant behavior, including compulsive belly nosing and sucking, which is presumably an attempt to suck and find milk. Anal massage is a similar deviant behavior. Piglets showing this behavior chase and inflict injuries on other piglets. Other aberrant oral behavior, such as sucking on walls and bars, may also be a result of early weaning. A recent study showed that relocation of piglets to a nursery may be a major stressor augmenting early weaning. . . .

Grower-Finishers

. . .When pigs leave the nursery (at about 6 weeks of age), they go into a grower-finisher pen in groups of 15 to 20. One facility I visited placed them in a pen 8 feet by 25 feet.

They remain together for the next five or so months until reaching market weight. . . . At the early stages of finishing, the pen seems to provide adequate space, but by the time the pigs attain market weight, they appear to be quite crowded.

[Pigs kept inside also develop] problems with respiratory disease. . . . 35 to 60 percent of all pigs raised in confinement buildings are affected with mycoplasmic pneumonia to the point where weight gain is adversely affected. In numerous pig facilities, workers must wear respirators; obviously, such a situation is harmful to human and animal welfare. . . . Another problem appears to be fighting, which is both short in duration and low in intensity. Pigs are kept in limited lighting to avoid aggression yet will work to obtain light. . . .

Amount of space per pig is important. Equally important is quality of space. Space in grower-finisher pens should take account of the need or desire of pigs for separate lunging and lying facilities, for eating without harassment by others, and for ways of avoiding attack . . . .

Foot and leg problems associated with problematic flooring are another area of concern. Slippery floors can cause lameness, abrasions, strains, and foot injuries. Slats may lead to trapped and broken claws. Some preference work on flooring has been done, but as Fraser points out, it should be followed by studies of welfare and injury on the various types of floors. . . .

Handling and Transport

Being highly intelligent and sensitive animals, pigs are very responsive to stressors . . . . In research and on farms, those handling pigs often rely on "macho muscling" methods, which produce significant stress. . . . Transportation is a major stressor for an animal kept in confinement all its life and suddenly moved outside, loaded, and transported. . . .Mixing of pigs during transport is also a significant stressor, as is poor, rough driving. . . .Ignoring the stresses of loading, handling, and transport can lead to bruising, carcass blemishes, PSE (Pale Soft Exudative) syndrome, and malignant hyperthermia syndrome, all of which harm both producers and animals.

THE DAIRY INDUSTRY

. . . .One of the most dramatic changes in dairies, directly relevant to public perception of the industry, is the rise of large, intensive dairy operations, with up to three thousand cattle maintained in relatively small acreages. The small dairy farmer, with names for his cows, is a vanishing breed, as land costs, labor costs, and capital investment costs increase . . . .

One area which feeds the idea of callousness at large dairies is the treatment of surplus calves. . . . [S]uch calves often receive no colostrum, and are shipped as young as one day old, before they can even ambulate properly. . . .Although the raising of so-called white veal is a spinoff of the dairy industry, this subject is discussed in the next chapter. . . .

Calf Welfare

Some of the major potential hot spots for the industry come from the treatment of calves. Most female calves are used as replacements for dairy cows. Various practices associated with raising such calves have been criticized on welfare grounds. One such issue is the early separation of calf from mother. Common sense suggests that such a separation is stressful to both animals, since cattle under extensive conditions can suckle for some seven months. . . the average person sees removing a baby from its mother as paradigmatically abusive, even cruel.

. . . Some dairy farmers leave the calf with the mother for up to three days to allow the

calf to suckle, to permit a mother-offspring relationship to form, and to render the cow's milk free of colostrum and thus able to be sold. In contrast, others separate the calf immediately and deliver the colostrum through a nipple-pail or bottle.

Although it may seem more humane to allow the cow and calf the longer period to bond, one can argue that separation of the calf after three days, rather than at birth, causes greater trauma. According to Albright:

> When the calf is left with the cow three days or more, it is more difficult to separate the pair. Excessive bawling, fussing, and breaking down fences occur when maternal urges are then denied, and the cow will fret excessively when separated from the calf, resulting in decreased milk production.

