A Strategic Review of International Animal Protection

Paul G. Irwin

Introduction

The level of animal protection activity varies substantially around the world. To some extent, the variation parallels the level of economic development, as countries with high per capita incomes and democratic political structures have better financed and better developed animal protection organizations. However there is not a one-to-one correlation between economic development and animal protection activity. Japan and Saudi Arabia, for example, have high per capita incomes but low or nonexistent levels of animal protection activity, while India has a relatively low per capita income but a fairly large number of animal protection groups.

The level of animal protection activity appears to be influenced not only by the wealth of a country but also by its sociopolitical background and its dominant religious traditions. Wildlife and food animal issues predominate in developing nations, whereas companion animal issues have been the driving force behind the development of animal protection in most of the developed nations.

Early Activities in International Animal Protection

Organized animal protection began in England in the early 1800s and spread from there to the rest of the world. Henry Bergh (who founded the American Society for the Prevention of Cruelty to Animals, or ASPCA, in 1865) and George Angell (who founded the Massachusetts Society for the Prevention of Cruelty to Animals, or MSPCA, in 1868) both looked to England and the Royal Society for the Prevention of Cruelty to Animals (RSPCA) as a role model for their own efforts, as did the founders of many other societies for the prevention of cruelty to animals (SPCAs) in the British Empire and elsewhere. In 1877 a group of American organizations established the International Humane Society—the first to carry the adjective “international”—although the name later changed to the American Humane Association (AHA).

Prior to the modern period of animal protection (starting after World War II), international animal protection involved mostly uncoordinated support from the larger societies and certain wealthy individuals and a variety of international meetings where animal protection advocates gathered together to exchange news and ideas. One of the earliest such meetings occurred in Paris in June 1900 although, by this time, there was already a steady exchange of information among animal protection organizations around the world. These exchanges were encouraged further by the organization of a number of international animal protection congresses, including one in Philadelphia, Pennsylvania, in 1908, followed by another in London in 1909.

In 1910 an International Humane Congress covering both child and animal protection was organized in Washington, D.C., under the auspices of AHA. The report of this meeting (American Humane Association 1910) is 228 pages long and includes a list of SPCAs outside the United...
Table 1  
Animal Protection Organizations Represented at the 1910 International Congress in Washington, D.C.

<table>
<thead>
<tr>
<th>Country</th>
<th>Country</th>
<th>Country</th>
</tr>
</thead>
<tbody>
<tr>
<td>United Kingdom*</td>
<td>200</td>
<td>Austria-Hungary</td>
</tr>
<tr>
<td>Belgium</td>
<td>20</td>
<td>Argentina</td>
</tr>
<tr>
<td>Australia</td>
<td>8</td>
<td>Crete</td>
</tr>
<tr>
<td>Burma</td>
<td>2</td>
<td>Denmark</td>
</tr>
<tr>
<td>Canada</td>
<td>40</td>
<td>France</td>
</tr>
<tr>
<td>Caribbean</td>
<td>9</td>
<td>Germany</td>
</tr>
<tr>
<td>Ceylon</td>
<td>1</td>
<td>Italy</td>
</tr>
<tr>
<td>Cyprus</td>
<td>5</td>
<td>Monaco</td>
</tr>
<tr>
<td>Egypt</td>
<td>8</td>
<td>Netherlands</td>
</tr>
<tr>
<td>India</td>
<td>23</td>
<td>Norway</td>
</tr>
<tr>
<td>New Zealand</td>
<td>3</td>
<td>Portugal</td>
</tr>
<tr>
<td>Singapore</td>
<td>3</td>
<td>Roumania</td>
</tr>
<tr>
<td>South Africa</td>
<td>12</td>
<td>Russia</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Spain</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Sweden</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Switzerland</td>
</tr>
<tr>
<td></td>
<td></td>
<td>United States</td>
</tr>
</tbody>
</table>

* RSPCA branches  
Source: American Humane Association 1910

States as an appendix. Table 1 identifies the approximate number of societies (or organizations with either a president or secretary) identified in the printed report of the meeting as being active in particular countries.

Other international congresses were organized in 1911 and 1927 (London), and five more were held in Helsingborg, Copenhagen, Philadelphia, Brussels, and Vienna between 1911 and 1947 (Anonymous ca. 1947). The Animal Defense and Anti-Vivisection Society’s International Humanitarian Bureau was established in Geneva (the home of the League of Nations) in September of 1928 (Anonymous ca. 1947). The bureau organized a deputation, supported by more than 1,400 animal protection societies throughout the world, to the president of the Conference for the Reduction and Limitation of Armaments in 1932.

The records of the 1910 Washington meeting indicate that many of the societies outside Europe, the United States, and the British Commonwealth were represented by expatriates (American Humane Association 1910). One example of a foreigner setting up an organization is the American Fondouk. This entity was established in 1920 in Morocco by American traveler Amy Bend Bishop to take care of the needs of animals. She asked the MSPCA to oversee the program, and today the Fondouk treats 15,000 animals annually.

Modern International Animal Protection

After World War II the level of organized international animal protection expanded as national movements grew and flourished. Today there are four major international entities and a number of international activities sponsored by a variety of organizations. The four major entities (listed in descending size) are the International Fund for Animal Welfare (IFAW), the World Society for the Protection of Animals (WSPA), the international program of the
RSPCA, and Humane Society International (HSI), the international affiliate of The Humane Society of the United States.

IFAW

IFAW was founded by Brian Davies. (The actual incorporation of IFAW in Massachusetts was in 1975.) Davies’s initial focus was the Canadian seal pup cull and, as a result of his campaigns, the Canadian seal issue is now well known around the world. Davies slowly built IFAW into the largest international animal protection organization, with an annual budget of more than $60 million per annum (the largest amount being raised in the United Kingdom) contributed by more than 2 million donors around the world. Its expansion in the 1990s was particularly impressive, as its budget increased from $30 million in 1994 to $62 million in 1998; the number of donors grew from 750,000 to 1.8 million over the same period. IFAW employs more than two hundred staff persons in its Massachusetts headquarters and in offices in another thirteen areas around the world (Asia/Pacific, Canada, China, East Africa, the European Union, France, Germany, India, Latin America, the Netherlands, Russia, Southern Africa, and the United Kingdom).

A few years ago, IFAW divided its programs into three broad areas—reducing commercial exploitation and trade, saving animals in distress, and preserving habitat for animals. These programs include working on trade through the Convention on International Trade in Endangered Species of Wild Fauna and Flora (known as CITES), elephant protection, seal protection, opposition to bushmeat (usually understood to refer to the meat of terrestrial wild animals consumed for food), providing emergency relief, and working to establish marine reserves.

WSPA

The World Federation for the Protection of Animals (WFPA) was founded in 1953 by Dutch animal protection interests and was headquartered for most of its existence in Geneva. It tended to draw most of its support from animal groups in Europe, although The HSUS became involved in WFPA’s governing body in the 1970s. Another organization, the International Society for the Protection of Animals (ISPA), was established in 1959 with the support of the RSPCA and the MSPCA. It had its headquarters in London but it had an office in Boston as well. ISPA became known for its disaster and emergency relief work—John C. Walsh, currently WSPA International Projects director, in particular, was involved in a number of dramatic rescue operations—while WFPA was recognized for its work on the development and eventual passage of several animal protection conventions at the Council of Europe.

The 1960s was marked by significant competition between WFPA and ISPA. During the 1970s, however, the leaders of both organizations recognized that there would be considerable benefits from a merger, and they began to work toward this end. In 1981 the two organizations formally merged to become the World Society for the Protection of Animals (WSPA), with offices in the United States, the United Kingdom, and Switzerland. In the 1980s the Swiss office was closed, but WSPA established new field offices in Costa Rica, Colombia, and Canada. Today the organization has offices in thirteen countries; 400 animal protection organizations from 91 countries as members; more than 400,000 individual supporters; and an annual budget of approximately $15 million.

HSI

HSI was established in 1991 to provide coordination for the international efforts of The HSUS. It has some similarities to the RSPCA international program in that it is able to draw on the program experts of The HSUS to provide expertise as needed. However, unlike the RSPCA, HSI has offices overseas. As of 2003 it had major programs in Costa Rica, Australia, and Europe, and new offices had been established in Asia, the United Kingdom, France, and Germany. Other affiliates of The HSUS, including EarthVoice and the Center for the Respect of Life and the Environment, also support international activities on the environment and animals.

Other Groups

The RSPCA and various groups in Europe formed Eurogroup for Animal Welfare in 1980. Eurogroup now is supported by leading animal welfare organizations in all fifteen member states of the European Union. Headquartered in Brussels, Eurogroup’s role is to present a united animal welfare voice and to lobby for new or improved European legislation to provide greater protection of animals. It is recognized as an influential and powerful lobby with many achievements to its credit.
For many decades the MSPCA has overseen animal protection programs in North Africa and Turkey. Various organizations in the United Kingdom have raised money to support animal protection activities in Japan, Greece, and North Africa—the Society for the Protection of Animals in North Africa (SPANA) is a particularly successful example—also for decades. The North Shore Animal League (Long Island, New York) and the National Canine Defense League (United Kingdom) teamed up in the mid-1990s to organize a series of capacity-building conferences in Eastern Europe focused around the idea of no- or limited-euthanasia programs. The U.S.-based People for the Ethical Treatment of Animals (PETA) recently has established offices overseas and is becoming more engaged in international activities. A consortium of animal protection groups has come together to represent animal protection interests on alternatives to animal testing at meetings of the OECD Chemicals Directorate. As of 2003 the Hong Kong SPCA was organizing a capacity-development and training conference for Asian and other groups to follow up on an earlier conference in the Philippines.

Current State of Animal Protection

International animal protection is healthy and expanding in both influence and sophistication. Table 2 provides some indication of the level of animal protection activity in different regions around the world. This table is compiled from a variety of sources. The number of animal protection organizations in each country was obtained from the International Directory of World Animal Protection; wildlife conservation groups were not included in the tally. (The directory does not include a complete tally of organizations, but the numbers probably are accurate enough for the rough analysis provided in the table.)

The country populations were obtained from the U.S. Central Intelligence Agency’s World Factbook on the Worldwide Web (www.cia.gov/cia/publications/factbook). The approximate per capita income in Purchasing Power Parity (PPP) also was obtained from the Worldwide Web. (PPP incorporates differences in cultural demand to provide a picture of comparative standards of living that is more accurate than a simple comparison of annual per capita incomes in local currencies.) The analysis could have been refined further to attempt to incorporate broad cultural factors (e.g., dominant religions) but that would have produced a level of detail and fragmentation not necessarily helpful for the level of analysis discussed here.

Briefly, there are three regions in the world (North America, Northern Europe, and Australia/New Zealand, or Group A) where support for animal welfare is very strong and where there is a robust and well-funded animal protection presence. All three regions tend to be characterized by high standards of living and Protestant religious traditions.

In four regions of the world (Southern Africa, the Caribbean Islands, Southern Europe, and Eastern Europe, or Group B) animal protection activity is reasonably healthy, although all four regions could use help to bolster their programs and the level of animal protection expertise available to them. The activity in Southern Africa and the Caribbean is almost certainly a legacy of British colonial traditions and/or proximity to the United States (producing a supply of expatriates to staff animal protection programs and some funds to support projects and organizations). Southern and Eastern Europe are upgrading their animal protection activities because of parity demands within the EU (in the case of countries in the EU) or in hopes of being able to join the EU sometime in the future. However, none of the organizations in these countries is well-funded.

Of the other regions, Central and South America (in Group C) have weak animal protection activities but exhibit signs of a growing interest and some hope for the future. These regions have reasonably high standards of living, but cultural factors (including possibly their strong Roman Catholic religious traditions) seem to work against the development of a healthy animal protection capacity. Some attitude surveys in Central America (see Drews, in this volume) show that the public appears to have the same strength of humane sentiment as that seen in the United States. However without the tradition of animal protection activity, those attitudes are not yet being translated into behaviors that support animal protection.

Group D includes most of Asia, most of Africa, and most of the former Soviet countries. In Asia animal protection is mostly weak to nonexistent. Japan has a very high standard of living, which usually is equated with concern for animals, but perhaps the religious and cultural traditions discount moral concern for animals (e.g., see Kellert 1993). Nonetheless there are some signs of an interest in developing an effective animal protection capacity in Japan, and recently a group of Japanese animal groups came together to try to develop a more robust political presence.

In India the standard of living is relatively low but the religious traditions tend to support moral concern for animals. India has a relatively large number of animal protection organizations, but they tend to be financially weak. Maneka Gandhi has provided strong leadership to help develop improved animal welfare standards, but economic barriers and the sheer size of the country make her task formidable indeed. She was removed from her position as a minister in the Indian government in 2002 and, therefore, no longer has the political power that she used quite effectively to challenge such activities as animal research oversight.

In the rest of Asia (including Indonesia, the Philippines, China, and the Koreas) animal protection is con-
## Table 2
Animal Protection Activity Around the World

<table>
<thead>
<tr>
<th>Region</th>
<th>Exemplar Countries</th>
<th>Total Population</th>
<th># of Animal Protection Orgs. (APOs)(^a)</th>
<th># APOs/m people</th>
<th>Approx. per Capita Income (000s) (PPP$)(^b)</th>
<th>Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>Europe—Western and Northern</td>
<td>United Kingdom, Germany, Scandinavia</td>
<td>211 million</td>
<td>1,865</td>
<td>8.840</td>
<td>22.5</td>
<td>A</td>
</tr>
<tr>
<td>Europe—Southern</td>
<td>Spain, France, Greece</td>
<td>178 million</td>
<td>348</td>
<td>1.960</td>
<td>18.0</td>
<td>B</td>
</tr>
<tr>
<td>Europe—Eastern</td>
<td>Poland, Hungary, Ukraine</td>
<td>194 million</td>
<td>158</td>
<td>0.820</td>
<td>4.5</td>
<td>B</td>
</tr>
<tr>
<td>Middle East</td>
<td>Turkey, Iran, Israel</td>
<td>239 million</td>
<td>46</td>
<td>0.190</td>
<td>5.4</td>
<td>C</td>
</tr>
<tr>
<td>Russia and Central Asia</td>
<td>Russia, Kazakhstan, Georgia</td>
<td>219 million</td>
<td>22</td>
<td>0.100</td>
<td>3.6</td>
<td>D</td>
</tr>
<tr>
<td>Asia—India and neighbors</td>
<td>Afghanistan, Bangladesh</td>
<td>1,367 million</td>
<td>128</td>
<td>0.094</td>
<td>1.5</td>
<td>D</td>
</tr>
<tr>
<td>Asia—Southeast</td>
<td>Thailand, Malaysia, Laos</td>
<td>229 million</td>
<td>16</td>
<td>0.070</td>
<td>3.5</td>
<td>D</td>
</tr>
<tr>
<td>Asia—Indonesia and Islands</td>
<td>New Caledonia</td>
<td>217 million</td>
<td>3</td>
<td>0.014</td>
<td>3.3</td>
<td>D</td>
</tr>
<tr>
<td>Australasia</td>
<td>Australia and New Zealand</td>
<td>23 million</td>
<td>220</td>
<td>9.690</td>
<td>19.0</td>
<td>A</td>
</tr>
<tr>
<td>Asia—Philippines and Islands</td>
<td>Philippines, Tonga, Guam</td>
<td>78 million</td>
<td>5</td>
<td>0.060</td>
<td>3.6</td>
<td>D</td>
</tr>
<tr>
<td>Asia—China and Korea</td>
<td>China, North and South Korea</td>
<td>1,358 million</td>
<td>8</td>
<td>0.006</td>
<td>3.3</td>
<td>D</td>
</tr>
<tr>
<td>Asia—Japan</td>
<td>Japan</td>
<td>127 million</td>
<td>30</td>
<td>0.240</td>
<td>23.4</td>
<td>C</td>
</tr>
</tbody>
</table>

(continued on next page)
fined to a few pockets of effective activism or to leftovers from colonial times (e.g., the Hong Kong and Singapore SPCAs). Africa north of the Zambesi River is mostly lacking in any significant animal protection activity (with a few noteworthy exceptions in East and North Africa), as is the Middle East, where only Israel has any active groups. There are signs of a stirring of animal protection interest in Russia and some of the other Soviet republics, but the movement is still very new and weak.

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<thead>
<tr>
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<th>Total Population</th>
<th># of Animal Protection Orgs. (APOs)</th>
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<th>Approx. per Capita Income (000s) (PPP$)</th>
<th>Group</th>
</tr>
</thead>
<tbody>
<tr>
<td>America—North</td>
<td>U.S.A. and Canada</td>
<td>310 million</td>
<td>6,400</td>
<td>20.675</td>
<td>27.0</td>
<td>A</td>
</tr>
<tr>
<td>America—Central</td>
<td>Mexico, Panama</td>
<td>135 million</td>
<td>77</td>
<td>0.200</td>
<td>5.5</td>
<td>C</td>
</tr>
<tr>
<td>America—Caribbean</td>
<td>Bahamas, Cuba</td>
<td>38 million</td>
<td>44</td>
<td>1.157</td>
<td>3.5</td>
<td>B</td>
</tr>
<tr>
<td>America—South</td>
<td>Chile, Brazil, Columbia</td>
<td>346 million</td>
<td>112</td>
<td>0.324</td>
<td>6.3</td>
<td>C</td>
</tr>
<tr>
<td>Africa—North</td>
<td>Morocco, Egypt, Ethiopia</td>
<td>292 million</td>
<td>7</td>
<td>0.024</td>
<td>1.0</td>
<td>D</td>
</tr>
<tr>
<td>Africa—West</td>
<td>Guinea, Nigeria, Ghana</td>
<td>186 million</td>
<td>5</td>
<td>0.027</td>
<td>1.5</td>
<td>D</td>
</tr>
<tr>
<td>Africa—Western/</td>
<td>Congo, Cameroon</td>
<td>74 million</td>
<td>0</td>
<td>0.000</td>
<td>1.2</td>
<td>D</td>
</tr>
<tr>
<td>Central</td>
<td>Uganda, Burundi, Tanzania</td>
<td>102 million</td>
<td>10</td>
<td>0.098</td>
<td>1.0</td>
<td>D</td>
</tr>
<tr>
<td>Africa—Southern</td>
<td>Angola, South Africa, Mozambique</td>
<td>126 million</td>
<td>115</td>
<td>0.913</td>
<td>3.0</td>
<td>B</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td>6,049 million</td>
<td>9,569</td>
<td>1.580</td>
<td>6.0</td>
<td></td>
</tr>
</tbody>
</table>

1Taken from World Animal Protection Directory
2PPP stands for Purchasing Power Parity and is used by the World Bank to compare countries.

### Types of International Activities

International animal protection activities can be segmented into several areas. One obvious activity is the pressuring of international organizations—e.g., the World Trade Organization (WTO), Food and Agriculture Organization (FAO) (see Trent et al. in this volume), International Whaling Commission (IWC), and CITES—to adopt more animal-friendly policies. In terms of hands-on animal protection activities, the programs can be divided into those that address dog and cat issues, those that address farm and draft animal issues, and those that address wildlife issues. Some organizations are engaged in programs to set aside land for wildlife and to promote humane, sustainable development activities.
Advocacy

All four of the major international organizations are active in advocating for animals on a wide range of international issues. The WTO is currently a particular concern, because countries with strong animal protection laws are being threatened with trade sanctions if they use those laws to restrict the import of animal products from countries with weaker or nonexistent animal protection legislation or enforcement. However animal protection has had a major presence at CITES since its establishment in 1973 and at the IWC for the past thirty years. Indeed the current restrictions on whaling are largely a result of the effectiveness of animal advocates over this period. Some of the other international treaties that intersect with animal protection concerns are:

IATTC/IDCPA: Inter-American Tropical Tuna Commission and dolphins (dolphin protection);
WSSD: sustainable development, animal agriculture, fisheries, drift-nets;
ISO: international standards involving humane farming and trapping;
FAO: trade, fisheries, whaling, farm animal husbandry, slaughter and transport;
SPAW: specially protected areas and wildlife in the Caribbean;
CMS: Bonn Convention on migratory species;
CBD: convention on biological diversity.

Several organizations (including HSI and WSPA) now have consultative status at the United Nations and are using that status to campaign for animals at the level of these international organizations.

Dogs and Cats

Although companion animals are a driving force behind the development and growth of animal protection organizations in Group A countries, they have not carried the same weight in countries in Groups B, C, and D. Most of the organizations established in developing countries were set up to address domestic dog and cat issues, however, often by expatriates from Group A countries. Currently most of the companion animal activities are focused on attempts to gain some control of community and stray dog populations. In developing countries the “pet” dog makes up a relatively small proportion (perhaps 5 percent or less) of the total dog population. Most of the dogs are either community dogs, with some tenuous connection to a household or group of households, or true strays who survive exclusively by scavenging. These populations can be very significant; for example, 85 percent of households in Micatlan, a Mexican village, have stray/community dogs who use the house as home base for their territory (Orihuela and Solano 1995).

Because community and stray dogs are an important conduit through which humans contract rabies (and a range of other diseases, such as hydatidosis), the World Health Organization has worked with WSPA to develop approaches to control populations of stray and community dogs. For the most part, developing countries have tried to deal with stray dog issues by periodically killing as many dogs as they can (often by poisoning). However canids respond to such programs by having larger litters and breeding more frequently, therefore 70 percent or more of a dog population must be killed before a significant drop in the population may be noticed. Such dog control programs rarely have the resources to take the first essential step—to conduct dog population studies.

Over the past ten years, it has been suggested that a variation of the “trap, neuter, vaccinate, and release” approach currently used to control stray cats in developed countries might be used for control of community and stray dog populations. Only a few of such dog trap, neuter, vaccinate, and release programs have included the collection of dog population data, so it is not yet possible to conclude that this approach can work. However a program in Jaipur, India, has recorded a decline in street dog populations (C. Townend, personal communication, n.d. 2003), and HSI (2001) reports that a Bahamian program reduced the number of strays on the streets, left the sterilized strays in a healthier state, and began to change the attitudes of local human populations toward the street dogs.

It is clear that dog and cat welfare projects in the developing world cannot involve simply the direct application of approaches that have been used in Europe and North America. New, appropriate technology programs need to be developed that recognize that, although the nurture of animals is a universal phenomenon of human nature, appropriate nurturing behavior does not simply appear without role models acceptable to the local community and adequate opportunity to engage in such behavior. It must also be recognized that animal nurturance, and animal protection, cannot thrive where human communities do not have adequate security or opportunities to provide food and shelter for themselves.

Farm and Draft Animals

Farm and draft animals are vital in providing families with food security (in the context of availability, not of safety) and the means to support themselves in much of the developing world. In parts of Africa, cattle and other livestock are a family’s social security system and “bank.” Thus the welfare of these animals is tied closely to the welfare of families and communities. The FAO is working with HSI on a range of humane slaughter initiatives that not only address animal welfare but also include such elements as food security and hygiene for local communities and the relevant state. Draft animals (e.g., working equines) also are important for local communities, and it is important to help support their health and welfare with appropriate initiatives.
Wildlife

For most of the developing world, wildlife represents either a competitor for resources or a resource in itself. Therefore wildlife protection issues in developing countries involve:

1. attempting to establish appropriate protected areas where wildlife can thrive;
2. attempting to enforce protections for populations of threatened and endangered species; and
3. dealing with the many associated cruelties of the trade in wildlife and bushmeat and attempting to address human-animal conflicts.

These issues frequently interest both wildlife conservation and wildlife protection groups and provide opportunities for such groups to work together to support land protection, conservation initiatives, and wildlife protection. The work of many conservation organizations already involves significant overlap with the programs put in place by the international animal protection groups. For example, HSI ran a three-year project to support wildlife rehabilitation around the world. Many zoos and conservation groups, most notably the Wildlife Conservation Society, which is based in the United States, support similar veterinary programs. Animal protection groups campaign against various aspects of wildlife trade. The U.K.-based WildAid runs active programs to educate people in source countries about the harmful impact of wildlife trade and provides training to rangers and customs officials in source countries to enable them to be more effective. WSPA has developed a very successful bear protection initiative (“Libearty”) to address the cruelties involved in harvesting bear products for the traditional medicines market and in performing-bear activities throughout Asia.

While the U.S.-based Nature Conservancy is the giant of land preservation activities, other organizations also do their part. For example, Earth-Voice has been working with U.K.-based Fauna and Flora International to set aside land in Africa and the Americas that secures important habitats for wild species. HSI has been engaged in a project to explore the potential of developing an immunocontraceptive vaccine to manage elephant populations in Southern Africa without resorting to culling.

Conclusions

International animal protection has been growing in its sophistication, reach, and impact for the past quarter century. The Internet provides a valuable new tool to support the activities of the major international groups as well as assist local individuals to be more effective in their advocacy. In ten years animal protection will have a foothold in those countries where it is now mostly a curiosity and will be much stronger around the globe. The message of kindness to animals is developing sophisticated new clothing. As the habit of helping and protecting animals spreads around the world, not only will the animals will be better off, but humans, and the communities, societies, and nations they people, also will grow less violent and more civil. The dream of a safer and more nurturing world gradually will emerge into reality.

Literature Cited


there are a variety of welfare concerns relating to companion dogs and cats in the United States but one of the more pervasive is the “pet homelessness,” “pet over-population,” or “pet surplus” problem. These widely used terms may discomfit some in the animal shelter community. Some of the terms can be misleading in that their use implies that the problem—however it is couched—could be solved simply by reducing the number of available dogs and cats. In addition the term surplus specifically implies a property function—that companion dogs and cats are inherently expendable whenever they fall outside of a stable human-animal relationship. A detailed examination of the population issue will reveal that it is not merely a case of the indiscriminate breeding of dogs and cats, but also a complex problem with both sociological and biological elements that has no simple solution.

Modern American society recognizes the crucial role of data and information in evaluating and effectively addressing societal problems. Americans are bombarded with information on the economy, public health, social and psychological attitude trends, and other matters that are considered important. For example, no self-respecting politician would think of launching a political campaign or initiative without some sense of what the public might be worrying about. Addressing pet population issues should be no different. Data are needed in order to define the nature and scope of the dog and cat demographic challenge. Data can help people to understand the impact of “pet homelessness” on companion animals; to identify some of the characteristics of both successful and failed human-animal relationships; and to develop sound, effective, and long-lasting solutions that will strengthen humans’ relationships with companion animals and enhance companion animals’ welfare.

Given the need for reliable data, what is known now about trends concerning the companion animal population and the shelters that help address the “homelessness” problem?

National Dog and Cat Demographic Data

Base-line Population Data

The United States has never had a national system in place to collect, store and analyze data relating to pet care-giving. Although detailed demographic data on the human population are gathered by the U.S. Census Bureau, no similar database exists for companion dogs and cats. Our society routinely refers to household pets as “members of the family” but the census process does not accept that data on pets should be collected. Several attempts by animal industries and interest groups to gain approval for the inclusion of questions on pets on the U.S. Census have thus far been unsuccessful. One of us (A.N.R.) attempted to do this in the mid-1980s but, despite the support of numerous
academics, animal industries, and animal advocates, did not succeed. Nonetheless relatively accurate data are available on the number of household dogs and cats in the United States now and historically. These data are collected primarily by veterinary organizations (e.g., the American Veterinary Medical Association, or AVMA, and the American Animal Hospital Association) and pet industry organizations (e.g., the American Pet Products Manufacturers Association, or APPMA, and the Pet Food Institute)—groups whose work depends on having reliable and current data on dog and cat populations. The APPMA has conducted national surveys on pet populations every other year since 1988. The AVMA has published data from national surveys in 1983, 1988, 1992, 1997, and 2002.

Two basic approaches have been used to gather data on dog and cat populations. The first uses surveys of sample populations drawn from an already established panel of U.S. households. Both the APPMA and the AVMA use this method. The panels are recruited on the understanding that the participants will complete periodic mail surveys. (Response rates typically are high—around 70 percent.) A sample of households is drawn from the panels so as to make them representative of the U.S. population. To be included in such a panel, a person must have resided at the current address for a year or more. Therefore these panels cannot represent the more transient elements of the United States.

The second approach uses telephones and random digit dial technology to sample the population. This method under-samples households at the lower end of the economic pyramid because they are less likely to have telephones.

Thus both approaches have limitations and appear to produce differences in estimates of the national dog and cat population. As demonstrated by Patronek and Rowan (1995), the household panel approach produces estimates that are approximately twenty percent higher than those obtained from telephone surveys. In Massachusetts telephone surveys conducted by both the Massachusetts Society for the Prevention of Cruelty to Animals (MSPCA) (C. Luke, personal communication with A.N.R., n.d. 1991) and Manning and Rowan (1992) in the same time frame produced estimates of state pet populations that were substantially lower than those obtained from telephone surveys. In Indiana Patronek found similar disparities between data he collected using telephone sampling and the AVMA estimates of Indiana pet populations.

The latest data published by the AVMA indicate that in 2001 Americans shared their households with 61.6 million dogs and 68.9 million cats. An examination of Table 1 illustrates that, on a national level, the owned dog population remained relatively stable between 1987 and 1996 (although the rate of care-giving fluctuated quite widely), while the owned cat population increased from 54.6 to 59.1 million (AVMA 1997, 2002).

While the AVMA population estimates may be on the high side, the fact that the same technique has been used for all four AVMA surveys should mean that the trends are accurate. Thus between 1996 and 2001 the total population numbers increased substantially for both dogs (8.7 million increase) and cats (9.8 million increase) (AVMA 2002). The substantial jump in population estimate in 2001 is the result of a jump in the percentage of households with either dogs or cats. It is not clear why the AVMA surveys show a downward trend in 1996. The APPMA surveys show no such dip (APPMA 2002).

Another factor to keep in mind is that the number of households in the United States increases steadily. Thus the dog population remained stable between 1987 and 1996 even though the rate of care-giving (household

Table 1
Pet Population Estimates

<table>
<thead>
<tr>
<th></th>
<th>Total U.S. Household Dog and Cat Populations (millions)</th>
<th>Percent of Households with Dogs and Cats (mean number/household)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Dogs</td>
<td>52.4</td>
<td>52.5</td>
</tr>
<tr>
<td>Cats</td>
<td>54.6</td>
<td>57.0</td>
</tr>
</tbody>
</table>

Source: AVMA Survey 1997, 2002
percentage) dropped from 38.2 to 31.6 percent. See Table 2 for changes recorded by the APPMA in rates of dog and cat households in the United States. The fluctuations from one year to the next may be due mostly to random statistical variation in the survey.

The estimated 130.5 million dogs and cats in American households drawn from the AVMA 2001 survey reside in approximately 53 percent of the approximately 100 million households (58.3 percent of households contain a pet of any sort) (AVMA 2002). Thus more than half the households in this country include an animal companion. The average household with pets has the characteristics indicated in Table 3. In general dog sterilization rates are lower than those of cats because of the reluctance of dog care-givers (used in place of “owner”) to have their male dogs neutered. The same reluctance is not observed among care-givers who have male cats. The fact that fewer cat care-givers report taking their animals to the veterinarian in the previous year is consistent with the observation that cats tend to require lower levels of involvement and cat care-givers generally are somewhat less attached to their cats than dog care-givers are to their dogs.

Attachment levels were measured by a research group in Kentucky using the Lexington Attachment to Pets Scale, or LAPS (Johnson, Garriott, and Stallones 1992). The researchers used a twenty-three-item scale (e.g., My pet understands me, I enjoy showing other people pictures of my pet) to obtain relative scores of attachment. The scores indicating level of attachment were based on the interviewer’s rating. The proportions of the population identified as being very or somewhat attached are what one might intuitively expect (Table 4). This scale has not been put into practical use, but there is no apparent reason it could not be explored as part of a questionnaire used by shelters to assess the suitability of a prospective animal adopter. The candidates could be administered the LAPS assessment regarding their previous or a current favorite pet and then scored to see how attached they were (or are).

It should be noted that, in studying the Miller-Rada “commitment to pets” scale, Staats et al. (1996) demonstrated that “attachment” is different from “commitment.” It is possible that the Miller-Rada instrument for measuring commitment might prove to be a better approach to assessing the suitability of potential adopters. However the characteristics of the Miller-Rada “commitment instrument” have not been established for a national probability sample. At present any suggestions regarding potential connections between attachment, commitment, and animal relinquishment are pure speculation.

### Regional and Life Stage Differences in Pet Care-giving

The national pet population surveys also indicate that there are regional differences in pet care-giving. This is an important factor when addressing welfare concerns relating to pet care-giving. The 2001 AVMA survey revealed significant differences in the percentage of households providing for pets around the country. Table 5a shows the highest rates of pet care-giving in the Mountain Pacific and West South Central regions of the United States, and the lowest rates in the Middle Atlantic, South Atlantic, and New England regions (AVMA 2002).

In fact, as seen in Table 5b, state to state differences in dog and cat care-giving rates can vary by a factor of two from highest to lowest (AVMA 2002).

### Table 2

**Percent of Households with Animals**

<table>
<thead>
<tr>
<th>Year</th>
<th>Dogs</th>
<th>Cats</th>
</tr>
</thead>
<tbody>
<tr>
<td>1988</td>
<td>37</td>
<td>30</td>
</tr>
<tr>
<td>1990</td>
<td>38</td>
<td>33</td>
</tr>
<tr>
<td>1992</td>
<td>38</td>
<td>32</td>
</tr>
<tr>
<td>1994</td>
<td>36</td>
<td>30</td>
</tr>
<tr>
<td>1996</td>
<td>37</td>
<td>32</td>
</tr>
<tr>
<td>1998</td>
<td>39</td>
<td>32</td>
</tr>
<tr>
<td>2000</td>
<td>39</td>
<td>34</td>
</tr>
</tbody>
</table>

Source: APPMA Survey 2002

### Table 3

**Characteristics of Animal Care-giving Households and Their Pets in the United States**

<table>
<thead>
<tr>
<th></th>
<th>Dogs</th>
<th>Cats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Time household has included pets</td>
<td>18 yrs.</td>
<td>18 yrs.</td>
</tr>
<tr>
<td>Average age of “main” pet</td>
<td>6.6 yrs</td>
<td>6.4 yrs</td>
</tr>
<tr>
<td>Animal(s) kept indoors during the day</td>
<td>43%</td>
<td>54%</td>
</tr>
<tr>
<td>Households did not visit vet in past year</td>
<td>9%</td>
<td>27%</td>
</tr>
<tr>
<td>Pets sterilized</td>
<td>70%</td>
<td>82%</td>
</tr>
<tr>
<td>Average annual veterinary expenses</td>
<td>$196</td>
<td>$104</td>
</tr>
</tbody>
</table>

Source: APPMA 2002
Thus use of national survey data to assess care-giving of regional or state pet populations can lead to significant over-estimates or under-estimates. Local studies of pet care-giving also indicate significant urban to suburban differences. Unpublished data from Massachusetts revealed differences in pet care-giving rates between Boston, an urban center, and Wellesley, an affluent suburb within commuting distance of Boston. The rate of dog care-giving was 25.4 percent in Boston compared with 37 percent in Wellesley; the rate of cat care-giving was 37.8 percent in Boston compared with 26 percent in Wellesley (Rowan and Williams 1987). Pet care-giving rates generally are significantly lower in dense urban complexes than they are in suburban communities. National surveys of pet populations usually do not focus on differences among urban, suburban, and rural communities; thus they overlook significant causes of error in estimates of pet populations.

These differences in pet care-giving around the country mean that a “one size fits all” approach will not be sufficient to resolve the pet population crisis, and that it is crucial for regions and communities to initiate and maintain their own data collection efforts in order to have reliable and accurate information with which to serve the pet care-givers in their jurisdictions. Communities can use the available national data as a guide to direct their own data collection efforts. They should be cautious, however, about relying on rote formulae derived from national data to estimate their own dog and cat populations. Using the APPMA (2002) survey data, it has been suggested that one can calculate the number of dogs in a community. The technique is to multiply the number of occupied households (derived from the census data) by 0.39 (the percentage of households nationally containing dogs) and then multiplying by 1.7 (the average number of dogs in each household). However, this will overestimate dog populations in a Northeastern urban community and underestimate dog populations in a

Table 4

Levels of Attachment to Companion Animals in the Household

<table>
<thead>
<tr>
<th>Percent of Care-givers</th>
<th>Average LAPS Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Very attached</td>
<td>50.0</td>
</tr>
<tr>
<td>Somewhat attached</td>
<td>35.7</td>
</tr>
<tr>
<td>Not very attached</td>
<td>12.4</td>
</tr>
<tr>
<td>Not at all attached</td>
<td>1.9</td>
</tr>
</tbody>
</table>

Table 5a

Pet Care-Giving by Region

<table>
<thead>
<tr>
<th>Region</th>
<th>Pet Care-giving Households (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Mountain</td>
<td>61.9</td>
</tr>
<tr>
<td>Pacific</td>
<td>60.6</td>
</tr>
<tr>
<td>West South Central</td>
<td>60.5</td>
</tr>
<tr>
<td>East South Central</td>
<td>56.7</td>
</tr>
<tr>
<td>East North Central</td>
<td>55.2</td>
</tr>
<tr>
<td>New England</td>
<td>54.1</td>
</tr>
<tr>
<td>South Atlantic</td>
<td>53.8</td>
</tr>
<tr>
<td>Middle Atlantic</td>
<td>50.2</td>
</tr>
</tbody>
</table>

Source: Johnson, Garrity, and Stallones 1992

Table 4a

Levels of Attachment to Companion Animals in the Household

<table>
<thead>
<tr>
<th>Category</th>
<th>Average LAPS Score</th>
</tr>
</thead>
<tbody>
<tr>
<td>Household size = 1</td>
<td>52.8</td>
</tr>
<tr>
<td>Household size = 5+</td>
<td>43.5</td>
</tr>
<tr>
<td>Never married/ sep./ div.</td>
<td>52.0</td>
</tr>
<tr>
<td>Married</td>
<td>45.7</td>
</tr>
<tr>
<td>Female</td>
<td>50.0</td>
</tr>
<tr>
<td>Male</td>
<td>45.1</td>
</tr>
<tr>
<td>White</td>
<td>47.6</td>
</tr>
<tr>
<td>African American</td>
<td>53.8</td>
</tr>
<tr>
<td>Household income under $30k</td>
<td>51.5</td>
</tr>
<tr>
<td>Household income over $50k</td>
<td>43.2</td>
</tr>
<tr>
<td>Household education: less than high school</td>
<td>53.0</td>
</tr>
<tr>
<td>Household education: college graduate</td>
<td>44.2</td>
</tr>
<tr>
<td>Favorite pet is dog</td>
<td>49.2</td>
</tr>
<tr>
<td>Favorite pet is cat</td>
<td>45.1</td>
</tr>
</tbody>
</table>

Source: Johnson, Garrity, and Stallones 1992
rural part of the Southeast or South-west. Nonetheless such formulae are useful first approximations of the number of dogs and cats in a particular community.

Animal care-giving rates also vary dramatically according to the “life stage” of the household (see Table 6). It is generally known that families with children between the ages of five and seventeen have the highest rates of pet care-giving (almost four out of five have pets). However, as indicated by Table 4, these families are less attached to their pets (just as there is less time to devote to each family member the more there are). As can be seen from Table 6, singles households are less likely to have pets (about 20 percent lower rate than that of families), and pet care-giving declines with age. No known studies assess relinquishment rates by life stage of the care-giver.