. . . Another welfare issue concerns the housing of calves. In the United States, it is most common to raise calves for about three months in individual pens or hutches to which the calf may be tethered. Although such hutches are an improvement over crates, since animals in fenced-in hutches can move freely, they are still offensive to many people, who dislike the restricted space and isolation from other animals. . . .

Welfare Issues of Cows

Housing Systems

The dairy industry in the United States employs a wide variety of housing systems for dairy cattle, ranging from highly extensive, very traditional pasture systems to stanchion or tie-stall housing to free-stall housing. Positive and negative features relevant to welfare are associated with all systems, but some seem more problematic than others. The system of greatest concern is probably tie stalls, where the animals are tied in one place for long periods of time. Tie stalls are used almost exclusively in the Midwest and Northeast. Although the apparent historical motivation for tie stalls was concern for the well-being of the cattle as well as reduction of labor, with tie stalls allowing for ease of observation and inspection of the cows, the fact that the animals are unable to move and unable to engage in normal behavior, notably grooming, makes tie stalls a plausible and inevitable target for social concern.

Whereas a range cow walks more than 6,000 meters a day, a cow in a tie stall is clearly prevented from such exercise. In addition, the cow's social nature is frustrated by such housing systems. Getting up and lying down can also be a problem in poorly designed stalls. Many tie-stall operators let the cows out onto pasture or dry lots for one to five hours a day when weather permits but keep them inside during bad weather.

Many dairy cattle, especially in the West, are kept in dry-lot conditions, in outdoor dirt pens in groups. The cow can express her social nature and can exercise. The problems with dry lots are similar to problems with feedlots: lack of shade, lack of shelter from wind and snow, poor drainage, and general lack of protection from climatic extremes. Some farmers do provide shade and cooling with sprinklers. In general, cattle withstand cold stress better than heat stress.

Free stalls have gained in popularity since their invention in 1960. In such systems, the cows can be in their own bedded stalls and move freely into concrete or earth yards where they receive food and water. Poor flooring in these systems can lead to foot and leg problems. Given a choice, dairy cattle prefer other flooring over concrete. . . . Poor hygiene in the stalls can also cause mastitis and is an issue that should be addressed.

One problem with all these systems is that they fail to allow for grazing on pasture, an activity for which cattle have evolved and which, if permitted, they will spend eight to ten hours a day doing. (Indeed, one can argue that the domestication of cattle resulted precisely

from their ability to convert forage into food consumable by humans.) Swedish legislation aimed at respecting the rights of animals following from their biological natures has stressed the need for cattle to graze and indeed granted cattle the right to graze in perpetuity. It is likely that public opinion in the United States similarly favors the grazing of cattle; few pastoral images are as powerful and pervasive as that of cows on pasture.

Some farmers pasture dry cows, but the keeping of milking cows on pasture has diminished, except in areas of the Southeast where climate and rainfall favor lush growth. . . .

Castration, Dehorning, and Branding

As in beef cattle. dehorning is a problem, as is castration of hull calves; both issues have already been discussed. Most operators do not brand dairy cattle.

Tail-docking

Docking of tails in dairy cows has gained in popularity in the United States and Canada. It is alleged that tail-docking reduces mastitis and somatic cell counts (SCC). The docking is often accomplished by elastrators, described in the discussion of beef cattle castration. Allegedly, the procedure is painless and keeps the cow from flinging manure.

Conversations with dairy specialists, dairy veterinarians, and a lactation physiologist have convinced me that there is absolutely no scientific basis for claims about the benefits of tail-docking. Problems with mastitis are largely a function of hygiene, arising when animals are regularly down in unclean stalls. Removing the tail is another example of attempting to handle a problem of human management by mutilating the animal—as in "devocalization" of dogs, declawing of cats, and docking tails in piglets. In this situation, however, unlike the others, the procedure does not even solve the problem. Indeed, removing the tail causes suffering to the cow, since it can no longer deal with flies!

Not only is docking the tail, in fact, not curative; it can exacerbate the problem. The use of elastrators, contrary to the belief of some farmers, is quite painful. The procedure can also cause infection, death, and decreased milk production. In purely prudential risk-benefit terms, then, it is irrational to choose to dock the tails, and since there is no potential benefit from the procedure, the farmer is not rationally warranted in taking any risk whatsoever. The same point, of course, holds for surgical docking of the tail. Indeed, there is reason to believe that docking the tails is likely to increase the very problem that the farmer is trying to eliminate, namely, high somatic cell counts. Kilgour and others have reported that stress elevates SCC in dairy cattle, and the use of the elastrator and the subsequent pain and distress that it causes the animal certainly represent a stressor, as does any ensuing infection. Furthermore, since stress results in immunosuppression, an animal experiencing the docking procedure is surely more prone than ever to mastitis, since its immune system is being compromised. . . .

Mastitis and Lameness

. . . [L]ameness and mastitis are the two major welfare problems in dairy cattle and there is a positive correlation between the incidence of these diseases. Lameness has in turn been tied to high-protein and high-concentrate diets. Lameness can be reduced by hoof trimming and foot baths and by attention to flooring. . . . A good deal of lameness is a result of laminitis. . . . Many of these problems can currently be handled with good husbandry and "cow smart" labor—the challenge, as in all modern agriculture, is to make the systems "idiot-proof. . . .”

Downer Animals

The dairy industry is probably the primary source of "downer" animals, discussed earlier. . . . While increasing numbers of dairymen are beginning to realize that nothing is more erosive to the "contented cow" image of the dairy industry than transporting and then dragging a downer cow with a tractor or loader to the kill floor, other elements of the industry have turned a blind eye to the problem. Most dairy downers are probably a result of calcium-phosphorus imbalance leading to milk fever (hypocalcemia). Animals that are down should he killed on the farm and not transported. . . .

The Human Environment

Much knowledge has accumulated, based on both practical experience and science, regarding human interaction with dairy cattle. This variable is fundamental both to milk production and to cow well-being. Cattle are creatures of habit, and disruption of habits can be highly stressful. Indeed, Kilgour has shown that introduction into a new environment is more stressful for cattle than electric shock. Good stockmen respect this aspect of cow handling. . . .

THE VEAL INDUSTRY

White veal production is to animal agriculture as the Draize test (where cosmetics or shampoos are put into rabbits' eyes to test for irritancy) is to animal research. Both are perceived by the public as examples of these activities at their worst. Like placing potential irritants into rabbits' eyes and scoring the resultant lesions for the sake of generating new cosmetics, what is seen as "torturing" calves to produce an expensive product consumed by a small portion of the population is unacceptable to the social ethic. I would guess that the average person sees white veal as a decadent product, analogous to the pate de foie gras produced by force-feeding geese whose feet have been nailed to a board. . . .

My own experiences with public attitudes toward veal provide. I believe, a typical reflection of opinion. I travel and lecture extensively and mingle with a wide cross-section of the population. from ranchers to urbanites, from bluecollar workers to college presidents. It is noteworthy that, across these populations, it is ethically correct—and mainstream—to assert that one does not eat veal, on humane grounds. Refusing to eat veal is not fringe or flaky; it is acceptable, exactly on a par with refusing to wear fur. John Gibbons, [President Bill Clinton's]... science advisor, declared publicly that he does not eat veal for ethical reasons. A high USDA official told me that he, and about half his peers, similarly will not eat veal. The vast majority of western ranchers I talk to also disavow veal on ethical grounds.

Some years ago, I had a striking experience that underscores this point. I had been asked by the Colorado commissioner of agriculture to participate in a seminar on the issues of animal rights and animal welfare for the leaders of Colorado agriculture. Among the speakers was a drug company executive representing the Animal Industry Foundation, a group devoted to opposing the animal rights movement. He began his presentation by showing a short video called "The Other Side of the Fence," produced by the ASPCA. The video is highly critical of white veal production, arguing that just as human babies have needs, so do calves. Though we try to meet the needs of babies, we do not in the case of calves used for veal. His stated purpose in showing the tape was to demonstrate the sophisticated level of propaganda directed by animal groups against animal agriculture, in order to galvanize the audience into opposing such activity. A few hours later, I sat at lunch with the head of the Colorado Farm Bureau and the president of the Colorado Cattlemen's Association. I asked them for their reaction to the film. The Cattlemen's Association president replied as follows: "Well, it brought tears to my eyes. There is no cause to raise

animals that way. If people want veal, we can kill some calves. We don't have to torture them. If I had to raise animals that way, I'd get the hell out of the business." The others at the table concurred.