### Table 5b
**Pet Care-giving by Species in Selected States** (percent of households)

<table>
<thead>
<tr>
<th>State</th>
<th>Dog Care-giving</th>
<th>State</th>
<th>Cat Care-giving</th>
</tr>
</thead>
<tbody>
<tr>
<td>MA</td>
<td>21.4</td>
<td>LA</td>
<td>26.1</td>
</tr>
<tr>
<td>NY</td>
<td>26.1</td>
<td>MI</td>
<td>26.1</td>
</tr>
<tr>
<td>NJ</td>
<td>26.2</td>
<td>MD</td>
<td>26.5</td>
</tr>
<tr>
<td>CT</td>
<td>28.4</td>
<td>IL</td>
<td>28.0</td>
</tr>
<tr>
<td>MT</td>
<td>46.6</td>
<td>MT</td>
<td>44.6</td>
</tr>
<tr>
<td>ID</td>
<td>48.1</td>
<td>WY</td>
<td>44.6</td>
</tr>
<tr>
<td>OK</td>
<td>48.5</td>
<td>OR</td>
<td>45.2</td>
</tr>
<tr>
<td>WV</td>
<td>50.3</td>
<td>ME</td>
<td>46.3</td>
</tr>
</tbody>
</table>

Source: AVMA Survey 2002

### Table 6
**Varying Rates of Pet Care-Giving by Life Stage**

<table>
<thead>
<tr>
<th>Life Stage Category</th>
<th>Percent with Pets</th>
</tr>
</thead>
<tbody>
<tr>
<td>Young singles</td>
<td>50.2</td>
</tr>
<tr>
<td>Young couples</td>
<td>72.5</td>
</tr>
<tr>
<td>Young parents</td>
<td>64.1</td>
</tr>
<tr>
<td>Middle singles</td>
<td>44.4</td>
</tr>
<tr>
<td>Middle parents</td>
<td>74.8</td>
</tr>
<tr>
<td>Older parents</td>
<td>69.0</td>
</tr>
<tr>
<td>Working older couple</td>
<td>58.9</td>
</tr>
<tr>
<td>Retired older couple</td>
<td>39.8</td>
</tr>
<tr>
<td>Older singles</td>
<td>29.7</td>
</tr>
</tbody>
</table>

Source: AVMA 2002

rural part of the Southeast or South-west. Nonetheless such formulae are useful first approximations of the number of dogs and cats in a particular community.

Animal care-giving rates also vary dramatically according to the “life stage” of the household (see Table 6). It is generally known that families with children between the ages of five and seventeen have the highest rates of pet care-giving (almost four out of five have pets). However, as indicated by Table 4, these families are less attached to their pets (just as there is less time to devote to each family member the more there are). As can be seen from Table 6, singles households are less likely to have pets (about 20 percent lower rate than that of families), and pet care-giving declines with age. No known studies assess relinquishment rates by life stage of the care-giver.

### Acquisition of Pets

Pet care-givers acquire dogs and cats from a variety of sources. These sources are believed to play an integral role in pet population problems. According to the APPMA National Pet Owners Survey, pets in 1998 were acquired as indicated in Table 7 (APPMA 2000, 2002). Use of those sources marked with an asterisk indicates that some forethought and planning usually went into the acquisition of the pet. The total percentage of dogs acquired from such sources is 74 (or about 48 percent of the identified sources); the total percentage of cats acquired from these sources is 38 (or about 29 percent of the identified sources). This indicates that cats are more likely to be acquired on a whim.

Other surveys have shown similar differences between the sources of dogs and cats. Nassar, Mosier, and Williams (1984) found that in Las Vegas cats (24.5 percent) were much more likely to be acquired from the stray population than dogs (8 percent), but only 9 percent of cats were purchased compared with 26 percent of dogs. In Massachusetts 71 percent of pet care-givers had planned to acquire their dogs, going to such sources as breeders (33 percent), shelters (16 percent), and pet stores (7 percent) (MSPCA 1996).

### Feral/Stray Dogs and Cats

No discussion of the nation’s dog and cat populations is complete without an estimate of the feral stray population. In the past two decades, it appears that the number of stray and feral dogs has fallen to a very low level (with the possible exception of some communities in dense urban, very rural, and Native American areas). The same is not true of cats. This population is not easy to define because household cats may join and leave the perceived “stray” population. The Humane Society of the United States (HSUS) 1999 “Statement on Free-Roaming Cats” notes, Cats elude simple categorizations. Free-roaming cats are often referred to as either stray or feral, but these designations do not reflect the many types of outdoor cats. Free-roaming cats can be owned cats who are allowed to roam; owned cats who have become lost; previously owned cats who have been abandoned and no longer have a home; quasi-owned cats who roam freely and are fed by several residents in an area but “owned” by none of them; and so-called working cats who serve as “mousers.” Almost every community also has feral,
unsocialized cats who may be one or more generations removed from a home environment and who may subsist in a colony of similar cats living on the fringes of human existence. Because cats exhibit varying degrees of sociability, even an animal care and control professional may not immediately be able to tell the difference between a feral cat and a frightened indoor-only cat who has escaped and become lost.

In a national survey of pet caregivers commissioned by The HSUS, respondents were asked if they fed stray cats and, if so, how many they fed (Anonymous 1993). It was possible to extrapolate that pet care-givers fed about 32.7 million cats (assuming no cats were fed by more than one household). However The HSUS questioned these “cat-feeder” results and exhorted caution in using the data to establish a national estimate of stray and feral cats (G. Handy, personal communication, n.d. 2003). Nonetheless one of the authors (A.N.R) has used the survey to estimate the American feral/stray cat population at roughly 30-40 million (or about 60-70 percent less than the number of cats being cared for in households). Some support for this estimate comes from two regional surveys in California that have produced similar percentages for the stray/feral cat population (Anonymous 1995, 1996).

Animal Shelter Demographics: A Historical Perspective

In the United States a network of animal shelters exists to address and manage pet population control. One of the primary functions of U.S. animal shelters is to attempt to find new homes for dogs and cats who, for a variety of reasons, have made the transition from owned animal to homeless animal. Because the number of animals entering shelters currently exceeds available home placements, many pet population management policies allow euthanasia of animals who cannot be placed in an acceptable home. Animals who are killed include healthy, adoptable animals, as well as animals deemed unadoptable due to illness, age, aberrant behavior, or some other characteristic. Recent attention has focused on collecting data on “animal shelter demographics,” including data that describes the animals populating shelters and that tracks trends in the movement of animals into and out of shelters.

The 1960s and 1970s: Experiential Policy

The early 1970s is considered by many to be a defining period for changes in the American approach to pet population issues. In 1974 a survey of U.S. mayors ranked animal-related issues as the number one complaint received by their offices (Bancroft 1974). During the 1970s attention to and awareness of what were perceived as growing pet population concerns led to development of a new approach that was to shape the course of pet population policy well into the 1990s. Called LES (Legislation, Education, and Sterilization), it was a three-pronged approach designed to reduce the numbers of animals that shelters were handling and subsequently to reduce the need for euthanasia as a population control method. LES was launched by Phyllis Wright of The HSUS with the catchy tag phrase “less born, less killed, and less cruelty.” LES’s major projects included establishment of sterilization programs, mandating adequate licensing fees, and educating the community via humane education programs, the media, and veterinarians. The HSUS also called for and helped organize two national conferences of interested parties (e.g., the

<table>
<thead>
<tr>
<th>Source (percent)</th>
<th>Dogs</th>
<th>Cats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Friend/relative</td>
<td>34</td>
<td>40</td>
</tr>
<tr>
<td>Breeder*</td>
<td>29</td>
<td>4</td>
</tr>
<tr>
<td>Newspaper/private party*</td>
<td>20</td>
<td>11</td>
</tr>
<tr>
<td>Stray</td>
<td>18</td>
<td>32</td>
</tr>
<tr>
<td>Animal shelter*</td>
<td>17</td>
<td>18</td>
</tr>
<tr>
<td>Puppy/kitten from own pet</td>
<td>16</td>
<td>12</td>
</tr>
<tr>
<td>Pet store*</td>
<td>8</td>
<td>5</td>
</tr>
<tr>
<td>Gift</td>
<td>7</td>
<td>2</td>
</tr>
<tr>
<td>“Other”</td>
<td>5</td>
<td>5</td>
</tr>
<tr>
<td>Veterinarian</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>155</strong></td>
<td><strong>133</strong></td>
</tr>
</tbody>
</table>

Respondents could name more than one source. Therefore the percentage totals amount to more than 100.

* Some forethought and planning usually went into the acquisition of the pet.

Source: APPMA 2002
AVMA, the American Kennel Club, and other animal-related groups) in 1974 and 1976 to address the pet population crisis (Rowan and Williams 1987).

The rationale for the LES approach was based largely on anecdotal reports from animal shelters around the country. Few shelters were keeping any data on the numbers of animals handled, on those returned-to-care-givers (RTC), or on those adopted and euthanized. No regional or national organizations focused on data collection for homeless pets. From the limited data available, it was estimated that in 1973 approximately 20 percent of the dog and cat population in households was being euthanized in shelters (Rowan and Williams 1987). Since then some data has been published on the experiences of the ASPCA in New York City from 1896 to 1994, when it gave up animal control for New York City (Zawistowski et al. 1998). Figure 1 shows the trends in animal intake over this 98-year period. What is readily apparent is that, even in 1973 when the alarm was raised about too many dogs and cats and not enough homes, the situation was much improved over the 1920s and 1930s. Up until 1950 the ASPCA was euthanizing 95 percent or more of the animals brought into the shelter. It should also be noted that the shelter intake numbers were falling at a time when the population of New York City was growing (from 5.63 million in 1928 to 8 million in 1954, where it has remained).

It is not clear why alarms were raised about unwanted and stray dogs and cats in the early 1970s (cf. Djerassi, Israel, and Jochle 1973), although it may be that Djerassi, known as the inventor of the birth control pill, was looking for possible new markets for his invention. However, his article led to others in which the focus was not on cats (the ASPCA data indicates that cats formed the bulk of the animal intake) but on the stray dog population. The stray dogs were portrayed as presenting a public health and safety risk as well as welfare issues for the dogs themselves (Marx and Furculow 1969; Beck 1973; Feldman 1974). Schneider and Vaida (1975), in their surveys of dog and cat populations in California, argued that cats should not be overlooked.

Animal protection groups began pushing the concept of companion animal surgical sterilization as a pet population control method. Initially the veterinary community was resistant and suggested that the development of contraceptive drugs might be a more viable solution (Anonymous 1978; Rowan and Williams 1987). Despite the lack of support from organized veterinary medicine, the Department of Animal Regulation in the City of Los Angeles set up a municipal spay-neuter clinic and a differential licensing system—in which it cost more to license intact dogs than neutered ones—in 1970. This clinic evoked a storm of protest from the veterinary community, but within ten years the proportion of licensed dogs in Los Angeles who were sterilized rose from 10 percent to 51 percent. The municipal clinic was doing far too few sterilizations to account for such a large change. There had to have been a change of behavior among the private veterinary practices. Over this same period, the number of animals taken in by the city’s Department of Animal Regulation fell from about 140,000 a year, to about 85,000 a year (Rowan and Williams 1987).

Reliable and consistent data are crucial for an evaluation of the success of any proposed pet population program. Early data collection focused solely on determining how many animals were being killed as part of pet population control, without considering other aspects of shelter demographics, such as number of animals handled, the number returned to the caregiver, and the number adopted. In 1973 The HSUS commissioned a national survey of animal shelters. Although the response rate was low, the survey provided a baseline estimate of 13.5 million dogs and cats euthanized annually. A follow-up survey in 1982 suggested that the total number of euthanasias had declined to an estimated range of 7.6 million to 10 million, despite an overall increase in the owned pet population from an estimated 60 million in 1973 to an estimated 90 million in 1983 (Rowan and Williams 1987). Thus there had been not only a fall in absolute shelter euthanasia numbers but also an even greater fall in the relative numbers.
Table 8 provides additional evidence that shelter animal intakes declined substantially in the 1970s. These data come from a large countywide program run by a humane society under a county contract in California (Sawesky 2001). Basically the data show that animal intakes plunged in the 1970s, stayed more or less the same from 1980 to 1990, and then began falling again.

While the evidence cited above demonstrates that shelter intakes and euthanasias moved in the right direction (i.e., down) from World War II to the present, the prevailing view in the shelter community through the 1980s and even into part of the 1990s was that of wrestling with an intractable problem. Part of the problem was again a lack of solid data and the generation of inaccurate estimates of shelter intakes and euthanasias. In the 1980s some surveys estimated that as many as 20 million animals were being euthanized in shelters annually (Rowan and Williams 1987). These surveys continued to be quoted well into the 1990s. The result was that both humane society workers and the public continued to assess progress on pet population issues based on these old statistics, giving a “doom and gloom” outlook to the situation, when in fact a retrospective examination of euthanasia trends indicates that euthanasias appeared to be decreasing over time.

Reliable Estimates from Regional Data

Djerassi, Israel, and Jochle (1973) noted that the lack of comprehensive, high quality data was the biggest roadblock to efficient and effective program development and commented that this deficiency was a universal weakness, common even among those countries that had long established a sophisticated human census. The lack of a standardized list of animal shelters contributes significantly to the challenges that continue to be faced by researchers doing shelter surveys (Rowan 1992a). There have been two significant problems in developing reliable estimates of shelter animal numbers. First, there was and still is no reliable public list of shelters in the United States. Second, many shelters either do not keep appropriate program data or are very reluctant to release them for fear that the data will be used to criticize their organizations. An additional challenge is posed by the fact that the term shelter encompasses a wide range of entities, from an animal control facility that serves several towns and handles thousands of animals per year to the private citizen who rescues a few strays a year.

With the increasing utilization of computers and the growing awareness of the value of shelter demographic data, more individual shelters had begun collecting and storing data by the 1990s. A recognition that euthanasia data alone was of limited value led to the collection of statistics on the number of animals entering shelters, as well as the disposition of the animals (e.g., adoption, RTC, euthanasia, death). The availability of some regional data enabled an analysis of regional shelter trends and estimates of the national picture. This analysis revealed that just as there were regional differences in pet care-giving trends, there were regional differences in shelter animal populations. Rowan examined regional data from New Jersey, Washington State, and Massachusetts and, by extrapolation, determined that, of approximately 110 million owned dogs and cats in the United States, an estimated 5 million–6 million, or 5 percent of the owned population, were euthanized. This was a much more conservative estimate than the range of 11.75 million–19.54 million found in AHA’s 1990 survey (Rowan 1992a). Others then produced numbers similar to Rowan’s extrapolation, based on a broader range of state data (e.g., Arkow 1994).

More recently The HSUS has been developing a list of shelters in which, to be identified as a shelter, the organization must possess a building that houses animals and has its own postal address. Beginning with a list of about 6,000 organizations, The HSUS removed duplicates and non-sheltered organizations, leaving approximately 3,500 entities. An unpublished 1999 HSUS survey of this group produced a 20 percent response rate and the following data. The duplicates and “address unknown” returns indicated that the accurate total of shelters was about 2,800–2,900. Of the respondents that identified their status, 38.2 percent were municipal entities, 43.6 percent were private entities with some form of municipal contract, and 18.2 percent were private entities with no municipal contract. In terms of size, 49.2 percent had annual budgets of $250,001 and $500,000, 16.6 percent had budgets between $500,001 and $1,000,000, and 15.4 percent had budgets exceeding $1 million. These data agree closely with those reported by Wenzel and Dowidchuk (1999) in their smaller sample of shelters. Finally the shelters in The HSUS survey reported a mean of fourteen full-time (median: six) and five part-time (median: three) employees.

As Rowan (1992a) noted, the larger shelters handle a disproportionately large percentage of the animals. Thus in New Jersey, where the average shelter is small and town-based, 30 percent of the shelters handled 82 percent of the shelter animals. In Washington State, where the shelters are typically larger and county-based, 30 percent of the shelters handled 63 percent of the animals. Therefore if data were collected from the largest 50–60 percent of shelters (or approximately 1,500 entities), it is reasonably certain that these shelters would account for at least 90 percent of the animals handled annually.
<table>
<thead>
<tr>
<th>Year</th>
<th>Dogs</th>
<th>Cats</th>
<th>Total</th>
<th>RTC/ADOP</th>
<th>Euth.</th>
</tr>
</thead>
<tbody>
<tr>
<td>1970</td>
<td>23,500</td>
<td>22,600</td>
<td>49,100</td>
<td>9,130</td>
<td>37,025</td>
</tr>
<tr>
<td>1971</td>
<td>26,425</td>
<td>20,785</td>
<td>46,210</td>
<td>7,095</td>
<td>39,935</td>
</tr>
<tr>
<td>1972</td>
<td>18,265</td>
<td>14,212</td>
<td>32,477</td>
<td>7,650</td>
<td>24,917</td>
</tr>
<tr>
<td>1973</td>
<td>20,034</td>
<td>14,920</td>
<td>34,954</td>
<td>9,278</td>
<td>25,676</td>
</tr>
<tr>
<td>1974</td>
<td>17,131</td>
<td>10,890</td>
<td>28,021</td>
<td>9,989</td>
<td>18,032</td>
</tr>
<tr>
<td>1975</td>
<td>15,019</td>
<td>10,052</td>
<td>25,071</td>
<td>9,552</td>
<td>15,519</td>
</tr>
<tr>
<td>1976</td>
<td>12,530</td>
<td>8,528</td>
<td>21,058</td>
<td>7,250</td>
<td>13,808</td>
</tr>
<tr>
<td>1977</td>
<td>11,199</td>
<td>8,001</td>
<td>19,200</td>
<td>6,770</td>
<td>12,430</td>
</tr>
<tr>
<td>1978</td>
<td>9,949</td>
<td>6,899</td>
<td>16,148</td>
<td>5,073</td>
<td>11,775</td>
</tr>
<tr>
<td>1979</td>
<td>8,969</td>
<td>6,055</td>
<td>15,054</td>
<td>5,870</td>
<td>9,184</td>
</tr>
<tr>
<td>1980</td>
<td>7,603</td>
<td>6,628</td>
<td>14,231</td>
<td>5,580</td>
<td>8,651</td>
</tr>
<tr>
<td>1981</td>
<td>8,235</td>
<td>6,888</td>
<td>15,123</td>
<td>5,634</td>
<td>9,489</td>
</tr>
<tr>
<td>1982</td>
<td>8,301</td>
<td>7,833</td>
<td>16,134</td>
<td>5,789</td>
<td>10,345</td>
</tr>
<tr>
<td>1983</td>
<td>8,199</td>
<td>6,729</td>
<td>14,928</td>
<td>4,922</td>
<td>10,006</td>
</tr>
<tr>
<td>1984</td>
<td>8,360</td>
<td>6,639</td>
<td>14,999</td>
<td>5,041</td>
<td>9,958</td>
</tr>
<tr>
<td>1985</td>
<td>8,477</td>
<td>7,014</td>
<td>15,491</td>
<td>5,522</td>
<td>9,969</td>
</tr>
<tr>
<td>1986</td>
<td>8,141</td>
<td>8,010</td>
<td>16,151</td>
<td>6,099</td>
<td>10,052</td>
</tr>
<tr>
<td>1987</td>
<td>7,165</td>
<td>8,710</td>
<td>15,875</td>
<td>5,962</td>
<td>9,913</td>
</tr>
<tr>
<td>1988</td>
<td>7,171</td>
<td>8,916</td>
<td>16,087</td>
<td>6,199</td>
<td>9,888</td>
</tr>
<tr>
<td>1989</td>
<td>6,843</td>
<td>9,021</td>
<td>15,864</td>
<td>6,274</td>
<td>9,590</td>
</tr>
<tr>
<td>1990</td>
<td>5,866</td>
<td>9,211</td>
<td>15,077</td>
<td>6,088</td>
<td>9,009</td>
</tr>
<tr>
<td>1991</td>
<td>5,224</td>
<td>9,442</td>
<td>14,666</td>
<td>6,042</td>
<td>8,624</td>
</tr>
<tr>
<td>1992</td>
<td>5,226</td>
<td>9,702</td>
<td>14,928</td>
<td>6,176</td>
<td>8,752</td>
</tr>
<tr>
<td>1993</td>
<td>5,116</td>
<td>8,257</td>
<td>13,373</td>
<td>5,902</td>
<td>7,471</td>
</tr>
<tr>
<td>1994</td>
<td>4,723</td>
<td>7,312</td>
<td>12,035</td>
<td>5,797</td>
<td>6,238</td>
</tr>
<tr>
<td>1995</td>
<td>4,894</td>
<td>6,963</td>
<td>11,857</td>
<td>5,544</td>
<td>6,313</td>
</tr>
<tr>
<td>1996</td>
<td>4,925</td>
<td>6,499</td>
<td>11,424</td>
<td>5,624</td>
<td>5,800</td>
</tr>
<tr>
<td>1997</td>
<td>4,934</td>
<td>5,866</td>
<td>10,800</td>
<td>5,470</td>
<td>5,330</td>
</tr>
</tbody>
</table>

Source: Savesky 2001
Tables 9a, 9b, and 9c provide data from New Jersey on dog and cat entries into the state shelters, and on outcomes. (These data were compiled by Dr. Gary Patronek of Tufts University from materials provided in 1998 by Colin Campbell of New Jersey.) New Jersey had established a program in 1984 to support low-cost sterilization of pets in needy households, but the program also required all shelters to register with the state health department and provide baseline data on animal acquisition and disposition. As the tables indicate, euthanasia rates declined from 1984 to 1997, although rates for cats remained higher than those for dogs (primarily because the RTC rate is so much lower for cats than for dogs). There are approximately 7.8 million people living in about 3 million households in New Jersey. Pet surveys indicate that these households probably include more than one million dogs and cats. Thus New Jersey shelters impound less than 2.5 percent of the dog population per annum (euthanizing less than 0.75 percent) and 3 percent of the cat population (euthanizing less than 1.5 percent). A comparison of these rates with the national shelter euthanasia rates of 20 percent or more in the early 1970s makes apparent how much progress has been made in dealing with pet homelessness!

### Population Dynamics

The next advance during the 1970s in utilizing data to define and address the pet population crisis involved treating the transfer of owned animals to animal shelters not as an isolated event but as one piece of a dynamic process that is composed of many elements. The concept of a pet population model began as an estimate of animal populations from the readily available human population data (Schneider and Vaida 1975, Nassar and Mosier 1980), and subsequently was developed into a population model that could be utilized to estimate pet (or dog) populations in any community (Nassar, Mosier, and Williams 1984; Patronek and Rowan 1995). The models essentially track the source and number of animals entering the owned pet population in a defined area; what percentage of them enter the shelter system; and the population’s final disposition. The population dynamics model is an important development in our under-

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### Table 9a

<table>
<thead>
<tr>
<th>Year</th>
<th>Impounded</th>
<th>Returned to Care-giver</th>
<th>Adopted</th>
<th>Euth.</th>
<th>Dead on Arrival</th>
<th>Euth. Rate (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1984</td>
<td>95,813</td>
<td>14,372</td>
<td>19,360</td>
<td>47,703</td>
<td>7,000</td>
<td>53.7</td>
</tr>
<tr>
<td>1985</td>
<td>80,071</td>
<td>13,067</td>
<td>17,605</td>
<td>40,757</td>
<td>7,455</td>
<td>56.1</td>
</tr>
<tr>
<td>1986</td>
<td>75,784</td>
<td>12,604</td>
<td>20,365</td>
<td>37,115</td>
<td>7,669</td>
<td>54.5</td>
</tr>
<tr>
<td>1987</td>
<td>81,876</td>
<td>13,717</td>
<td>22,597</td>
<td>40,400</td>
<td>7,051</td>
<td>54.0</td>
</tr>
<tr>
<td>1988</td>
<td>72,887</td>
<td>12,560</td>
<td>21,917</td>
<td>34,175</td>
<td>6,110</td>
<td>51.2</td>
</tr>
<tr>
<td>1989</td>
<td>73,974</td>
<td>12,422</td>
<td>21,350</td>
<td>33,408</td>
<td>5,552</td>
<td>48.8</td>
</tr>
<tr>
<td>1990</td>
<td>66,870</td>
<td>12,426</td>
<td>21,273</td>
<td>28,937</td>
<td>5,126</td>
<td>46.9</td>
</tr>
<tr>
<td>1991</td>
<td>60,901</td>
<td>11,914</td>
<td>21,210</td>
<td>22,379</td>
<td>4,940</td>
<td>40.0</td>
</tr>
<tr>
<td>1992</td>
<td>56,760</td>
<td>13,290</td>
<td>20,030</td>
<td>20,131</td>
<td>3,641</td>
<td>37.9</td>
</tr>
<tr>
<td>1993</td>
<td>55,480</td>
<td>12,765</td>
<td>18,924</td>
<td>18,502</td>
<td>3,739</td>
<td>35.8</td>
</tr>
<tr>
<td>1994</td>
<td>52,092</td>
<td>13,375</td>
<td>19,372</td>
<td>15,188</td>
<td>3,426</td>
<td>31.2</td>
</tr>
<tr>
<td>1995</td>
<td>48,954</td>
<td>12,565</td>
<td>17,951</td>
<td>14,880</td>
<td>3,021</td>
<td>32.4</td>
</tr>
<tr>
<td>1996</td>
<td>52,791</td>
<td>13,178</td>
<td>17,489</td>
<td>17,429</td>
<td>2,993</td>
<td>35.0</td>
</tr>
<tr>
<td>1997</td>
<td>50,779</td>
<td>13,991</td>
<td>19,328</td>
<td>15,294</td>
<td>2,902</td>
<td>31.9</td>
</tr>
</tbody>
</table>

Note: The euthanasia rate is calculated by dividing the total euthanized by the total impounded less those who are dead on arrival.
Source: Data collated and provided by G. Patronek, from annual reports from C. Campbell (New Jersey Health Department) in 1998.
standing of the pet population. Challenges to implementing the model include continued lack of standardized data in most communities and a lack of data on stray populations, especially in regard to cats.

The National Council on Pet Population Study and Policy

In 1993 the National Council on Pet Population Study and Policy (NCPPSP) was established as a coalition of interest groups with the goal of gathering and analyzing reliable data in order to characterize the number, origin, and disposition of owned dogs and cats in the United States and to make recommendations on program and policy development to address the pet population crisis (Zawistowski et al. 1998). NCPPSP’s main mission was to be a driving force in centralizing and standardizing data collection for animal shelters.

The group initiated its shelter survey in 1994. It sent surveys to the 4,700 known sheltering agencies and requested a variety of data, including the number of dogs and cats handled, returned to their caregiver, adopted, and euthanized. The survey was repeated three more times. Unfortunately it experienced a relatively low response rate (approximately 23 percent, or 1,100 shelters and other organizations) and a limited overlap of respondents (Zawistowski et al. 1998). (Reportedly only 396 shelters responded in all four surveys, M. Armstrong, personal communication, n.d. 2003.) The authors of this chapter believe that municipal shelters were over-represented: in two of the surveys, these shelters accounted for 53 and 46 percent of the sample respectively.

Overall the surveys reported that 63 percent of animals being handled by the participating shelters were euthanized (71 percent of cats and 56 percent of dogs). Moreover dogs were returned to their caregivers at significantly higher rates than cats (16 percent versus 2 percent), while adoption rates were approximately 25 percent for both species (Zawistowski et al. 1998). These findings were similar to those of other studies.

After the 1996 shelter survey, the NCPPSP focused its efforts on implementing a regional shelter relinquishment study, a research project designed to explore pet and household characteristics of cases where
animals are relinquished. The survey, which involved four regions of the United States and twelve shelters, resulted in a database of thousands of animals (Salman et al. 1998). It is the most ambitious and extensive survey of the pet population crisis to date. This research effort reflected an increasing shift away from focusing on the characteristics of animals in shelters; the characteristics of their previous households; and the circumstances leading to their transition to the shelter.

Several studies have characterized the shelter animal population in terms of age, breed, and sterilization status. In a study conducted at a Pennsylvania shelter, 72.5 percent of dogs were one year of age or older and 59 percent of incoming dogs were mixed breed (Patronek, Glickman, and Moyer 1995). Results from the NCPPSP’s regional shelter study showed that most dogs and cats surrendered to shelters were between five months and three years of age. Sixty-eight percent of dogs and 93 percent of cats were mixed breed (Salman et al. 1998). In the same study, animals relinquished by their care-givers were more likely to be intact, younger, and mixed breed (New et al. 2000). Another study of 186 shelters found that only 13 percent of animals entering shelters were puppies and kittens, apparently confirming the anecdotes that puppies are become rarer in the shelter population (Wenstrup and Dowidchuk 1999). However few shelters from the Southeast, the Southwest, and the Midwest, where puppies are still common, participated in this survey.

Numerous studies have defined shelter populations in terms of animals surrendered by their care-givers versus animals arriving at the shelters as strays and have identified variations in these populations by region as well as species. One survey found that approximately 54 percent of the shelter population was stray and approximately 42 percent was surrendered, with no significant differences between cats and dogs (Wenstrup and Dowidchuk 1999). In contrast unpublished data from Massachusetts indicated that 73 percent of dogs were surrendered and 27 percent were stray, while 42 percent of cats were surrendered and 58 percent were stray (Clancy, Birkholz, and Luke 1996). Such differences from one region to another reflect the changing ecology of stray animals. Many communities, particularly in the Northeast, report a minimal or nonexistent stray dog population, while the majority of the country is grappling with the remaining stray and feral cat population (Patronek 1998).

Clancy, Birkholz, and Luke found that, of 143,456 dogs and cats admitted to Massachusetts shelters in 1995, 36 percent were adopted, 34 percent were euthanized, and 20 percent were returned to their care-givers (1996). In addition a recent review of shelter demographic data reported collected from every “major” (major not defined) shelter in the country calculated a national euthanasia estimate of 4.4 million, the lowest estimate ever recorded. According to this review, which included an examination of trends over time, the euthanasia or disposal of animals in shelters likely peaked at approximately 23.4 million in 1970; by 1992 the number had dropped to an estimated 5.7 million. (The ASPCA data provided in Figure 1 indicate that shelter euthanasia may have peaked fifty years earlier. However there were far fewer shelters in the 1930–1950s, so each shelter may have had to handle a larger number of stray and homeless animals.) Estimates for 1999 and 2000 were 4.5 million and 4.6 million, respectively. The 2001 evaluation concluded that the lowest rate of shelter euthanasia was in the Northeast and the highest in the South, with significant decreases in euthanasia rates occurring in the Midwest and the Sunbelt (Clifton 2002).

Two studies have confirmed that a sizable proportion of pet care-givers bring their pets to animal shelters to be euthanized. Data from a Pennsylvania shelter indicate that 17.2 percent of care-giver-relinquished animals were brought to the shelter for immediate euthanasia (Patronek, Glickman, and Moyer 1995). The regional shelter survey (Kass et al. 2001) found similar results: of 4,000 animals surrendered, 24 percent of dogs and 17 percent of cats were surrendered for immediate euthanasia. The primary reasons care-givers gave for requesting this service included old age, serious illness, and serious behavior problems. The median length of care-giving of these animals was ten years (Kass et al. 2001). This illustrates a function of the animal
shelter that has been overlooked—that of potentially providing an euthanasia outlet and support for grieving pet care-givers. It also demonstrates that not all animals handled by shelters are potential candidates for adoption and adds another dimension to our understanding of the pet population situation.

Risk Factors for Relinquishment

Several studies have increased our understanding of some of the characteristics of care-giver relinquishment and have identified potential risk factors for relinquishment of pets to animal shelters. It is no surprise that there are differences for dogs and cats. The first good study of this issue—a case-control study in a community in Indiana—compared two groups of pet care-givers: those who had surrendered a pet to an animal shelter and those representing a random sample of pet care-givers in the community who had not surrendered an animal. Tables 10a and 10b outline the major risk factors for cats and dogs that were identified in this study (Patronek et al. 1996a, 1996b).

The study authors used a measurement called an Odds Ratio (OR) to assess what factors might make a dog or cat more likely to be relinquished by a care-giver. In developing an OR, a researcher identifies a factor (such as not visiting a veterinarian in the previous year) and then compares the group of animals who have that characteristic with a group who have a related but different characteristic (e.g., visiting a veterinarian once a year). Usually an odds ratio of greater than 2 is considered a significant difference. As Table 10a shows, the data collected by Patronek et al. (1996a) refute at least one cherished belief (that dogs received as gifts or from pet stores are more likely to be given up) and confirm a number of others (that age is an important factor in relinquishment of dogs). The shelter community needs to be concerned that dogs acquired from their facilities are more likely to be relinquished and should emphasize the importance of pet care-givers establishing strong relationships with a veterinarian (their “other family doctor”).

The OR data for cats is less interesting. Having a veterinarian is important but not so major a factor as it is for dogs, and shelter cats are not more likely to be relinquished than cats obtained from other sources. The relinquishment age data are very similar for dogs and cats.

These data are consistent with both previous and later studies that found that surrendered dogs were obtained most frequently from family or friends at no charge (Arkow and Dow 1984; Salman et al. 1998).

The NCPPSP’s Regional Shelter Survey identified the top ten reasons for relinquishment based on 3,772 interviews of care-givers who surrendered a pet to the participating shelters. While these studies found many different factors, the most common reasons included changes in the owner’s health, moving to a new place, or the owner’s inability to care for the pet.

### Table 10a
Risk factors for Dog Relinquishment: Indiana (odds ratios)

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>OR</th>
<th>Characteristic</th>
<th>OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchased or adopted</td>
<td>1</td>
<td>Two or more visits per year</td>
<td>1</td>
</tr>
<tr>
<td>Received as gift</td>
<td>0.6</td>
<td>One visit per year</td>
<td>2.6</td>
</tr>
<tr>
<td>Free from previous care-giver</td>
<td>3.0</td>
<td>Less than one visit per year</td>
<td>6.2</td>
</tr>
<tr>
<td>Source: private (cost &gt; $100)</td>
<td>1</td>
<td>Relinquishment age &gt; 5 years</td>
<td>1</td>
</tr>
<tr>
<td>Source: private (cost: $31–$100)</td>
<td>3.6</td>
<td>Relinquishment age 3–5 years</td>
<td>4.1</td>
</tr>
<tr>
<td>Source: private (cost &lt; $31)</td>
<td>5.0</td>
<td>Relinquishment age 0.5–3 years</td>
<td>9.7</td>
</tr>
<tr>
<td>Source: unknown</td>
<td>1.0</td>
<td>Relinquishment age &lt; 0.5 years</td>
<td>18.3</td>
</tr>
<tr>
<td>Source: pet store</td>
<td>0.75</td>
<td>Acquisition age &lt; 0.5 years</td>
<td>1</td>
</tr>
<tr>
<td>Source: born in home</td>
<td>4.0</td>
<td>Acquisition age 0.5–1 year</td>
<td>1.5</td>
</tr>
<tr>
<td>Source: stray</td>
<td>3</td>
<td>Acquisition age: 1–2 years</td>
<td>2.8</td>
</tr>
<tr>
<td>Source: shelter</td>
<td>6.1</td>
<td>Acquisition age &gt; 4 years</td>
<td>2.1</td>
</tr>
</tbody>
</table>

Source: Patronek et al. 1996a
similarities between dogs and cats, there are a few differences (Table 11). The most common reasons for relinquishment include animal-centered issues, such as behavior and pet illness, as well as care-giver-centered issues, such as landlord issues and personal problems (Salman et al. 1998).

In the regional shelter survey, moving was the primary reason for surrender of dogs and the number three reason for surrender of cats. Most care-givers in this category were in the 25–39 age range and had lived with their pets for less than two years, perhaps suggesting that attachment or bonding factors may play a role in these surrenders. Additionally 40.8 percent of care-givers in this category noted that they were unable to find suitable new housing that would accommodate their pets, suggesting that working with landlords and housing authorities may be a helpful long-term strategy for care-givers in this group. Some relinquishers acknowledged that other factors may have played a role in their decision to surrender their pets when moving, such as behavior issues (New et al. 1999).

The study also grouped the 71 distinct reasons for relinquishment into three classes: health/personal issues (relating to the care-giver), behavioral (relating to the pet), and housing. Health/personal issues represented the leading class of surrender for cats and the third most significant class for dogs (after behavioral and housing, respectively). The top three reasons for surrender in the health/personal issues category for cats were a family member’s allergy to cats, care-giver personal problems, and a new baby in the house. An examination of the same category for dogs revealed that lack of time, care-giver personal problems, and allergies were the most common (Scarlett et al. 1999).

The regional shelter survey revealed that many care-givers surveyed gave several different reasons for surrender, indicating that deciding to surrender a pet is a complex, multifaceted process. Indeed an ethnographic study of care-givers who had relinquished their pets found that a combination of challenges in the pet care-giver relationship combined with lifestyle pressures ultimately led to the relinquishment of the pet. In most cases the care-giver had accepted responsibility for the animal because otherwise he or she would have been taken to the shelter or abandoned. In other words the people started off as reluctant care-givers. These care-givers then tolerated the situation with the new animal for a varying period of time (up to a year) and put off relinquishment of the pet because such an action was perceived as a negative one that was likely to result in euthanasia. One other important finding of this study was that most of the relinquishers had other animals that were not being surrendered! This speaks to the importance of developing early intervention strategies that identify and support “at-risk” pet relationships (DiGiacomo, Arluke, and Patronek 1998).

### Table 10b

<table>
<thead>
<tr>
<th>Characteristic</th>
<th>OR</th>
<th>Characteristic</th>
<th>OR</th>
</tr>
</thead>
<tbody>
<tr>
<td>Purchased or adopted</td>
<td>1</td>
<td>Two or more veterinary visits per year</td>
<td>1</td>
</tr>
<tr>
<td>Received as gift</td>
<td>0.7</td>
<td>One veterinary visit per year</td>
<td>0.6</td>
</tr>
<tr>
<td>Free from previous care-giver</td>
<td>2.0</td>
<td>Less than one veterinary visit per year</td>
<td>0.9</td>
</tr>
<tr>
<td></td>
<td></td>
<td>No veterinary visits</td>
<td>3.1</td>
</tr>
<tr>
<td>Source: private breeder or care-giver</td>
<td>1</td>
<td>Relinquishment age &gt; 5 yrs</td>
<td>1</td>
</tr>
<tr>
<td>Source: pet store</td>
<td>1.2</td>
<td>Relinquishment age 3–5 years</td>
<td>4.3</td>
</tr>
<tr>
<td>Source: born in home</td>
<td>0.9</td>
<td>Relinquishment age 0.5–3 years</td>
<td>7.3</td>
</tr>
<tr>
<td>Source: stray</td>
<td>0.6</td>
<td>Relinquishment age &lt; 0.5 years</td>
<td>14.2</td>
</tr>
<tr>
<td>Source: shelter</td>
<td>0.7</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Source: Patronek et al. 1996b

Shelters and Data Collection and Analysis

Clearly there was a call for more attention to pet population and animal shelter demographics in the 1990s, but it is unclear what impact this has had in terms of changing policies and procedures of animal shelters. The focus of animal shelters...
has always been, and continues to be, direct animal care, and accomplishments relating to saving animals’ lives and promoting adoption continue to be the emphasis of direct mail campaigns and other fundraising efforts. Most shelters are short-staffed and operate under stressful conditions and with limited budgets. Under such circumstances it is understandable that they may have difficulty recognizing the value of numbers and statistics, especially when immediate problems are clamoring (literally) for attention.

A relatively small proportion of the animal sheltering community attends organized educational events regularly. Few subscribe to the academic journals in which much of this data is published. However Animal People regularly reports on shelter animal handling (Clifton 2002), Animal Sheltering Magazine now includes more data in its pages, and the NCPPSP website (which includes copies of NCPPSP studies) enjoys a healthy traffic. Therefore it is likely that the latest data is reaching a greater, but still small, proportion of the animal sheltering community. A decreasing number of facilities lack basic computer technology that would facilitate the collection of data. Recent attempts at increasing organization awareness of the importance of data collection have focused on identifying what data shelters need to collect. Future efforts need to provide guidance regarding data analysis (Wenstrup and Dowidchuk 1999). Shelters that do perform analysis should be encouraged to publish their data, so that the information is available to other shelters and can serve as a model (Patronek and Zawistowski 2002).

To make it easier for shelters to develop data management protocols, several software packages for animal shelters have come on the market, including Chameleon and PetWhere. Some packages are offered free of charge to shelters. Generally such software allows for the collection of basic admission and disposition data and also allows the databases to be adapted to meet a shelter’s specific needs. (The ASPCA has taken over responsibility for PetWhere and will continue to distribute it free of charge.)

In addition a trend toward collaboration in the sheltering community began to develop in the 1980s. This trend has increased awareness of the relevance of data collection and the issue of facilitating data sharing. Collaboration is occurring among shelters within a community area (e.g., the Washington, D.C., Denver, and San Francisco regions), and between shelters and other animal protection organizations, educational institutions, corporations, and the business sector. An increasing number of foundations and grant programs are funding companion animal welfare projects. Many of these foundations are requiring relevant, reliable, and consistent data in order to evaluate grant applicants and assess the success of funded projects (personal communication, N. DiGiacomo, n.d. 2002). Maddie’s Fund, a well-endowed foundation, was founded in 1999 specifically to fund collaborative projects that seek to “guarantee loving homes for healthy shelter dogs and cats across the country,” and to “save the sick and injured pets in animal shelters” (Maddie’s Fund 2002). Lastly donors are increasingly asking for statistical data, in addition to information regarding an organization’s mission and programs, in order to make donation decisions.