This was not an isolated incident. I have yet to address a group of cattle ranchers who find the production of white veal acceptable. Indeed, if I were to transcribe the remarks generally made by the ranchers about veal into a typescript, one would probably assume from the text that one was reading the opinions of extreme animal rightists! (I actually have such a transcript, based on a seminar I gave in Worland, Wyoming.)

One could argue that the strong antipathy toward white veal production in the general public is a function of emotionalism, sentimentality, the "Bambi syndrome," the fact that calves have "big soulful eyes," and the like. But such a claim can surely not he made about ranchers. In their case, the distaste for veal production is a result of their understanding of the cattle telos, and their belief that nothing could be further from accommodating that telos than the raising of white veal. . . .

Welfare Problems in Current Systems

Behavioral Deprivation

In an exhaustive paper published in Applied Animal Behavior Science in 1988. T. H. Friend and G. R. Dellmeier discuss the behavioral deprivation associated with current systems of veal production. They point out that "research has identified positive correlation between the degree of behavioral deprivation and physiological responses indicative of chronic stress, increased disease incidence and behavioral anomalies." In their discussion of housing systems, they take as their point of departure the ethogram for cattle, that is, the comprehensive behavioral catalog for the species (Table 6.1).

Table 6.1 Major bovine ethogram components affected by calf housing and management systems

General postural behavior	Social behavior
Ingestive behavior	Explorative behavior
Locomotion/kinesis	Reproductive behavior
Sleeping/resting	Eliminative behavior
Body maintenance/grooming	Circadian/diurnal rhythms

By appealing to this table, one can assess the limitations of various systems. . . . [V]eal crates are an extreme example of maximum close individual confinement with significant curtailment of a variety of natural behaviors. Most of the behaviors listed on Table 6.1 are restricted, if not totally prevented, by this method. For example, such calves exhibit increased motivation for locomotion and social behavior and have a greater incidence of impaired locomotor ability. . . . [C]alves are housed in small enclosures where they cannot turn around and cannot groom the hind portion of their bodies, which calves normally do several times a day. This leads to significant frustration. Consequently, the calves groom excessively those parts of the body that they can reach, which in turn results in hairballs in the rumen.

Lying behavior is important for cattle. In crates, calves cannot assume certain standardly adopted lying postures, another deprivation that serves as a source of frustration. Not surprisingly, then, calves show a good deal of stereotypical behavior, a sign, as we discussed, of poor welfare. . . . these behavioral indicators are buttressed by measures of both long- and short-term physiological stress responses.

Friend also stresses the thwarting of social behavior and play. He reminds us that social interaction is known to be a source of both physical and physiological comfort and that play, which in calves is largely social, is a "sensitive indicator of overall general psychological as well as physical wellbeing." A similar point is true of exploration.

Friend argues a point applicable to all confinement agriculture, an observation also made by M. W. Fox. A sense of control—or even prediction—is essential to all animals. . . . Confinement robs animals of control, which in turn diminishes their ability to cope with stressors. A confined animal has no control and cannot cope; it cannot scratch an itch, stretch a leg, chase a fly, or run from a perceived threat. This situation could result in a form of learned helplessness, a morally unacceptable state in animals extensively studied by M. E. P. Seligman and others as a model for human depression. If we are in effect creating learned helplessness in veal calves, this is a prima facie reason to condemn such a system.

Diet

Two major dietary welfare problems are associated with the raising of white veal. First, because veal calves are "milk fed," that is, fed only milk or milk replacer and no roughage, the rumen and its microflora develop unnaturally, often resulting in abomasal ulcers and predisposing the animal to enteritis and indigestion from hairballs. . . . According to Fraser and Broom, calves should he fed adequate roughage from the second week of life, a diet that would also help eliminate some behavioral anomalies growing out of the animals' failure to achieve oral satisfaction.

Second, in order to obtain white veal, producers must strictly limit the iron intake of the calves. The redness of beef is a function of haem compounds, which contain iron. Myoglohin is the haem compound in muscle; hemoglobin is the compound in blood. Webster has pointed out that one cannot produce white veal without feeding a diet that will certainly produce anemia in some calves. . . .

An additional dietary problem generated by confinement rearing grows out of the system of feeding. Usually. the animals are fed twice a day from a bucket. This frustrates their normal sucking behavior and leads to behavioral anomalies. Furthermore, the animals tend to consume much more milk at the two feedings than they would consume at any of the four to ten feedings they would have if nursing, which in turn can cause digestive problems.

Flooring

Slatted floors are uncomfortable and severely restrict behavior.

THE POULTRY INDUSTRY

The chicken and egg industries are, in many ways, the paradigm cases of intensive, industrialized agriculture. These industries represent far and away the largest numbers of animals used by humans—an estimated nine to ten billion worldwide. For this reason, . . . if there are widespread welfare problems in this species, ... then a majority of the animals in the world which suffer because of man's activities are chickens. The egg industry is also the most vertically integrated and mechanized of all animal agriculture and the oldest of confinement systems. . . .

There are few differences in behavior between the wild Burmese red jungle fowl (Gallus gallus spadiceus) and the domestic form (Gallus gaits domesticus). Furthermore, again contrary to what one may hear from the industry, chickens are not mindless, simple automata but are complex behaviorally, do quite well in learning, show a rich social organization, and have a diverse repertoire of calls. Anyone who has kept barnyard chickens also recognizes their significant differences in personality. Unlike the swine

industry, the U.S. chicken and egg industries have tended to "play ostrich" on welfare issues occasioned by their industry, adopting an "ignore it and hope it will go away" posture. It seems likely that the industry has felt that the public will not express a great deal of concern for chickens, perhaps seeing them as interchangeable clones. Perhaps, too, given the low price of eggs and chicken, once a luxury meat, the industry may believe that the public will not, as it were, bite the hand that feeds it.

Although it is certainly true that chickens will not generate the same sort of instantaneous response that calves do, it is myopic and self-deluding to think that public concern for the welfare of chickens is nonexistent. As Frank Perdue understood, there are few more vivid and classic bucolic images than chickens pecking contentedly in a barnyard; clever media manipulation could further tap our childhood memories of the story of The Little Red Hen. Conversely, few images in agriculture are more grating to common sense than chickens squeezed into small cages. . . .

Welfare Issues in Battery-Cage Egg Production

In 1933, the average yield per hen was 70 eggs a year. A yield of 150 eggs from a six-pound hen was considered unattainable. Today a four-pound hen produces 275 eggs per year. This increase is a result of improvements in genetics. nutrition, and disease control and, in no small measure, industrialization and intensive confinement systems. Productivity has increased without necessarily ensuring welfare, however. Although, for example, it has long been known that the stocking of fewer birds per cage leads to greater production per bird, it is nonetheless more economically efficient to put a greater number of birds into each cage, accepting lower productivity per bird but greater productivity per cage.

In other words, though each hen is less productive when crowded, the operation as a whole makes more money with a high stocking density: chickens are cheap, cages are expensive.

Debeaking and Toe Trimming

The crowding of caged birds, up to six in a cage, has led to significant welfare issues. In the first place, hens in cages cannot establish normal social relationships, cannot behave as they have evolved to behave, and cannot escape from more aggressive animals. As a result, the system encourages the development of cannibalism and feather-pecking. which are costly in terms of both economics and welfare. The exact causes of these behaviors have not been determined, but various factors have been implicated in their genesis, including high light intensities, housing systems, group size, nutrition, and hormonal factors. These behaviors appear in chickens under extensive conditions but, where chickens can escape, do not cause the same degree of problems. Cannibalism can lead to high rates of mortality in battery chickens, and feather-pecking causes injury and loss of thermoregulatory ability. Though beak trimming, as practiced by the industry in both egg and broiler production, does not decrease the incidence of these behaviors, it does render the beak less effective in producing injury.