While sterilization programs have remained a priority for many shelter organizations, the late 1990s saw a shift in organizational approach and program development. Due in part to the new data on care-giver relinquishment and behavior issues (and probably in part to the declining number of animals entering shelters, which potentially frees up resources for new initiatives), more shelters have devoted time and money to developing behavior programs. These programs range from largely informal approaches, in which potential adopters are educated about behavior issues and receive some training on site, to ambitious, structured programs targeted to current pet care-givers as well as the shelter dog population. Structured programs include behavior help lines, formal classes, and the

### Table 11
Top Ten Reasons Nationally for Pet Relinquishment

<table>
<thead>
<tr>
<th>Dogs</th>
<th>Cats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moving</td>
<td>Too many in house</td>
</tr>
<tr>
<td>Landlord issues</td>
<td>Allergies</td>
</tr>
<tr>
<td>Cost of pet maintenance</td>
<td>Moving</td>
</tr>
<tr>
<td>No time for pet</td>
<td>Cost of pet maintenance</td>
</tr>
<tr>
<td>Inadequate facilities</td>
<td>Landlord issues</td>
</tr>
<tr>
<td>Too many pets at home</td>
<td>No homes for littermates</td>
</tr>
<tr>
<td>Pet illness</td>
<td>House soiling</td>
</tr>
<tr>
<td>Personal problems</td>
<td>Personal problems</td>
</tr>
<tr>
<td>Biting</td>
<td>Inadequate facilities</td>
</tr>
<tr>
<td>No homes for littermates</td>
<td>Doesn’t get along with other pets</td>
</tr>
</tbody>
</table>

Source: Kass et al. 2001
Future Directions

New data on pet populations are beginning to move U.S. pet population policies in new directions. Nonetheless, some significant deficits continue to slow progress. These include the failure to standardize and broaden data collection on such basic questions as how many animal shelters there are in the United States and how many animals are euthanized each year.

Brestrup (1997) and Fennell (1999) have challenged some of the prevailing views about pet population policies. Fennell, for example, approaches the issue from the perspective of a free market and suggests that discounting the consumer aspects of pet care-giving may be shortsighted. She observes that new perspective may be gained by examining the application of the laws of supply and demand, and the economic and cultural forces that govern the "production" and destruction of owned dogs and cats. Fennell argues a market model would shift the focus from placing blame on prodigal pet care-givers to a focus on the characteristics and roots of consumer choice regarding pets. Moreover, research into what pet care-givers want may ultimately give animal shelters the tools they need to shift consumer demand in their direction. Fennell notes that the market for puppies and kittens, as represented by the pet store and breeding industries, is relatively orderly, well developed, easily accessible, and well understood by the public, despite the significant companion animal welfare concerns sometimes associated with these businesses. In contrast, she argues that, from the public's perspective, the business of "re-homing" animals has been poorly organized, often inaccessible, and not well understood.

Many shelters are beginning to acknowledge the importance of marketing techniques by redesigning their facilities—both the physical plant and their policies and procedures—to make their organizations more "user-friendly" and appealing to the public. There is growing recognition that shelter animals must be presented in the best possible light in order to attract a greater pool of potential adopters. A recent study that examined predictors of adoption versus euthanasia outcomes reinforces this view: age, sex, coat color, and reason for surrender were important predictors for adoption. Dogs with brindle or black coats were least likely to be adopted, while cats with white, color point, or gray coats were more likely to be adopted than their brown or black counterparts (Lepper, Kass, and Hart 2002). One policy application of these data would be the development of creative means to bring positive attention to animals such as the brown and black cats who otherwise may be passed over.

New Research Directions

A largely overlooked area of investigation in pet population and shelter demographics is post-adoption follow-up. This investigation would be the logical next phase in long-term resolution of the pet population crisis. Little published data exists on failed adoption rates, including animals who are returned to the shelter as well as those who end up in other homes or shelters; on the duration of the adoptive relationship; on the short-term and long-term challenges for the adopter; and on the evaluation of effective support services. In addition, there is very little information on the effectiveness of adoption prescreening systems. Do some adopter prescreen produce better outcomes (fewer failed adoptions) than others? As shelters continue to debate the practicality, usefulness, and ethics of various adoption protocols, it would appear that only solid data will serve to provide solid answers (Patronek and Zawistowski 2002).

Adoptions now take place in a variety of venues. "Virtual shelters," in which potential adopters can learn about available animals, are commonplace, and Petfinder.com is one of the 2,000 most-visited websites in the world. A recent study evaluated adoption success at three locations: a traditional animal shelter setting, an offsite adoption site at a pet store (PETSMART), and a special event "adoptathon." Satisfaction and retention were found to be associated with the pet's personality, behavior, and compatibility with the new household. The level of satisfaction with the adoption experience was not related to adoption setting. The survey identified some significant and troubling potential challenges to adoption follow-up: a full 58 percent of adopters could not be reached two weeks after adoption, and 6 percent of adopters declined to provide any information (Neidhart and Boyd 2002). The low success of the follow-up may have been related to the fact that the adoption centers were not traditional, well-established shelters. Anecdotal reports claim that well-established shelters (e.g., those in Marin County, California) have a much better rate of reaching and gaining the cooperation of adopters in post-adoption surveys.

A deeper understanding is needed concerning the decisions leading to adoption and euthanasia in the shelter, and the potential effect these decisions have on both shelter operations and shelter employees. As euthanasia rates continue to fall, a paradoxical result may be that the stressful effect of euthanasia on the employee and the organization (cf. Arluke and Sanders 1996, Arluke, in this volume) increases. It might seem
likely that, as the number of euthanasias in a shelter falls (see Tables 9a, 9b, and 9c), the related stress might also decline. However as euthanasia becomes less routine, it is also possible that the opposite might happen. Arluke (this volume) provides hints that this might be the case. The HSUS as of 2003 was supporting a euthanasia study through Bowling Green University and providing "Compassion Fatigue" workshops that included the use of a survey instrument to measure both burnout and compassion fatigue. Initial results indicated that both compassion fatigue and burnout rates are very high among shelter employees (R. Roop, personal communication, n.d. 2002). As debate about euthanasia in shelters, and about the meaning of the terms adoptable and non-adoptable, continues, Americans desperately need some actual data to determine how best to proceed.

It also is necessary to go one step further in exploring regional and species differences. While regional differences have been identified and acknowledged, these data have not been utilized to discover the general criteria or patterns underlying the differences (Wenstrup and Dowidchuk 2001). Such information would enable researchers to get at the root causes of the pet population crisis. The questions to ask are: Why do these differences exist? What do they mean? What societal, cultural, and educational forces drive pet care-giver choices? In order to discover the answers to these questions, humane societies will need to broaden their point of reference. Past research has demonstrated consistently that animal shelters are not the most common source of pet dogs and cats— and are not the only care-giver option for pet relinquishment (Patronek and Zawistowski 2002). Prospective, long-term studies of representative pet care-giving populations, as well as a more visible role for animal shelters in the community, will enable shelters to become more common choices of potential care-givers and to provide increasingly professional advice and support for pet care-givers in the community.

Acknowledgements
Research for this paper was supported by the Bide-A-Wee Home Association and funded by the Edith Goode Trust.

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Humane Education
Past, Present, and Future

Bernard Unti and Bill DeRosa

Introduction

From the earliest years of organized animal protection in North America, humane education—the attempt to inculcate the kindness-to-animals ethic through formal or informal instruction of children—has been cast as a fruitful response to the challenge of reducing the abuse and neglect of animals. Yet, almost 140 years after the movement’s formation, humane education remains largely the province of local societies for the prevention of cruelty and their educational divisions—if they have such divisions. Efforts to institutionalize the teaching of humane treatment of animals within the larger framework of the American educational establishment have had only limited success. Moreover, knowledge, understanding, and empirical measures of the impact of humane education remain limited. In many respects humane education is best seen as an arena of untapped potential rather than one of unfulfilled promise.

The Origins of the Kindness-to-Animals Ethic

Appreciation for the value of cultivating kindness to animals in children flowed directly from John Locke’s observations on the subject. Although others had made the point previously, in 1693 Locke offered the most prominent early statement of the need to correct children’s cruelty. “This tendency should be watched in them, and, if they incline to any such cruelty, they should be taught the contrary usage,” Locke wrote. “For the custom of tormenting and killing other animals will, by degrees, harden their hearts even toward men; and they who delight in the suffering and destruction of inferior creatures, will not be apt to be very compassionate or benign to those of their own kind” (Locke 1989).

Over time Locke’s insight raised interest in the beneficial moral effect of childhood instruction favoring the kindly treatment of animals. Growing comprehension of the importance of childhood experience and its impact on youthful character sustained a robust transatlantic publishing industry devoted to the production of literature for children. In North America the first juvenile works infused with the humane didactic began to appear in the late 1790s and early 1800s. The earliest were reprints or excerpts of English titles, but the genre quickly gained important American enthusiasts, including Lydia Maria Child and Harriet Beecher Stowe (Pickering 1981; Unti 2002).

One explanation for the spread of the kindness-to-animals ethic lies in its consonance with the republican gender ideology of the post-revolutionary United States. Early American society assumed a set of paternalistic relationships both within and outside the family, emphasizing the importance of a virtuous citizenry devoted to republican principles of governance. This made education of the boy especially critical, since as a man he would assume authority over family, chattel, property, and social institutions. Responsibility for educating the child for his leadership role rested with women, who were assumed to be the repositories of gentle virtue, compassionate feeling, and devotion—buffers against the heartless struggle of the masculine public sphere. Humane education provided one means of insulating boys against the tyrannical tendencies that might undermine civic life were they to go unchecked. Animals were nicely suited for instruction that impressed upon the child their helplessness and dependence upon him and his considerable power over them (Kerber 1980; Grier 1999; Unti 2002).

The presence of the kindness-to-animals ethic in antebellum childhood experience had still broader implications for the process of class formation in North America. From the 1820s onward, sympathy with domestic animals, gradually encoded in education lessons for children, became an important means of inculcating such standards of bourgeois gentility as self-discipline, Christian sentiment, empathy, and moral sensitivity. Moreover, as a household companion, a domestic animal could serve as a convenient real life medium for the practice and expression of compassionate feelings. Merciful
regard for animals became one hallmark of a developing middle-class culture rooted in Protestant evangelical piety (Grier 1999).

In addition to their sociocultural utility for instilling and enacting the principles of kindness and compassion, the presence of animals in children's literature fulfilled other didactic functions in nineteenth-century domestic ideology. Narratives of animal life offered idealized conceptions of middle-class family relationships and served as morality tales for human domestic relations. By their example the animal heroes of these narratives served to reinforce cherished norms of conduct and behavior (Grier 1999).

Over time such functions helped to consolidate the place of animals in the emotional framework of middle-class domestic life. By the 1850s the kindness-to-animals ethic was a staple of juvenile literature as well as a fixture of many middle-class homes. A generation before the advent of organized animal protection in America, the humane didactic was an established instrument of childhood socialization (Grier 1999; Unti 2002).

The Era of Organized Animal Protection

After the anti-cruelty societies formed in the late 1860s, humane education became a vital objective of a burgeoning social movement specifically devoted to the welfare of animals. In the earliest stages of anti-cruelty work, humane education referred broadly to the instruction of both adults and children. As the limits of law enforcement-centered approaches became clear, animal protectionists embraced early instruction in kindliness as a means of reducing adult crimes and prosecutions. Accordingly they shifted their emphasis to the education of children as a long-term response to the spread of cruelty. Although many advocates adopted this approach, George T. Angell of the Massachusetts Society for the Prevention of Cruelty to Animals (MSPCA) stood at its forefront. Under Angell’s leadership, the MSPCA and its sister organization, the American Humane Education Society (AHES), provided both the inspiration and the resources for humane education, which became central to the coalescence of a national animal protection movement during the last quarter of the nineteenth century (Angell n.d.).

Like the kindness-to-animals ethic itself, enthusiasm for humane education of children within organized systems of education predated the anti-cruelty societies, coinciding with the emergence of the common school movement. The massive influx of immigrants in the 1830s and 1840s led some educators to envision the school as a central instrument of assimilation, guiding immigrant children away from the “backward” cultures of their parents. Horace Mann (1796–1859), universal schooling’s best-known proponent, based his educational philosophy on unlimited faith in the perfectibility of human beings and their institutions. His conviction that the public school could be the answer to all of the Republic’s problems had roots in the deepest of American traditions, including Jeffersonian republicanism, Christian moralism, and Emersonian idealism. As Mann conceived the common school, it would be a guarantor of social order that reduced the destructive potential of class, political, or sectarian difference. This was not an unproblematic or unchallenged view; of course, and popular education was a subject of intense debate (Cremin 1969; Button and Provenzo 1983).

By 1860 Mann’s ideals had reached fruition, with public schools operating in a majority of the states. Although their philosophies varied, supporters of the common schools hoped to improve children’s character by inculcating morality and citizenship and to facilitate social mobility by promoting talent and hard effort. Through education they would push young citizens toward what one reformer called the “civilized life” of order, self-discipline, civic loyalty, and respect for private property. Between 1860 and 1920, the common school movement, expanding its reach to include kindergarten, elementary, and secondary levels, became the dominant tradition in American education. During the same period, compulsory attendance requirements—rare before the Civil War—became universal, with Mississippi the one exception (Butts and Cremin 1953; Cremin 1969).

Mann recognized the value of humane instruction, noting that the good man grows in virtue, and the bad man grows in sin…. From the youthful benevolence that rejoices to see an animal happy, one grows up into a world-wide benefactor, into the healer of diseases, the restorer of sight to the blind, the giver of a tongue to the dumb, the founder of hospitals…. Another grows from cruelty to animals, to being a kidnapper, and enslaver, and seller of men, women, and children. (Mann 1861)

Over time, humane values were incorporated into formal systems of education, including those inspired by the object-teaching method associated with the State Normal School at Oswego, New York, and its president, Edward A. Sheldon (1823–1897) (Sheldon 1862).

Angell, influenced by Mann, stressed humane education’s utility for ensuring public order, suppressing anarchy and radicalism, smoothing relations between the classes, and reducing crime. Humane education would be the solution to social unrest and revolutionary politics, he believed, and a valuable means for socializing the young, especially the offspring of the lower classes. Angell also appreciated the significance of the public school system as a forum for socialization in an increasingly secular society. He told the annual meeting of the American Humane Association (AHA) in 1885 that “the public school teachers have in the
first fortnight of each school year, about four times as many children, and have them more hours, than the Sunday school teachers do during the whole year.” Humane education provided a means of spreading the word that could be adapted easily by other advocates, especially women, in whatever region or situation they might be active. It did not require substantial funds, and anyone able and willing to work with children in the schools or elsewhere could participate (Unti 2002).

Angell’s enthusiasm for humane education helped to make it one of the most important elements of animal protection work in the Gilded Age and the Progressive Era. The MSPCA directed tens of thousands of dollars toward the production and distribution of humane education literature, making it the preeminent source of such materials in the nation. It also invested time, effort, and funds toward the formation of Bands of Mercy. The English temperance movement’s Bands of Hope, which rallied children against alcohol consumption and related evils, provided the model. Band of Mercy members pledged to “be kind to all harmless living creatures and try to protect them from cruel usage.” Angell and Thomas Timmins, a minister who had assisted with the development of Bands of Mercy in his native England, introduced the concept to the United States in 1882. Timmins worked to form bands, while Angell strove to raise money and awareness (Timmins 1883). In 1889 this initiative coalesced as AHES.

From the 1870s onward, Angell had been on the lookout for suitable literature to guide the young toward the values of kindness. He found his ideal vehicle in Black Beauty, the novel dictated by a dying British invalid, Anna Sewell, and first published in 1878. In 1890 Angell circumvented copyright laws and brought out the first American edition under the auspices of AHES. In just two years, more than one million copies were in circulation. Black Beauty cast a long shadow over the field, and Angell, wishing to inspire a canine analogue, advertised a contest for the purpose. The winning entry was Beautiful Joe, by Margaret Marshall Saunders of Nova Scotia. Later, a spate of autobiographical works—written by a host of maltreated animals—appeared, and the animal autobiography became a staple of humane literature. The other books in the AHES series anchored by Black Beauty—Our Goldmine at Hollyhurst (1893), The Strike at Shane’s (1893), Four Months in New Hampshire (1894), and For Pity’s Sake (1897)—were mainstays of the field well into the twentieth century. The books, along with cash awards, medallions, badges, and rewards of merit, were distributed in schools in recognition of good behavior, recitations, essays, acts of kindness, and other attainments (Sewell 1890; Anonymous 1893; Bray 1893; Saunders 1893; Barrows 1894; Carter 1897; Unti 2002).

In the post-Civil War period, the formation of character became “a new social religion and the dynamic for social change,” especially for feminists and moral reformers. It was believed that the properly instructed child could resist temptation and internalize a morality consistent with middle-class ideals of social purity (Pivar 1973). Such preoccupation with youthful virtue provided humane advocates with both rationale and wider opportunities. The promotion of humane education as an antidote to depraved character and a panacea for numerous social ills brought animal protection into close alignment with other reform movements of the era. The movements for temperance, child protection, and humane treatment of animals, in particular, all reflected deep concerns about the ramifications of cruelty and violence for individuals, the family, and the social order. Each cause addressed issues that straddled the line between private and public spheres. Humane education work received an especially significant boost in the 1890s from the creation of the Department of Mercy as a division of the Women’s Christian Temperance Union during its “Do Everything” phase under Frances Willard (Unti 2002).

The Compulsory Humane Education Movement

The first discussion of compulsory humane education occurred in Massachusetts in the 1880s, and by 1886 George Angell had helped to secure a humane instruction mandate as part of compliance with an extant statute requiring “the teaching of humanity, universal benevolence, etc.” By the early 1900s, the notion of a national campaign for compulsory humane education began to gather momentum. In 1905 William O. Stillman of AHA and professional educator Stella H. Preston formed the New York Humane Education Committee to advance a state requirement. In that same year, both Oklahoma and Pennsylvania passed state laws providing for moral and humane education. The Oklahoma legislation required humane instruction as part of the moral education of future citizens. Sponsors wanted educators to teach morality in the broadest meaning of the word, for the purpose of elevating and refining the character of school children…that they may know how to conduct themselves as social beings in relation to each other…and thereby lessen wrong-doing and crime.

The law mandated that one half hour each week be devoted to teaching “kindness to and humane treatment and protection of dumb animals and birds; their lives, habits and usefulness, and the important part they are intended to fulfill in the economy of nature” (Unti 2002).

In 1909 the compulsory humane education movement achieved its most important benchmark—the passage of legislation in Illinois that
included sanctions for noncompliance and provisions for instruction in teacher-training schools. In November 1915 AHA adopted a resolution favoring establishment of compulsory humane education in every state, selecting the 1909 Illinois law as its model. However, of the twenty states that had humane education requirements in place by 1920, only two others—New York and Oklahoma—followed the Illinois model in providing sanctions for non-compliance. In New York compliance was tied to public funds, and the commissioner of education was directed to publicize the requirement (Unti 2002).

The emergence of the professional humane educator was a natural outgrowth of the compulsory humane education movement. The American Society for the Prevention of Cruelty to Animals (ASPCA) created a humane education department in 1916. The stated goal of the division was “not to do the humane education work in our schools, so much as to stimulate the work of the schools themselves.” By the beginning of the academic year in autumn 1921, the ASPCA was promoting essay contests within the school system. That summer, the humane education department cooperated with four Lower East Side school districts in New York City to measure the effectiveness of humane propaganda with the children of the foreign-born. The activity was the ASPCA chose to encourage was the rounding up of unwanted strays. During 1922 the department estimated that it had reached 300 New York City schools in the course of its work. Preston estimated that, in the summer of 1923, New York schoolchildren brought in more than 28,000 small animals from the streets. As an instrument of character development, the kindness ethic nicely served the goal of assimilation by exposing immigrant children to normative values and expectations (Shultz 1924; Unti 2002).

Throughout most of the nineteenth century, humane educators relied on eclectic anthologies and an array of didactic stories and novels devoted to kindness to animals. Many humane periodicals included selections for children, and some of these found their way into published works marked for use by Bands of Mercy (Firth 1883; Timmins 1883). In the 1890s, however, the first manuals and textbooks with systematic humane lesson plans, question and answer sets, and related offerings began to appear. In 1902 AHA formed a committee to promote the publication of textbooks that inculcated humane ideals and to draw up guidelines for publishers of children’s textbooks. By 1930 about a dozen humane education titles had appeared (Unti 2002).

Here and there, progress in institutionalizing humane education ensued. In Colorado the State Teachers College adopted a course of study in ethical and humane education that was directed by the state’s Bureau of Child and Animal Protection. For a time, humane advocates made efforts to canvass the meetings of the National Education Association (NEA), and it seems that animal protectionists were successful in their outreach to national and regional teaching organizations, as well as to school system administrators. In 1924 the NEA president endorsed humane education at the annual meeting of AHA (Unti 2002).

Despite such progress, the push for compulsory humane instruction was not necessarily instrumental in ensuring access or influence within the schools. The law was frequently a dead letter in those states where it was approved. Hostile and indifferent superintendents and teachers could ignore the statutes with little fear of recrimination, and effective texts and materials were not always readily available. Chicago, with its tradition of progressive experimentation in education, promised to be one place in which humane education might gain a significant foothold. But by 1923 advocates were casting doubt on the success of the movement for humane education even in Illinois. On the basis of her own experience in a small town outside New York City, a New York reformer concluded in the late 1930s that the law in her state was “unevenly observed,” its enforcement usually contingent on “some superintendent, principal, or teacher with a kind heart, who personally has compelled action” (Shultz 1924; Krows 1938).

The Longevity and Impact of the Bands of Mercy

For years, Our Dumb Animals (the MSPCA’s monthly magazine) reported extensively on the formation of Bands of Mercy. However, such reports were better reflections of speaking engagements than of actual clubs or groups that went on to continuous activity. Referring to the “sixty thousand branches of our American Bands of Mercy” in 1905, George Angell wrote, “What does this mean? It means that over sixty thousand audiences have been addressed on kindness both to human beings and the lower animals” (in Unti 2002, 588). Some years later AHES claimed that more than 103,000 bands had formed between 1882 and 1916. In 1922 Angell’s successor, Francis Rowley, estimated that in forty years of activity, the Bands of Mercy had enrolled more than 4 million children (Unti 2002).

While admitting their positive influence, social scientist William Shultz underscored the “transitory character” of the bands. Where “no attempt is made to encourage them, they soon dissolve, leaving little or no effect upon the children’s character.” AHAs William Stillman conceded that the bands “were not as carefully followed up as they might be.” Rowley believed that, in many cases, interest was sustained through the course of one school year, and that in successive years new bands would form at the instigation of teachers or humane educators who visited the schools again. In some cases, the bands
enjoyed great longevity (Shultz 1924; Unti 2002).

In fact under Rowley’s leadership AHES launched an ambitious effort to hold the bands together by maintaining humane educators in the field. None of the organizational initiatives of the early twentieth century matched the accomplishments of AHES in building and sustaining a cadre of humane missionaries during the period from 1910 to 1925. Educational outreach to the schools was especially robust in the pre-World War I years.

The success of the AHES initiatives depended heavily on its field representatives, at least some of whom were paid (Unti 2002). The field representatives were armed with a broad selection of humane education materials, including novels such as Black Beauty. By 1913 AHES was the world’s largest publisher and distributor of humane literature by far. Our Dumb Animals enjoyed a monthly circulation of 60,000. In December 1916 931 new bands were reported, the largest figure ever for a one-month period, although one third of these formed in Massachusetts. That same year AHES estimated that it had spent more than $100,000 on literature and its distribution since 1882 (Unti 2002).

Once World War I began, the focus of many animal protection organizations shifted to war concerns. Not simply a distraction, however, the war threatened humane ideals more fundamentally as the United States prepared for battle. In the years before America joined the war, humanitarians could point to humane education as a powerful solution to the world’s ills. With the war tearing Europe apart, American advocates cast it as an inoculant against the animosities and prejudices bred by conflict, and the guarantor of peace. But the wartime focus on preparedness also placed on the defensive humanitarians who had so closely identified themselves with anti-militarism. Humanitarians felt vulnerable to the charge that their own educational program would lead to the “softening” of American youth. Rowley met the matter straight on in an editorial, writing:

Should anyone imagine that humane education means a generation of boys and girls with all iron sapped from their blood, a generation of cowards and cravers, he only reveals his total ignorance of what humane education is. The spirit of chivalry toward all the weak and defenseless, the hatred of injustice and cruelty . . . will make of the citizen, should the time demand it, a far better patriot and soldier than the selfish, bullying pugnacious spirit that often proclaims not a possible hero, but only an arrant coward. (in Unti 2002, 590)

In any case, once America entered the conflict, war animal relief filtered straight into Band of Mercy work and such other humane initiatives as Be Kind to Animals Week. The message of universal peace through humane education was subordinated to patriotic imperatives. The movement’s most vital activity—its outreach to children—was reconfigured dramatically to serve the interests of American nationalism (Unti 2002).

**The Failure of Institutionalization**

It was not the war but the lack of success in institutionalizing humane education that led to its decline during the middle decades of the twentieth century. Very few of the initiatives launched by humane organizations gained the lasting attention of teacher-training institutions, and humane education certainly did not become a regular element of teacher preparation. The fate of a $100,000 donation to Columbia University in 1907, specifically earmarked for promoting humane education, was perhaps the most conspicuous setback on this front. Rather than direct the money toward Teachers College for studies and training in humane education, university president Nicholas Murray Butler used it to support a faculty position in social legislation. The funds disappeared into Columbia’s general accounts and, with the exception of several historical studies, no progress toward the goal of the donor was realized (Unti 2002).

The Columbia initiative was the most significant missed opportunity in the history of humane education. Had the gift been allocated differently, it might have supported the review and validation of teaching methods and content; the resolution of differences between humane education, nature study, and science education; the development of a training program for humane education specialists; or the institutionalization of the kindness-to-animals ethic in the curriculum. However, the bias of Butler and the professors he consulted made it hard for them to take seriously such academic investigations of humane education (Unti 2002).

At least a few researchers in the pre-World War II era believed that humane education was a proper subject for scholarly inquiry. In 1931 concern for animals found its way onto the agenda of the Conference of Educational Associations, whose members came together annually to discuss educational theory and practice in Great Britain. That year Susan Isaacs, chair of the British Psychological Society’s Education Section, spoke about her research concerning childhood socialization and attitudes concerning animals. Her method, applied in a small Cambridge school during the years 1924–1927, permitted children the greatest possible freedom to pursue their own interests. In her research Isaacs paid special attention to the conflicting tendencies toward cruelty and kindness to animals that she observed in children. She had proposed that educators should strive “to make a positive educational use of the child’s impulses” so that children could be helped to reach “a more satisfactory psychological solution for their own internal conflicts.” This method of instruction, she asserted, would become “an
active influence in the building up of a positive morality of behavior towards animals, going beyond the mere negative standard of not being unkind to them, and expressed in an eager and intelligent interest in their life-histories, and a lively sympathy with their doings and happenings” (Isaacs 1930, 166).

Isaacs’s special focus was on children’s exposure to the death of animals and on dissection. The children she observed “showed greater sympathy with the living animals, and more consistent care, after they had ‘looked inside’ the dead ones, and fewer lapses into experimental cruelty,” Isaacs reported. “In other words, the impulse to master and destroy was taken up into the aim of understanding. The living animal became much less of an object of power and possession, and much more an independent creature to be learnt about, watched and known for its own sake.” Isaacs found that the children moved steadily toward the non-interfering, observational attitude of many modern naturalists, and developed a humane outlook and sense of responsibility toward their pets and toward animals in general (Isaacs 1930, 165–166).

Obviously, these findings, gathered in one school, could not be considered broadly representative or conclusive. Nevertheless, the very singularity of the approach taken by Isaacs and her colleagues makes one thing clear: fruitful research on children’s psychological development and on the methods by which an attitude of respect and interest in animals could be inculcated was a neglected pursuit for much of the twentieth century.

**The Mid-Twentieth Century**

In the early twentieth century, arguments in favor of increased emphasis on education as distinct from practical relief work for animals surfaced regularly. If actively pursued, the emphasis on humane education promised to shift the balance of humane work. As an *Our Dumb Animals* editorialist, probably Rowley, optimistically predicted,

More and more societies organized for the prevention of cruelty to animals will turn to the work of humane education. . .as their widest and most important field of service. Train the heart of the child aright, and the cruelty from which animals suffer will end far more quickly than by punishing the ignorant and cruel man. (Unti 2002, 610)

As it happened humane education did not become more central to the work of SPCAs in the years that followed. By the era of the Depression it had diminished greatly, as the practical and financial burdens of shelter and hospital work, animal control obligations, and law enforcement cast other initiatives, including humane education, to the margins of activity. What survived was the simple lesson of kindness to pets, carried into the schools by SPCA staff members and volunteers who continued to enjoy access to the earliest grades of elementary school. Changes (such as the advent of motor vehicles) that eliminated from Americans’ daily experience the abuse of horses and other working animals rendered obsolete much of the earlier practical education concerning animal welfare. At the same time, the movement’s educational focus, normally centered on acts of individual cruelty, failed to touch upon newer and socially sanctioned forms of animal use. Both self-censorship and the constraints imposed by educational institutions prevented humane education from reaching into the realm of the new cruelties—institutionalized uses of animals such as animal experimentation and the mass production of animals for food and fur that were well beyond the experience and influence of most individuals. Undoubtedly, too, the disillusionment wrought by war, depression, and other events deflated the grand claims and expectations expressed by Gilded Age and Progressive Era animal protectionists.

These considerations render the success of the campaign for compulsory humane education legislation highly ironic. Its clear relationship to moral instruction and the inculcation of good citizenship was endorsed in state houses all across America. Paradoxically, however, the determination to see such laws passed was not matched by commensurate effort to see them honored. In general, the cadre of SPCA activists committed to humane education dwindled, and efforts to see its principles enshrined in the curriculum of teachers’ institutes and colleges failed (Unti 2002).

Ultimately, the difficulty of penetrating local and regional school system bureaucracies proved insurmountable for a movement with limited resources and more urgent concerns and responsibilities. Yet the blame for such failures should not be laid simply upon organized animal protection itself; the impact of countervailing forces was decisive. The classroom and the educational system were the subject of increasing struggles during the twentieth century, and the question of how humans ought to encounter and treat animals was implicated in several of these. Humanitarians were not the only ones with an interest in animals. Agricultural societies, industry associations, religionists, and science education groups also fought for a stake in shaping modern American education.

Many of these interests promoted consumptive uses of animals that were at odds with humane imperatives (Unti 2002). The fortunes of “nature-study,” a contemporaneous education movement, were very similar to those of humane education, as both declined in the face of a professionalizing field of science instruction. The rise of a professional science education cadre, committed to the unification, rationalization, and standardization of American science curricula, crowded out both nature-study and humane education, incorporating some of their elements but ridding those elements of their romantic notions of...
affinity with nature and non-human animals. By the 1930s the term *elementary science* had subsumed nature-study, and humane education as a discrete subject of instruction was on the wane. As one scholar suggests, the “abstract rationalism” of biology instruction in the higher grades and in university courses also left little room for the empathy-building emphasis of nature-study and humane education approaches (Pauly 2002).

The anti-cruelty movement’s overall loss of influence and lack of vitality in the interwar period also had its effect. Humane education suffered as much as any area of organized animal protection from the absence of enlightened and energetic leadership, and the loss of a receptive public. By World War II, organizations were using badly dated humane education materials, if any.

In some regions viable outreach programs undertaken by regional humane societies survived and enjoyed good access to public schools even during the mid-twentieth century decades (Matthewson 1942; Whyte 1948; Walter 1950; American Humane Association 1952). While humane education outreach now tended to focus on the treatment of companion animals and the benefits of keeping pets, it nevertheless reinforced the simple message of kindness to animals as an important standard of individual conduct. In addition, the kindness-to-animals ethic continued to resonate through children’s literature (Oswald 1994) and other cultural media (Cartmill 1993). These influences certainly strengthened decades of effort aimed at promoting personal rectitude in dealings with animals.

After the post-World War II revival of organized animal protection (Unti and Rowan 2001), humane education gradually resurfaced as a priority of both national and local groups. In the mid-1960s, The HSUS began to invest serious attention and resources in humane education, collaborating with university researchers to formulate and test methods and techniques of humane education. By the 1970s such efforts sparked the formation of a separate division of The HSUS, predecessor of the National Association for Humane and Environmental Education (NAHHEE). Founded in 1973 NAHHEE has become a preeminent source for information, research, and analysis in the field of humane education.

**The Status Quo**

Today the locus of humane education activity in the United States continues to be the animal care and control community, as elementary and secondary schools and colleges of education have yet to accept and integrate the teaching of most humane concepts into their curricula. Many animal care and control agencies (SPCAs, humane societies, animal rescue leagues, and the like) offer education programs in some form, working primarily at the municipal or county level. Such programs frequently involve partnerships with schools or other youth-oriented institutions.

What methodologies does humane education employ? What is being taught and how effectively? How significant is the role of youth education within the animal welfare movement? A study conducted by Jaime Olin (2002), a graduate student at the Tufts University Center for Animals and Public Policy, provides some answers. Olin surveyed 600 animal shelters, selected at random from approximately 2,800 in existence nationwide, about the scope and nature of their efforts to teach children humane values. The results of her investigation paint a picture of humane education as a relatively widespread enterprise, yet one that typically is relegated to side issue status, addressed perfunctorily by most animal care and control organizations and simply ignored by others.

Of the 203 animal care and control agencies that responded to Olin’s 32-item questionnaire, 144—71 percent—were classified as having a humane education program. Those respondents reported being involved in humane education for a median of ten years, and 42 percent reported relevant activity for between eleven and fifty years (Figure 1). The majority of shelters with humane education programs claimed reaching between 100 and 500 children per year, most of whom were of elementary school age (Figure 2). The vast majority of respondents—94 percent—indicated that they regard humane education as either “essential” or “very impor-
tant” to their overall mission.

If classroom visits and shelter tours traditionally have been the educational methods of choice employed by animal shelters since the mid-twentieth century, then it appears from Olin’s investigation that little has changed (Figure 3). Eighty-eight percent of respondents reported conducting classroom visits, and 77 percent included tours of their facilities in their programs. Fewer organizations reported offering youth community service programs (44 percent), junior volunteer programs (30 percent), after-school activities (23 percent), and summer camps (15 percent). Thirty-six percent reported serving as a source of curriculum-blended materials for classroom teachers. Children saw live animals in 86 percent of humane education programs and were allowed to touch an animal in 73 percent.

The content of humane education programs at the local level is dominated by companion animal issues (Figure 4). Olin’s respondents indicated that responsible pet ownership accounted for an average of 49 percent of their programs’ subject matter, safety around animals for 26 percent, and the role of animal shelters for 20 percent. On average, 8 percent of programming was devoted to wildlife issues, and 2 percent to topics related to farm animals. Obviously, this distribution of priority reflects the primacy of direct care and protection of companion animals in the missions and day-to-day activities of animal shelters. In addition, omission from youth education programs of such topics as intensive farming, the use of animals in research, and consumptive uses of wildlife may stem from other factors. These include the philosophical orientation of shelter administrators and boards of directors; sensitivity to local politics; the influence of competing and sometimes hostile interest groups; the view that such issues do not fall under the purview of animal care and control agencies; and the reluctance of school officials to accept special interest topics into the curriculum—especially those that may be considered age-inappropriate, inflammatory, or inimical to a community’s values, traditions, or economic base.

Olin’s investigation also reveals that 88 percent of local animal care and control agencies obtain at least a portion of their youth education materials from outside organizations. Materials were procured most often from national animal protection groups with a history of providing shelter-related services and disseminating youth education resources with a strong emphasis on companion-animal issues: The HSUS, the ASPCA, and AHA. Thirty-five percent of the respondents reported using KIND News, a classroom newspaper published by NAHEE. Sixty-four percent said they included their own materials in their programs.

If, prima facie, the above data shows humane education to be a vibrant enterprise, the deeper reality is that it remains a peripheral compo-
nent of animal welfare activity, as it was throughout most of the last century. Despite the fact that a majority of local animal care and control agencies report offering humane education programs, have been doing so for quite some time, and regard humane education as mission-critical, commitment to youth education as measured by funding—perhaps the most salient measure—is anemic. Although the median annual budget reported by Olin’s respondents was $200,000 (Figure 5), 63 percent of organizations with humane education programs reported allocating less than $1,000 to those programs, and only 21 percent reported having an annual humane education budget of $5,000 or more (Figure 6). Most respondents (74 percent) admitted that the amount of money budgeted for education was “not enough,” while 26 percent said the amount their organizations had allocated was “just about right.”

The animal care and control community’s reluctance fully to embrace youth education also can be inferred from staffing-related data. Organizations responding to Olin’s study reported a median of one paid education staff member (a significant number given that the median number of full-time, paid staff overall was four) and one education volunteer (Figure 7). But personnel responsible for youth education often are spread thin, charged with handling a wide variety of disparate job duties. For example, when asked to give the title of the person involved most directly with humane education, 26 percent of respondents indicated “shelter director,” while only 12 percent cited “humane education director.” Thirty-eight percent indicated “other,” and in most cases, Olin found, that meant “animal control officer” (Figure 8).

When asked by Olin about other services performed by education staff, 57 percent of respondents said “media relations”; 51 percent said “adult education”; 33 percent said “animal behavior counseling”; 25 percent said “violence prevention”; and 23 percent said “pet therapy.” Although some of those job duties are not unrelated to children, it is clear that youth education, per se, rarely is given the undivided attention of one or more staff members. That education personnel are spread thin is also reflected in the fact that an average of only 21 percent of children reached by Olin’s respondents received more than one humane education intervention, e.g., more than one classroom visit or shelter tour, per year.

If youth education were a high priority in the animal care and control community, one might expect that formal education credentials would be a criterion in the hiring of staff assigned to teach children. Olin found, however, that only 15 percent of respondents reported that the staff member most directly involved with humane education had classroom teaching certification, while 50 percent cited “on-the-job-training” in lieu of such credentials. Twenty-four percent indicated that their education staff had informal teaching or youth leadership experience (Figure 9).

One of the most telling signs of generally tepid support for humane
education is that 29 percent of the organizations answering Olin’s questionnaire did not respond to the item asking about the size of their education budget. Olin classified those organizations as not having a humane education program. While the assumption behind that classification (i.e., no education budget means no education program) may not be entirely valid, the fact remains that a significant number of animal care and control organizations make no effort to teach humane values to children, while most make a weak attempt at best. Why? Why would an undertaking that, at least intuitively, holds such promise for advancing the cause of animal protection and that was so energetically pursued during the early decades of the animal welfare movement be given such minimal attention nowadays by those most directly engaged in solving their communities’ animal-related problems?

Answers from animal shelter professionals typically hinge on points about lack of time and/or funding—points raised, in fact, by some respondents to Olin’s survey. Such rationales, however, beg the underlying question, since if youth education were seen as crucial to achieving animal protection objectives, time and funds to support it would be allocated or funds would be raised to augment existing budgets. Perhaps a more fundamental answer lies in the dilemma faced by animal care and control personnel: how can they meet basic, short-term needs—such as a community’s need for adequate animal control and sheltering—and also reach broader, long-term goals, such as eliminating or significantly reducing animal abuse, neglect, and the overpopulation of companion animals? Although youth education is seen as an important means of permanently solving or preventing the problems animals face, it typically does not render the same immediate, tangible outcomes or level of emotional fulfillment as, for example, uniting a family with a homeless pet or rescuing a stray dog from the hardships of the street. In contrast its potential rewards may seem distant and abstract. So, while animal care and control professionals may view youth education as mission-critical in a long-range sense, it often is treated in the short term as a drain on resources that might otherwise be applied to more pressing, day-to-day concerns.

That seems to have been the prevailing reasoning for many years. In 1922 Francis Rowley speculated that the promise of immediate results was what kept so many humane advocates involved in direct relief of animals rather than humane education of subsequent generations (Unti 2002). It appears that similar forces are at work now. As a result, youth education continues to be a marginal if not entirely dispensable facet of animal welfare work in the United States.
Can Humane Values Be Taught?