For many years. the industry argued that beak trimming was a benign procedure, analogous to cutting nails in humans. However, it is now clear that this is not the case and that trimming causes behavioral and neurophysioiogical changes betokening both acute and chronic pain.

After hot-blade trimming, damaged nerves develop into extensive neuromas, known to be painful in humans and animals. Furthermore, these neuromas show abnormal discharge and response patterns indicative of acute and chronic pain syndromes in mammals. Behavioral and white-cell responses to beak trimming confirm this conclusion. There is also evidence that the pain of debeaking may ramify in pain in eating, weight loss,

and "starve-out" in chicks.

Obviously, then, beak trimming represents a major welfare issue. . . .

In any case, it is clear that society will probably not accept the mutilation of the hens in a manner that produces chronic pain as a way of managing a "vice" stemming from a system that violates the animals' natures. . . .

Toe trimming is also performed on laying hens to decrease claw-related injury. . . .

Behavioral Problems

Virtually all aspects of hen behavior are thwarted by battery cages: social behavior, nesting behavior, the ability to move and flap wings, dustbathing, space requirements, scratching for food, exercise, pecking at objects on the ground. . . . Hens typically live for about 72 weeks in such cages before they are shipped to slaughter.

Exercise

The most obvious problem is lack of exercise and natural movement. Under free-range conditions, hens walk a great deal. Wing flapping, which is common in free-range animals, is also prevented in cages. Comfort behavior is likewise truncated, as is leg stretching and preening. Research has confirmed what common sense already knew—animals built to move must move. Studies have observed the animals' behavior in open conditions after long periods of deprivation. After being in a battery cage, hens show much wing flapping, and the longer they are caged, the more they flap.

Lack of exercise has serious effects on bones and muscles. Caged birds have greater incidence of lameness, bone brittleness, osteoporosis, and muscle weakness than uncaged ones. Most significant, battery hens have a much higher incidence of broken bones than animals free to move. H. B. Simonsen reported that 0.5 percent of free-range hens had broken wing bones at slaughter, in contrast to 6.5 percent of caged hens. Fraser and Broom cite research showing that 29 percent of hens had broken bones before stunning at slaughter. . . .

Nesting

Nesting behavior is a primary activity of hens. Prior to egg-laying. feral or extensively housed fowl exhibit a characteristic sequence of behaviors associated with nest site selection. A period of restlessness and vocalization (pre-laying calls or "Gackeln") occurs which is followed by examination by the hen of potential nesting sites. When a nest site is finally selected, the hen performs rudimentary nest-building movements; oviposition occurs at a variable period of time following these behaviors, The most desirable nest site appears to be one which provides concealment and separation from conspeeilics, and also protects on-going nesting and incubation behaviors from disturbance.

Battery cages clearly cannot satisfy these needs, and this is the one area where behavioral signs of frustration are seen. Hens housed in such cages display agitated pacing and escape behaviors that last two to four hours before oviposition.

. . .[T]he pacing is similar to the stereotyped pacing hens exhibit when they are thwarted in feeding behavior. . . . [H]en demand for nests before laying is inelastic, with animals willing to work to gain access to them and to suffer food and water deprivation in exchange for access. Building nests out of litter is also important to the hens: they choose building nests over using premolded ones and show greater frustration when given the premolded type.

Dustbathing

On average, hens provided with loose material will perform dusthathing behaviors every other day, with each bout lasting approximately thirty minutes. The primary function of dusthathing appears to be to remove excess oil from the feathers and maintain them in a "fluffy" condition. Caged hens having no access to litter show dusthathing behavior as a vacuum activity. In addition, levels of both exploratory activity and dusthathing behavior increase in hens subjected to a period of liner deprivation, The performance of these vacuum and rebound activities suggests that hens have a motivation to dusthathe even when the appropriate external stimulus, litter, is absent in the environment.

Preference tests appear to support this conclusion. Hens show a preference for cages with litter rather than wire floors when they are required to remain in the chosen cage for several hours. Hens will also enter a non-preferred small cage in order to have access to litter. . . .

Social Behavior

Research indicates that social behavior in the domestic chicken under open conditions is similar to that of Burmese jungle fowl. That research has been supplemented by studies of chickens gone feral for more than one hundred years and by studies of chickens deliberately released into the wild. . . .

Behavior studies of wild jungle fowl of South East Asia have highlighted the birds' daily cyclical activity pattern of roosting, feeding, drinking and nesting with omnivorous feeding habits and secretive wary movement patterns. Hens were found in association with cocks, the hens' territory being about I ha and the cocks' about 5 ha.

Studies of hens in a population that had been feral for about 100 years showed the following main features:

- The birds established roosts, about 60 m apart and with 6-30 birds/roost and 1 harem/roost.
- The amount of crowing by the males was related to status with the most crowing by the subordinate males. The dominant male acted as a suppressant to all hen fighting in his group.
- The hens nested within 45 m of water but when broody only left the nest for a short period each day.
- The broody hen and her chicks kept to themselves and threatened other hens that came within 6 m.
- Chicks start to he left by the dam at 5-6 weeks when she returned to roost in a tree. At 10-12 weeks when chicks were feathered. the hen started to threaten them.
- Chicks run ahead of the hen before weaning but behind her thereafter.
- At 16-18 weeks, the brood breaks up and adult behavior patterns begin.

A study in Scotland compared the behavior of a group of hens released into the wild with a group fenced off and given some domestic care. Information on nest selection, laying, brooding, care of young, feeding and movement was collected. The work highlights the importance of the strong maternal behavior of the hen toward her spring-hatched chickens, walking over 3 km/day, walking with them 24 percent of the time. Their active working day lasted 16 hours and the hen initiated most of the behavior, especially feeding, tidbiting, pecking and scratching the ground. She also prevented fights between chicks. The importance of the male in organizing a harem and preventing fighting was also shown and confirmed the earlier research findings.

The removal of the broody hen, the male and total confinement, key features of modem poultry farming. mean that behavior problems like severe pecking were bound to arise.

All this behavior indicates the lack of fit between caged layers and their natural social predilections, as well as a similar lack of fit in broiler production. . . .

[I]f hens were given a choice of feeding near cages containing zero to five unfamiliar birds, the hens preferred being near the empty cage, and the least preferred was the cage with the most birds. If the other birds were not strangers, however, the hens preferred to be near them. Furthermore, hens prefer to be around other hens when they perform comfort behaviors, when laying eggs, and when feeding. . . .

Space

Along with exercise and movement, space is probably the area where the general public would see the greatest problem with the egg industry. The visual impact of hens squeezed together is stunning and evokes familiar, unfriendly metaphors of prisons and concentration camps.

. . . .[C]ertain minimal space requirements are evidently necessary for welfare. Again, common sense would not likely accept the notion that animals with bones and muscles do not need room to move. . . .

Boredom

It is easier to see the issue of boredom as a welfare problem for animals such as monkeys or swine, which are perceived as "intelligent," than for chickens. Nonetheless, there is good reason to believe that chickens can indeed get bored. Ingenious experiments . . . have shown that, given a choice, hens will work for food rewards rather than just eat ad libitum even when food is provided. Such results seem to force the conclusion that working alleviates boredom. H. J. Blokhuis suggests that feather pecking occurs in cages because the animals do not have enough normal stimulants at which to peck. Research by M. C. Appleby and colleagues shows that laying hens in open conditions spend up to 16 percent of their time in nonforaging locomotion: These findings accord well with our view that an animal is a bundle of evolved powers and that the inability to exercise those powers leads to frustration and boredom. . . .

Forced Molting

Egg laying is cyclical. The ovary becomes less active, and the diminution of sex hormones leads to new feather growth, which forces out the old feathers. At the end of this rest period, when feather regrowth is complete, the laying cycle resumes. But waiting for the cycle to proceed naturally is not costeffective, since quantity and quality of eggs diminish, so producers have learned to induce molting. This requires subjecting the animals to a sufficient stressor to inhibit ovulation. (Stress can inhibit reproductive capacity in all animals.) Producers accomplish this by withholding food and water, which is a significant stressor for the birds, since it is known that the demand for food and water is "inelastic," or fundamental.