If, as suggested, a lack of immediate—or at least immediately visible—results is a disincentive for humane organizations to expend resources on youth education, it would seem that definitive empirical evidence demonstrating the effectiveness of humane education programs would provide an important incentive. That is, if the intended benefits of teaching humane values to children (e.g., gains in general knowledge about animal protection issues and the development of positive attitudes and behavior toward animals) were consistently brought to light through program evaluation, perhaps humane education would come to be seen as more of an urgent imperative than an abstract panacea. But there is an obvious Catch-22 here: an interest in spending time and money to assess the effects of a humane education initiative presupposes a relatively high level of interest in committing resources to humane education in general, and such willingness has been in short supply.

Consequently, relatively little empirical evidence exists showing that humane education programs increase children’s knowledge about or improve their attitudes and behavior toward animals. None exists showing that such gains are carried into adulthood. The issue is not that there is proof to the contrary—indeed, intuition, anecdotal evidence, and a handful of formal studies suggest that humane education can work. Rather, it is simply that humane education initiatives typically are not subjected to formal evaluation to test their efficacy. Of the organizations responding to Olin’s survey, for example, only 7 percent reported formally evaluating their programs. Given the relatively low level of support for humane education, this assessment gap is not surprising. But it is significant, for two reasons: first, a lack of formal evaluation limits understanding of what methodologies are most and least effective and how humane education programs can be improved; and, second, it deprives animal protection advocates of an important tool for convincing school officials, colleges of education, and the public that humane education is a worthwhile pursuit that deserves funding and representation in standard curricula.

Empirical studies conducted over the last twenty-five years have tended to show that education programs can indeed generate gains in knowledge of animal protection issues, improvement in attitudes toward animals, and improvements in projected behavior toward them. Positive results have been inconsistent, however, and investigations have not been undertaken to determine whether humane education results in positive changes in actual behavior related to animals.
The special challenges associated with assessing actual behavior toward animals—such as cost, difficulty of observation, and potential harm to animals and children—have, no doubt, hindered such inquiries.

Systematic research to test the effects of general approaches to humane education and specific programs peaked during the 1980s. Several studies conducted early in that decade relied on the Fireman Tests, assessment tools that presented children with a story about a boy whose house is burning down and who is given the opportunity to ask a firefighter to save certain household items (Vockell and Hodal 1980). A list of ten items is given, consisting of seven inanimate objects, such as a television and a checkbook, and three animals: a dog, a cat, and a canary. The tests asked children to select three items from the list which they think the boy in the story should tell the firefighter to save, the rationale being that the more positive an individual’s attitudes toward animals, the more likely it is that he or she will choose the dog, cat, and canary for rescue. The first investigation employing the Fireman Tests sought to evaluate the effects that a single classroom presentation conducted by a visiting humane educator had on attitudes of third through sixth-grade students, compared with simply giving the children reading material (Vockell and Hodal 1980). The researchers found that the one-time presentation had no more impact on attitudes than did distributing the literature. The omission of a pretest from the study design, however, made interpreting those results problematic (Ascione 1992).

A year later another Fireman Tests study analyzed the impact of three different humane education treatments on the attitudes of fifth and sixth-grade students in Jefferson County, Colorado (Fitzgerald 1981). The three approaches tested were: light-treatment—reading material with no instruction; intensive treatment—reading material with one instruction session; and repeated treatment—reading material with four instruction sessions over a two-month period. (A control group received no instruction or materials.) The lessons and reading material focused on responsible pet ownership and related topics. In contrast to the earlier study, results showed that, although all three interventions led to an increase in positive attitudes toward animals, the intensive, one-lesson treatment had a greater positive impact on attitudes than did the reading material alone. Somewhat unexpectedly, however, the repeated treatment was not found to be more effective than the one-time presentation. The researcher suggested that the more focused nature of the intensive treatment contributed to its success compared with the repeated intervention, the content of which was only loosely connected. No differences in test scores were found between boys and girls or between fifth and sixth-graders.

Contradicting the results of that investigation was a similar one designed by the Animal Rescue League of Boston. Relying on the Fireman Tests as the assessment tool, the Boston evaluation found that a repeated humane education treatment consisting of lessons and materials presented over a period of several days had a greater positive effect on the attitudes of fourth and fifth-graders toward animals than either a one-time presentation or reading materials without instruction (Malcarne 1983). The fact that the repeated intervention in this case took place over a fairly concentrated period of time may have contributed to its success compared with the more diluted, two-month repeated treatment employed in the Jefferson County study.

An innovative study during the same period analyzed the effects of role-play as an empathy-building technique. Malcarne (1981) found that playing the role of animals is an effective means for children to increase their empathy with animals and that playing the role of children helps to increase empathy with other children. Children who had been induced to empathize with animals, however, showed little tendency to extend that increased empathy to other children. That finding calls into question the validity of the transference theory, which holds that positive attitudes toward animals are transferable, or will generalize, to humans—a tacit assumption in much humane literature. Findings casting doubt on the transference theory also have been reported by Ray (1982) and Paul (2000), while Poresky (1990), Ascione (1992), and O’Hare and Montminy-Danna (2001) have found evidence to support it.

In one of the few efforts during the early 1980s to assess the impact of humane education on older children, Cameron (1983) compared the effects of two intensive, classroom-based interventions on the attitudes of eighth-graders. One relied on print material and media-based instruction (films and filmstrips), the other on print material and lecture-method instruction. A control group received no materials or instruction. Students receiving media-based treatment showed the greatest improvement in attitudes. The lecture treatment group also improved but to a lesser extent, while the control group showed no positive change in attitudes.

**The Humane Education Evaluation Project**

Perhaps the most ambitious attempt at program assessment was NAHEE’s Humane Education Evaluation Project. In that investigation, Ascione, Latham, and Worthen (1985) sought to measure the impact of a curriculum-blended approach to teaching humane values, using as the prototype NAHEE’s *People and Animals: A Humane Education Curriculum Guide*. The guide consisted of more than 400 classroom activities, each
designed to teach a humane concept along with a skill or concept in language arts, social studies, math, or science. The study involved more than 1,800 children in kindergarten through sixth grade and 77 teachers from various urban, suburban, and rural school districts in Connecticut and California. Using a battery of instruments developed by the Western (formerly Wasatch) Institute for Research and Evaluation, the investigation was designed to test the effects of a relatively weak treatment: teachers were required to lead only twenty activities (the equivalent of about ten hours of instruction) from the curriculum guide over the course of an entire school year. The objective was to evaluate the materials as they realistically might be applied during a typical school year by teachers with many other curriculum requirements to meet. The instruments were designed to measure the curriculum guide’s effect on (1) children’s knowledge of animals; (2) their attitudes toward animals; (3) their projected behavior toward animals, i.e., their perceptions of how they would behave in situations that allowed humane or inhumane behavior; and (4) whether children’s attitudes toward animals transferred, or generalized, to people. The assessment tools were administered as pretests and posttests to the study sample, which was divided into an experimental and control group, the latter receiving no instruction from the NAHEE curriculum guide at any point in the school year.

Results showed statistically significant gains in knowledge as a result of the curriculum guide intervention at the kindergarten and first-grade levels. Knowledge scores of second through sixth-grade children in the experimental group also improved, though not to a statistically significant degree. Attitudes toward animals improved along similar lines: kindergarten and first-grade children in the experimental group showed significantly more humane attitudes than their counterparts in the control group. Although experimental-group children at the higher grades also showed improvement, generally their attitude gains were not pronounced enough to be statistically significant. The researchers suggested that the disparity in the treatment effects between the younger and older children may have been due to the possibility that conceptual knowledge and attitudes are more malleable at the earlier grades, or that baseline levels of knowledge and attitudes are lower at the earlier grades, leaving more room for improvement. They also cited the weak treatment as a possible factor in the inconsistency of experimental-group gains.

The NAHEE study’s examination of projected behavior produced results that were somewhat the reverse of the knowledge and attitude findings in terms of age-group comparisons. At the kindergarten through third-grade level, the projected behavior scores of experimental-group children did not differ significantly from control group scores. In contrast, at the fourth through sixth-grade levels, the experimental group showed significantly more humane attitudes than did the control group. Why did older children respond more humanely on this measure, while younger students showed greater gains on the knowledge and attitude tests? According to the researchers, test format could have had an influence. The knowledge and attitude scales were composed of multiple-choice or yes/no items, which gave children a choice from which to select an answer. The instrument used to test projected behavior, on the other hand, required children to describe verbally the scenario depicted in a drawing, formulate a response to the situation, and explain why they responded as they did—tasks that the older children may have been developmentally more prepared to handle than were the younger students. In addition the researchers surmised that teachers at the higher grades may have been more likely than those at the lower grades to focus their instruction on the intentions and rationale behind humane behavior.

To determine if humane attitudes toward animals would extend to people, the NAHEE project researchers developed two instruments: the Attitude Transfer Scale (ATS), which used photos depicting situations involving other children to which students could respond with varying degrees of kindness and compassion; and the Revised Aggression Scale (AG), a multiple-choice instrument that presented school and home situations to which children might react with varying degrees of aggression. (The AG was administered only to children in grade three and above.) Results of the ATS and AG showed no statistically significant differences between experimental and control group children at any grade except fourth. Surprisingly, fourth-grade boys in the experimental group had lower interpersonal kindness scores on the ATS than did their counterparts in the control group. Fourth-grade experimental-group children (girls and boys) also scored more aggressively on the AG than did fourth graders in the control group. The researchers noted, however, that the fourth-grade experimental-group scores were on the kind and non-aggressive ends of the continuum of scores for the attitude transfer measures.

Despite its somewhat ambiguous findings, the Humane Education Evaluation Project produced some encouraging—and intriguing—results overall. The instruments that were created, the conclusions reached, and the insights gained were valuable in providing direction for subsequent research and can aid in development and refinement of humane education methodologies.

Recent Research

Humane education program evaluation continued sporadically in the years following NAHEE’s landmark study. In 1988 the MSPCA completed an extensive investigation to examine the impact of its statewide humane education program on the animal-welfare-related knowledge and attitudes of second through fifth-graders. Third, fourth, and fifth-grade children
received three instruction sessions, and the investigation found gains in their knowledge and attitudes. This was not the case, however, among second-graders, who were exposed to a single classroom presentation. The researchers concluded that results were positive but limited, and suggested that a more marked impact might be achieved by consolidating the program, i.e., delivering a more intense intervention (Davis et al. 1988).

In a follow-up to the Humane Education Evaluation Project, Ascione (1992) assessed a treatment employing NAHIEE’s People and Animals curriculum guide and other materials in thirty-two first, second, fourth, and fifth-grade classrooms. Pretests and posttests were administered to assess changes in children’s attitudes toward animals and human-directed empathy. (The attitude measure was the same as that used in the 1985 study.) Results showed that the intervention enhanced fourth-graders’ humane attitudes to a statistically significant degree. In addition fourth-grade scores revealed a significant generalization, or transfer, effect from animal-related attitudes to human-directed empathy. Fifth-grade children in the experimental group also showed more humane attitudes than did the control group, though the difference was not statistically significant. Ascione noted that the more modest gains among fifth-graders were due to the fact that fifth-grade control group teachers reported substantially more instruction related to humane education than their experimental group counterparts. (Ascione noted that restricting the content of control group teachers’ instruction for purposes of the study would have been unacceptable.) No statistically significant effects on attitudes or human-directed empathy were found at the first and second-grade levels, although the first-grade experimental group children did show some gain in humane attitudes over first-grade children in the control group. In comparing those results to the more pronounced gains from the 1985 study, Ascione noted that the mean attitude scores of the first and second-grade control and experimental groups were higher (more humane) than the mean attitude scores from the 1985 investigation. One reason, the researcher suggested, was the possibility that the children participating in the 1992 study were more aware of and better educated on humane and environmental issues than were their 1985 counterparts. If that was the case, by 1992 scores on the instrument used to measure the younger children’s attitudes may have been reaching a “ceiling,” which would make detecting differences between control and experimental groups more difficult. Ascione noted that the scale used to measure the older children’s attitudes was less susceptible to such ceiling effects.

As a follow-up to the 1992 investigation, Ascione and Weber (1996) tested fifth-grade students who had participated a year earlier in the above study to determine if the effects found when they were fourth-graders were maintained. Results showed that fourth-graders who had received the People and Animals intervention the previous year scored higher on humane attitudes scales than did those who had not. Once again a generalization effect from attitudes toward animals to human-directed empathy was found. The researchers interpreted their findings as evidence that classroom-based, curriculum-blended humane education can be an effective means of developing sensitivity in children toward animals and people.

Positive results also were found by O’Hare and Montminy-Danna (2001) in a comprehensive evaluation of a humane education program for third and seventh-grade students. The program was offered by the Potter League for Animals, an animal care and control organization serving southeastern Rhode Island. The Potter League study was unique in that it employed qualitative research methods as well as more typical, quantitative techniques. It included the following components: (1) the administration of a true/false pretest and posttest to determine the Potter League program’s effect on animal-welfare-related knowledge, attitudes, and projected behavior; (2) a measure of attitude transference obtained by comparing pretest results with scores from instruments designed to gauge children’s human-directed empathy and quality of peer relations; and (3) an examination of the intellectual, affective, and behavioral responses of children to the program through the use of student and teacher focus groups and classroom observation. The study sample consisted of 181 third-graders, who took part in eight weekly forty-five-minute classroom lessons, and 152 seventh graders, who participated in five weekly forty-five-minute lessons. The third-grade lessons covered such areas as basic pet care, the role of animal shelters, and safety around animals; the seventh-grade lessons covered animals in entertainment, endangered species, pet overpopulation, and animal-related moral dilemmas.

The Potter League investigation revealed statistically significant gains in knowledge, attitudes, and intended behavior at both the third and seventh-grade levels. In addition the examination of attitude transference indicated that children who were more knowledgeable about and favorably disposed toward animals also were more likely to respond with greater empathy to people and have better relationships with peers. Qualitative analysis yielded a wide range of information, most of which reflected positively on the Potter League program. Conclusions regarding the third-grade intervention included that the children enjoy the program (especially the opportunity to relate stories about their pets), that concepts are presented in a clear, age-appropriate manner, and that positive behavior toward animals is constantly reinforced throughout the program. During focus groups third-graders related evidence of behavior change, some stating that they had begun to spend more time with their pets, had stopped hitting or teasing them, or had shared their new knowledge with
friends and family members.

At the seventh-grade level, classroom observations revealed that the Potter League material was presented in a way that allowed students to see both sides of controversial issues, that the program stressed the positive impact a single individual can have, and that it appeared to have an immediate effect on some students. (One boy, for example, said he would no longer shoot birds.) The researchers also noted that some seventh-grade students appeared somber after discussions of particularly hard-hitting issues. During focus groups several seventh graders, like their third-grade counterparts, suggested that their behavior had changed or would change as a result of the Potter League program. Some, for example, indicated that they had become kinder toward their pets and would be more willing to speak up about mistreatment of companion animals. Most seventh-grade students expressed concern about the uses of animals in entertainment and stated that they would curtail participation in activities that involved the mistreatment of animals. A few, however, thought the program’s emphasis on the cruelty of circuses and other forms of entertainment was overstated. The findings of the Potter League evaluation were overwhelmingly positive, though the investigators noted several limitations of the study (i.e., that it lacked a control group; it did not measure the retention of cognitive or attitudinal gains over time; and its outcomes were based on the presentation of a program by only one instructor), and thus advised caution in interpreting its results. Nevertheless, the project generated a host of recommendations useful to the Potter League’s education personnel—and potentially to others in the field—and represents an important contribution to the body of knowledge concerning the effectiveness of school-focused humane education programs.

Although the above survey of humane education program evaluation is not exhaustive, existing research still is too limited to tell us definitively whether children can be taught to think and behave kindly toward animals or what the best instructional methods might be. The empirical evidence compiled thus far, however, suggests that humane education has promise. Moreover, investigations such as those reviewed here are significant not just for what they may prove or disprove, but also for the questions they raise and the directions they provide for future inquiry. Do gains resulting from elementary-level humane education initiatives extend into the teen years and beyond? Do improvements in project-based behavior translate into more humane behavior in fact? At what ages is humane education most effective? What impact, if any, do instructor enthusiasm and teaching style have on the efficacy of humane education interventions? Such are just a few of the questions waiting to be addressed in a field that is ripe for study, not only because of the paucity of existing research, but also because humane education seems especially relevant at a time when the connection between childhood cruelty to animals and interpersonal violence in adulthood is widely known, and the perceived moral decline of our nation’s youth is a common and increasingly fervent lament.

**The Road Ahead**

Vitalizing humane education research would create a solid foundation on which to build a more prominent, influential humane education movement. A substantial body of empirical evidence not only would provide humane educators with the knowledge necessary to develop effective pedagogical strategies, it also would lend much-needed credibility and recognition to humane education as a serious discipline. Animal care and control organizations can become involved in humane education program evaluation in a variety of ways that need not be prohibitively elaborate, expensive, or time-consuming. Assessment can be as basic as interviewing teachers to ascertain whether and how they are using humane education materials provided to them. It can entail simply identifying program objectives, and administering brief surveys to students or teachers to determine whether those objectives, e.g., positive changes in attitudes toward animals, are being met. Even evaluation efforts as limited as these can provide valuable information that ultimately can help an agency make the most effective, efficient use of its humane education resources. Several national organizations, such as NAHEE and the Character Education Partnership, offer guides to basic program assessment. In addition, copies of the instruments used to assess the impact of the *People and Animals* curriculum guide in the 1985 Humane Education Evaluation Project are available from NAHEE and can be adapted for use in assessing other humane education initiatives.

Certainly, conducting rigorous experimental investigations of the impact of humane education programs requires expertise and resources beyond the reach of most animal shelters. But providing the impetus for such investigations and facilitating them does not. By partnering with college and university academic departments (including education, child development, social work, and psychology), animal protection organizations engaged in youth education can provide the subject matter for study and access to teachers, children, and classrooms. In return, academic institutions can offer expertise in instrument development, study design, and data analysis, as well as a pool of graduate and undergraduate students in search of topics for senior projects, master’s theses, and doctoral internships and dissertations. In addition, since both universities and animal-protection agencies typically are skilled in the art of fundraising—and often have established relationships with philanthropic institutions—partnerships between the two can be mutually beneficial when it comes to obtaining grants to fund humane education research.
Back-to-Basics Revisited

Closing the assessment gap will not, by itself, ensure the advancement of humane education. Insofar as giving the teaching of humane values a more prominent, permanent place in American schools remains a goal, the chief obstacle continues to be humane education’s identity as a special interest. Traditionally, special interests have been objectionable to school administrators, and low priorities for teachers (Underhill 1941; Westerlund 1982). The back-to-basics movement of the 1970s and 1980s rendered humane education and other special interests all the more superfluous to educators facing declining test scores and general complaints that children were advancing to higher grades with substandard reading, writing, and math skills. Today, back-to-basics thinking is reflected in the adoption of state curriculum standards by all states except Iowa, where directives regarding curriculum content are generated at the district level (Topics Education Group 2001). Curriculum standards enforced by state departments of education or school districts, combined with a growing emphasis on standardized testing (teacher career advancement is often directly tied to test scores now) has made schools and teachers more accountable—and more pressed for time. Consequently, winning representation in the classroom for the issues of special interest groups, including animal protection organizations, has become an increasingly formidable challenge.

Meeting that challenge will require that animal protection professionals keep the needs of teachers and schools paramount—a simple but sometimes overlooked precept. Failure to convince school officials of the importance of teaching humane values often has resulted from an inability or unwillingness on the part of humane education advocates to articulate the benefits of their programs within the framework of teachers’ and administrators’ priorities (Westerlund 1982). For humane educators, recognizing school priorities typically has meant creating lessons and materials that are “curriculum-blended,” i.e., provide instruction in core subject areas—math, English, science, and social studies—as well as convey a humane message. A prerequisite for the success of school-focused humane education initiatives in the future will be the addition of another dimension to curriculum blending: the alignment of humane education programs with state curriculum standards. Indeed, in their report to the Potter League, O’Hare and Montminy-Danna (2001) recommend that the league collaborate with school officials to tie its programs to curriculum standards. Teachers and administrators are likely to be more receptive to the teaching of humane values if they know specifically which curriculum standards a particular humane education program or lesson plan will help them meet. The task of linking lessons to curriculum standards need not be burdensome for humane educators. On the contrary, various Web resources, e.g., www.exploraseource.com, provide ready access to all state curriculum standards, and the standards themselves can serve as valuable guideposts in developing pedagogical objectives and humane education program content.

The Character Connection

An obvious but not yet thoroughly exploited strategy for ensuring future representation for humane content in school curricula—and for invigorating humane education in general—is alignment with character education, an incarnation of the back-to-basics trend in the moral education realm. Today character education typically refers to the teaching of “core” or “consensus” values, basic principles of right and wrong, which, proponents argue, transcend political, cultural, and religious differences. In a return to a more traditional, virtucentered moral education model, and in response to the widespread public perception that our youth have fallen into a state of moral decline, the modern character education movement departs sharply from the values-clarification trend of the 1960s and 1970s. While recognizing that debate about moral issues has an important place in the classroom, character education seeks not to assist children in clarifying their own personal values but to train them to develop certain fundamental character traits. Typically those traits include respect, responsibility, caring, fairness, and citizenship—principles that have formed the conceptual underpinnings of humane education since its inception. Over the last twenty years, the character education movement has benefited from growing public and legislative support and significant government funding (DeRosa 2001). In 2002 $25 million in federal grants was made available to state departments of education for the development and implementation of character education programs (Grenadier 2002). Such programs already have been incorporated into the curricula of thousands of schools nationwide, and the movement shows no signs of weakening.

The rise of character education and its conceptual symmetry with humane education present animal protection organizations with a clear opportunity for blending the teaching of humane values into school curricula. Relying on the widely recognized effectiveness of animal-related content for captiving children’s attention and imagination, humane education has great potential for enriching and enlivening lessons in core values, making abstract concepts such as respect and responsibility more accessible and engaging for children. By providing programs that focus on the ways in which treating animals humanely is an essential part of good character, humane educators can serve as valuable resources to classroom teachers who increasingly are being required to incorporate formal character education lessons into their classroom activities (DeRosa 2001).
Alternative Methodologies

Aligning humane education program content with state standards and character education curricula will help ensure that proposals to introduce the teaching of humane values in schools will be well received by teachers and administrators. Actually institutionalizing humane education in schools—i.e., making the schools themselves a primary source of instruction in humane values—and providing teachers with the necessary training, tools, and motivation will require a reexamination of traditional humane education methodology. Standard practices such as classroom visits and shelter tours typically regulate the classroom teacher to the role of bystander, involved marginally at most in the presentation of humane concepts and lessons. Such approaches can reinforce the notion of humane education as a novelty or special interest, exclusively the purview of the animal protection organization, and both separate from and subordinate to core curricula. Making schools partners in the propagation of a humane ethic will involve, at the very least, cultivating ongoing working relationships with teachers and administrators. Creating humane education committees, composed of teachers representing target schools, to assist in the development of curriculum-blended interventions may be an effective first step in fostering such collaboration. Inevitably, however, integrating humane education in school curricula will require that animal protection professionals divert at least some of their attention from instructing children directly. Conducting professional-development workshops for teachers and providing them with instructional materials (aligned, ideally, with state standards and character education curricula), for example, will help transfer the locus of humane education from the animal protection organization to the schools themselves. Such an approach will enable humane educators to reach, albeit indirectly, more children more consistently than would be possible through classroom visits or shelter tours.

In addition to teacher training and support, other school-focused strategies may provide animal protection organizations with opportunities to maximize their impact while limiting the expenditure of time and money. These include the use of technology-based methodologies, such as chat rooms and videoconferencing, to link elementary and secondary teachers and their students to animal care and control professionals and to provide virtual field trips (Finch 2001). By positioning themselves as service learning sites, organizations with a particular interest in reaching teens—an audience traditionally neglected by humane education—also will benefit from the growth of service learning as an educational model in American high schools (Winiarskyj 2002). Working with education departments in colleges and universities to introduce the teaching of humane values in relevant courses will ensure that new teachers are familiar with humane education and that they understand its connection to character education and other curriculum areas. In shifting their primary role from practitioner to trainer and facilitator, humane education professionals can benefit from assistance offered by various national animal protection organizations—some of which offer supplemental classroom materials for the elementary and secondary levels—as well as training in such areas as the creation and implementation of teacher in-service workshops and strategies for reaching teens.

Exploring potentially more effective, efficient alternatives to traditional humane education practices may also take animal protection organizations away from the schoolhouse entirely. Sávesky (2002) has argued that obstacles to classroom access, such as increased emphasis on standards and testing, have made school-focused approaches inefficient or unfeasible for many organizations. While access to classrooms and general receptiveness to humane education will vary among school districts, animal care and control agencies may indeed find that non-school options provide an expedient use of limited resources. Such options may also provide a means of broadening programming beyond companion animal issues in cases where school officials are resistant to accepting potentially controversial subject matter into the curriculum. Strategies employed by organizations either as supplements to or replacements for school programs have included summer youth camps; family humane education programs; interactive shelter-based exhibits; programs designed to instill empathy in youth at risk for violent or antisocial behavior; Web-based instructional material on a broad range of animal issues; and the creation of partnerships with social service agencies, law enforcement, and pet product retailers. Other potentially productive non-school strategies include reaching out to faith-based youth organizations, homeschooled children, and after-school programs, especially those serving communities where children and families and their animals may be at high risk for abuse or neglect (D. McCauley, personal communication with B.U., July 3, 2002).

Ultimately, the success of any methodology, whether school-based, shelter-based, or dependent on collaboration with some other agency, will be measured primarily by a single standard: its effectiveness in improving children’s attitudes and, most important, behavior toward animals. As a result commitment to a particular strategy must be accompanied by the resolve continually to evaluate it and, if necessary, improve or abandon it.

Conclusions

Virtually unlimited faith in the influence of humane education has long been a hallmark of organized animal protection in the United States. From an early stage, the humane movement pinned its hopes on education as the remedy to cruel treatment of
animals by future generations. However, the movement has not supported humane education with practical and financial resources commensurate with this expressed interest. Moreover, the effects of humane education outreach remain unclear, and, for a variety of reasons, the work of promoting kindness to animals through school programs proceeds with limited prospect for measuring results and outcome. The movement’s inability to institutionalize the teaching of humane education in teacher-training schools and related institutions has restricted its influence, and the penetration of humane education programs run by humane societies has proceeded unevenly where it has proceeded at all.

Nevertheless, there is no question that the diffusion of humane values throughout American culture has advanced in the years since the advent of organized animal protection in 1866. Whatever the level of success on other fronts of humane work, wanton acts of individual cruelty against animal pets are now usually seen as the signs of a maladjusted and sick personality. Conversely a kind disposition toward such animals is considered an important attribute of the well-adjusted individual (Lockwood and Ascione 1998). Humane education undoubtedly has reinforced such ideas about healthy social and psychological development. Indeed, it is unlikely that such awareness could have coalesced in the absence of a movement that accepted this perspective as a commonplace and pursued extensive measures to carry the lessons of kindness to generations of American youth.

Now, as at other times in the past, heightened interest in character education promises to increase opportunities for promoting humane education programs. Teaching kindness to animals is highly compatible with the focus of contemporary character education, concerned as it is with the inculcation of compassion, caring, responsibility, respect, and sociality. Animal welfare organizations may be able to take advantage of the growing consensus about the importance of character education, by offering their services to schools and school systems, and by asserting the value of humane education to the objectives of the character education movement (DeRosa 2001). They may further enlarge their opportunities by providing humane education lessons that can be correlated with conventional subject matter.

For the most part, organized animal protection has been unable to secure the introduction and perpetuation of humane education programs and philosophy within institutions of higher learning and teacher training. This remains the great unrealized goal, and perhaps the most promising objective, in the field. Yet it presupposes an increased commitment to humane education strategies on the part of humane societies. Expanded levels of activity on this front can broaden possibilities for collaboration with institutions of higher learning and teacher training and generate opportunities for program evaluation and ongoing curriculum development.

One limiting factor undoubtedly will be the tenuousness of programs tied to humane societies and their budgets. American animal protection is highly decentralized, and the responsibilities of municipal animal control; fluctuations in donor support; and the press of other priorities have all had an impact on commitment to humane education by local societies. Without a steady investment of resources in this arena, the spread and impact of humane education efforts are likely to remain uneven and uncertain.

Humane education would seem to be an especially fruitful channel for foundation support. Historically, philanthropic foundations have played a crucial role in helping to shape the course of social change through strategic investments and subsidies. During the civil rights era, for example, foundations underwrote voting rights campaigns in an effort to direct the freedom movement’s energies toward the creation of viable and lasting structures to enhance representative democracy. A similar approach might be taken for subsidizing the hiring and placement of humane education specialists within humane societies, or for the endowment of relevant positions and proper training programs within institutions of higher learning. Such an investment might serve to free humane education from subordinate status within organizations that otherwise are well equipped to promote the lessons of kindness to animals. Higher levels of activity, expanded levels of research, and more rigorous evaluation programs all will help to bring greater credibility to humane education and validate the hopes that advocates have attached to it in the several centuries since appreciation for the value of kindness to animals as a didactic instrument first surfaced.

**Literature Cited**


Underhill, O.E. 1941. The origins and development of elementary-school science. Chicago: Scott, Foresman, and Co.


Unti, B., and A. Rowan. 2001. A social


## Appendix

**Milestones in Humane Education: A Pre-World War II Chronology**

<table>
<thead>
<tr>
<th>Year</th>
<th>Event</th>
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<tbody>
<tr>
<td>1693</td>
<td>John Locke, <em>Some Thoughts on Education</em> published</td>
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<tr>
<td>1765</td>
<td><em>Goody Two-Shoes</em> published</td>
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<tr>
<td>1780</td>
<td>Jeremy Bentham, <em>Principles of Morals and Legislation</em> published</td>
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<tr>
<td>1783</td>
<td>Dorothy Kilner, <em>The Life and Perambulations of a Mouse</em> published</td>
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<tr>
<td>1785</td>
<td>Sarah Trimmer, <em>Fabulous Histories</em> published</td>
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<tr>
<td>1792</td>
<td>Herman Daggett, <em>The Rights of Animals</em> published</td>
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<tr>
<td>1794</td>
<td>American edition of <em>Fabulous Histories</em> published</td>
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<tr>
<td>1794</td>
<td>American edition of Arnaud Berquin <em>Looking Glass for the Mind</em> published</td>
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<tr>
<td>1802</td>
<td>American edition of <em>The Hare, or Hunting Incompatible with Humanity</em> published</td>
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<tr>
<td>1824</td>
<td>Royal Society for the Prevention of Cruelty to Animals (RSPCA) founded</td>
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<tr>
<td>1828</td>
<td>American Tract Society edition <em>Louisa’s Tenderness to the Little Birds</em> published</td>
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<tr>
<td>1829</td>
<td>New York State anti-cruelty statute passed</td>
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<td>1835</td>
<td><em>The Spirit of Humanity</em> published</td>
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<tr>
<td>1845</td>
<td>American Sunday School Union edition of Charlotte Elizabeth’s <em>Kindness to Animals; or The Sin of Cruelty Exposed and Rebuked</em> published</td>
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<tr>
<td>1850</td>
<td>American Vegetarian Society founded</td>
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<tr>
<td>1851</td>
<td>Grace Greenwood, <em>History of My Pets</em> published</td>
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<tr>
<td>1852</td>
<td>Harriet Beecher Stowe, <em>Uncle Tom’s Cabin</em> published</td>
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<td></td>
<td>Massachusetts compulsory school attendance legislation passed</td>
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<thead>
<tr>
<th>Publications Released</th>
<th>Organizations Founded</th>
<th>Legislation Passed</th>
<th>Other</th>
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<tbody>
<tr>
<td>1867</td>
<td>Pennsylvania Society for the Prevention of Cruelty to Animals (PSPCA) founded</td>
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<tr>
<td>1868</td>
<td>Massachusetts Society for the Prevention of Cruelty to Animals (MSPCA) founded</td>
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<tr>
<td>1874</td>
<td>Women’s Christian Temperance Union (WCTU) founded</td>
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<tr>
<td>1875</td>
<td>New York Society for the Prevention of Cruelty to Children launched by Henry Bergh and Elbridge T. Gerry</td>
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<tr>
<td>1877 Anna Sewell, <em>Black Beauty</em> published</td>
<td>American Humane Association (AHA) founded</td>
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<tr>
<td>1882</td>
<td>Band of Mercy concept introduced to United States</td>
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<tr>
<td>1883 Abraham Firth, <em>Voices of the Speechless</em> published</td>
<td>American Anti-Vivisection Society founded</td>
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<td></td>
<td>Thomas Timmins, <em>The History of the Founding, Aims, and Growth of the American Bands of Mercy</em> published</td>
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<tr>
<td>1886</td>
<td>Humane education mandate in Massachusetts spurred by MSPCA</td>
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<tr>
<td>1889</td>
<td>American Humane Education Society (AHES) founded</td>
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<tr>
<td>1890</td>
<td>AHES edition of <em>Black Beauty</em> published</td>
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<tr>
<td>1891</td>
<td>WCTU Department of Mercy formed by Mary F. Lovell</td>
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<tr>
<td>1892</td>
<td>AHA campaign against classroom vivisection spurred by Albert Leffingwell</td>
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<tr>
<td>1893 Marshall Saunders, <em>Beautiful Joe</em> published</td>
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<th>Legislation Passed</th>
<th>Other</th>
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<tbody>
<tr>
<td>1894 American edition of Henry Salt’s <em>Animals’ Rights Considered in Relation to Social Progress</em> published</td>
<td></td>
<td>Ban on classroom vivisection in Massachusetts secured by MSPCA</td>
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<tr>
<td>1895</td>
<td>New England Anti-Vivisection Society founded</td>
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<tr>
<td>1897 Sarah J. Eddy, <em>Songs of Happy Life</em> published</td>
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<tr>
<td></td>
<td>Emma Page, <em>Heart Culture</em> published</td>
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<tr>
<td>1899 Ralph Waldo Trine, <em>Every Living Creature</em> published</td>
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<tr>
<td>1902</td>
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<td>AHA Textbook Committee formed</td>
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<tr>
<td>1905 Humane Education Committee in New York State formed by Stillman and Stella Preston</td>
<td>Oklahoma and Pennsylvania pass compulsory humane education laws</td>
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<tr>
<td>1907</td>
<td>Henry Bergh Foundation for the Promotion of Humane Education established at Columbia University</td>
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<tr>
<td>1909</td>
<td></td>
<td>Compulsory humane education legislation passed in Illinois</td>
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<tr>
<td>1911 Millennium Guild founded</td>
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<tr>
<td>1913 S. Louise Patteson, <em>Pussy Meow</em> published</td>
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</table>
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<th>Other</th>
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<tbody>
<tr>
<td>1915</td>
<td></td>
<td></td>
<td>Be Kind to Animals Week launched</td>
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<td></td>
<td></td>
<td></td>
<td>AHA votes to seek compulsory humane education in every state</td>
</tr>
<tr>
<td>1916</td>
<td>Sandor Ferenczi, “A Little Chanticleer” (case study of a boy’s cruelty toward humans and non-human animals) published</td>
<td></td>
<td>AHES produces the first humane education film, “The Bell of Atri”</td>
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<td></td>
<td></td>
<td></td>
<td>ASPCA creates humane education department</td>
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<td>1917</td>
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<td>Compulsory humane education laws passed in Maine, Wisconsin, and New York</td>
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<td>Harriet C.C. Reynolds, <em>Thoughts on Human Education: Suggestions on Kindness to Animals</em> published</td>
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<td>William J. Schultz, <em>The Humane Movement in the United States,</em> judges humane education the most important development of the previous decade</td>
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<td>Frances E. Clarke, <em>Lessons for Teaching Humane Education in the Schools</em> published</td>
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The No-Kill Controversy: Manifest and Latent Sources of Tension

Arnold Arluke

Introduction

Traditionally, most animal shelter workers have denied that the killing, or euthanasia, of animals in their facilities was cruel, even when euthanized animals were adoptable, young, attractive, and healthy. Workers have sustained a core professional identity of being humane, good-hearted “animal people” who want the very best for their charges, despite—or even because of—their euthanasia of animals. Killing has been taken for granted, regarded as a “necessary evil” having no alternative in their eyes.

One reason shelter workers have been able to maintain this self image is that, until the last decade, little if any organized criticism has been leveled at them. When criticism occurred, it tended to be case-specific, focusing on which animals were euthanized, how it was done, and whether the shelter shared this information with the public. Although a few shelters offered an alternative to the standard paradigm by restricting admission of unadoptable animals and billing themselves as “no-kill” shelters, they did not represent a serious threat to the continuation of “open-admission” policies toward euthanasia.

However, criticism of euthanasia has mounted steadily in frequency and fervor from within certain segments of the sheltering community. In 1994 the Duffield Family Foundation created the Maddie’s Fund, which sought to revolutionize the status and well-being of companion animals by championing the no-kill movement. No longer possible to ignore or discount as an outrageous idea, this movement has spurred debate at the national level about the proper role of euthanasia in shelter practice. The resulting challenges have strained the ability of conventional shelters and humane organizations to protect workers psychologically from the charge that euthanasia is a form of cruelty. Instead of preventing cruelty, which their mission maintains, these organizations now are seen as causing it. In response, the no-kill movement has been attacked by those who defend the practice of euthanasia and open admission.

Although some argue that everyone in the debate shares a passionate concern for the welfare of animals, a rift over this issue divides the shelters. Ultimately, the best interests of animals may not be best addressed in a climate of controversy and criticism. To understand and perhaps reduce this controversy, the tensions fueling the no-kill conflict need to be identified and the breadth of the gulf separating its two camps assessed.

Method

I investigated the shelter community’s response to the no-kill movement in two communities that have taken different approaches to the issue. Though located on opposite coasts of the country, these metropolitan areas are similar in size and wealth. The makeup and nature of their humane organizations, however, are quite dissimilar. One community is home to many independent organizations that individually have received praise or criticism over the years; until recently they have been a widespread group of equals sharing a common media market. Even animal control programs have been large, countywide, and sometimes-progressive players in their own right. In the other community, two key players are so large that they have dwarfed the role and significance of others; the two players have been conservative, lagging somewhat behind the nationwide trends in sheltering. These two communities have dealt very differently with the pet overpopulation issue. In one case the SPCA (society for the prevention of cruelty to animals) has embraced the no-kill concept, while in the other it has not. There are differences in the relationships between the SPCCAs and neighboring humane organizations, as well; in the former community...
these relationships are uneasy, while in the latter they are cordial.

In each community I conducted participant observation at the SPCA shelter, the city animal control office, and nearby (i.e., within sixty miles) smaller shelters that either competed with or complemented the work of the SPCAs. “Sanctuaries” and rescue groups also were studied. Gatekeepers in these settings introduced me to respondents as a sociologist interested in understanding how people thought and felt about the no-kill issue. I was allowed to observe almost every facet of shelter and sanctuary operation, including, but not limited to, kennel cleaning, intake, adoption work, behavior training, and euthanasia. Ultimately I carried out more than 200 hours of observation and 75 interviews that elicited the interviewees’ perspective on the no-kill issue and the animal overpopulation problem. In addition I attended the national meetings of the major no-kill and open-admission organizations, examined press accounts and shelter publications relating to no-kill, and combed several Internet news groups that discussed shelter issues.

Details about each camp’s perspective were subject to respondents’ biases, distortions, and memory limitations. Information obtained was treated as an accurate reflection of what people thought and felt, whether or not it was objectively true, since the perception of truth motivated and justified people’s behavior. From these data I constructed, rather than assessed, the perspectives of both camps toward the no-kill issue. Although this approach follows that of sociologists and social historians, who argue that collective behavior is best understood by examining participants’ own understandings in relation to their social context, it may frustrate those who think I should be more critical. However a critical approach would be neither faithful to my ethnographic method nor helpful in creating dialogue and common ground.

I also tried to sample a wide variety of shelter organizations by size, orientation, location, and financial health, but it was impossible, and perhaps unnecessary, to study every nuance and variation. The wide diversity makes it very difficult to characterize the perspectives of these camps. Indeed, at one level, the only thing that makes each camp identifiable as a group is the fact that one supports the role of and need for euthanasia, while the other does not. Even here, though, the why, the how, and the circumstances of euthanasia vary considerably. For example, the players, policies, and realities of animal sheltering in any one community vary in terms of numbers, composition, strength, and orientation of shelter organizations. Arguments and perceptions of individuals on both sides are informed by and respond to the realities of their own communities. In some cases, these local realities lead members of the same camp, who work in different contexts, to make very different comments about the opposition. Knowing this may help readers understand contradictory statements made by respondents on the same side of this controversy.

Manifest and Latent Tensions

Groups experience tension in two ways. At a manifest or surface level, group members are aware of and speak about superficial differences in attitudes or behaviors thought to cause various problems. These surface tensions are acknowledged publicly at group meetings, written about in professional and popular publications, and debated and mulled over by those who experience them. Since these manifest tensions are thought to be the root cause of problems, solutions are aimed at altering, neutralizing, or eliminating them.

While important to understand and manage, these manifest tensions are symptomatic of deeper, rarely verbalized tensions. These latent tensions are sensed by group members but rarely articulated in a conscious or deliberate manner. The tensions lurk beneath the surface of everyday communication, perhaps appearing in innuendos that stop short of saying what actually is on the minds and in the hearts of speakers. For those hoping to reconcile tense intergroup relations, it is crucial to identify and correct sources of latent tension. Attempts to reduce conflict often stop short, staying at the manifest level of perceived differences or problems and offering solutions that cannot significantly reduce group tension because issues, images, and implications below the surface remain untouched.

Certainly, the American humane community is no exception to this pattern. Discussions about no-kill have been more cathartic than analytic, allowing people to vent their confusion or anger and identify allies and enemies. These discussions have stayed at the manifest level of intergroup tension, involving issues of dirty work and dishonesty.

Manifest Tensions

Dirty Work

Some jobs important to the everyday operation of society are avoided by people who choose not to engage in disrespected occupations. This dirty work is seen as distasteful or discrediting because it casts a moral pall over those who do it (Hughes 1964). Most people turn a blind eye to this work, preferring that others do it but viewing those who do so as modern untouchables—members of a caste thought to be symbolically contaminated and best avoided or pitied because they are associated with unpopular, unpleasant, or unclean tasks.

Many of the open-admissionists I interviewed felt that no-kill shelters delegated euthanasia to them. They believed that they were judged to be morally tainted because they killed animals. They sensed they were uncomfortably tolerated, at best, for carrying out such an unpleasant task, and challenged, at worst, for continuing to do it. As one respondent said,
"Why am I now an enemy? It used to be the humane societies versus the pound, who were the baddies. Now we are the baddies." Another respondent concurred, saying, "It’s no fun being the villains with the black hats." As the "baddies," open-admission workers thought that no-kill advocates cast them as wrong-doers who were "looked down upon" (Milani 1997), "discredited" (Bogue 1998b) or "guilty... because they are murderers" (Caras 1997a) "...sadists, or monsters" (Caras 1997b). Moreover some respondents felt that, with the growing popularity of the no-kill concept, the public had joined this critical bandwagon to castigate them as bad people for euthanizing animals. The result was that open admissionists, rather than the public, were blamed.

The casting of open admissionists as "baddies" stemmed from the language used by no-kill advocates. Many open-admissionists argued that the term no-kill was itself an "attack" on them, implying a "put-down" of open admissionists as killers (Bogue 1998a). "When they say, ‘no-kill,’ what they really mean is, ‘you-kill,’" claimed one critic (Miller n.d.). Indeed, there was concern that the terminology itself positioned open admissionists as "pro-kill" (Paris 1997), since the term no-kill implies its opposite. "Open admission shelters are not ‘kill’ shelters any more than ‘pro-choicers’ are ‘pro-abortion,’" explained one open-admission advocate. Not surprisingly, some open-admissionists have called for abolishing the "no-kill" label and substituting the term limited admission.

Even more provocative was language that accused open-admission shelters of killing animals in ways reminiscent of Nazi cruelties to humans. One charge labeled the open-admission approach the "final solution," a term referring to the Holocaust. Another charge was even more specific: referring to euthanasia by open-admissionists, a no-kill conference panelist described it as the "holocaust of family members [i.e., shelter animals] being put to death." And a number of shelter directors have been called "butcher," "Hitler," and "concentration-camp runner" (Foster 2000; Gilyard 2001, 6–7). Short of specific references to the Nazi Holocaust, some no-kill advocates suggested genocide-like actions by open-admissionists because they were conducting "mass slaughter of animals" or "legitimized mass slaughter."

Slightly less provocative were charges of criminal-like action toward animals. "To me it’s criminal if a dog with poor manners or who is a little bit standoff-ish should be euthanized for behavior reasons," noted one no-kill advocate. Sometimes the "criminal" metaphor was created through the use of such penal language as "execute." For example, one no-kill trainer was trying to modify the behavior of a very aggressive dog who bit two staff members, required muzzling for walks, and was kept in the shelter for sixteen months. She said that the dog would have been "executed" had the dog been in an open-admission facility. This terminology suggests that, if open-admission workers euthanized this difficult-to-adopt, potentially dangerous dog, their act would be morally equivalent to putting a criminal to death. While open-admission shelters spoke of "euthanasia rooms" and "euthanasia technicians," no-kill staff claimed that their shelters did not have "execution chambers" and maintained that they did not "kill" as did their open-admission peers.

At the core of this provocative imagery was the idea that open admissionists were killers, an idea that reinforced the no-kill distinction between killing and euthanizing. Open admissionists patently rejected this distinction, claiming that they only euthanized. Of course, when working with peers, open-admission workers did speak of killing. Shelter workers sometimes used the term kill when speaking with colleagues but were careful to say "euthanize" when speaking to the public. Use of this language was not an implicit acceptance of the no-kill distinction, but rather a combination of black humor and informal understanding that they were using kill as a linguistic shorthand to describe their acts. Other shelter workers deliberately used the term kill, at least before the rise of the no-kill movement, as an interesting way to demonstrate their continuing lack of acceptance of euthanasia as a solution. For them it served as a reminder that this was something they did not like to do and wanted to eliminate the need for. Thus, while some objected to the use of this term because they were concerned about it making them look or feel callous, others supported its use, saying that it helped remind them that they were taking lives—a symbolic way of keeping fresh the commitment to attack the source of the problem.

Open admissionists resented the perception of them as killers because they felt it was unfair or hypocritical. In their opinion, by being forced to euthanize many animals, they were made to shoulder all the moral, emotional, and aesthetic heartaches that went with the job. One editorial argued that the harm of no-kill is that it punishes shelters that are doing their very best but are stuck with the dirty work. It is demoralizing and disheartening for humane workers who would do almost anything to stop that heartbreaking selection process. Humane workers who are brave enough to accept that dirty work deserve better than that. (Caras 1997c, 17)

Instead open admissionists called for what one interviewee described as "...sharing the burden. As long as there is euthanasia to be done, the resentment on the part of us is that we shouldn’t be doing it all. Any shelter in the same town should be sharing the burden. That’s like saying we are all working on the same issue. We are all going to take the good stuff and the bad stuff."

However, no-kill proponents argued that if anyone was to blame it should be open admissionists. In their opinion blaming no-killers for delegating dirty work sidetracked shelter work-
ers from a more important matter. Open admissionists, they said, need to see that they were guilty of complicity in killing because they made it “easy” for the public to handle their animals like unwanted consumer goods disposed of without forethought. “They [open-admission shelters] are teaching the public they can throw away their animals at the shelter, and the shelter will euthanize their problem for them, and they aren’t to blame because they took the pet to the shelter.”

No-killers saw charges of dirty work delegation as “garbage talk,” contending that open-admission shelters needed to rethink their mission and identity so they could become no-kill themselves. Open-admission shelters should “get out of the killing business,” as one no-kill worker said, for the sake of those working in such settings. Carrying out euthanasia was thought to be an “endlessly demoralizing activity” that stopped workers from focusing on their “core purpose: bringing an end to the killing of these animals.” Having sympathy for their euthanizing peers, many no-kill employees wanted them to have the opportunity to work in an environment where the killing of animals was rare and, when done, was for apparently extreme veterinary or behavioral problems. “People are drawn to work here because it is less scary,” observed one no-kill worker. The scariness refers to the loss, guilt, and grief experienced if workers kill animals with whom they have established some relationship, especially if these animals were potentially adoptable. Another worker explained, “I don’t have to worry that I am going to bond with an animal and then have to put him down, which is my perception of what happens in kill shelters. So I feel lucky that those are the kinds of emotions I don’t have to deal with.” This thinking suggested that no-kill workers were not ducking responsibility for delegating dirty work or refusing to share the burden. Instead, they wondered why open admissionists continued their traditional approach to euthanasia, given its adverse emotional impact on them.

No-kill proponents pointed out that they too have been discredited or demonized for not killing enough animals as opposed to killing too many. This stigma was felt, according to many no-kill spokespersons, when they were ignored by open-admission leaders. Several speakers at a no-kill conference lamented the lack of support for no-kill at national animal welfare and animal rights conferences, where companion animal issues were “not well represented.” They felt that open-admission authorities spurned their well-intentioned advances for support of no-kill conferences and other activities. One national spokeswoman for the no-kill movement claimed that prominent open-admission leaders and academics even refused to return her telephone calls. This lack of recognition by mainstream humane authorities was seen as hypocritical, given their presumed concern for promoting the welfare of animals. As one speaker at a no-kill conference pointed out, “The most fundamental right of animals is to be allowed to lead their own lives and not be killed, yet this right has not been strongly embraced by open-admission animal welfare and rights groups.” This was seen as a deliberate repudiation of the no-kill perspective.

No-kill advocates also felt ignored, misunderstood, and criticized at the national conferences of open-admission organizations, because euthanasia proponents seemed unwilling to enter into a “dialogue.” As one no-kill advocate put it,

I don’t like being demonized. So many people there were very resentful of us. They know the wonderful things we do here and how wonderful we are. We were expecting people to be, like, “Wow, you are affiliated with that wonderful group,” and instead we were, like, getting slammed, shielding ourselves from the rotten vegetables being thrown at us. That feeling was very pervasive there [at national meeting].

Another no-kill worker felt “dissed” at a national humane meeting, recalling,

Dishonesty
A palpable distrust existed between open-admission and no-kill followers. Members of each camp insisted that they were woefully misunderstood and misrepresented by the opposition, which, in turn, was seen as portraying itself dishonestly to professional colleagues and the general public.

Open admissionists attacked the honesty of no-kill shelters and spokespersons on a number of counts. First, they said, no-kill advocates lied about not killing shelter animals when the term was taken literally. “I believe they are trained to lie and there is deception to the public...that animals are not euthanized,” said one worker. One critic maintained that some no-killers euthanized animals “surreptitiously, behind closed doors,” so supporters would not find out. To many respondents this “deception” was terminological: “What is a shelter’s definition of no-kill? At our shelter it is that we don’t kill for overcrowding or when a dog’s ‘time runs out,’ but we euthanize for behavioral and health reasons. Now to me that’s not no-kill. It makes that terminology close to a lie. What do the press and the public and donors think it means? Probably they take the words literally— ‘We don’t kill dogs, ever’—well, they do!”

On the grounds that the term was false if taken literally, some critics proposed new terminology, calling no-kill shelters rarely-kills or low kills. Another problem that has less to do with ter-
minology, but still was regarded as a matter of dishonesty, has to do with misrepresentation. Open-admissionists claimed that no-kill shelters misrepresented themselves by shifting responsibility for killing to other shelters; this made the no-kill shelters accomplices to death, argued the open-admissionists, although the shelters distanced themselves from it. One such critic maintained, "... The reality of a ‘no-kill’ approach to sheltering simply means ‘let someone else kill!’" (Savesky 1995a, 4).

Second, open-admissionists said no-killers were deceptive in claiming to adopt out all their animals, a tactic some critics called a “smart marketing strategy.” This point was underscored by one critic who claimed that “their almost no-kill policy” resulted from only accepting “very adoptable animals,” leaving the “burden” of euthanizing turned-away animals to open-admission shelters. It was alleged that no-kill shelters “take in the ‘movie star’ dogs and cats, the pretty ones they know they can place in new homes, and turn away the rest” (Caras 1997c, 17). The result of such policies, open-admissionists said, was that most animals wound up at open-admission shelters. “They are strays, ‘too old,’ unsocialized, injured, or diseased. They are considered unadoptable by no-kill shelters so they are brought to us” (Bogue 1998b). One person compared this self-serving policy to a school that always has impressive SAT scores because it accepts only bright students in the first place. No-kill shelters were seen as excessively “picky,” rejecting some animals with extremely minor problems that could be used as excuses for turning them away. Expanding on this point, one respondent said, “If an animal has the tiniest patch of flea allergy, dermatitis, which is curable, they say no if they want to. Bad teeth, they say no if they want to. Any animal they can say no to, they are going to say no. They don’t take many that need treatment.” One respondent said that even “color” could be used as a reason to classify an animal as “unadoptable,” if there were too many similar looking animals together in a shelter, such as tiger-striped kittens. Some critics also charged that no-kill shelters used a “changeable” classification, whereby a placeable animal could be reclassified as unplaceable if the animal was not adopted, enabling the shelter to claim a “huge” percentage of their “placeable” animals were adopted. Some felt that this classification “game” was so capricious it made no-kill “a joke.” All of these manipulations, some charged, enabled the “no-kill propagandists” through “deception” to produce statistics apparently documenting low rates for euthanasia and high “save rates.”

Third, critics charged that no-kill shelters misrepresented the cause of behavior problems in dogs, not admitting that these difficulties were due to long-term confinement and/or the kind of training they received. For instance, “excuses” were made for the bad behavior of animals, as in the case of a dog showing “guarding behavior” around food whose actions were “explained away” by pointing to the lack of food the dog had experienced. One worker spoke about “the betrayal the public would feel if they were aware that the shelter they trusted has made them the subject of an experiment in placing rehabilitated biting dogs, an experiment with so many failures.” Critics maintained that the aggressiveness of shelter dogs was not fully disclosed to adopters. Upset by this problem, a worker described a shelter that was being sued for adopting out a Rotweiler who was known to have killed one dog, only to have him knock down his new owner and kill her pet dog. The same worker also claimed that this shelter concealed from potential adopters that another dog had bitten seven volunteers. In response, she resigned from her organization, noting: “They adopted out any and all dogs, no matter their history and, worst of all, did not tell adopting families if the dog had bitten previously.” Another no-kill worker, uncomfortable with her own shelter’s policy, gave credence to this open-admission critique when she reported “incredible feelings of guilt,” making it “hard to sleep at night,” because she felt “complicity” in adopting out dangerous animals to clients from whom information was hidden about these problems and who were blamed by staff when animals were returned.

Some critics claimed that, if not deliberately dishonest, no-kill shelters misrepresented themselves because they were unrealistic. One open-admissionist wrote, “The concept of the shelter where no animals must die is a fantasy that seems too good to be true” (Caras 1997c, 16). These “fantasies,” argued open admissionists, made donors and the general public “feel good.” As one worker said: “The truth is that it is impossible. They are encouraging an expectation that is unrealistic.” These expectations... raise false hopes and wishes for pet owners and our communities that animal abandonment is going to be prevented simply because the killing of adoptable animals is going to be prohibited. The complexities of the problem of killing so many animals in our shelters is not simply due to the perception that an unwanted pet is “better off alive on the streets than being killed at the pound.” (Cubrda 1993)

Critics argued that, in addition to raising false hopes, these fantasies led people mistakenly to believe that euthanasia was unnecessary at their local humane society, a strategy that siphoned funds away from open-admission shelters.

No-kill advocates maintained that their aims were distorted, bemoaning the “warfare” and frequent “bashing” by open-admission spokespeople that resulted in “credibility hits” against them. One no-kill staff member spoke of her frustration with people who misconstrued the meaning of no-kill as a preference for animals to be kept alive in unpleasant or unhealthy circumstances. She noted, “I don’t know if there is any sane person who would agree that a ware-
house kind of life...is better than death. I don't think anybody is arguing that, except for an extremely small subset of people who are not in the mainstream of the no-kill movement." No-kill advocates also disagreed with those who criticized the concept of no-kill because it failed to be literally true, admitting that a few animals, albeit a tiny number when compared to open-admission shelters, were euthanized. Some even refused to label their shelters as no-kill or minimized use of this term because their euthanasia rates were not zero.

For their part no-kill shelters argued that open-admission organizations "kill healthy animals" (Foro 1997, 16) and misrepresent the real meaning of euthanasia. Seeking to undermine the semantic justification for killing so many animals, one no-kill spokesperson wrote: "The term euthanasia, as used by these practitioners [open admission and animal control staff] in the destruction of healthy animals, softens the reality and lessens its impact on the public. Sadly, to mislabel killing as euthanasia for controlling animal overpopulation does not allow society to deal with the tragedy or to accept responsibility for making this happen" (17). "True," "authentic," or "dictionary-defined" (17) euthanasia was spoken about to separate "killing" from other instances where extreme, untreatable, chronic suffering mandated euthanizing animals. No-kill advocates also reclaimed the concept of euthanasia by asserting that humane death be done only for the sake of suffering animals rather than for owners who had their own agenda for requesting euthanasia, suggesting that open admissionists wrongly blurred this distinction. Not surprisingly open-admission advocates rejected this distinction, claiming that it was mere "semantics."

No-kill proponents also refuted the charge that they were "picky" to ensure high adoption rates. They claimed to take many animals that were far from the "cream of the crop," as one worker pointed out. "We get only the worst here; everybody thinks we take only the best dogs here. It's hard for me to find a family dog in our shelter because we are taking the ones no one else takes." In fact, in one no-kill shelter, there was strong internal pressure on intake workers to accept as many dogs as possible from the nearby animal control office, regardless of their bad or "spooky" behavior or poor condition; otherwise the dogs were likely to be euthanized. In one instance, after an intake worker refused an aggressive, six-month-old dog offered to her shelter, several coworkers chided her and called her a murderer. Challenging back, some no-kill shelters felt that their save rates might be even better were it not for having difficult and unadoptable animals dumped on them by animal control organizations. A respondent explained.

We could inflate our save rate even more if we had a bar that resembled anything like another shelter[s], where they see the hint of a curl of a lip and that animal is euthanized and it never goes to their staff as an adoptable animal, where we would not even flinch at that. So I would say our numbers are possibly even better in so far as we are taking some serious-behavior animals—dogs that bite you, dogs that are aggressive.

**Latent Tensions**

Identifying manifest tensions helps to detail the no-kill controversy but does little to diffuse it. Most proposals to allay the conflict come from the open-admission camp, which has called for no-kill advocates to modify their provocative language. However, those concerned about inflammatory speech in the no-kill controversy have tuned into only a small part of the bigger picture that informs this controversy. Provocative language is a symptom and not a cause of the problem; its social and psychological roots are concealed and complex. To explain the persistence and fervor of the strife, it is necessary to analyze the unexpressed, complicated, and recalcitrant issues that underlie manifest tensions.

**Vested Interests**

Much like the abortion debate, the persistence of which stems from the vested interests of pro-life and pro-choice proponents, the no-kill controversy is stubborn and resistant to easy compromise. No-kill and open-admission followers cling to and defend their vested interests, including their collective identities, occupational lifestyles, and world views. These vested interests underlie any debate about the merits of different policies for controlling and managing pet overpopulation or dealing "humanely" with its victims.

Members of each camp in my research had a vested interest in protecting their humane identities. For no-kill followers this identity provided some cachet because it empowered them. They saw themselves as "rediscovering" who they were, as opposed to open-admission workers whom they felt "have forgotten our mission and are lost in the overwhelming job of euthanasia," according to one shelter worker whose organization was switching from open admission to no-kill. In the opinion of no-killer followers, open-admission work was simply not the work of a "humane" society. Their new identity also was empowering because it had an outlaw quality; this made it an attractive and powerful label for no-kill workers who felt alienated, misunderstood, and excluded from the humane powers that be. Believing that they were disempowered framed their camp's stance as "anti-establishment" relative to open admissionists (Foro, n.d.a). Poorly endowed, small shelters especially were drawn to the identity tag of no-kill because it symbolically represented their perceived powerlessness in an animal community dominated by a few large and powerful national organizations. The charge made by some that the San Francisco SPCA (SF SPCA) had "sold out" to The HSUS (which is viewed as pro
open admission in its orientation) by increasing the number of animals it euthanized from almost none to a few, speaks to the current importance of boundaries in conferring identity in the humane community.

Other features of the no-kill identity that offered some cachet came from its evangelical quality, calling for people to see the “right” way to approach this problem and convert to this “movement,” leaving behind their former, ill-conceived approach. Several respondents commented on the “religious fervor” of no-kill followers; one said that there was a “kind of saintliness” about the movement. There even were rare attempts to include elements of Buddhism and vegetarianism as part of the “no-kill philosophy” (Foro, n.d.b).

Perhaps the most cachet came from unintentional piggybacking on the pro-life movement. Large and successful social movements provide an assembly of symbols and ideological trappings—a cultural resource—that other groups can use to fashion their own thinking and model their own actions, or from which they can draw emotional power and symbolic coherency. While there was little evidence that no-killers subscribed to pro-life beliefs, there were many parallels between the ideologies of these two groups that empowered the no-kill movement and emotionally charged the identity of its followers. Just as the pro-life movement campaigns to save the “helpless unborn” who should not be “killed,” the no-kill movement questions the moral, as well as the practical, basis for killing unwanted or undesirable shelter animals. The “killing” of shelter animals signaled a moral assault on the fabric of human-animal relationships that was unimaginable to no-killers, much as abortion was to pro-lifers (Ginsburg 1986; Kaufmann 1999). Many no-kill proponents saw the open admissionists’ version of euthanasia as murder committed by selfish owners and unimaginative shelter workers willing to accept the status quo, in the same way that pro-life advocates defined abortion as a crime approved by a legal system which protected murderers and left victims unprotected (Doyle 1982). In the end this cachet was strong enough to make it virtually impossible to stop using some language, including the very term no-kill. Its advocates were unlikely to curtail use of this self-moniker because it so powerfully organized their identity.

Open admissionists have discovered little if any cachet in their humane identity, at least compared with no-killers. For the most part, they have refined their former identity in a reactive and defensive manner by digging in their psychological heels and reaffirming their long-standing image as the standard bearers for humane treatment of animals. Ironically their “new” identity has made them appear to be victims facing a more powerful enemy. For example some open admissionists spoke as though they were on the “wrong side of the street” because the “dirty work” of killing was delegated to them. They felt powerless to stop this flow of animals and the undesirable task of euthanizing so many. Some staff in open-admission shelters and animal control offices, especially in cities that had strong and financially stable no-kill programs, lamented having poorer facilities and less public attention. This difference was noted in a major magazine article about animal shelters, which referred to one city’s animal control office as a “tenement” and its no-kill operation as a “palace” (Hess 1998).

Open-admissionists also failed to piggyback their identity on a cultural resource that could give it momentum, coherency, and cachet. In contrast, pro-choice advocates linked their cause to the feminist movement’s protection of the rights of women. Support from animal rights groups, such as People for the Ethical Treatment of Animals (PETA), did not provide this cachet. One reason is that no-kill groups also claimed to be protecting the rights of animals by opposing traditional euthanasia policy, making the rights issue somewhat of a wash. It was true that open admissionists focused on the issue of easing the suffering of animals and providing options to owners who no longer could or wanted to care for their pets. However this symbolism paled in comparison with the no-kill movement’s moral concern for what were seen as innocent, helpless, and desirable animals, a stance similar to the pro-life movement’s symbolic construction of the fetus (Doyle 1982; Sheeran 1987). In American society anti-death icons trump almost any other image except that of freedom, and this appears true in the present case. Moreover, although some open admissionists wish to develop their own label conveying a new identity rivaling “no kill,” this would perpetuate the tension rather than remedy it.

Workers also had vested interests in protecting lifestyles, whether personal or occupational, associated with either the open-admission or no-kill approach. They sought to defend what was familiar to them at work, while questioning others who threatened this routine. For instance, at one level, the open-admission approach to euthanasia was easier for established bureaucracies that had worked this way for years and had developed suitable defenses to cope with it. Mainstream open-admission shelters have had the resources to garner large-scale support for euthanasia as the best way to deal with pet overpopulation, and they have grown comfortable with their established methods of doing so. One respondent claimed, “We are all vulnerable to the possibility that euthanasia just makes my day go a little bit easier. If you suddenly ended euthanasia for reasons of space, you’ve got a big problem, don’t you? You are going to have 20 or 80 percent more population than before. Solve that problem. If there is euthanasia, it does make things a little bit easier, doesn’t it, to have your shelter running very smoothly and efficiently?

No-kill workers also developed organizational routines that made their work easier for them. Those most outspoken in their criticism of euthanasia
took the moral high ground by distancing themselves from it while on the job. In their shelters they regarded euthanasia as a clinical, veterinary act performed elsewhere by technicians in animal control agencies, or an infrequent, highly ritualized and emotionally upsetting treatment of a "good friend" done by in-house veterinarians. They provided a language and set of rationalizations to ensure that such rare, in-house killings would be seen as impossible to avoid, without any ambiguity about the wisdom of doing them. These steps made them comfortable and secure while on the job. Like their open-admission counterparts, they came to see their particular organizational way of life as the best one for animals and themselves.

Finally, these accustomed ways of working endured because workers accepted the presumptions that propped up, defended, and explained them. Usually the presumptions were expressed by people as "truths" that were rarely questioned and often thought to be self-evident. It was predictable that the workers could not see the tenuousness of such "truths," since ideologies make those who profess them shortsighted as to the implications of their beliefs. The beliefs function as "reality" anchors for people and, as such, are clutched tenaciously. Respondents in my research supported these anchors by use of key terms, such as shelter, euthanasia, adoptable animal, and humane, whose meanings were ambiguous and therefore modifiable to be consistent with each camp's truths. The terms became a linguistic code to define a camp's position relative to other groups.

For example, while both open-admission and no-kill advocates abhorred euthanasia, they had different takes on killing because they had different conceptions of the fundamental problem. Each group defined the problem somewhat differently, making for different solutions. Open-admission shelter workers saw the problem as an animal problem—one of managing pet overpopulation. They argued that no-kill approaches did not solve this problem but merely shifted the responsibility for euthanasia to another shelter or agency. No-kill advocates, however, saw the fundamental problem as a person problem—one of changing the nature of shelter work so that workers could have a professional identity uncontaminated by the contradictions posed by conducting frequent euthanasia, especially if it involved animals thought to be adoptable. Evidence of this changing emphasis from animals to people came from the public justifications of shelters that had abandoned their prior open-admission/euthanasia policies for no-kill approaches. When a major SPCA did so, the New York Times headline proclaimed: "ASPCA Plans to Give Up Job Killing New York Strays." The text explained that

Killing stray dogs and cats has obscured its mission—and its image.... The society has backed away from killing, which it calls animal control. "Philosophically, it's a nightmare to kill 30,000 to 40,000 animals a year.... That's not our mission."... Being perceived as an animal killer has... saddled it with an image far different from the one it wants—that of an animal care and adoption agency. (Hicks 1993, B14)

These divergent views were bolstered by the isolation of workers from the realities of shelters unlike their own. Most workers in each camp had little if any firsthand experience with the opposing group. As in the abortion controversy, where pro-life participants had little or no direct exposure to abortion (Luker 1984), most workers in no-kill facilities had scant exposure to euthanasia. Not having direct contact can exaggerate the emotional difficulty of doing something, making it seem even more wrenching than it might be in reality, and making it seem even more horrific or ghastly than it seems to those workers who have learned how to rationalize or cope with it. Similarly, many open-admissionists never worked in no-kill settings; this lack of experience certainly made any other approach seem impractical or even outlandish.

**Attacking the Problem**

Differing approaches to dealing with animal overpopulation resulted in a second latent tension. No-kill workers "fought the good fight" for each animal who came their way, expending as much time, labor, and money as necessary to ensure that he or she was cared for, loved, and, they hoped, adopted. Workers could feel as though they championed individual animals. As one respondent said, "We dare to think that every individual life does matter... that that individual's life actually matters." This focus on the welfare and fate of individual animals, combined with the knowledge that euthanasia was very unlikely, allowed these workers to indulge their "rescue instinct" and their need to have emotionally deep and complex relationships with shelter animals, even though they knew that many animals would be adopted.

The major force behind fighting the good fight was the unabashed desire of no-killers to rescue or save animals, believing that it almost always was worth trying to find homes for all animals, even if others classified them as unadoptable. As one respondent said, there are a lot of self-proclaimed experts who will tell you that this or that dog is unadoptable, don't even bother trying. And we don't accept that. You can get terrifically good outcomes.... It's a question of when can you and when can't you. The jury is out on our animals until we have exhausted all reasonable attempts.

No-kill trainers believed they could rehabilitate most problem animals, including those exhibiting aggressiveness. One trainer compared this challenge with working with criminals, concluding that both animals and criminals can be rehabilitated if people try hard enough. "If you've gotten people who've committed certain levels of crime, can they be rehabilitated? If you give them the right counseling, can you turn them around, or
is it always in them? I would submit that the right kind of effort hasn't been tried.”

No-kill workers felt that open-admission shelters turned their backs on animals that were less than “perfect,” euthanizing those that could be placed in homes if given behavioral or medical attention, along with time and careful placement. One no-kill worker elaborated on this view, saying,

Where do you draw the line? Does everything have to be pristine and perfect, and you kill everything else? We want to give animals a chance that we think ought to be given a chance. It’s kind of like a “quantity versus quality” type of thing. I mean, the Blackies and the Willies out there, they would be killed because they are not perfect, and I see this wonderful pet that would make a great companion for someone and I think they are worth investing the resources into.

This logic meant that no-kill facilities could “save” or “rescue” animals from open-admission shelters, and that those shelters denied the value of rehabilitating animals who could be improved and perhaps adopted.

Saved animals often faced a severely reduced pool of potential adopters, since it took a very special adopter to be the right match for an animal with behavioral or veterinary problems, let alone one that was old or unattractive. Despite this, no-kill workers convinced themselves that perfect adopters existed for virtually all of their charges. Having this view, however, justified keeping animals for a long time as staff searched for suitable adopters. This search could be particularly trying when dogs were highly aggressive and needed muzzling and constant monitoring. When a no-kill worker was asked who would be an appropriate adopter for such a challenging animal, she said a dog trainer would come to the shelter one day and adopt one. However, she acknowledged—without apparent irony—that no such adopter had come to her shelter since she had arrived there three years earlier.

Fighting the good fight for all animals made euthanizing any of them a difficult and labored decision. One facility had formal guidelines for deciding on all acts of euthanasia (except for extreme emergencies). The guidelines included obtaining signatures of approval from the president, vice president, and initiating department head, and requiring that the animals’ names be posted so no staff would be shocked by inadvertently discovering that a “friend” had been euthanized. After completing this paperwork, cats slated to be euthanized were given special foods and treats; soft, comfortable, secure bedding; adequate scratching posts; and visits from the staff. Dogs were given similar bedding; a rawhide bone during the day; a beef bone at night; special food and “extra special goodies”; a cloth toy; and visits from staff members who would give them “quality time” through long walks, outdoor play “with their special buddies,” or quiet time. This “spoiling period,” an informal practice at many no-kill facilities, involved special consideration for animals after the decision was made to euthanize them. Spoiling periods “were awkward” for the staff because they knew that animals were to be “put down,” but the special treatment also made the staff feel better about the euthanasia decision. One worker said,

The last days are so difficult. I find it very hard to look at a dog carrying on its normal life, when I know that soon it will all be over. But I think it helps us to know that our dog’s last day or so was really special. It seems to bring peace to the people around the dog who are suffering, knowing that the dog is going to get euthanized.

The individualization of shelter animals meant that no-kill workers were very disturbed when euthanasia took place, even though, or perhaps because, this was a rare event. “It is always such a big deal. I just cannot get used to it,” observed one worker. Enormous internal resistance occurred at one no-kill shelter when a small number of overly aggressive dogs were slated for euthanasia. “We could not fix them. We were at the end of our ability,” lamented one worker. Some dogs had become a danger to the staff and were a liability risk. Management held special meetings with different groups of workers and volunteers to deliver this news, calm those upset or in “shock,” and reset the organization’s “bar” for rehabilitating difficult dogs. During the meetings senior staff placed most of the blame on external forces, saying, “Our hand has been forced by elements in society.” Those external forces included what the staff described as unreasonable expectations for the behavior of animals, and society’s excessive litigiousness. Trying to ease distraught and confused listeners, senior staff claimed they “did not have choices” and “couldn’t” do anything else with these dogs.

Nevertheless senior managers withdrew their initial list as pressure mounted to spare these animals; a few workers and volunteers demanded meetings with shelter officials to protest this list, and rumors circulated about a volunteer protest strike and leaks to the press. Workers feared that conducting euthanasia on this scale would subvert their identities as no-kill advocates. One uneasy worker spoke about the slippery slope created by doing even a small number of euthanasias: “We are in a position now of either becoming like every other shelter and we save only perfect dogs who need nothing or what...?” Considerable, continued pressure by workers resulted in several dogs being taken off the list and sent to sanctuaries.

Despite these efforts a few dogs from the list were euthanized. The most unsettling case involved a dog having a history of aggression, but with whom the animal’s “fan club” had bonded intensely. Only this inner circle was permitted to attend Maria’s euthanasia; lights were dimmed in the dog’s quarters, and the mood was extremely solemn if not despondent. Many workers were tormented; a few
chose not to attend the euthanasia because they were so distressed. One staff member was hospitalized because she was so disturbed by the event, and several others took “sick days” because of their grief. During the hours preceding the euthanasia, as well as the days following it, workers could be seen embracing each other, offering words of comfort, and shedding tears. “People are walking around like zombies,” said one sad worker about her peers. A wake held the evening of the euthanasia again excluded those outside the inner circle of mourners; a poem in honor of Maria was available; stories were swapped about the animal along with photographs of her; flowers and wine were there for the occasion. As one worker said, the sentiment was: “We love you guys, you did good work but this one just didn’t work.” Contrary to shelter policy, one of the workers requested Maria’s ashes; a few staff members thought this was going “overboard.”

Open-admission workers, in contrast, related to shelter animals less with their hearts and more with their heads. Unquestionably they too wanted the best for animals that came their way, but their approach was colored by what they saw as a more important issue than the need to feel good about their relationships with individual animals—namely, the need to attack the overpopulation problem by increasing the number of adoptions through euthanasia of animals deemed unadoptable. They also used their heads because they felt it was important never to say no to surrenderers of animals; despite their frustration and anger with surrenderers, open admissionists feared what might happen to the animals if they were not left at the shelter. This thinking forestalled deeper emotional relationships with their charges, because all the animals stood some chance of being euthanized and usually were in the shelter for relatively short periods. One worker aptly summarized this type of thinking as follows: “There’s a part of me that I don’t give to the dogs—not to that dog—because that would inhibit what I can do for so many others. I always have to come back to looking at numbers. I can’t afford to get attached to a new dog. I have to think with my head. I have to keep part of me for the good of the whole. I won’t sacrifice a few for the many.”

According to open admissionists, relating to shelter animals with one’s heart caused ethical and emotional problems. They claimed that no-kill shelters had such a narrow definition of suffering, they often could not “see” it; certain animals might not be euthanized even to end their suffering. Without clearly seeing suffering, workers as well as animals suffered, although the workers’ suffering was emotional.

These problems were evident at Maria’s euthanasia, according to shelter staff members who sympathized with the open-admission approach. The fact that this euthanasia was for behavioral rather than medical reasons made it especially difficult for workers to say that Maria’s “suffering” justified her death. One exception was a staff member who had worked previously at an open-admission shelter. She commented,

Whenever I put an animal down, I always found it to be redeeming because the dog has been in torment—and any dog I have put down has either had an aggression issue or just not been happy, has had a bad life. For me it was the one thing I was able to do for that dog—give it some peace. I was able to end the suffering.

Indeed, a number of workers at this shelter felt that the strong emotional reaction to the death of Maria was “unfair” to some staff members and out of proportion with what should happen after the loss of an un-owned shelter dog with a history of biting. One such dissenter said that, if anything, members of Maria’s fan club were “mourning their failure” to rehabilitate this highly aggressive dog. Moreover, his opinion was that, although he thought it might sound “cold,” it was a better idea for emotional reasons to have a veterinarian and technician be alone when euthanizing animals. Having all the people who were involved in his [the dog’s] life standing around him, pushing their emotions on the doctor…. it could be difficult for the doctor not to cry. That’s not fair to do to the doctor or the tech holding the dog. Why should they be forced to have an emotion for an animal that they have no connection to? They are forced to feel sympathy.

These ethical and emotional drawbacks of bonding so closely to shelter animals were worrisome not just to the no-kill workers but also to open-admission proponents who pondered the fate of their no-kill peers.

By comparison, a nearby municipal animal-control office routinely and unceremoniously euthanized animals. While bemoaning euthanasia, workers there felt that it was the right thing to do given the large number of surrendered animals and the limited space and resources available. They, like other open-admission workers, rejected the notion that they were the “bad-dies” because no-kill workers needed to “rescue” their shelter animals. The implication of using this language was that these animals were salvageable as potential pets and therefore should not be killed. The problem, according to open admissionists, was that if no-kill workers “rescued” with their hearts, they would neglect the “bigger picture,” which the former could see. This criticism was expressed even by some no-kill workers who bemoaned turning away so many animals for lack of sufficient resources to deal with them all. To open admissionists, this was a management problem—a combination of poor resource allocation and bad judgment—that allowed workers to be self-indulgent. Such shortsighted policies were seen as beneficial to workers, since they gained emotional gratification at the expense of animal welfare.

The above-mentioned animal-control office, like many open-admission shelters, had no formal protocol calling for signing off on euthanasia decisions or for in-house postings of the events. Nor was there a spoiling peri-
od for animals being euthanized, although the workers here, like their peers in open-admission shelters, maintained that they "spoiled [the animals] as much as possible" for as long as they were in their shelter "...not [just for] twenty-four hours." Spoiling periods per se were thought to be more for the psychological benefit of workers than for the animals and to place a "huge emotional burden" on the staff members doing the spoiling. While workers lamented having to euthanize animals, they handled it quite differently from their no-kill peers. Rather than expressing their emotions about preventing euthanasia or grieving when it occurred, these workers blocked their emotions when it came to euthanasia. As one worker recalled, "I was like a killing machine, a certified euthanasia tech that euthanized 60 to 100 plus animals every single day. Some days that's all I did—clean and kill. And go home. You put your feelings on the shelf. You just do your job. You have to deal with that sometime down the line."

**Being Humane**

Short of the most extreme manifestations of physical suffering in animals, no-kill and open-admission workers had very different perceptions of what constituted suffering, or at least enough discomfort to justify killing an animal for his or her own sake. Having conflicting ideas about the nature of suffering led to suggestions that members of the opposite camp were being cruel to shelter animals because they caused needless suffering, either for killing them or for keeping them alive. Alternative notions of suffering also allowed both open-admission and no-kill workers to see themselves as humane because they could say that they were acting in the best interests of animals compared to their peers in the other camp.

Some open-admission representatives argued that no-kill workers were cruel to turn their backs on so many needy or less desirable animals, and that open-admission shelters actually were responsible for "saving" more animals. One open-admission defender wrote in an editorial, "The Door Remains Open," that "no-kill shelters seldom operate programs to rescue sick and injured animals off the streets," suggesting that animals in need are turned away (Savesky 1995b, 2), while open-admission shelters "rescue sick and injured animals every day...dogs hit by cars, cats tangled in debris, animals injured by other animals, victims of all sorts of accidents." In addition, no-kill shelters, according to Savesky, "often turn away older animals, those with minor health or behavioral problems, or those that they otherwise classify unadoptable." Moreover, this author added that "no-kill shelters seldom investigate and prosecute complaints of cruelty and neglect" (2). By contrast, she argues that many such animals have a greater chance of being adopted in open-admission shelters.

People working in open-admission shelters also thought it was cruel to "warehouse" animals past the point where they should be "humanely euthanized." Some claimed that warehousing was cruel because of the harmful psychological effects of keeping dogs and cats in long-term housing, especially if caged with multiple animals and given minimal stimulation and human contact. But in discussions less-than-ideal caging or animal care often fell short of being labeled as cruel. One animal control worker, for instance, was uncomfortable with the local no-kill shelter's practice of putting animals into boarding kennels when space ran out in the facility. "Who do they have to love them? They are going from one cage to another just to keep them alive. I don't know if it is cruel; it just seems...neglectful. The reason why it is hard to say it is cruel is that it is not for a bad reason. The intention is 'Hold on, hold on, you'll get your chance.'" Another respondent hesitated to use the word suffer, but spoke of the unintentional emotional "neglect" of dogs who are confined in cages and have to deal with many different handlers and visitors—all of which takes a "toll." One respondent, however, did use the word suffer, claiming that some no-kill shelters kept animals so long that they developed "that nervous thing, like dogs spinning, or some of the barking [which] sounds like suffering to me. They are just unhappy and crying." Similarly, another critic of warehousing pointed out after visiting a no-kill shelter that "it was spotless...They had air conditioning, climbing trees, toys, and good food. But when you walked in, they were all over you. I had cats attached to my legs and arms, on my shoulders and my head. I had scratch marks for a week after that but not from aggression. These cats were starved for human contact. That's what breaks my heart about these places" (Donald 1991, 4). Some critics suggested that workers compounded the detrimental psychological effects of long-term housing by using inappropriate behavior and training techniques. As evidence, one respondent cited a case of several dogs who were born in a no-kill shelter and stayed there for seven years. All displayed serious behavior problems that were attributed to the methods used in their training.