The standard forced molting protocol involves removal of food for up to twelve days and water deprivation for up to three days. Obviously, such an intentional stressor is quite traumatic for the animals, given the strength of the need for food and especially for water. In addition, the protocol usually involves withdrawal of daylight, another stressor to which the animals are unaccustomed. Indeed, so significantly adverse to welfare is this approach to artificial manipulation of the egg cycle that the British codes of practice since 1987

categorically recommend against using it. . . .

Wire Floors

Wire floors inhibit the ability of hens to dusthathe and to scratch and also violate their known preference for litter before and during oviposition. Wire can also be responsible for soring and injury of feet and legs. . . .

Cage Injuries

Battery cages are responsible for a variety of injuries, as birds are sometimes trapped in cages by the head and neck, body and wings, toes and claws, or other areas. In addition, steep floors can cause foot deformities, and wire mesh can lead to feather wear.

Attention to Individuals

Although battery cages theoretically allow for close monitoring of each bird, in reality the way cages are stacked, the periods of semidarkness, and the sheer numbers militate against close scrutiny. . . . Care for individual animals, beyond viewing them as "expected losses" or "write-offs," is essential if public concerns about intensive agriculture are to be met.

Problems in Broiler Welfare

The broiler industry has attracted a good deal less public attention than the egg industry, and much less research into and discussion of broiler welfare has occurred. Because of genetics, nutrition, and intensification, the modern broiler reaches market weight (1.5-2 kg) in 7 weeks, a reduction of nearly two-thirds from the time it took the traditional broiler.

Broiler housing resembles the deep litter system for eggs. Birds are introduced at one day of age and kept together for 7 weeks in groups of ten thousand to twenty thousand; needless to say, the animals are very crowded by the end of this period.

Inspection

Obviously, in the system described, it is going to be impossible to check on individual animals. Weak, sick, injured, or suffering animals are not detected. Down animals may be trampled. Once again, we have a problem of concern for individuals in large confinement operations. . . .

Problems of Fast Growth

With the breeding of broilers for fast growth and heavy musculature, little attention was paid to bone development and other areas under genetic control. The many diseases that have resulted must be considered a function of this approach to broiler production. They include leg weakness, ascites, sudden death or "flip-over," deep pectoral myopathy, and right ventricular hypertrophy. Moreover. . . weak legs lead the birds to sit in soiled litter, which in turn produces breast blisters and hock burns, since the fecal material is corrosive . . . .

Food Restriction in Broiler Breeders

Duncan has eloquently stated the problem of food restriction: "Animal breeders will have to realize that they cannot proceed indefinitely to select for growth rate and appetite without running into problems with the breeding stock, which have to be maintained in a non-obese state."As a result of such selection, broilers used for breeders must be kept under severe food restriction— they simply convert too efficiently. Since food is such a primordial, inelastic demand, it is likely these animals suffer. . . .

Destruction of Baby Male Chicks

Millions of newly hatched chicks are killed in the egg industry. They have been killed by suffocation in plastic bags, decapitation, carbon dioxide, and crushing. . . .

Handling, Capture, and Transportation

Fraser points out that "chickens are very much disturbed by close contact with people for man is a large and dangerous animal to a chicken." Capture is thus highly stressful to chickens, both spent laying hens and broilers. Between 10 and 30 percent of broilers in Europe are injured during capture and transport, and 29 percent of spent hens have freshly broken bones (as mentioned earlier) by the time of preslaughter stunning. These injuries are a function of hone weakness and rough handling. Hens are pulled from battery cages manually by the legs, carried by one leg in groups of two to five, and put into crates. Broilers are caught by catch gangs off the floors.

Both processes have been shown to result in physical and psychological trauma and stress. After all, these animals, which are unaccustomed to any human physical contact, are suddenly violently wrenched from the environment to which they are habituated. It is well known that breaking routine is stressful for animals, and that is certainly true here. . . .

Slaughter

. . . [T]here is considerable debate over whether the electrical stunning currently used in poultry suffices to produce unconsciousness. It has been suggested that stunning voltages be raised to produce cardiac fibrillation.