Open-admission spokespersons also argued that warehousing in no-kill shelters could cause physical harm. This critique was echoed in a popular magazine, which reported the following reaction of a 4-H group leader after taking the group to visit a no-kill shelter: "Dogs limping around with mange and open sores. Others gasping for air or dragging broken legs, struggling to fight off vicious packs in the large communal pen. 'I might as well have taken them to a horror show'" (Foster 2000). The reporter who wrote this article referred to the "atrocious conditions" at some no-kill facilities, and the "luckless inmates" who are "condemned" to "filth" and who "suffer" from long-term caging. Indeed, one respondent claimed that the "quality of care of animals is horrific. They [no-kill shelters] need to do it right and have some standard of care." For example, he pointed to a no-kill facility that
called his shelter in hopes of transferring some of its 110 animals to reduce overcrowding. When the respondent visited the no-kill shelter, he found that the facility was very cold, merely a “semblance” of a building, and that some of the animals were dead. In addition, when the no-kill shelter was told it could transfer some animals, its manager declined because the open-admission director could not rule out their euthanasia.

Most no-kill respondents denied “warehousing.” They felt that they addressed the “quality of life” issue and provided a better life for animals in shelters than some had in adoptive homes. Although one worker admitted that, “from the dogs’ perspective, they are always prisoners,” she felt that their quality of life was “as good if not better than the [homes where] many open admission shelters place their dogs. . . . I know a good many dogs in suburbia who don’t get walked, have minimal veterinary care, don’t get socialized. They don’t get patted much by their owners. They’re in the yard.” Others defended extended stays; one respondent said they were “less than ideal, however it is fortunate that [the animals] get a chance to end up in a wonderful home where they are completely loved and adored.”

Well-funded no-kills described “lavish” surroundings for shelter animals to counter charges of inhumane warehousing—though these surroundings were sometimes belittled by the press or open-admission shelters as excessive, and better than facilities provided for some homeless people. One no-kill “Q and A” included a question asking how it could justify such a “beautiful” and expensive shelter with “luxury suites for animals, replete with toys, TVs, and playrooms,” when “most humans don’t have quarters like these.” The reply, in short, claimed these “amenities” were not excessive but “important for the animals” to reduce their stress and make them “healthier and happier. So the toys and playrooms are not frivolous. They’re just what the doctors ordered.”

Part of their defense also rested on the language used by no-kill advocates to describe physical and mental problems of animals housed for long periods of time in shelters. The advocates fought hard to describe these problems in ways that did not lead quickly to perceptions of hopelessness for the animals. For example, in one such facility, animals with behavior problems who would have been euthanized in open-admission shelters were described as having “issues.” The word “issues” conjures up psychological problems in humans that can be lived with and managed, as opposed to more troubling behavior that is difficult to tolerate and control. In one case a shelter dog had a history of snapping at children, and was spoken about as “having an issue with children.” The solution was to work on ridding the dog of that “issue,” while seeking childless adopters who could keep the dog away from children.

Language modification also helped lessen the image of dangerous animals so they might appear as “nice, soft.” One group of no-kill trainers was particularly concerned, for legal reasons, about written records that created an image of dogs as vicious, perhaps indiscriminate biters. They started a “language project team” not to “hide data,” but to “be cautious. If somebody reports something, even if it’s literally a puppy who puppy-bit, that would go down on the record. We are trying to clean up all that junk. . . . trying to make a big distinction between when a dog play-bites versus really bites. We are giving people who do the reporting a multiple-choice form rather than letting them editorialize about it. [One choice is] “dog play-bit hard with bruising.”

In any case keeping compromised animals alive or warehousing them was not as bad as killing them, according to no-kill respondents. They countered criticism with the charge that euthanasia itself was often cruel by definition, if not by practice, because most shelter animals could be kept alive and even adopted. Some methods of euthanasia were easier for critics to decry on the grounds that they caused animal suffering. For example critics of a shelter that used carbon monoxide deemed this gassing to be morally “wrong” and “cruel” because animals cried out in pain or fear and saw other animals dying (Gilyard 2001). The more common method used, injection of lethal drugs, still was attacked as cruel.

Moreover most no-kill workers felt that if adverse “warehousing” existed it was at a facility other than their own. Some no-kill proponents were very clear that shelters whose mission was to adopt animals should not keep unadoptable animals in too-small quarters for extended periods of time; to do so was considered inhumane. Other advocates acknowledged that these abuses probably occurred in at least some no-kill facilities, but they were marginalized and viewed as exceptions rather than as representing the vast majority of no-kill shelters. Indeed one common way to create this “bad egg” hierarchy was to refer to the abusing facility as a “sanctuary” (used here pejoratively) rather than a no-kill shelter, thereby distancing it from “better” organizations.

In fact no-kill proponents felt that keeping behaviorally or medically difficult animals was a sign of success and an opportunity to save more animals, rather than evidence of their insensitivity or cruelty. One hopeful no-killer said these animals were a challenge to rehabilitate, and her goal was to make ever sicker animals into adoptable ones: “We are raising the bar for what we can handle medically or behaviorally. We’ve got animals with chronic health conditions. We’ve got aggressive dogs. We are trying to rehabilitate them so they can be made adoptable.” By “raising the bar,” no-kill workers felt they were attempting to reduce suffering in animals rather than increase it through prolonged caging. For the most part, they denied the latter happened. For example, when discussing a highly
aggressive dog who had been sheltered for eighteen months, a no-kill worker said the animal was not a candidate for euthanasia because that "means you are ending suffering, and he is quite enjoying his life."

Toward a Common Ground

Unearthing the manifest and latent tensions behind the open-admission and no-kill perspectives suggests that a large and perhaps insurmountable gulf exists between the camps. However, it would be wrong to portray these differences as antithetical. Situations exist where each camp’s defenses are down, vulnerable to concession or change. This offers hope of a common ground between camps that would improve dialogue, enhance cooperation, and mollify tensions. Four bases exist that auger well for such change, including internal dissent, shared values, mutual identification, and maturation and change.

Internal Dissent

Far from public posturing that yields rigid ideological distinctions, there was internal dissent within the open-admission and no-kill camps over the proper handling of specific shelter animals—a dissent that mirrors the same criticisms made between the camps. It was common to find some workers within open-admission and no-kill shelters who were uneasy with their own shelter’s ideology but remained on the job because they strongly believed in the importance of voicing an alternative view in their own shelter, even if this marginalized them from peers. In larger facilities, there were cliques devoted to such dissent, but they, too, felt alienated from their own shelter’s dominant outlook on these issues. Whether individuals or cliques, the concerns of these workers came to a head over the handling of particular shelter cases.

For example workers within some no-kill shelters sometimes debated the appropriateness of their facility’s stance on euthanasia when that issue was raised for certain animals. As they discussed the fate of these animals, workers mulled over the various arguments now associated with the no-kill or open-admission perspective. Workers at one no-kill facility were sharply divided over the proposed euthanasia of several dogs with threatening behavior who had been sheltered for several months. Most strongly opposed the death of these animals, believing that their quality of life was satisfactory and that their risky behavior was modifiable, while some supported it on the grounds that their lengthy caging adversely affected them and that they were dangerous to adopt out. Those in the dissenting minority espoused a view that at times was closer to the open-admission than the no-kill stance, since it saw euthanasia as an acceptable alternative to the deleterious effects of long confinement. The two factions within the shelter were engaging in a meta-discussion about the proper handling of all shelter animals who faced a similar quandary. At this general level, they were debating and considering the merits of both no-kill and open-admission stances; this process allowed for the possibility that features of these perspectives might be merged.

Open-admission shelters also had their share of internal dissent. Traditionally, workers who became attached to individual animals quietly resisted the euthanasia of their “favorites” or, over time, quit because of “burnout” from the routine of killing. Perhaps empowered by the no-kill movement and seepage of its ideas into the open-admission camp, these workers were more willing than in the past to express doubts about the rationale for euthanasia and to garner support for such resistance from fellow workers. At these times, workers and shelter managers, much like those in no-kill shelters, debated the appropriateness of euthanasia in ways that echoed sentiments from both camps.

This dissent can become a building block for establishing a common ground. Although twenty years ago individuals in shelters expressed doubts about their shelter’s policies, these questions were unlikely to have credibility because they were coming from a single person having no larger voice. Instead of having their objections considered seriously, dissenters probably risked being seen as “problem children,” “difficult employees,” not “team members,” or the like, with the expectation that they needed to adjust to the job, become silent, or leave. With the growth of the no-kill movement and crystallization of the open-admission identity, dissenters can name, and thereby attach their individual doubts to, something larger and more legitimate. When they speak it is from a position of strength. Giving voice to both perspectives provides an opportunity for healthy, albeit critical, debate and discussion at the ground level. Such empowered discussions within shelters make it possible for previously defensive workers to hear the other camp’s views.

Shared Values

While internal dissent over the management of specific cases permitted the expression of opposing views within each camp, there also was more general evidence of mutual subscription to fundamental sheltering goals. When their guards were down, many respondents spoke about their work in ways that were far less polarized than the sheltering oral culture and literature suggested. Linguistic flashpoints used for public consumption and for posturing by spokespersons were not necessarily accurate reflections of the feelings and actions of everyday workers. If workers were confronted about their use of these terms, stark and inflammatory distinctions started to blur or fade. In fact, there was some agreement as to the meaning of important language that typically divided the camps. In this regard people in both camps demonstrated common rather than
conflicting values about basic issues and concerns faced by all.

To some degree both camps had similar views of what constituted “suffering” and what conditions justified euthanasia. Despite what open admissionists assumed about no-killers, many of the latter were willing, in principle, to euthanize animals when their “fates were worse than death,” a position championed by open admissionists. As one no-kill advocate claimed: “I haven’t heard one person [at the no-kill facility] saying, ‘Yeah, I think it is much better if we let the animal go on the highway then euthanize them. . . . Better the animal is free and roaming around with mange and starving to death than to be killed.’ I think that’s nutty. [Is that cruel?] Absolutely. Absolutely. I would pick euthanasia over that.” Another no-kill proponent, agreeing with this view, likened the plight of some animals whose suffering merited death to that of humans facing dire situations. This no-kill worker criticized “sanctuaries” that kept animals alive to the point where they suffered, arguing that humans do not let that happen to each other. In her words,

If you are not being humane, and the animal is in mental or physical distress, that may be considered a ‘sanctuary’ [living out their lives until they end naturally]. Technically we don’t even do that for humans anymore. If someone is in pain, they usually are put on a morphine drip with the dosage slowly increased to reduce their discomfort. The reality is morphine suppresses the respiration.

Other no-kill respondents also spoke of euthanasia as a humane option by comparing the plight of some shelter animals with that of humans isolated from society. As one said,

What happens when you confine humans? What happens when you put humans in mental institutions? You can make it acceptable for some time for some dogs. Some can handle kenneling. Others need the bond. . . . [of] something or someone, and sitting in that kennel is not the same for them. They just can’t hack it.

Members of both camps also saw almost all shelter animals as potentially adoptable and not requiring euthanasia, despite their physical and emotional limitations. Sounding quite like a no-kill advocate, one open-admissionist explained: “Most of the animals we kill are to us adoptable. That’s why we don’t use the word adoptable in any of our literature. A kitten with two legs who is four weeks old is adoptable to a person who wants to adopt her. Adoptability is only about who wants this animal. We had a thirteen-year-old dog with no front legs. She gets around. She kisses everyone. And she was placed.” Of course, some open-admission respondents did not work in shelters that had resources to treat or keep such compromised and difficult-to-adopt animals. But they clung just as strongly as their no-kill peers to the hope that almost every shelter animal, regardless of disability, age, or unattractiveness, could be placed if given sufficient time.

Most respondents from both camps saw shelters—even the “best” of them—as unhealthy, if not destructive, environments for animals. Everyone agreed that, in an ideal world, shelters would not exist or, if they did, would serve only as temporary way stations to rehabilitate and home needy animals. One no-kill worker admitted that even her own “nice” shelter was “still” a shelter, as she questioned the “quality of life” of one animal who had been in her shelter for more than five hundred days. “I don’t care how wonderful we make it for them, they are still institutionalized. Caretakers are there for thirty minutes to an hour and then the dog is alone, not able to do any of the innate things that a dog is supposed to be doing.” Another no-kill worker agreed with this sentiment, saying, “We’ve had dogs here for a year or two and you look at when they came in versus when they went out or were put to sleep, and they get worse not better. Shelters aren’t always great places for dogs. And the longer they are here, the more likely we are to make them worse.”

Recognition of shared values is an important tool for building common ground. Most workers in both camps are not absolutists; they neither unthinkingly carry out every euthanasia nor rigidly oppose every possibility. Despite such overlap in values, however, most workers believed that members of the other camp did not share their own broad, if not ambiguous, perspective toward fundamental animal sheltering issues. This thinking served only to polarize further the no-kill controversy because it emphasized differences in values and exaggerated the ideological distance between the two camps. Discovering, noting, and acknowledging shared values would help proponents and workers “see” their common interests and change their current thinking and practice.

**Mutual Identification**

Although public posturing toward and stereotyping of the no-kill and open-admission approaches commonly occurred, when individuals aired their thoughts in private, they sometimes identified with those in the opposing camp. Research on pro-life and pro-choice supporters also has found their differences to be less pronounced than their public rhetoric (Dworkin 1993; Kaufman 1999). Among shelter workers, mutual identification was evident when respondents spoke informally with peers or with the author; at these times, political and rhetorical guards were lowered enough to reveal more overlap in humane identities than many might realize or admit.

For example, there were occasional expressions of empathy for workers in the other camp. No-killers, as seen earlier, reported pity for open-admission workers who had to euthanize animals, or even work in a shelter.
that did this, because of the emotional toll such actions were believed to take. One no-kill worker felt that open-admission shelter staff might resent the greater resources available to the few well-endowed no-kill shelters. She explained,

It’s a horrible thing to have to euthanize animals every day. I feel fortunate that I am working in an organization where we don’t have to do that. I can understand them [open-admission shelters] being resentful that we have the resources that we do and are able to run things the way we do. And that is where this [tension] is coming from. They have the same amount of compassion that we do have, but because they have fewer resources, they can’t do what we do.

Open admissionists sometimes pitied no-kill workers who had to say “no” to people wanting to drop off their pets, only to tell them there was no room or a very long waiting list and that they either had to take their animals to some other shelter, go to a veterinarian for euthanasia, or find a neighbor or friend to adopt the animal. One respondent said that he thought it was at least as upsetting for no-killers to tell many people “no” as it was to euthanize animals “eight hours a day.” How hard, he conjectured, it must be to turn away people who sometimes are pleading for their animals to be taken. He even computed the number of people who are told “no” at a prominent sanctuary, estimating many thousand each year, and finding the thought of doing this to be mind boggling.

Mutual identification was manifested in ways other than pity. There was recognition by some that, in the end, both camps resorted to a similar process for deciding the fate of animals when space became limited. At these times, said one respondent, “You go through your populations and you are going to try and euthanize the animals that are the least placeable...the ones with the worst health, or the oldest, or the ones not doing well in the shelter environment.” Workers who shared this thinking felt that their peers in the other camp were forced to go through the same excruciating decision making to decide the fate of shelter animals. Because they did this too, they felt collegial and cohesive rather than confrontational and competitive.

Identifying and acknowledging mutual identification can help to lessen the present polarization that leads to overgeneralization and blanket assumptions about those in the opposite camp. In such a hostile environment, people are likely to feel unfairly and negatively judged by others, and certainly unappreciated for their emotional and ethical labors. Sympathy can be the starting point that opens lines of communication and support for different, but not necessarily antagonistic, ways of managing shelter animals.

Maturation and Change

New common ground will be discovered over time as the “no-kill issue” matures in the humane community. This is likely to happen as more people reject simplistic characterizations of the no-kill “debate” or “controversy” that pit one camp against the other, even though the present study could be faulted for doing so. Although many people consider the no-kill controversy to be highly polarized, it is more accurate to think of it as a range of views about the appropriateness of killing shelter animals. While some tension no doubt occurs as these differences are negotiated, a working order probably will be created that, despite occasional bumptiness, allows most shelters to draw on and be comfortable with different perspectives toward euthanasia. This diversity of views should be seen as a healthy form of organizational conflict that allows both perspectives to exist under the same roof. Such a plan means that the humane community will have to live with some residual uneasiness about the nature and role of euthanasia and to see that discomfort as a sign of correctly managing a complex and subtle issue.

As the no-kill issue matures, other organizational changes are likely to reduce the distance between camps. Some no-kill groups will become institutionalized over time, if they have not already; moving them closer to a humane centrist position. As this happens, they will reject, with the same conviction and vehemence as traditional humane groups, “fringe” or “lunatic” groups also claiming to be no-kill. Some no-kill leaders have acknowledged the existence of these marginal “shelters,” and the need for them to be improved or eliminated. More centrist no-kill organizations will move to some degree toward the open-admission camp. To wit, there has been some response to the open-admission plea for less provocative language and to stop using the label “no kill” or inflammatory terms that compare open admissionists to Nazis, criminals, or other killers. Aware that the no-kill language hurts or angers others, some in the movement sympathize with this concern and have curtailed use of such terms. In one instance the director of a major no-kill shelter publicly acknowledged that, because the term no-kill can offend others, he consciously tries to stop using it when speaking publicly. And several shelters whose policies were no-kill in practice and principal refused to label themselves as no-kill because they had various problems with the term’s meaning and its effect on open-admission shelters and staff. In one case, the president of a no-kill shelter claimed that she did not “tout” her organization as no-kill:

The only reason we are “no kill” is because, unlike animal shelters, we have the ability to turn people away...just because one organization is not killing does not mean that animals are not dying en masse. The animals we unfortunately must turn away very likely end up at the end of a needle in a shelter. (Stinson 1997)

Finally, the organizer of the national
no-kill conference decided to drop “no kill” from the name of this meeting, so as to include rather than exclude people from the open-admission perspective. The organizer renamed it the “Conference on Homeless Animal Management and Policy.”

More progressive open-admission groups, in turn, are likely to rethink their mission and identity, moving somewhat closer to the no-kill camp by adopting more aggressive adoption policies; questioning long-standing definitions of what constitutes “acceptable” rates of euthanasia; and trying to lower these rates. Some open admissionists also have shown a willingness to embrace a no-kill identity in their speaking. For instance at one shelter that has had great success in controlling dog overpopulation, a senior staff member commented, “We are no-kill with puppies.” Even if said tongue in cheek, his language suggests a recognition that no-kill is a worthy aim and a sign of success. A few open admissionists are even styling themselves as “no-kill advocates,” although this is laughable to no-kill workers. Perhaps there is more substance to this claim; certainly, no shelter worker wants to euthanize animals. If these organizational changes take place, friction between camps will subside, leaving a small number of marginalized humane organizations outside the boundaries of mainstream shelter culture.

Conclusion

Maturation and change in the no-kill controversy is likely to lead to new language and ideology for speaking and thinking about issues facing all shelter workers. This will happen as the humane community chooses not to fan the fires of current tensions, or even focus on them, but rather to look upon them as an opportunity to redefine to shelter workers and the public its identity and mission. Some divergent ideas from both camps will become synthesized and appeal to most shelter workers, while others will be dropped by the wayside because they lack this broad interest. The result will be a new humane ideology that can be embraced by no-kill and open-admission advocates alike.

This change will require refashioning the meaning of familiar concepts or creating entirely fresh ones that bridge tensions rather than create them. The very ambiguity of such terms as shelter, humane, and euthanasia frustrates people, but this vagueness can benefit those who want to give them new meanings that resonate for all shelter workers. To bridge the tensions, superordinate concepts must draw from common ground between camps—shared practices, values, and identities—so that most workers can agree with and extol them in professional and public arenas.

The notion of welfare could serve aptly as one superordinate concept to unite rather than divide the shelter community. Although somewhat tricky to reinvent because of its present political connotations in the general animal community, the term nevertheless has the potential to bridge tensions underlying the no-kill debate, just as others have suggested using the concept of welfare to quell the abortion controversy (Kaufmann 1999). Concern for the welfare of animals deeply motivates both no-kill and open-admission advocates. It is a major area of common ground, leading virtually all shelter workers, regardless of their camp, to preserve and improve the quality of life for animals. When threads of common ground surface in dialogue between members of the two camps, workers can understand how the same concern for animals triggers one person’s decision to be no kill, the other’s to be open admission. The lifework inspired by this motivation is different for the two camps, but it is work that both parties can admire. Focusing on this common ground can foster mutual respect, as the enemy image is replaced by the actual presence of another shelter worker struggling to respond to the difficult situations of everyday life. Workers see for themselves that within their world views is a shared concern for animals.

Certainly there are many other notions, long familiar to shelter workers, that can be infused with new meaning to connect rather than separate open-admission and no-kill supporters. Indeed, entirely new concepts unfamiliar to the shelter world may be brought into this community to bridge its camps. Whether old ideas are being reinvented or new ones are being imported, to succeed they must be based on common ground between camps. The challenge facing the American sheltering community is to discover additional bases for this common ground and to articulate a new language to reaffirm it.

Acknowledgements

I wish to thank Kathy Savsky, Natalie DiGiacomo, and Anne Lindsay for providing advice and criticism. I am also grateful to the Edith Goode Trust and the San Francisco Society for the Prevention of Cruelty to Animals for their support of this research.

Notes

1 My use of the term kill, except when specifically discussing its meaning to shelter workers or quoting them directly, is made without symbolic or political connotation.
2 Throughout this report the terms open admission and no kill are used because most members of the respective camps accept these labels as self descriptions, while rejecting other terms for themselves. Open-admission advocates reject the label “kill shelter,” and even the less sensitive language of “full service” or “traditional” are received ambivalently. Similarly no-kill proponents reject the term limited admission for their facilities.
3 Open-admission advocates use the same argument against no-kill proponents when they challenge, in so many words, that “all that money and effort on keeping animals alive keeps them from their mission of preventing births in the first place.”
4 While this piggybacking on the pro-life movement’s symbolism offers cachet to the no-kill identity, it also escalates the controversy because it confuses two reasons for believing that euthanasia is often, if not always, wrong. Like the pro-life movement’s ideological confusion over whether it is wrong to abort a fetus because the fetus has a right to live or because all life has intrinsic value (Dworkin 1993), the no-kill movement’s confused ideology argues both that the unwanted or undesirable shelter animal has a
right to live and that euthanasia as commonly practiced shows disrespect for animal and human life.

It is important to be cautious about the significance of such dissent, especially when it involves a new social movement. Rather than serving as a common ground, internal diversity and emotional fervor can divide and weaken camps. Hints of this can be seen in tensions between behavior/training staff and adoption staff in some no-kill shelters or, at a different level, between doctrinaire no-kill advocates and other no-kill proponents who occasionally resort to euthanizing their animals.

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In 1903 W.E.B. Du Bois predicted, “The problem of the twentieth century is the problem of the color line” (1969). One hundred years later, we can hope that the twentieth century achieved important advances for human liberation—not only racial but also sexual and political. Will that moral trajectory—the expansion of fundamental protections now easily seen as the hallmark of the last century—continue? Will the problem of the twenty-first century be the problem of the species line?

For protections to evolve to include nonhuman species, religions—through their leaders, their institutions, and above all their believers—must take seriously the important role that they have played, and certainly will continue to play, in humans’ engagement with the lives beyond our species line. Religions have such a central role in the transmission of basic images and values regarding living beings that, without their help, the problem of the species line will not be solved in this century. A central question for this century is whether influential religious institutions will continue to convey images that radically and absolutely dismiss nonhumans, or will religions offer support for the broadening movement to include nonhuman animals in humans’ moral scope.

If religions notice other species and take them seriously, ethical sensibilities regarding nonhuman animals may blossom as fully as did sensibilities regarding the importance of the human individual. Various positive signs at the end of the twentieth century suggested that religions may yet play an important role in dispelling the dismissive caricatures of nonhuman animals that prevail in, for example, industrialized societies. One of these signs was that religions’ role in the origin and persistence of both negative views and positive evaluations of other animals finally was well described. Another was that many believers began the difficult task of engaging their fellow believers in dialogue regarding religions’ strengths and weaknesses in addressing the issue of the value of the nonhuman lives around them.

Where will this vital discussion go in the new century? Will it help people see the myriad ways in which religious traditions have been vitally involved in developing the often-dismissive views of nonhuman lives? Will the discussion bring to the foreground the animal-friendly features found in every code of religious ethics? Will religious leaders and scholars fully delineate the contributions of religion—both good and bad—to people’s ability to take other animals seriously? Will many religious leaders continue to claim that it is only human lives that really matter? Will religious traditions be formed not solely by theologians but also by grassroots believers attempting to commit their religion’s resources to the fullest possible recognition of animals as beings possessing integrity and value wholly independent of human needs?

However believers and their leaders answer these questions, religions will play a decisive role in humans’ encounters with the nonhuman others in and near our communities. And whatever choices any particular religious tradition and its believers make, a central problem inside and outside religion will be, without doubt, the problem of the species line.

1900–1950: The Dismissal of Nonhuman Lives

The science establishment of the western industrialized countries began in the early twentieth century to recognize that nonhuman primates were subject to many of the same diseases as were humans. The remarkable physical (and, it was later recognized, psychological and social) similarities of nonhuman primates to humans, however, did not lead scientists, on the whole, to recommend similar ethical protections for these evolutionary cousins.

An irony in the thoroughgoing dismissal of all nonhuman lives so characteristic of the first half of the twentieth century was that turn-of-the-century scientists had inherited a resurgent interest in the importance of nonhuman lives around them.
and complexities of nonhuman animal lives. The 1859 publication of Darwin’s pivotal Origin of Species had spurred much new interest in nonhuman lives. In some quarters at least, commitments to take other animals seriously flowered relative to the absolute dismissal and caricature of nonhuman lives that had prevailed in western scientific and religious circles before Darwin’s groundbreaking achievement.

Curiosity about other animals’ lives manifested itself in many ways, from increased observation to invasive studies such as those done in the 1870s by the British physician David Ferrier, who looked at the relationship of humans to other primates (Blum 1994). Ferrier’s idea of a systematic study of primate-human relationships was to take apart the brains of nonhuman primates in order to say something about the similarity of humans to other primates. Whole lives in context, which of course must be part of any truly systematic study, also were engaged increasingly, as exemplified by R.L. Garner’s study in the 1890s of free-living chimpanzees (Wrangham et al. 1994). The extensive works of George Romanes—Mental Evolution in Animals (1885) and Animal Intelligence (1886)—went through multiple editions. While often based on anecdote rather than the rigorous observation standards of late twentieth century ethology, Romanes’s work and that of others reflected deep interest in the lives of the animals described and an openness to the possibility that some nonhumans were, like humans, possessed of social, cognitive, and individual complexities.

As Ferrier’s work shows, by no means all of what was happening in the study of nonhuman animals at the end of the nineteenth century was of a moral or otherwise sensitive nature. Darwin’s co-originator of the notion of natural selection, A.R. Wallace, shot orangutans in order to study them—and sadly this was typical of Victorian naturalists (Galdikas 1995). Such insensitivity was perhaps a harbinger of attitudes to come, for in crucial ways and in important institutions, scientific attitudes toward other animals were about to go through a regressive narrowing in the twentieth century’s first fifty years.

The Narrowing

John Watson (1913) published an essay that was to set the tone of scientific research into other animals’ cognitive abilities for the next half-century. Watson’s approach, which involved a denial of the mental life of other animals, was unusual in several senses. First, a denial of mental life begs obvious questions. As the Oxford historian Keith Thomas has noted, “There are some footsteps of reason, some strictures and emissions of ratioception in the actions of some brutes, is too vulgarly known and too commonly granted to be doubted” (1984, 124: n.8).

Second, from the scientific perspective, Watson’s views, which were the foundation of behaviorism, left much to be desired. Behaviorism, which in its strictest form emphasizes the stimulus-response model and holds that all behavior is learned through either classical or operant conditioning, is very ideological, in the narrowest sense of that term. Many contemporary scientists hold that behaviorism involves an explanatory monism—that is, an unnecessarily narrow attempt to provide an exhaustive causal account of even the most complex living organism built arbitrarily upon stimulus-response generalizations drawn solely from an isolated part of that being’s complexity. In this regard, behaviorism can in fact be unscientific, because the explanatory monism neglects a significant range of data.

Historically behaviorists drew their inspiration from the philosophical paradigm of positivism, which led it to be unnecessarily reductive. Behaviorism’s explanatory monism violates both observation and such cherished methodological principles as that of parsimony. Sometimes it is simply more consistent with observation and considerations of parsimony to explain actions of a living being by means of higher level functions than by behaviorism’s simplified stimulus-response paradigm. In biology intelligence and other “higher level” cognitive functions often are far more economical as explanations than are explanations that rely on long chains of stimulus-response relations.

When the minds of other animals are ignored, it becomes easier to treat them as mere machines or inanimate things. The result of such a radical dismissal of the more complex features of other animals’ lives is that humans use them as experimental tools or unfeeling resources. Such use, and in particular its problems from the standpoint of both informed, sensitive science and ethically integrated religion, is well symbolized by Tom Regan’s film We Are All Noah (1986b), which refers to the use of thousands of nonhuman animals as experimental subjects on a boat dubbed “the Atomic Ark” in the U.S. military’s 1946 Bikini Island nuclear test in the Pacific.

The Opening

Of course not every development in science in the first half of the twentieth century reflected a dismissal of other animals from humans’ ethical horizon. R.M. Yerkes published The Great Apes in 1927, but, when doing his research, he was astonished to find only travelers’ accounts (Galdikas 1995). Garner’s attempt in the 1890s to study nonhuman great apes in the field was to be the only real attempt before Nissen’s attempt in 1930—which lasted all of four months (Goodall, in Wrangham 1994). Thus for Yerkes the available sources of information were travelers’ tales [Such as those by T.S. Savage and J. Wyman in the Ivory Coast in 1842 . . . [These] provided almost everything that was known of chimpanzee behavior in the wild (although the African peoples who lived in or near the forests could have told us more) until the flurry of field studies began after the Second World War in the early sixties.
The first successful study of a wild ape took place in Asia in the 1930s when C.R. Carpenter studied white-handed gibbons in Thailand. His work was important because Carpenter identified such crucial features of gibbon adaptation as territoriality and monogamy. But afterwards all the gibbons were shot, and it was almost thirty years until another study (that of Goodall) was launched (see Galdikas 1995).

From the late 1930s to the late 1940s, a modern version of Darwin’s views, sometimes referred to as “the evolutionary synthesis,” became the consensus view among established biological scientists. This development “settled numerous old arguments once and for all, and thus opened the way for a discussion of entirely new problems” (Mayr 1982, 569).

A foreshadowing of much broader concerns appeared in 1946 when the International Whaling Commission, an association of more than two hundred members from forty nations, was formed under the International Convention for the Regulation of Whaling. Although committed not to the elimination of the killing of cetaceans but instead to the management of resources, this international effort paved the way for both conservation and abolitionist efforts that developed later in the century, such as the 1986 ban on commercial whaling.

In the 1950s and 1960s, there were significant developments in various life sciences regarding a fuller engagement with other animals on the basis of their realities. Some of these developments came at the prompting of various ethical traditions (though in virtually every case an ethical tradition outside religion). Many came from a reassertion of basic scientific values, such as the importance of humble, patient empirical observation. In the early 1960s, careful fieldwork was commenced (Kortlandt in eastern Zaire; Goodall in Gombe, Tanzania; Itani and others in Kabogo, Tanzania; and Nishida in what is now Mahale Mountains National Park, Tanzania). Undoubtedly the most important scientific study for the subsequent tradition of careful observation was that of Jane Goodall on the chimpanzees of Gombe. Begun in 1960 this effort continues today (see van Lawick-Goodall 1971). Through a series of National Geographic television specials, Goodall’s work, though initially controversial, stimulated a new generation to pursue careful, observation-based studies of animals of all kinds. Stephen Jay Gould of Harvard, referring to Goodall as “one of the intellectual heroes of this century” (1995, 23), described her study as “one of the Western world’s great scientific achievements” (in Miller 1995).

The fundamental change from the first half of the century to the second half also is epitomized by the change in thinking known as the “Cognitive Revolution.” In this recent revolution in psychology, information processing has been emphasized and the behaviorists’ exclusive focus on conditioning through stimulus-response models has been de-emphasized (see Gardner 1985; Griffin 1992).

Because of this revolution, there is a much richer evaluation of the mechanisms of any animal, human or otherwise, that are involved in modification of behavior during growth and after experience, as well as the relationships among cognition, learning and development, information processing, representation, imitation, and problem solving generally.

This important change has not solved all problems. According to Griffin, there remains a reluctance to attribute subjective states to nonhuman animals: “This antipathy to consideration of consciousness threatens to become a sort of self-inflicted paralysis of inquiry, and obsolete hindrance to scientific investigation” (1992, viii).

Yet the bottom line is that science now has delivered evidence that some nonhuman animals’ cognitive abilities are far richer than ever imagined in the western scientific establishment and, arguably, in the theological and philosophical establishments as well.

Religion and Other Animals

In neither 1900 nor 1950 would religious believers in North America, Europe, and other parts of the industrialized, “developed” world have been well described as “concerned” about the earth’s nonhuman animals. Some believers were compassionate, no doubt, but institutions and religious rhetoric were, on the whole, insensitive to nonhuman animals’ interests. Indeed, the vast majority of religious believers were not only unconcerned but also ignorant and blind insofar as nonhuman animals were concerned.1

In the succeeding half-century, however, developments within specific religious traditions have revealed that religious traditions offer many perspectives, ethical values, and other resources for engaging all animals, human and otherwise, far more sensitively than occurred in the first half of the twentieth century. In the world of academic study of religion, the “Caucus on Religion, Animals, and Ethics” first met in 1998 and has been formalized by the American Academy of Religion. In 1999 the Center for Respect of Life and Environment (affiliated with The Humane Society of the United States) sponsored a major conference of international scholars at Harvard University. This conference was part of the follow-up to the groundbreaking series of ten conferences organized by Mary Evelyn Tucker and John Grim that established the now flourishing field of religion and ecology.

These developments, along with the seminal theological work of Linzey (1987, 1994b), Cohn-Sherok (1997, with Linzey), and Masri (1987, 1989), have led to the emergence of a group of scholars who now pursue the new field of religion and animals systematically for the first time in history.

Thus in the last fifty years the state of animals in religion has, at least in some respects, changed significantly. The radical change from the first half of the twentieth century to the sec-
ond half, described more specifically below, stimulates many to speculate on what additional changes may be seen in both the new century and, indeed, in this new millennium.

**Pre-1950 Religion and Animals**

In 1888 the influential Catholic theologian Joseph Rickaby summed up a view that in many different ways has dominated the Christian tradition on the issue of the moral status of non-human animals:

> Brutes are as things in our regard; so far as they are useful for us, they exist for us, not for themselves; and we do right in using them unsparsingly for our need and convenience, though not for our wantonness (1988, 250).

While neither Christianity nor the other Abrahamic traditions (Judaism and Islam) are exhaustively represented by such a bald assertion (as will be shown by what follows), the underlying mentality that nonhuman animals are on the earth for humans’ use is representative in two respects of the ways in which most religious believers in these traditions viewed nonhuman animals before the mid-point of the twentieth century.

First and foremost such a claim is grounded in what often is referred to as an instrumentalist view, which holds that other animals can, unlike humans, be used in good conscience for an individual human’s own benefit. Second, as Rickaby’s quote reflects, there was a limiting factor, namely the injunction not to act “cruelly” or “wantonly.” Such a concern reflects, no doubt, the deep concern for an individual human’s own benefit. This is so because each of the traditions thought not to be “true believers” and respectful of nonhuman animals’ interests. In such traditions, considerable respect has been accorded to both other animals’ place in the moral circle and their status as living beings with whom we share the earth.

**Mid-Century Winds of Change**

From the midpoint of the twentieth century onward, certain developments have pushed many religious traditions to become more sensitive to nonhuman animals as candidates for moral concern. These developments include increasing interfaith dialogue; greater historical awareness of the traditions’ own pro-animal sub-traditions and the irrational prejudices against nonhumans within and across traditions; increasing interest in the relationship of human ethical abilities to environmental issues; and, above all, better information about nonhuman animals.

Such developments have enhanced the ability of religious believers to “see” other animals better. This, of course, is relevant to how those believers’ ethical abilities might be engaged, for, as the English philosopher Stephen Clark has said, “One’s ethical, as well as one’s ontological framework is determined by what entities one is prepared to notice or take seriously…” (1977, 7).

An essay written by C.S. Lewis (1963) at mid-century can be used to highlight dormant possibilities within religious institutions, especially because it reveals that even those traditions thought not to be “animal friendly” have resources for a full engagement with nonhuman lives. This is so because each of the traditions is, in fact, an extraordinarily rich cumulative tradition within which many past believers have rec-
recognized the relevance of human ethical abilities to nonhuman lives. Apparent in the re-emergence of these oft-subordinated possibilities are the beginnings of an important series of changes that continue to this day in the established religious traditions in North America.

Lewis’s essay first appeared in 1947 in the journal of the New England Anti-Vivisection Society. Later it appeared in other publications. This seminal article appeals to core beliefs of Christians about the special qualities of humans’ moral abilities. Thus even though the arguments are stated in terms of the dualism “humans and animals” that Lewis was trained to use by his own religious and cultural traditions, the article reveals that the Christian tradition has much to offer those who care enough to engage the realities of other animals’ actual lives.

Lewis lures the reader into engaging the issue openly by observing that it is “the rarest thing” in the world to hear “a rational discussion of vivisection.” He then argues that a rational discussion must begin with whether pain is an evil. If pain is not an evil, Lewis suggests, then the cases both for and against vivisection fail. He reasons that if pain is not an evil, its infliction on nonhuman animals need not be opposed, but, also, if pain is not an evil, there is no reason to look for ways to ameliorate it in humans. The discussion, then, must begin with recognition that pain is an evil.

Focusing on the standard Christian position “in the Latin countries . . . that we are entitled to do anything we please to animals because they ‘have no souls’” (1963, 154), Lewis notes that if this is the case then infliction of pain on them is “harder to justify.”

If it means that animals cannot deserve pain, nor profit morally by the discipline of pain, nor be recompensed by happiness in another life for suffering in this. Thus all the factors which render pain more tolerable or make it less totally evil in the case of human beings will be lacking in the beasts. “Soullessness,” in so far as it is relevant to the question at all, is an argument against vivisection. Lewis then appeals to a fundamental claim at the very heart of the Christian and many other religious positions, namely, the belief that humans alone among the earth’s creatures are moral beings. He uses this important claim to challenge facile Christian acceptance of instrumental uses of nonhuman animals:

[We] may feel that though objective superiority is rightly claimed for man, yet that very superiority ought partly to consist in not behaving like a vivisector—that we ought to prove ourselves better than the beasts precisely by the fact of acknowledging duties to them which they do not acknowledge to us. (1963, 154)

Relying relentlessly on common sense, logic, and frank appraisals of the general nature of instrumental uses of other living beings, Lewis adds many other creative arguments. He suggests that it was non-Christian values that promoted the argument to allow vivisection, and he reminds us that, at least in England, Christian society in the eighteenth and nineteenth centuries had many resources for seeing the anti-vivisectionist as a religious person. Lewis’s principled and, most relevantly, fully Christian engagement with a facile acceptance of contemporary instrumental uses of living beings pushes him to repudiate completely any casual acceptance of instrumental uses of other animals:

The victory of vivisection marks a great advance in the triumph of ruthless, non-moral utilitarianism over the old world of ethical law, a triumph in which we, as well as animals, are already the victims, and of which Dachau and Hiroshima are the more recent achievements. (1963, 155)

Traditional and Compassionate Views

Lewis’s essay exemplifies both typical and unusual features of the religion and animals landscape at mid-century. His arguments are typical in that, despite his obvious compassion for pain in other animals, he reflects what amounts to a dismissal of other animals’ complex lives as relevant to their moral standing. In the passages quoted above, he implies very negative images of nonhuman animals. In particular, his argument assumes that because humans understand that some nonhuman animals act in ways that humans see as cruel, all nonhuman animals are cruel. This involves not only the obvious fallacy of overgeneralization, but also the standard caricature of nonhuman animals that has dominated western cultures since the classical Greeks.

Thus because Lewis knew virtually nothing of the behaviors of the more complex nonhuman animals and existed at a time when his culture sanctioned such ignorance, in an important sense his arguments merely perpetuate the following culturally significant stereotypes: (1) of the earth’s denizens, only humans are complicated beings; (2) nonhuman animals live without any kind of moral or social regard for each other; (3) for all intents and purposes, all other animals lack intelligence in any significant sense.

When seeking to understand either the history or the future possibilities of religion on the issue of nonhuman animals, it is crucial to recognize that not all religions have dismissed nonhuman animals in this way. Indeed, at certain times and places some religious believers have had significant, empirically based knowledge of other animals. Accordingly they could be called upon to point out the caricatures and ignorance that underlie the generalities used by Lewis. The fallacy
is, of course, that the absence of evidence has been taken as evidence of absence. The prevailing ignorance is not dispelled because no one is looking for complexities, and hence none is found.

Lewis's own religious tradition, along with the other traditions that have had a significant influence in the industrialized world, has lost much of the experienced-based knowledge of the natural world and its nonhuman animals that is found, among other places, in certain religio-cultural traditions now classified among the "indigenous" traditions. Similarly, the Christian culture into which Lewis was born was not characterized by any ethically developed sense of humans' continuity with other animals, although examples of this can be found throughout the Hindu, Jain, and Buddhist traditions. Indeed the natural world and its nonhuman animals are part of the nature and abilities of nonhuman animals relative to humans are characteristic of many of the most influential institutions and voices within those religious traditions that have the most influence in the industrialized world. In effect these institutions and loud voices, as it were, have drowned out the voices of the more compassionate sub-traditions from within their own circle that have been willing to promote the moral significance of nonhuman animals.

Nonetheless Lewis's essay has some features that begin to bring to light the additional Christian possibilities for seeing nonhuman animals. In this respect Lewis foreshadows some of the developments seen in other traditions’ believers, engaging insights sometimes buried deep within the religion and animals landscape at mid-century. For example, it is worth noting that Lewis is arguing as a Christian and that he reaches his conclusions even though he adheres to, and in some ways promotes, aspects of Christianity’s traditional, ignorance-based appraisal of other animals. Thus, in spite of his traditional views, his profound religious beliefs connect him to life generally, and he thus finds a way to assert that other animals should matter to Christians as moral agents. It is as a Christian that Lewis speaks of the value of other animals’ lives, and his concern clearly is to reach Christian colleagues as Christian, as well as the Christian establishment that had been quiet about humans’ instrumental uses of other animals. This is precisely why Lewis emphasizes the cherished senses of (1) human uniqueness and (2) human moral abilities that lie at the center of Christianity and all other religious traditions. Through a focus on our important ability to care about others, be they human or not, Lewis questions the facile, absolute dismissal of all nonhuman animals that dominated his own religious traditions during his lifetime (he died in 1963). In making this challenge, Lewis reflects the internal resources established religion has available for the task of reexamining modern industrialized societies’ radical marginalization of other animals.

In reflecting both the traditional and more compassionate sides of contemporary religious traditions, Lewis reflects well the dilemma regarding nonhuman animals faced by religion in the twentieth century. His essay, particularly as it highlights the very un-Christian (in Lewis’s view) features of the modern practice of vivisection, sets the stage well for understanding the complex trajectory of developments within religious traditions since 1950 on the issue of “animals.” During the last half of the twentieth century, informed religious believers had to come to terms with the consequences of the modern world’s increasingly radical, virtually absolute dismissal of all nonhuman animals as valued individuals deserving protection as individuals. It is noteworthy, for example, that Lewis does not argue the Christian’s duty is to species, and he never alludes to the issue of loss of species. His concern is with individuals who are harmed by a specific practice, not the qualitatively different concern for biodiversity. It is this standard of sensitivity to other living things as individuals that Lewis names in this essay as the proper Christian standard. Even if such sensitivity is not altogether new, but rather a reaffirmation of a sub-tradition that has existed in Christian and other religious traditions all along, it provides a challenge to contemporary mainline Christianity. This is a formidable and identity-threatening challenge, for the mainline Christian tradition, not unlike mainline interpretations of other religious traditions, has in its ancient, medieval, and contemporary theology promoted anthropocentric, exclusivist views and practices among its believers and churches.

### Competing Tensions

The tension in Lewis’s article between elements of the traditional view that humans are superior to all other animals, on the one hand, and those morality-based implications so creatively argued by Lewis, on the other hand, can be used to frame not only the issues that faced religion at mid-century on the issue of the status and importance of nonhuman animals, but also the issues facing today’s religious communities, churches, synagogues, mosques, and other places of worship or meditation.

First, tension is occasioned by the very questions Lewis and other believers ask concerning modern practices in an environment where religious communities and believers promote a status quo dominated by anthropocentrism in ethics as well as in politics, economics, law, and even academia. Lewis’s modeling of possibilities of extending concern and compassion can easily be based on passages in the Qur’an, the Hebrew Bible, the Christian New and Old Testaments (in their original and translated forms), the Vedas from Hinduism, any of the Buddhist canons, or the astonishingly rich stories of indigenous religious traditions that support the extension of deep concern to nonhuman animals. These stories have remained a part of
even the main line, anthropocentric interpretations of those religious traditions that predominate in the industrial world. Thus even if the dominant stories in Christianity and other religions take an instrumentalist approach to “humans and animals” and confine their believers’ focus to humans alone, believers can still find elements of compassion that can be extended to nonhuman animals. If they do so, they are likely to find tension between that choice and the standard assumptions made in their own community or place of worship.

Second, merely naming the possibility of a more compassionate view as the true Christian (or Jewish, Muslim, etc.) position creates tension. Lewis was extraordinarily popular in his native England, and he remains an icon in many conservative Christian circles in the United States. Yet despite the fact that Lewis is widely held by conservative Christians to be a person of vision, his conclusions in this essay remain unrealized. What’s more, they are rarely, if ever, cited. The latter fact suggests that, although certain concerns for nonhuman animals that are grounded in the Christian tradition’s most basic values have been and continue to be brought to the forefront by some major voices heard in contemporary circles, they have had but a limited effect. There are, without question, very strong competing values in the Christian tradition that negate concern for nonhuman animals. Still, Lewis’s gambit remains a constant challenge on explicitly Christian grounds to the practice of vivisection. His arguments can be seen as a foreshadowing of the contemporary debates both within and without religious circles on the issue of nonhuman animals’ moral significance.

Third, even greater tension now is evident on the issues Lewis addressed, for when he published this essay instrumental uses of nonhuman animals were just beginning to increase. The extraordinarily harsh features of intensive, or factory, farming; widespread use of nonhuman animals in experiments; and, of course, genetic engineering of animals to model human diseases were basically unknown to Lewis. These uses, some of which are described elsewhere in this volume, now dominate humans’ relations with other animals.

Yet even if the Christian and other Abrahamic traditions have not yet given Lewis’s reasoning any real standing in the debate over the propriety of the widespread contemporary practices that so obviously inflict pain and suffering on nonhuman living beings, Lewis’s and other similar arguments continue to mark the possibilities of religious believers being open to the significance of other animals’ lives. Since Lewis wrote this essay as a Christian argument for other Christians, his work continues to suggest that Christianity and other religions can use their own internal resources to provide insights into the importance of the lives of other animals.

The Image of God and Dominion

Ethical anthropocentrism characteristically is driven by the notion that humans are different from “animals.” That humans are different in significant respects is, of course, both important and true, though this point often is overstated in the extreme. As Radner and Radner note:

Obviously there are differences between humans and other species. Every species is different from every other species; this much is plain biology. The ideology lies not in the search for differences, but in the unwavering belief that humanity is defined by attributes that have absolutely no precedent in the rest of the biological world. (1989, 8)

In many contemporary forms of religious traditions, in particular the Abrahamic traditions, as well as in many secular traditions, the separation of humans from other animals is one of the forces that prevent humans from achieving a better understanding of their place in the ecological webs that link all lives. White, in a piece that has become one of the most notorious of modern essays, argued that the Christian doctrine of creation, particularly as it was elaborated in medieval times, forms “the historical roots of our ecological crisis,” and that “orthodox Christian arrogance toward nature” thus “bears a huge burden of guilt” for present problems. White’s thesis was based on the premise that our increasing ability to control and harness natural forces is flawed by the assumption that “we are superior to nature, contemptuous of it, willing to use it for our slightest whim” (1967, 1206). This led White to comment:

Especially in its Western form, Christianity is the most anthropocentric religion the world has ever seen.... Christianity, in absolute contrast to ancient paganism and Asia’s religions...not only established a dualism of man and nature but also insisted that it is God’s will that man exploit nature for his proper ends. (1205)

White’s analysis can be seen, upon even superficial consideration, to be in important respects a rhetorical and unfair overstatement, for a wide variety of factors other than religious ones, such as economic, social, political, and historical, underlie contemporary environmental practices (see also Merchant [1980] for the change from an organically oriented mentality to a mechanically oriented mentality between 1500 and 1700).

White’s thesis has been very valuable, however, in raising awareness of how profoundly religious values have influenced the ways believers approach living beings. Jeremy Cohen (1989), among others, has argued persuasively that White’s claims are wrong in some important specifics, since the dominion charge of Genesis 1:28 (relied on heavily by White) was not taken by ancient and medieval readers as any sort of license “selfishly to exploit the environment or to undermine its pristine integrity” (309). Cohen notes, however, that the
language of Genesis 1:28 (which reads, in the Revised Standard Version, “Be fruitful and increase, fill the earth and subdue it; and have dominion over the fish in the sea, over the birds of the air, and over every other living thing that moves on the earth”) was consistently taken as a divine call to rule over other animals. This analysis provides an interesting example of the how “environmental” issues and “animal” issues are by no means identical and do not overlap perfectly, even though they are obviously related. Conflating them under the rubric “environmental concerns” can, interestingly, make many nonhuman animals disappear from the moral landscape altogether. This happens, for example, when the exclusive focus is on species conservation and not on treatment of individuals from species that are not threatened. The upshot is that many morally relevant issues regarding nonhuman animals sometimes disappear in environmental discourse even if those who employ language that is eminently “environmental” have the best of intentions and are obviously in earnest about the relevance of the lives of nonhuman animals to us as moral agents.

The Realities of Change

Of great relevance to understanding the possibilities of change in religious views of nonhuman animals is the fact that religion at the start of the twenty-first century is, as it were, a different animal from what it was in the middle of the twentieth century. Negative factors pushed such a change, including astonishing ethnic, political, religious, and economic oppression, widespread ecological damage, and a proliferation of refugee crises brought on by countless wars. Positive factors pushing this change included increased communication, changing demographics, and interfaith dialogue.

The result of these and other factors prompting change has been that religious traditions and their believers often exhibit far more mutual understanding now and better awareness of each other. In general the leadership of religious institutions has become much more willing to tolerate, talk to, and even respect, believers of other religious traditions, though, of course, many well-known problems involving religious toleration remain unsolved. Nonetheless pluralism has become an accepted phenomenon, grounded institutionally, politically, and philosophically by the open-minded work of the World Council of Churches and such pioneers as John Hick, Masao Abe, Ninian Smart, Sallie McFague, Rosemary Radford Ruether, Karl Rahner, John Cobb, Huston Smith, and Wilfred Cantwell Smith. Their work has been advanced by other philosophers, comparativists, theologians, and religious leaders, including Diana Eck, Arvind Sharma, Sulak Sivaraksa, Keith Ward, Jonathan Smith, Karen Armstrong, David Tracy, Langdon Gilkey, Mary Evelyn Tucker, Dan Cohn Sherbok, and Jay McDaniel. Such believers reflect well the openness that religious belief can stimulate when it notices and takes other perspectives seriously.

The Prevailing Context and Reality

The changes discussed here in the vast and diverse realm of religion took place in the late twentieth century, and continue in the new century, at the same time as an extraordinary ferment concerning perspectives on the diverse group of living beings referred to as “animals.” One influential philosopher describes the changing values regarding nonhuman animals, especially as these values are enshrined in federal protections of laboratory animals, as a changing social ethic (Rollin 1999).

These important changes have been manifested in countless ways outside of religious traditions. In media and literature, discussions regarding the status of nonhuman animals now abound, as they do in the ever-proliferating forest of biological sciences. Awareness of nonhuman animals in recent decades has not, however, been led by religious traditions. It has been led more by two forces: (1) primarily secular forces in industrialized countries, and (2) various life sciences such as primatology and marine mammalogy under the guidance of such recognized authorities as Goodall (chimpanzees), Roger and Katy Payne (whales), and Cynthia Moss, Joyce Poole, and Katy Payne (elephants). In philosophical circles a broad discussion has been taking place concerning ethical issues as a secular matter; this has been especially prominent since the 1975 publication of Animal Liberation, by Peter Singer.

The emergence of widespread interest in protecting nonhuman animals in some manner or another has led to a complex social movement, often misleadingly labeled “animal rights.” This broad movement is a particularly forceful manifestation of many humans’ concern to include at least some animals as “others” whom their ethical values address. Environmental interests, though often exceedingly anthropocentric, also were part and parcel of the industrialized world’s expansion of the moral circle in the late twentieth century and surely will continue to be relevant to the protection of nonhuman animals. Of particular significance is the development and popularization of science-based information regarding nonhuman animals. This has occurred in such fields as ethology, conservation biology, animal behavior, and cognitive science.

These developments are powerful supports for the burgeoning social concern for nonhuman animals. Of perhaps even greater importance, however, is the dramatic change in attitudes and values, described elsewhere in this volume, regarding companion animals. This phenomenon alone is pushing remarkable changes in awareness (see Rowan 1988; Manning and Serpell 1994), as evidenced in the changing landscape of veteri-
nary medicine and values (see Rollin 1999; Tannenbaum 1995).

The changes in values and attitudes toward nonhuman animals have been so rapid and dramatic that even some of the most conservative realms of industrialized societies, including major religious institutions, now reflect such changes, though often in only small ways. In the United States, lawyers have been instrumental in pushing the legal system to consider whether moral standing for nonhuman animals should be enshrined by way of legal rights in legislative and litigation arenas. Law is, of course, an area of society whose discourse is often “privileged,” that is, legal discussions and terminology often are given a special level of respect by society at large and by media. Thus law has a profound effect on many other areas. Other privileged areas are politics, economics, academics, and, importantly, religious discussions. Debates, media, and other ongoing conversations in any one of these realms can affect many outside that realm. Ferment in these areas can, thus, be of extraordinary significance in fostering cultural changes.

**Animals at the End of the Twentieth Century**

The second half of the twentieth century and the beginning of the twenty-first have manifested an extraordinary increase in humans’—and thus religious believers’—interest in animals. This has been promoted by better observations, a phenomenon helped along by the fact that assessments of other animals no longer are dominated by (1) the ideology of narrow, dismissive views that, in large part, originated in religious traditions; (2) the equally narrow-minded ideology of early twentieth-century science (in the form of behaviorism and its dismissive, Cartesian premises); or (3) the longstanding tradition of anthropocentric ethics that dominated Western daily and intellectual life, and which had roots in both the Abrahamic traditions and classical Greek presuppositions about the special nature of human minds.

A consensus is emerging in which many humans now understand that humans cannot continue to destroy the ecological niches they occupy; that the earth itself needs to be the beneficiary of human ethical sensitivities; and that at least some nonhuman living beings are complex beings worthy of ethical consideration in their own right. This consensus is the foundation for a change in perspective on nonhuman animals that is pushing religious traditions to re-vamp their conceptuality and discourse.

To be sure the changes in attitudes toward nonhuman animals that have taken place since 1950 have not all been positive. In some senses nonhuman animals are treated worse than ever before. This certainly is true in terms of numbers killed for human use and in terms of the environmental destruction that affects so much nonhuman life. Hence there remains tension of many kinds—over wildlife in backyards, the use of nonhuman animals for experiments, the destruction of so many unwanted companion animals by shelters, genetic engineering of nonhuman animals, captivity of animals in zoos, and experimentation. These tensions were, at the end of the twentieth century, being addressed by more than 10,000 organizations in more than 130 countries (de Kok 1999).

**The Complex Terrain at Century’s Dawn**

The ferment in the fields studying religion and in those engaging nonhuman animals will, no doubt, produce extraordinary challenges—and opportunities—for the emerging study of religion and animals. As conservative as many parts of the worlds of religion and religious studies remain, these domains in some respects are advanced relative to the discussions now going on in the legal, political, and business worlds. The academic world reflects openness to the study of religions but remains quite conservative on the issue of moral value beyond humanity. Discussions in academic circles remain uneven and as yet without much impact on politics and business practices. But in some realms—including the academic study of religion and of law—concerns for other animals now surface in interesting ways. The 1999 conference “Religion and Animals” and the emergence of “animal law” classes at leading law schools are but two examples of the ways in which the world of education reflects an increased profile for the interests of nonhuman animals.

The upshot of such profound, complex, and widespread change is that many people perceive other animals differently now from how they did in 1950. This is particularly true not only of companion animals, who have become significantly more important in private lives, but also of wild animals and experimental animals. Noticeably absent, though, are food animals, who in the vast majority of cases remain without effective legal protections of even a minimal sort.

Such changes create additional pressure on religious traditions, for they remain the primary source of ethics and world view for the majority of the human race. As might be expected, in such a context of change noteworthy concern has emerged in religious communities. They, like so many other communities in contemporary society, reflect the profound changes at many different levels and in many different ways. This is apparent in the daily activities of believers as well as at the most learned levels, such as contemporary theological thinking on the environment (see, for example, the website of the Forum on Religion and Ecology).

In assessing how religious traditions have responded, it is good to recall that concern for nonhuman
animals is a venerable tradition that reaches well back into all religious traditions (see Regan 1986; Masri 1987, 1989; Salisbury 1994; Linzey and Cohn-Sherbok 1997; Grant 1999; and Waldau 2001b). Some of the best-known concerns are those manifested in the religions that originated in India, such as the Hindu traditions, the Jain religion, and various forms of Buddhism. In addition many indigenous traditions, including those of the original inhabitants of North America, often are cited for their animal-friendly concerns. Such concerns also abound in the ancient strata of Judaism, Christianity, and Islam, and often are cited when the importance of other animals is discussed.

Despite the availability of these profound resources, the situation is, in many respects, one of continuing myopia. There is a certain irony in this, since White argued that even though

\[\text{we shall continue to have a worsening ecological crisis until we reject the Christian axiom that nature has no reason for existence but to serve man...} \]

\[\text{both our present science and our present technology are so sullertured with orthodox Christian arrogance towards nature that no solutions for our ecologic crisis can be expected from them alone. ...} \]

\[\text{Since the roots of our troubles are so largely religious, the remedy must be essentially religious, whether we call it that or not. (1967, 1207)} \]

White’s main hope was a refocused Christianity rather than a wholesale repudiation of it; he suggested a return to the alternative Christian views of humans’ relation to the earth, especially as such alternatives are exemplified by St. Francis’s respect for the living world.

Yet a contemporary example suggests how shallow and incomplete the changes within religious communities have been on essential issues. In 1993 the Parliament of the World’s Religions held a meeting in Chicago, the end product of which was a short declaration (Küng and Kuschel 1993). The meeting took place a century after the original Parliament of World Religions, which did so much to promote interfaith dialogue throughout the twentieth century. A careful reading of the document signed at the 1993 meeting reveals that it perpetuates the traditional, harmful prejudice in favor of all humans to the exclusion of all other animals (Waldau 1995). This continuing shortsightedness causes a failure to see those other animals as the diverse and sometimes complex creatures they are.

To be sure, the 1993 document has some inclusive features. Addressing the important needs of all humans and giving prominence to environmental concerns, the introductory paragraphs are dominated by themes of inclusion, consideration, protection, and involvement. Within its opening sentences, the declaration acknowledges that global problems affect all life on earth. The introduction goes on to mention “life” several more times, the “ecosystems,” “community of living beings,” “animals,” “plants,” “preservation of Earth, the air, water and soil,” and “nature-friendly ways of life” (Küng and Kuschel 1993, 13–16).

Despite this auspicious beginning, these seemingly inclusive references are bracketed by at least eleven explicit references to human interests alone. There is an irony in this, given that many nonhuman individuals possess considerable complexity and, in important ways, share identical, similar, or comparable interests as a matter of biology and/or personality (see, for example, Parker and Gibson 1990: Cavalieri and Singer 1994). But by and large, at the end of the twentieth century, religions had failed to engage such specifics. The declaration’s preoccupation with the interests of the human species to the effective exclusion of the interests of all other species is an imbalance that threatens to perpetuate the traditional view that, of all the species on earth, the only one of real significance, because its individuals are distinctive and of value in their own right, is the human species. The declaration does not really engage the deeply meaningful proposition that there can be value and integrity in nonhumans completely independent of exclusively human interests.

Major figures in contemporary theology manifest this anthropocentrism. J. Moltmann, whose Gifford Lectures in 1984–1985 were published under the inspiring title God In Creation: An Ecological Doctrine of Creation (1985), spends a great deal of time on arguments about human arrogance, which he calls “anthropocentrism.” And this naturally leads the reader to expect that his broadly titled text will engage the possibility of seeing other animals. Yet tellingly, nonhuman animals are ignored in the book, as there is no mention of any nonhuman animals that carries any significance. Similarly the highly respected theologian Wolfhart Pannenberg published Toward a Theology of Nature: Essays on Science and Faith (1993). This text is more of the same, as it in no way engages the extraordinarily rich perspectives developed in such biological sciences as primatology and marine mammal studies (Waldau 2001b).

Catholic documents from the end of the twentieth century continue to reflect the fact that anthropocentrism in ethics has important and still powerful strongholds in established religion. The 1995 encyclical Evangelium Vitae is not nearly as broad as its beautiful title (translated as “the gospel of life”) suggests, for its language and arguments continue to promote an unabashed ethical anthropocentrism—the only “life” it focuses on is human life. None of the twenty references to nonhuman living beings gives any hint of, let alone makes serious reference to, the value of the lives of any living beings outside the human species. What makes for a certain irony in this approach is the extremely heavy concentration in the document on humans before they are born. As noted by the feminist whose work most fully engages the moral significance of nonhuman animals,
The speciesism of Homo sapiens is perhaps nowhere more pronounced than in the protestation about the fate of the human conceptus and zygote, while the sentiency of the other animals is declared morally irrelevant because they are not human beings. (Adams 1994, 60)

Noting this irony is not meant to suggest that “the fate of the human conceptus and zygote” should be unimportant, subordinate, or in any way treated as irrelevant. The lives of future humans are, by almost total consensus in contemporary societies, extremely important to all humans even if the right of a future human to be born conflicts dramatically with the individual woman’s need to make her own moral decision about what is happening within her own body. But the absence of any meaningful reference to nonhuman animals in a major doctrinal statement that by its own title purports to deal with the importance of “life” suggests that nonhuman animals are not yet an important concern for the hierarchy of this large and influential religious tradition within Christianity.

Such lack of references to the realities and importance of nonhuman animals is ironic, given that some animals have the very traits that we value in ourselves as the basis of our own moral significance—such as family connections and loyalty, intelligence, communication, emotions, social structure, and even cultural transmission. The daily realities of nonhuman animals are addressed in ethology and related sciences; of particular interest in recent years has been the development of “cognitive ethology,” which is providing much more information about the mental, emotional, and social dimension of nonhuman lives (see, for example, Allen and Bekoff 1997.) That the Catholic Church is likely to continue to ignore such realities and espouse what above has been called an instrumentalist view is confirmed by the following pronouncement in the 1994 revised Catholic Catechism: “Animals [meaning, of course, ‘all nonhuman animals’], like plants and inanimate things, are by nature destined for the common good of past, present, and future humanity” (para. 2415).

As C.S. Lewis might have argued in 1950, approaches to creation (to use Moltmann’s 1985 term), nature (Pannenberg’s 1993 term), and life (the term so central in the 1995 encyclical Evangelium Vitae) that continue to ignore nonhuman animals completely are in some ways contrary to a core message and value found in religious traditions. Acting on this intuition or value is a central feature of a moral and/or religious life generally. And even if a specific religious tradition makes claims about human superiority, that message does not excuse, as Andrew Linzey (1987, 1994b) has so well shown, complete failure to take any nonhuman animals’ lives into account.

Indeed it is virtually impossible to argue that any religious tradition’s core message is that other life is unimportant, although this is admittedly a subtext or “meta-message” of the rhetoric of many well-respected religious leaders. Religious believers may be heirs to the claim that humans are theologically more significant than any other animals, but that claim has nothing to do with the logically distinguishable claim that the religion authorizes humans to ignore the realities of other animals.

The great value of Lewis’s essay is its suggestion that it is part of the Christian view of humans’ religiously superior position that religious believers be responsible for, and learn about, the consequences for nonhuman animals of humans’ current manner of living. This same kind of reasoning, so reliant on the internal resources of each religious tradition, is available to any religious believer when the issue is suffering, death, and other material effects—including environmental consequences—that a believer’s consumer choices and political decisions have on nonhuman individuals.

Prospects in the Twenty-first Century

One could fairly conclude, then, that religions can rise above the obviously anthropocentric concerns that have dominated so many religious traditions in the twentieth century. The manifest lack of church, synagogue, mosque, and other religious community involvement in challenging the most egregious abuses of nonhuman animals remains a principal feature of the contemporary religious scene. That this is true in North America is suggested by respected sociologists when they comment, “The animal rights movement [is] a new social movement noted for its participants’ lack of ties to traditional Judeo-Christian religion” (Peek, Konty, and Frazier 1997, 429). Changing this reality is, no doubt, the principal challenge facing religion in North America, dominated as it is by what is sometimes referred to as the Judeo-Christian tradition.51 Traditions do not necessarily need to reach outside themselves to solve the current dilemma for, as Lewis’s essay suggests, religious traditions can have “core” or fundamental values that are both relevant and buried and which, once “unearthed,” as it were, can be brought to bear on the prevailing indifference toward nonhuman animals. There is evidence of this kind of movement, but it remains marginalized. Linzey and Cohn-Sherbok have written often and eloquently of the values manifest in both theological and historical parts of their traditions (respectively, Christian and Jewish) (see, for example, Linzey and Cohn-Sherbok 1997). Similar analyses exist for Islam (for example, Masri 1987, 1989), and of course for Hindu, Jain, Buddhist, and many indigenous traditions in Africa, Asia, South America, North America, Australia, and various island cultures (see Suzuki and Knudtson 1992; Grim 2001). Indeed plumbing the conservative views of the Catholic hierarchy reveals that
there is some movement within that tradition. For the first time ever, the Catholic Catechism issued in 1994 included an official statement from the Catholic Church that believers have more than indirect obligation to nonhuman animals. A required “religious respect for the integrity of creation” is explained in paragraph 2416, which states:

Animals are God’s creatures. He surrounds them with this providential care. By their mere existence they bless him and give him glory. Thus men owe them kindness. We recall the gentleness with which saints like St. Francis of Assisi or St. Philip of Neri treated animals.

Before celebrating this important movement, it is important to acknowledge that, while this first-ever Catholic Church admission indicates that humans owe duties directly to some nonhuman animals (thus implying that the lives of these nonhuman animals have a moral dimension), the concession is extremely limited. Paragraph 2415, in addition to the passage already quoted, includes various factors that override Paragraph 2416’s historically new concern for direct duties to nonhuman animals. These factors include our duties to “neighbors” and “future generations,” both of which, predictably, refer to humans alone even though the terms “neighbors” and “future generations” on their face apply to nonhuman animals. In other words, the primary concern of the revised Catholic Catechism is the traditional, exclusive focus on members of the human species alone.

It is fair to ask whether this really is much movement, and what will happen in the future given the new abilities of humans to use nonhuman animals under the power of such technologies as genetic engineering. On the whole such complex specific problems, including widespread and uncontrolled experimentation on nonhuman animals for humans’ benefit or profit, and the cruel conditions of intensive rearing conditions (see Regan 1986a), remain unaddressed by the vast majority of the religious establishment and its leaders. This means that the “on the ground realities” in ordinary churches remain anthropocentric in the extreme.

One hope, of course, is the burgeoning concern in religious traditions for the “environment.” This reflects the increasingly inclusive nature of ethics today, as well as the implicit theological dimensions of any ethical discussion. Holistic, environmental themes increasingly are found in works by religious believers as religious believers, examples of which include Christian thinkers such as Thomas Berry, Dieter Hessel, and Jay McDaniel; Muslim thinkers such as Mawil Y. Izzi Deen and B. A. Masri; Buddhists such as Sulak Sivaraksa and the Dalai Lama; and numerous representatives from Judaism, Hinduism, and a wide range of indigenous traditions.

The state of current literature, however, is a signpost of how little has been done regarding other animals, even though other animals often are mentioned in studies of symbolism. These studies form, however, classic examples of what Adams (1994) calls the “absent referent”—in other words, the animals themselves are nowhere to be found. At the dawn of the new millennium, there still was no systematic work on the topic of religion and animals, although the papers from the “Religion and Animals” conference were close to publication.

A Continuing Role for Traditions

Any member of any of the major world religions, including Muslims, Jews, Christians, Buddhists, Hindus, as well as adherents of indigenous and other religious traditions, can freely embrace nonhuman animals and remain completely faithful to their own tradition. As with ecological insights, compassionate concerns for other animals are well grounded in the ethical insights of virtually all religious traditions. Thus humane reforms, as is the case with ecological reform, can find homes in the cosmologies, stories, and communities of contemporary religions.

But will religious traditions continue to promote anthropocentric ethics alone, or will they enlarge their moral circles? One important factor in the future trajectory of religious concerns for nonhuman animals will be the continuing revolution in values in developed world societies, for as the philosopher Bernard Rollin suggests (1999, 3), “Most now realize...that society is in the process of changing its view of animals, and of our obligation to animals.”

Religious traditions can advance or retard such changes, or they can take a unique leadership role in this process because of their profound commitment to the ethical abilities of humans.

Today the fundamental questions for religions, as for all humans, are these: Who are the “others”? Will the “others” protected by human, religious, and ethical sensibilities be only humans? Will religions cross the species line in the twenty-first century? The verdict remains out on just what kind of force religious traditions will become in this important area of human existence.

Notes

1Religions were also, to be sure, blind to many humans, as evidenced by both widespread religious intolerance and the all too cozy relationship between established religious institutions and oppressive regimes, imperialist foreign powers, and capitalist corporations. The major theological movement known as “liberation theology” describes the latter; see, for example, Brown (1993).

2Because this attitude focuses on the usefulness of nonhuman animals for human purposes, such views sometimes are described as “utilitarian” (for example, by C.S. Lewis in a passage quoted below). If such a description is used, however, one must be careful not to confuse this attitude with the very distinctive, animal-friendly theory of ethics called “utilitarianism” historically associated with the eighteenth-century philosopher Jeremy Bentham and the nineteenth-century philosopher John Stuart Mill and exemplified today by the works of Peter Singer. See, for example, Singer (1990).

This is the traditional Catholic position. See, for example, Thomas Aquinas, Summa Theologiae, 2a, 2ae, q. 64, art. 1, ad 3; Summa Contra
Gentiles Bk. 3, Pt. 2, ch. 112, art. 13.

The original title was simply “Vivisection.” Clyde Kilby reports (1995) that the article was published in 1948 in London for the National Anti-Vivisection Society. As late as 1963 it appeared in The Anti-Vivisectionist (March/April, 154–5), where it has the longer title “Can Christians Support Vivisection?” The page numbers given here are from the 1963 version.

As a technical matter, this is the position of only some Christians. The leading theologian of Catholicism, Thomas Aquinas, followed Aristotle in holding that all living beings have a soul. The practical consequences of this are not significant, however, in that Catholic theology, as noted below, has always asserted humans’ complete superiority to nonhuman animals.

Lewis also makes another argument as to why the standard Christian position is troubling: “We may find it difficult to formulate a human right of tormenting in terms which would not equally imply an angelic right of tormenting men” (154).

It is interesting to contrast this with today’s general view that the animal rights movement is a secular phenomenon. See, in particular, the conclusion of the end of this chapter made by sociologists Peek, Konty, and Frazier (1997) regarding the non-involvement of the Judeo-Christian tradition.

It would be misleading to infer from this comment that these other traditions have been without problems in the many ways in which they have seen and otherwise engaged nonhuman animals. On the limitations in the views and values regarding other animals in various other traditions, see Waldau (2000 a,b,c, 2001a).

The term interfah dialogue frequently is used to describe the many conversations now taking place. The journal World Faiths Encounter, in which Waldau (1995) was published, is a good example of the breadth and depth of this phenomenon.

The term is misleading because not all proponents seek either moral or legal rights. For the history of the animal rights movement in the twentieth century, see Jasper and Nelkin (1992) and Finsen and Finsen (1994).

There now are many courses on “animal law,” the most publicized of which is the Harvard Law School class that began in 2000. The trend toward inclusion of this topic continues, with Yale Law School most recently offering an animal law study group in spring 2003. The best-known legislation is the Animal Welfare Act, first enacted in 1966 and regularly amended thereafter.

In the United States alone, more than 10,000 animals per day are killed for want of a home. Details are available at the website of The Humane Society of the United States, www.hsus.org.

Some scholars, such as Kimberley Patton of Harvard Divinity School, observe that this is a very misleading phrase, for it fails to signal that the Jewish and Christian traditions are much less alike than, say, the Islamic and Jewish traditions.

Andrew Linzey (1994a) has noted that these 1994 statements of the Catholic Church go beyond the pre-1994 official position of the Catholic Church, which Linzey has described as “we, [humans] do not have direct duties” (1987). Linzey also refers to some limitations on humans’ “stewardship” in the 1987 encyclical Sollicitudo Rei Socialis.

A Harvard series on “religion and ecology” (the individual titles can be found at http://environment.harvard.edu/religion, the website of the Forum on Religion and Ecology) includes many centrally positive estimates of how local religious communities already are undertaking environmentally sensitive programs that affect many nonhuman animals in favorable ways.

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O
ver the last half century, the law has assumed an increasingly important place in animal protection even as it has begun to point in the direction of true legal rights for at least some nonhuman animals. In this chapter I briefly discuss five aspects of the law: anti-cruelty statutes; the necessity of obtaining standing to litigate on behalf of the interests of nonhuman animals; evolving protections for great apes; the movement toward legal rights for at least some nonhuman animals; and the state of legal education concerning animal protection.

Anti-cruelty Statutes

“Anti-cruelty” is not necessarily synonymous with “animal welfare.” British law professor Mike Radford notes that to cause an animal to suffer unnecessarily, or to subject it to any other treatment which amounts to an offense of cruelty, is self-evidently detrimental to its welfare. To that extent, there is a degree of affinity between cruelty and welfare, but the two are far from being synonymous: prejudicing an animal’s welfare does not of itself amount in law to cruelty. “Anti-cruelty” is also not synonymous with “animal rights.” Speaking of the entire body of legislation in the area of nonhuman animal welfare in the nineteenth century, Radford explains that “while this legislation imposed restrictions on how animals could be treated, none of it—nor, indeed, any enacted subsequently—change [sic] the traditional legal status accorded to animals by the courts.” That status was as property, and property generally lacks rights.

There is no federal anti-cruelty statute in the United States. But, according to American law professor David Favre, the anti-cruelty statutes of the fifty states “are so similar in nature and the issues so fundamental that there is very little variation in judicial outlook around the country.” In 2002 these statutes strongly resembled not just each other, but also the anti-cruelty statutes that existed in 1950, in 1900, and, indeed, in 1850. Radford says that, in both the United States and the United Kingdom, “(t)he gist of the offense” today is as it has been for nearly two hundred years, “the infliction of unnecessary abuse or unnecessary or unjustifiable pain and suffering upon an animal.” In neither country, explains the leading American legal encyclopedia, has it been “the purpose of such statutes to place unreasonable restrictions upon the use, enjoyment, or possession of animals or to interfere with the necessary discipline or government of animals.”

The last half-century has seen two significant changes in American anti-cruelty statutes, and they are rapidly trending in opposite directions. The penalties for violating state anti-cruelty statutes have gotten tougher and tougher, but the statutes themselves apply to fewer and fewer perpetrators of nonhuman animal pain and suffering.

First, there has been a stiffening of penalties for conviction. In 1950 the barest handful of state legislatures had enacted anti-cruelty statutes that were felonies or that even provided for a maximum penalty exceeding one year of imprisonment. The problem of low penalties, Favre says, “is the ultimate weakness of most [anti]cruelty statutes, for no matter how expansive the language, if the punishment is not sufficient, then no real deterrent against the acts exists.” The maximum penalty that a criminal statute allows is an important benchmark. It signals to a judge how opposed legislators think a society actually is to a particular wrong, for it sets the stiffest penalty that a wrongdoer who commits a crime in the most unimaginably horrific way—or who commits it repeatedly—can suffer. Because a judge usually will not impose a penalty near the maximum for a first or “run-of-the-mill” offense, the typical penalty for cruelty will remain low so long as the maximum penalty remains low. This problem has begun to ease. While most anti-cruelty statutes continue to be misdemeanors, or lesser crimes, by 2002 thirty-four American states and the District of Columbia had enacted at least one felony anti-cruelty
statute. Felonies generally are understood to be graver crimes that carry longer sentences of imprisonment. They are more serious and legal, and rejected the McDon

The second trend has been more ominous for nonhuman animals, because many of the humans who commit forms of institutionalized cruelty have been exempted from the reach of anti-cruelty statutes. The most notorious example is that of nonhuman animals raised and killed for fo

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and legal requirements. There may be others. The most common of the so-called prudential requirements for standing is that a plaintiff’s claim “must fall within the zone of interests protected by the law invoked.” This requirement arises when plaintiffs seek review of the decision of a federal agency under the federal Administrative Procedures Act. It guides a court in deciding whether the particular plaintiff who has challenged an agency’s decision should be heard.

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In the famous English “McLibel” case, two plaintiffs—McDonald’s Corporation and its English subsidiary—sued for defamation for, among other things, statements that they engaged in cruelty toward the nonhuman animals whom they served for food. The corporations urged the trial judge to rule that in England, as in most American states, customary farming practices should be deemed acceptable. He refused, observing that a farming practice could be both cruel and legal, and rejected the McDon

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That is precisely what the majority of American states do. Professor David Wolfson has observed that the “effect of this trend of amendments cannot be overemphasized. The trend indicates a nationwide perception that it was necessary to amend anti-cruelty statutes to avoid their possible application to animals raised for food or food production. Amendments specifi

Standing

Lacking legal personhood and legal rights, nonhuman animals are essentially invisible to civil judges. This means that no one can file lawsuits directly on their behalf. Their interests can be protected only indirectly. This can happen when a legal person, who has legal rights (usually an adult human being) files a lawsuit either to stop an illegal act or to seek compensation for injuries already inflicted.

Not just any legal person can sue to protect animals. American courts generally prohibit a litigant from asserting the legal rights of another person. Judges, federal and state, usually restrict those able to obtain a judicial decision to plaintiffs with a sufficient large stake in the outcome of a controversy. This is the doctrine of “standing.” It allows persons to sue to redress an injury that they, and only they, have suffered as a result of an illegal act. Their remedy may indirectly protect nonhuman animals who are being injured at the same time. And that is all the protection that nonhuman animals ever get from the civil law.

I limit my discussion of standing to how it operates in America’s federal courts and focus on common ways in which it has an impact on litigation that seeks to protect the interests of nonhuman animals. Bear in mind that the struggle of judges with what may appear to be a straightforward standard has led to a federal law of standing that has been rightly accused of “suffering from inconsistency, unreliability, and inordinate complexity.”

The source of federal judicial power is Article III, section 2 of the U.S. Constitution. Federal judges may only decide “cases” and “controversies.” In order to surmount the constitutional obstacle of standing, a plaintiff in a federal court must allege and prove that he or she has suffered what has come to be called routinely an injury-in-fact. It was not until 1970 that the U.S. Supreme Court adopted this relatively lenient standard. Before then, one could obtain standing only if one could show that one’s legal right had been invaded. An injury-in-fact must then be “fairly traceable to . . . allegedly unlawful conduct and likely to be redressed by the requested relief.”

But injury-in-fact, traceability, and redressability are just the constitutional requirements. There may be others. The most common of the so-called prudential requirements for standing is that a plaintiff’s claim “must fall within the zone of interests protected by the law invoked.” This requirement arises when plaintiffs seek review of the decision of a federal agency under the federal Administrative Procedures Act. It guides a court in deciding whether the particular plaintiff who has challenged an agency’s decision should be heard.
If the court decides that the plaintiff’s interests are “so marginally related to or inconsistent with the purposes implicit in the statute or that it cannot be reasonably assumed that Congress intended to permit the suit,” it will not hear the claim of the particular plaintiff.28

In the 1990s the Animal Legal Defense Fund (ALDF) brought a landmark trio of cases in the federal courts in Washington, D.C., to try to obtain standing to litigate in the interests of nonhuman animals. Three times ALDF won in the District Court and three times these victories were overturned by a three-judge panel of the Court of Appeals. On the appeal of the third decision to the full bench of that court, ALDF achieved a singular success.

In the first case, Animal Legal Defense Fund v. Espy (I),29 an inactive researcher and a lawyer-member of an animal oversight committee, as well as two animal protection organizations, complained that the Secretary of Agriculture had excluded 90 percent of the nonhuman animals who were used in biomedical research—rats, mice, and birds—from the definition of “animal” in the regulations he was required to issue under the federal Animal Welfare Act.30 A three-judge panel of the Court of Appeals for the District of Columbia found the researcher had not suffered the required injury-in-fact because it was not immediate, while the lawyer was said to be improperly trying to compel a general executive enforcement of the law. The organizations were dismissed from the suit, for although they met the three constitutional requirements for standing, they did not fall within the zone of interest of the Animal Welfare Act.

In a second case, Animal Legal Defense Fund v. Espy (II),31 the same Court of Appeals turned aside for lack of standing a challenge to the sufficiency of the standards that the Secretary of Agriculture had issued for the exercise of dogs used in biomedical research and to promote a physical environment adequate to meet the psychological well-being of primates. This time an ape language researcher was said to lack standing because it was his university, and not he, who might have suffered an injury, while a business that sold primate housing that could be used if valid standards had been issued lacked standing because it fell outside of the zone of interests.

In 1996 the ALDF tried a third time, claiming once again that the Secretary of Agriculture had failed to issue the minimum standards required to promote the psychological well-being of primates. One plaintiff, Marc Jurnove, was alleged to have visited a zoo repeatedly and seen primates kept in inhumane conditions whom he intended to continue to visit regularly. For the third time, a panel of the Court of Appeals reversed a lower court victory for the Animal Legal Defense Fund. This time a further appeal was requested before all the judges of that Appeals Court, and they ruled, 7 to 4, that Jurnove had standing.32 The majority said that people have a protected aesthetic interest in observing animals free from inhumane treatment. It turned back arguments that the dissent embraced that a plaintiff could obtain standing only if he alleged that animals whom he wished to observe faced extinction, not just suffering; that causation did not exist because the Department of Agriculture had not authorized the inhumane treatment, but had just not acted to prevent it; and that one could only speculate that any changes in the treatment of the primates would actually satisfy Jurnove’s aesthetic sensibilities. In 2000 three other plaintiffs used this victory to obtain standing in, and finally to win, another lawsuit that complained that the Secretary of Agriculture had illegally excluded rats, mice, and birds from the definition of “animals” to be protected by the Animal Welfare Act.33 Unfortunately, in 2002 Congress enacted an exemption to the definition of animals that nullified this win. The standing victory remains, however.

**Toward Protection for Great Apes**

In *Rattling the Cage: Toward Legal Rights for Animals* (2000), I argued that, under the common law, entitlement to legal rights turns on the nature of an animal’s mind; that numerous scientific investigations have demonstrated that at least two great apes, chimpanzees and bonobos, possess minds so extraordinary that they tower above the minimum sufficient for rights; and that the day has come to grant basic legal rights to these apes. In *Dancing the Line: Science and the Case for Animal Rights* (2002), I made the same argument on behalf of the other two great apes, gorillas and orangutans.

That day in which the great apes obtain legal rights will cap a long legal and political process. Among its first fruits were the 1985 amendments to the Animal Welfare Act. There the Secretary of Agriculture was directed to “promulgate standards to govern the humane handling, care, treatment, and transportation of animals by dealers, research facilities, and exhibitors... [and to] include minimum requirements... [for] a physical environment adequate to promote the psychological well-being of primates.”34 This amounted to a recognition by Congress that primates had a psychology that could be in good health or poor.

Britain was next to step in the direction of legal rights for great apes. In 1997, on its own initiative, the British government’s Home Secretary banned the use of all four species of great apes, not just chimpanzees and bonobos but orangutans and gorillas, too, as biomedical research subjects.35 This ban on the use of great apes, he wrote, “was a matter of morality. The cognitive and behavioural characteristics and qualities of these animals mean that it is unethical to treat them as expendable for research.”36 Under current British legislation, there must be a weighing
of the cost to a nonhuman animal of a biomedical procedure with the benefit to human beings. Only when the human benefit outweighs the nonhuman cost may the procedure be licensed. Steve Wilkes, head of the Home Office’s Animal Procedures Section, said that the benefit to a human being could never outweigh the cost to a great ape.37

In New Zealand a 1998 attempt led to formal Parliamentary hearings that were highly publicized around the world. Prominent New Zealand advocates of legal rights for great apes, including lawyers, professors, scientists, and philosophers, sought to build upon an idea that had been the focus of a powerful book, The Great Ape Project: Equality Beyond Humanity.38 Animal Welfare Bill No. 2, which sought to streamline and modernize Kiwi animal protection law, was pending before the New Zealand Parliament. The submitters sought to have it amended as proposed by the group Great Ape Project (New Zealand) in order to grant great apes three basic legal rights. These were the rights not to be deprived of life, not to be subjected to torture or cruel treatment, and not to be subjected to medical or scientific experimentation. They also sought to provide for the appointment, when necessary, of human guardians to defend these great ape rights.39

In their Submission to Parliament, the submitters argued that

[b]eing fellow hominids, the great apes are more closely related to humans than to any other animals. They share many of our characteristics including some that we thought were uniquely ours, such as self-awareness, the ability to reason and the ability to imagine what others are thinking and feeling. In humans, these traits are often cited as a basis for ascribing basic legal rights. We believe that a strong case now exists for giving basic legal rights to the other members of the Hominidae family.

The Animal Welfare Act of 1999 that eventually cleared the New Zealand Parliament did not grant legal rights to the great apes. Instead it prohibited research, testing, and teaching involving the use of a great ape without approval of the director-general who, in granting approval, must be satisfied that use of the ape is in his or her best interests or in the best interests of his or her species, and that the benefits to be derived are not outweighed by the likely harm to the ape.40

In the United States, at least chimpanzees, but likely all the great apes, appear to be edging toward a de facto “right” to life. If not the most expensive nonhuman animals to maintain in biomedical research, chimpanzees certainly are among the most expensive. In 1995 it was estimated that it cost between $113,000 and $321,000 to maintain a captive chimpanzee used in biomedical research over his or her natural lifespan.41 That it would doubtless be far cheaper to kill them the way mice and rats routinely are killed when their usefulness has ceased was forcefully etched in a minority statement appended to a report of the National Research Council, an arm of the National Academy of Sciences, in 1997. The statement firmly opposed the use of public money to support chimpanzees in retirement sanctuaries, “since there is no potential return on research dollars invested in chimpanzees permanently removed from the research pool,” and urged that they be euthanized.42 The majority, however, rejected euthanasia as a method of population control of captive chimpanzees on the grounds that

the phylogenetic status and psychological complexity of chimpanzees indicate that they should be accorded a special status with regard to euthanasia that might not apply to other research animals, for example, rats, dogs, or some other nonhuman primates. Simply put, killing a chimpanzee currently requires more ethical and scientific justification than killing a dog, and it should continue to do so.43

In 2002 a move was afoot to have all the countries of the world, but especially the so-called range countries, embrace an international Declaration for the Protection of Great Apes and a subsequent Convention for the Protection of Great Apes that name the great apes as “World Heritage Species.” This is a new category roughly modeled on the existing treaty that allows for the designation of World Heritage Sites. If this declaration materializes, the new category of World Heritage Species would tighten the protection of great apes under international law and under the domestic law of range countries and provide special protections under international law.

**Toward Legal Rights for Animals**

The ancient Greek and Roman worlds were dominated by the belief that the universe was designed for human beings. Small wonder that from these worlds emerged the jurisprudential idea that, in the words of the early Roman jurist Hermogenianus, “All law was established for men’s sake.”45 Why should law not have been established just for the sake of men? According to the early Greeks and Romans, everything else was. In Roman law, “persons” had legal rights, while “things” were the objects of the rights of persons. And all those beings who were believed to lack free will—women, children, slaves, the insane, and nonhuman animals—were at some time classified as property.

Roman law has had a tremendous effect upon Western law as a whole, and especially upon property law. The law of nonhuman animals in the United States at the beginning of the second millennium is nearly identical to the Roman law of nonhuman animals as it existed when the first millennium turned. While all humans are legal persons, all legal persons are not human beings. Some are artificial persons, like corporations and ships.
However, all of the more than one million species of nonhuman animals—chimpanzees, cheetahs, cats, and cockroaches—are not legal persons but are legal things.

Some may confuse being the object of legal protection with having legal personhood. They may point to the criminal anti-cruelty statutes, which I briefly discussed, that have existed for well over a century in every American jurisdiction as evidence that nonhuman animals are legal persons with legal rights. But they would probably be wrong. Criminal statutes are prohibitions enacted by legislatures. Sometimes they protect persons, as when legislatures make it a crime to assault a fellow human being. But they may also commonly protect things. For example, in Massachusetts it is a felony, punishable by imprisonment for up to five years, to destroy a cemetery shrub. It also is a crime to smash the windshield of your neighbor’s automobile or set his dog afire. Violate these prohibitions and you may be charged with a crime by the state, convicted, and punished. But neither the shrub nor the automobile nor the dog has thereby been given any legal rights.

What are legal rights? Potter Stewart, a twentieth century justice of the United States Supreme Court, famously observed about pornography, “I know it when I see it.” Similarly, people have an intuitive “feel” for what legal rights are, even if they can’t quite define them. Some of the most important rights, such as bodily integrity and bodily liberty, act like a suit of legal armor, shielding the bodies and personalities of natural persons from invasion and injury. These rights are so important that they usually are enshrined in the bills of rights of state and federal constitutions.

For most of the last century, legal scholars, judges, and lawyers often classified legal rights in the way that Wesley Hohfeld, a professor at Yale Law School, proposed during World War I. Hohfeld said that a legal right was any theoretical advantage conferred by recognized legal rules. He broke legal rights into their lowest common denominators, using terms that judges commonly employ, such as privilege, claim, duty, immunity, disability, power, and liability, but he never formally defined them. Instead, he spelled out how the common denominators relate to each other. According to Hohfeld, legal relationships can exist only between two legal persons and one thing. One of the two persons always has a legal advantage (or right) over the other. The other person has the corresponding legal disadvantage. Just as a man can’t be a husband without a wife and a woman can’t be a wife without a husband, neither a legal advantage nor a disadvantage can exist all by itself.

The legal rights of nonhuman animals might first be achieved in any of three ways. Most agree that the least likely will be through the re-interpretation or amendment of state or federal constitutions, or through international treaties. For example, the Treaty of Amsterdam that came into force on May 1, 1999, formally acknowledged that nonhuman animals are “sentient beings” and not merely goods or agricultural products. The European Community and the member states signatory to the treaty are required “to pay full regard to the welfare requirements of animals.” In 2002 the German Parliament amended Article 26 of the Basic Law to give nonhuman animals the right to be “respectedge as fellow creatures” and to be protected from “avoidable pain.” Half of the sixteen German states already have some sort of animal rights provisions in their constitutions.

In the United States, most believe that gaining personhood is much more probable through legislative enactment than through a constitutional change. But a change in the common law (which Germany does not have) may be the most likely of all. What is the common law? Lemuel Shaw, the nineteenth century chief justice of the Supreme Judicial Court of Massachusetts, provided this good definition: it “consists of a few broad and comprehensive principles, founded on reason, natural justice, and enlightened public policy, modified and adapted to all the circumstances of all the particular cases that fall within it.”

Why the common law over legislation? The common law is created by English-speaking judges while in the process of deciding cases. Unlike legislators, judges are at least formally bound to do justice. Properly interpreted, the common law is meant to be flexible, adaptable to changes in public morality, and sensitive to new scientific discoveries. Among its chief values are liberty and equality. These favor common law personhood, as a matter of liberty, at least for those nonhuman animals, such as chimpanzees, bonobos, gorillas, orangutans, dolphins, and whales, who possess such highly advanced cognitive abilities as consciousness, perhaps even self-consciousness; a sense of self; and the abilities to desire and act intentionally. In other words, they have what I call a “practical autonomy,” which is, I argue, sufficient, though not necessary, for basic legal rights. An animal’s species is irrelevant to his or her entitlement to liberty rights; any who possesses practical autonomy has what is sufficient for basic rights as a matter of liberty. And as long as society awards personhood to non-autonomous humans, such as the very young, the severely retarded, and the persistent-ly vegetative, then it must also award basic rights, as a matter of equality as well, to nonhuman animals with practical autonomy.
Legal Education in Animal Law

I have written that an animal rights lawyer should not expect a judge to appreciate the merits of arguments in favor of the legal personhood of any nonhuman animal the first time, or the fifth time, he or she encounters them. While a sympathetic judge might be found here and there, no appellate bench will seize the lead until the issue has been thoroughly aired in law journals, books, and conferences. Law reviews discussing animal legal rights must be established around the country in order to provide an important scholarly forum in which the relevant legal issues can be explored. Legal conferences must be organized, law school courses devoted to educating students on animal law issues must be established, animal rights lawyers and law professors must reach out to acquaint the profession with the importance of their work and the power of their arguments.51

Legal education, in every sense of that term—law reviews, legal conferences, and law school courses—is critical to the legal changes that animal rights lawyers seek. As of 2002 much work remained. In 1950 it had not even begun. The wildlife legal scholar Michael Bean has written that, even in 1977, “the very term ‘wildlife law’ was novel, for few had seen fit to distinguish such a body of law from the broader categories of ‘environmental law’ or ‘natural resources law.’”52

In 1950 no law reviews—those scholarly journals published by the students of every American law school—were devoted exclusively to even environmental (much less animal rights) law. That gap was not plugged until 1970, when Environmental Law began to be published by students of the Northwestern School of Law of Lewis and Clark College in Portland, Oregon. In the middle of the twentieth century no law school classes solely addressed environmental law, much less wildlife law. The more arcane subjects of animal protection law and animal rights law lay nearly forty years in the future.

There were no animal law conferences in 1950. In the 1980s the Animal Legal Defense Fund held sporadic conferences. By 2002 four state bar associations (in Washington, Texas, Michigan, and Washington, D.C.) had formed animal law sections, as had the New York City and San Diego County bar associations. Several states (Connecticut, Florida, Georgia, and Oregon) appeared to be in the process of forming animal law sections. Since 1995 the Committee on Legal Issues of the Association of the Bar of New York City has held a continuing series of educational seminars on animal issues, and annual full-blown legal conferences. This series of programs was capped by “The Legal Status of Non-Human Animals,” a 1999 conference that attracted speakers from three continents and hundreds of participants.53 The Center for the Expansion of Fundamental Rights has begun a program to take the issue of animal rights law directly to the judges who will be making the decisions, by offering to send speakers to judicial conferences throughout the United States.

Precisely a quarter century after Environmental Law was founded, Animal Law joined it as a sister publication. David Favre wrote in the premiere issue that,

[i]n the tradition of the prior students at Lewis and Clark, a substantial number of present students have focused upon what will be a cutting area of scholarship for the next generation of law students—animal related legal issues. In the 1970s the new area of jurisprudence was environmental law. In the 1990s there is a growing interest in animal issues.”54

Animal Law is important because it was, and remains, both a cause and an effect of the intensifying interest in animal law within the legal profession, an interest that must continue to build if animal rights lawyers are to succeed. (As of 2002 a second animal law review, this one a Northeast regional publication, was in the planning stages.) It is important that general law reviews have begun publishing animal law articles, including those written by such prominent legal academics as Cass Sunstein of the University of Chicago School of Law and Anthony D’Amato of the Northwestern University School of Law. Oxford University Press has just published a series of groundbreaking essays edited by Sunstein and Martha Nussbaum in Animal Rights: Current Debates in New Directions.

The first American law school class in animal law was offered by the Pace University School of Law in White Plains, New York, in the mid-1980s. The instructor was adjunct professor Jolene Marion, a pioneer in animal rights law. Though it lasted just a few years, it paved the way for every animal law class that followed. In 1990 I began teaching a law school class at the Vermont Law School, again as an adjunct. This course, entitled “Animal Rights Law,” focused on whether nonhuman animals should be eligible for basic legal rights.

In 2002 animal law classes were being offered at nineteen American law schools, including Harvard, Georgetown, UCLA, Hastings, and George Washington universities. Courses were being offered in the United Kingdom, Holland, and Austria. Most of these courses were taught by practitioners acting as adjunct professors or lecturers on law. They offered such an intellectual smorgasbord that a student might attend several and encounter little repetition.

Most focused on “animal law” and surveyed either the statutes and case law in which the nature of nonhuman animals is important, or “animal protection law,” which addresses how attorneys can protect the interests of nonhuman animals within a legal system that considers them to be legal things. Some courses, however, concentrated on “animal rights law,” in which the arguments are explored for and against having judges recognize...
that at least some nonhuman animals possess at least some basic legal rights. All classes were given a boost by the publication in the year 2000 of Animal Law, the first casebook exclusively concerned with animal law issues. As its authors noted, “There has been a reticence in many legal quarters to teach, learn, or practice in the area specifically because of the absence of meaningful assistance and coverage.” The authors’ hope that their casebook will “serve as a valuable guide to students and professors stepping onto this new frontier and provide more law schools with a template for animal law courses” has been fulfilled.

The last fifty years—and especially the last ten—have seen tremendous strides in the evolution of animal protection law, both in its teaching and in the laying of the foundations for true animal rights law. The first serious attempts to gain legal rights for at least some nonhuman animals will likely be upon us in this decade.

Notes
2Id. at 99.
3Id. at 99–100, 101.
5Id. at 251.
7Annotation, note 6, supra, at 799.
11USDA/NASS “Meat Animal Production, Disposition, & Income(1998); USDA/NASS “Broiler Hatchery” (October 1999); USDA/NASS “Chicken and Eggs” (October 1999); USDA/NASS Turkey Hatchery (October 1999); USDA/NASS Livestock Slaughter 1998 Summary (March 1999); USDA/NASS Poultry Slaughter 1998 Summary (February 1999).
12Wolson, D.L. 1999. Beyond the law: Agriculture and the systemic abuse of animals raised for food or food production 27 Watkins Glen, N.Y.: Farm Sanctuary, Inc.
13Id.
14McDonald’s Corporation v. Stekel, http://www.mcspotlight.org/case/trial/verdict/jud2c.html, at page 5 (High Court of Justice, Queen’s Bench Division June 19, 1997), rev. in part on other grounds (Court of Appeals, March 31, 1999).
17Favre et al., note 10, supra, at 76–77 and note 31.
18Id. at 76–77.
24Allen, note 19, supra, at 751.
25Id.
31S. Fr. 3d.
39Id. at 28.
46Id. at 63–87, 243–270.
49The proceedings were published in 8 Animal Law (2002).
52Personal communication from Pamela Frash, April 16, 2002; P.D. Frash et al. 1999. State anti-cruelty statutes: An overview, 5 Animal Law 69–69.
55Submission of David Penny and 37 others to the Parliamentary Select Committee on Primary Production concerning the Animal Welfare Bill No. 25, 14 (October 27, 1998).
56New Zealand Animal Welfare Act of 1999, sec. 76A.
The Science and Sociology of Hunting: Shifting Practices and Perceptions in the United States and Great Britain

John W. Grandy, Elizabeth Stallman, and David W. Macdonald

Introduction

Between the late nineteenth and early twenty-first centuries, both the rationale for and perception of hunting shifted in the United States, coinciding with demographic changes in the U.S. population (Duda 1993). Similar changes in attitude, though largely undocumented, probably occurred in the United Kingdom. (For example, foxhunting did not emerge as a substantial sport until the second half of the eighteenth century; before that, foxes were widely perceived as pests and killed whenever the opportunity arose [Marvin 2000]). Our purpose in this chapter is to compare these two countries in order to reveal some of the science and the sociology relevant to hunting (the latter just one of many interacting environmental issues about which human society faces complicated judgments within rapidly shifting political and cultural areas).

While hunting was once necessary for the survival of European colonists and Native Americans, the number of people reliant upon subsistence hunting in the United States and Western Europe is now small. For the general public in both the United States and Europe—including non-hunters and hunters—the acceptability of hunting today hinges on ethical considerations such as “fair chase”; whether the hunt is conducted primarily for sport, recreation, trophy, or food; and perceived effects on conservation or animal welfare (e.g., Kellert 1996).

Paralleling changes in public attitudes, the discipline of wildlife management in the United States has shown evidence of a gradual evolution away from “game” management and toward whole-ecosystem management (Dasmann 1964; Decker et al. 1992; Woolf and Roseberry 1998; Bolen 2000; Peyton 2000). Despite the shift in the focus of wildlife management, as well as a steady decline in the popularity and acceptance of hunting, the generally dwindling stakeholder group associated with sport hunting continues to exert a strong influence on wildlife management (Bissell 1993; Woolf and Roseberry 1998), often encouraging the production of “harvestable surpluses” of favored game species for the sake of providing recreational hunting opportunities (Holsman 2000; Peyton 2000). Consumptive users of wildlife (hunters, trappers, and anglers) have a financial—and perhaps, therefore, influential—impact on wildlife management via the purchase of hunting and fish-
ing licenses and duck stamps, and payment of federal excise taxes on sporting arms, handguns, ammunition, and archery equipment (Schmidt 1996; Holsman 2000). This potential influence of hunters on management decisions has three potential effects: it may (1) promote the killing of wildlife as a form of public recreation; (2) reduce the emphasis by wildlife agencies on non-game species; and (3) affect the movement toward ecosystem management.

In contrast to the United States, mammalian wildlife populations in the United Kingdom exist almost entirely on privately owned land and are managed by individual landowners within the constraints of European and U.K. legislation regarding seasons, permitted methods of killing or hunting, use of firearms, and protected species (Macdonald et al. 2000). The organization of wildlife management is much less institutionalized in the United Kingdom than in the United States. For example, provided that permitted methods are used, strict firearms regulations are followed, and closed seasons recognized, the decision as to how many deer to cull lies almost entirely within the control of individual landowners. No hunting license is required (although individual landowners may charge a fee for the right to hunt on their land) and, except for deer in Scotland, there is no requirement for hunters to report the number of animals killed. There is no legally enforced regulation in the United Kingdom, although landowners and informal groupings (e.g., deer management groups, fox destruction clubs, and shooting syndicates) may achieve a similar effect. Very recently, and as a significant change, many organizations hunting with dogs have submitted themselves to voluntary regulation by the Independent Supervisory Authority for Hunting. However, the U.K. situation generally contrasts sharply with the situation elsewhere in Europe, where wildlife culling is subject to a statutory licensing system and/or cull plans approved by government authorities, often covering a defined area of land (Gill 1990; Myrberget 1990; Stroud et al. 1999). Of course, management of mammalian wildlife in the United Kingdom is perhaps less complex than elsewhere in Europe or in the United States because there are no remaining populations of large predators and only a handful of larger herbivores.

In the United Kingdom, most available data on public attitudes toward wildlife management are collected through opinion polls for political purposes, and these generally are scientifically wanting (Macdonald et al. 2000). However, one particular aspect of hunting that certainly causes great public concern is the use of dogs to chase and kill wild mammals such as foxes, deer, and hares (Ministry of Agriculture, Fisheries, and Food 2000). A number of European countries, including Germany, Sweden, and Denmark, have banned or partially banned hunting with dogs (Burns et al. 2000). Although hunting with dogs is an ancient occupation in the United Kingdom (Macdonald 1987; Macdonald and Johnson 1996), the longstanding and fierce debate as to whether it should be allowed to continue recently culminated in a bill that was introduced in the House of Lords in 2002. The proposed legislation abolished mounted foxhunting and hare coursing and prevents the hunting of deer, boar, and mink with dogs. In 2002 ministers of Parliament voted overwhelmingly to ban hunting with dogs in England and Wales, but progress was blocked by the House of Lords. Following a period of consultation, new legislation proposed in late 2002 was again supported by the House of Commons but was also likely to face opposition from the Lords when it was to be voted on in late 2003 or 2004. The proposed bill, as amended in committee, bans hunting with dogs unless two tests are passed: first, that the hunting is necessary to prevent serious damage of some kind and, second, that the damage cannot be prevented using a method involving less suffering.

### U.S. Wildlife Management and Hunting

Early European colonists considered wildlife on the North American continent to be essentially infinite in abundance (e.g., Mighetto 1991; Posewitz 1999). There was no need to justify hunting to the public. Hunting for subsistence was a way of life and was believed to be justified by the desire to conquer the wilderness of the New World. Thus, little need was seen for restraint in hunting and trapping those wildlife species whose meat could be used or whose hides or fur could be traded within the colonies or sold to financiers in Europe. European colonists saw many wildlife species, as well as the wilderness itself, as hostile and a deterrent to progress. In Connecticut, for example, the first restriction on hunting deer, in the form of a closed season, was not in place until 1698, by which time deer had been nearly wiped out in that area (Conover and Conover 1987). Bounties on wolves and cougars—placed only partly for the sake of protecting livestock—succeeded in extirpating large predators from the East and later from much of what was to become the forty-eight contiguous states (Leopold 1933; Conover and Conover 1987; Mighetto 1991; Paquet and Haekman 1995).

By the late 1800s, however, some hunters began to write about the need for conservation of declining populations of game species—most notably the bison and the passenger pigeon—and to increase public awareness of the loss of wildlife to market hunting (Mighetto 1991). Deer, beaver, wolves, bears, cougars, and other animals killed by hunters or trappers had been nearly extirpated from most of their range in North America, and many waterfowl species were in serious decline (Nichols, Johnson, and Williams 1995; Paquet and Haekman 1995; Woolf and Roseberry 1998). Massachusetts was the
The Science and Sociology of Hunting: Shifting Practices and Perceptions in the United States and Great Britain

Mighetto (1991) suggests that the least some hunted wildlife species.

fare of individual animals began to humanitarians concerned for the wel-
tence was rapidly diminishing, and 1999). The need to hunt for subsis-
tions of hunters (e.g., Posewitz and, ultimately, be used by future
dards, such as the concept of fair
chase and self-imposed restrictions
emphasizing particular ethical stan-
tions (e.g., Nichols, Johnson, and
Williams 1995).

Hunters and anglers around the turn of the twentieth century frequently are credited with kick-starting the early conservation movement that eventually led to passage of the Lacey Act of 1900, the MBTA, and associated treaties, and an end to destructive market hunting (Leopold 1933; Mighetto 1991; Schmidt 1996). Critics point out that these sport hunters—turned-conservationists acted for the “selfish” purpose of providing “abun-
dant sport for themselves” (Grinnell, in Mighetto 1991, 41). Regardless of
the motives of the hunters of the past, their actions resulted in the initiation of early wildlife conservation.

While hunters of this era pushed for laws and regulations that would pro-
tect the game species they found valuable, they simultaneously refined the “sporting” aspects of hunting by emphasizing particular ethical standards, such as the concept of fair chase and self-imposed restrictions on the number of animals killed to allow wildlife populations to rebuild—and, ultimately, be used by future generations of hunters (e.g., Posewitz 1999). The need to hunt for subsis-
tence was rapidly diminishing, and humanitarians concerned for the welfare of individual animals began to pay attention to the suffering of at least some hunted wildlife species. Mighetto (1991) suggests that the publication in 1859 of Darwin’s theo-
ry of natural selection may have been a catalyst for the concern of humani-
tarians for animal welfare, because the theory clearly indicated that humans and other animals share a common origin.

During the early 1900s, increasing populations of some wildlife species allowed wildlife managers to move away from a strategy of simply restricting hunting to recover scarce wildlife populations, adopting instead a strategy in which the “cropping” of game species was emphasized. (Cropp-
ring, as a management technique, involves encouraging the reproduc-
tion and survival of animals so that many will be available to be killed by recreational hunters without decreasing the population beyond the capa-
bility of the next reproductive cycle to replenish the population.) This strategy was accomplished through attempts to limit the negative impact on wildlife of hunting, as well as to mitigate the effects of disease and habitat degradation. Refuges and parks were also established on which hunting was prohibited or restricted (Leopold 1933). Sport hunters in the early and mid-1900s were provided with hunting opportunities and in turn provided a means to limit now-increasing deer herds which, though still limited by food and disease, were no longer being held in check by large predators such as wolves and cougars (Woolf and Roseberry 1998). Sport hunters became a self-designated “tool” for wildlife management and began funding state and federal wildlife management agencies through a tax in the form of fees for the purchase of hunting licenses and duck stamps (Migratory Bird Hunting Stamp Act, 1934) and via excise taxes imposed on purchases of sporting arms and ammunition (through the Pittman-Robertson Federal Aid in Wildlife Restoration Act of 1937).

The notion of hunters as the “clients” of U.S. state wildlife agen-
cies has largely persisted to the pre-

sent day, as has the wildlife manage-
ment strategy of producing wildlife for hunters to kill, in spite of the fact that Leopold’s (1933) embrace of cropping wildlife came at a time when production of wildlife seemed a responsible alternative to the exploitation of scarce wildlife populations. Some authors now suggest that continuation of the cropping strategy as a primary goal of wildlife manage-
ment may hinder progress toward whole-ecosystem management (Pey-
ton 2000). Even in those regions where some wildlife populations, such as white-tailed deer, are considered too abundant, state wildlife agencies often respond to pressure from sport hunters by continuing to manage habitat to provide increased food and cover for deer so that hunter satisfac-
tion remains high (Woolf and Rose-
berry 1998). In areas where native predators have returned (e.g., cougars in the West) or have been replaced by others (e.g., coyotes replacing wolves in Maine), hunting and trapping seasons for these preda-
tors often are established or liberal-
ized under the generally untested assumption that this will increase populations of popular game species.

The American public, including wildlife managers and some hunters, has begun to question more critically the emphasis of state wildlife agen-
cies on satisfying the desires of hunters (e.g., Williams 1986). In response to this and other criticisms, hunters’ organizations in several states have lobbied for passage of legis-
atation establishing their “right” to hunt (Table 1). It is not yet clear what effect this will have on wildlife manage-
ment strategies or hunting regul-
ations.
Hunters in the United States

Absolute numbers of hunters (paid license holders) in the United States have decreased over the past two decades, from approximately 16.3 million in 1980 to 15 million in 2000. The popularity of hunting, measured by the proportion of the U.S. population that purchases hunting licenses, has declined steadily, from an estimated 7.18 percent in 1980 to 5.35 percent in 2000 (Table 2a) (U.S. Fish and Wildlife Service 1981; U.S. Census Bureau, 1996; U.S. Census Bureau 2001; U.S. Fish and Wildlife Service 2001). Trends in most states follow the national trend, though there is substantial variation in hunting participation.

Table 1
States that Currently Have a Constitutional Amendment Guaranteeing the Right to Hunt for All Citizens

<table>
<thead>
<tr>
<th>State</th>
<th>Bill or Amendment</th>
<th>Highlights of Text</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alabama</td>
<td>Alabama Constitution, Amendment No. 597 (2002)</td>
<td>“All persons shall have the right to hunt and fish in this state in accordance with law and regulations.”</td>
</tr>
<tr>
<td>Florida</td>
<td>Section 8, Section 372.002, Florida Statutes (2002)</td>
<td>“The legislature recognizes that hunting, fishing, and the taking of game are a valued part of the cultural heritage of Florida and should be forever preserved for Floridians.”</td>
</tr>
<tr>
<td>Minnesota</td>
<td>Minnesota Constitution, Article XIII, Section 12 (2001)</td>
<td>“Hunting and fishing and the taking of game and fish are a valued part of our heritage that shall be forever preserved for the people.”</td>
</tr>
<tr>
<td>Missouri</td>
<td>Title XXXVIII. Crimes and Punishment; Peace Officers and Public Defenders Chapter 578.151</td>
<td>“It is the intent of the general assembly of the state of Missouri to recognize that all persons shall have the right to hunt, fish and trap in this state.”</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>Title XVIII. Fish and Game Chapter 207 General Provisions as to Fish and Game Jurisdiction. 207:58 (2001)</td>
<td>“…The general court further finds that it is in the best of the state and its citizens that the fish and game recognize, preserve, and promote our special heritage of hunting, fishing, trapping, and wildlife viewing by providing opportunities to hunt, fish, trap, and view wildlife.”</td>
</tr>
<tr>
<td>North Dakota</td>
<td>North Dakota Constitution, Article 11, Section 27 (2002)</td>
<td>“Hunting, trapping, and fishing and the taking of game and fish are a valued part of our heritage and will be forever preserved for the people.”</td>
</tr>
<tr>
<td>Virginia</td>
<td>Virginia Constitution, Article XI, Section 4 (2002)</td>
<td>“The people have a right to hunt, fish, and harvest game.”</td>
</tr>
</tbody>
</table>

Table 2a
Percentage of the United States Population Holding a Hunting License

<table>
<thead>
<tr>
<th></th>
<th>1980</th>
<th>1990</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Number of Paid Hunting License Holders 1</td>
<td>16,257,074</td>
<td>15,806,864</td>
<td>15,044,324</td>
</tr>
<tr>
<td>U.S. Population 2</td>
<td>226,542,199</td>
<td>248,709,873</td>
<td>281,421,906</td>
</tr>
<tr>
<td>Percentage of Population Holding a Hunting License</td>
<td>7.18</td>
<td>6.36</td>
<td>5.35</td>
</tr>
</tbody>
</table>

1Source: U.S. Fish and Wildlife Service, based on data provided by state wildlife agencies. A paid license holder is one individual regardless of the number of licenses purchased. Some states do not require the purchase of a hunting license by senior citizens, youth, or disabled individuals; some unprotected species, such as prairie dogs or marmots, may be shot without a license in some states.

2Source: U.S. Census Bureau
participation among states (Table 2b). Between 1980 and 2000, nineteen states showed a decrease of 2 percent or more in the percentage of the population that purchased licenses; however, a few states (Montana and the two Dakotas) showed an increase of at least 2 percent in the percentage of paid license holders. (It is not clear the extent to which non-resident trophy hunters may affect state-by-state variation in these trends.) These recent trends contrast with the period 1955–1975, during which the number of paid license holders in the United States increased 46 percent, from 11.7 million to 14.0 million (U.S. Department of the Interior 1997).

Another measure of participation in hunting is the average number of days hunted per year. Between 1991 and 1996, hunters spent, on average, approximately 17 percent fewer days hunting annually than in 1975, 1980, and 1985 (U.S. Department of the Interior and U.S. Department of Commerce 1997). Enck, Decker, and Brown (2000) point out that most of this decrease can be accounted for by a decrease in time spent hunting small game (a 40 percent decrease in days spent hunting); days spent hunting big game and waterfowl actually increased by 28 percent and 5 percent, respectively, between 1980 and 1996 (see also U.S. Department of the Interior and U.S. Department of Commerce 2002). These authors suggest further that the reduced interest in small-game hunting may be indicative of reduced participation by younger hunters, for whom small-game hunting is often part of the introduction to hunting (Enck, Decker, and Brown 2000). Perhaps for this reason, hunter recruitment efforts by state wildlife agencies and non-governmental hunting associations often focus on encouraging young people to begin or continue hunting, though efforts to recruit minority groups and women are also becoming more common (e.g., Matthews 1993; Mangun, Hall, and O’Leary 1996).

Table 2b
States Showing an Increase or Decrease of 2 Percent or More in Hunting Popularity, 1980, 2000

<table>
<thead>
<tr>
<th>Percent of State Population Holding a Hunting License</th>
<th>1980</th>
<th>2000</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hunting Popularity Increases</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Montana</td>
<td>27.64</td>
<td>31.46</td>
</tr>
<tr>
<td>North Dakota</td>
<td>15.33</td>
<td>19.23</td>
</tr>
<tr>
<td>South Dakota</td>
<td>20.66</td>
<td>30.23</td>
</tr>
<tr>
<td>Hunting Popularity Decreases</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Alaska</td>
<td>17.96</td>
<td>15.55</td>
</tr>
<tr>
<td>Arizona</td>
<td>7.31</td>
<td>3.83</td>
</tr>
<tr>
<td>Colorado</td>
<td>10.81</td>
<td>7.85</td>
</tr>
<tr>
<td>Georgia</td>
<td>7.03</td>
<td>4.03</td>
</tr>
<tr>
<td>Idaho</td>
<td>25.21</td>
<td>19.26</td>
</tr>
<tr>
<td>Kansas</td>
<td>10.51</td>
<td>7.80</td>
</tr>
<tr>
<td>Louisiana</td>
<td>9.14</td>
<td>6.23</td>
</tr>
<tr>
<td>Maine</td>
<td>21.28</td>
<td>16.37</td>
</tr>
<tr>
<td>Mississippi</td>
<td>11.45</td>
<td>8.86</td>
</tr>
<tr>
<td>Nevada</td>
<td>6.53</td>
<td>3.02</td>
</tr>
<tr>
<td>New Hampshire</td>
<td>9.07</td>
<td>6.17</td>
</tr>
<tr>
<td>New Mexico</td>
<td>11.08</td>
<td>6.00</td>
</tr>
<tr>
<td>Oregon</td>
<td>14.98</td>
<td>9.09</td>
</tr>
<tr>
<td>Pennsylvania</td>
<td>10.73</td>
<td>8.37</td>
</tr>
<tr>
<td>Utah</td>
<td>19.68</td>
<td>7.69</td>
</tr>
<tr>
<td>Vermont</td>
<td>26.86</td>
<td>16.70</td>
</tr>
<tr>
<td>Virginia</td>
<td>8.78</td>
<td>4.45</td>
</tr>
<tr>
<td>Washington</td>
<td>8.73</td>
<td>3.65</td>
</tr>
<tr>
<td>Wyoming</td>
<td>41.21</td>
<td>29.90</td>
</tr>
</tbody>
</table>

Popularity of hunting is indexed as the number of paid hunting license holders divided by the total U.S. population.

Sources: U.S. Fish and Wildlife Service, based on data provided by state wildlife agencies and the U.S. Census Bureau. A paid license holder is one individual regardless of the number of licenses purchased. Some states do not require the purchase of a hunting license by senior citizens, youth hunters, or disabled individuals; some unprotected species of wildlife, such as prairie dogs or marmots, may be shot without a license in some states.
Several factors may be contributing to the apparent decline in the popularity of hunting in the United States, but urbanization is the factor most frequently cited. The trend toward an increasing concentration of the human population in urban areas was recognized and lamented by hunters and outdoors enthusiasts in the late 1800s. For example, Theodore Roosevelt in 1893 complained that American society was becoming too civilized and was in danger of losing the toughness—or “vigorous manliness”—that only dangerous and physically demanding experiences such as hunting could provide (Roosevelt 1900, 7–8). John Muir, on the other hand, observed that the trend toward urbanization and the “deadly apathy of luxury” had at last awakened in Americans an appreciation for nature (1901, 1). Wildlife management professionals today complain that an increasingly urbanized and suburbanized America is losing touch with nature and holds idealized notions of wildlife populations that can exist free of human intervention (e.g., Organ and Fritzell 2000), an idea supported by Kellert (1996). On the other hand, however, Kellert (1996) asserts that attitudes of rural residents are biased in another direction: these residents are more likely to value wildlife and the land primarily because of their usefulness to humans, rather than through an appreciation of their role in natural ecosystems.

Hunting is, in fact, more popular in rural populations, as indicated by the fact that rural residents are more likely to hold hunting licenses or to have hunted at least once (Duda 1993). In a regression analysis of factors associated with hunting participation, Heberlein and Thomson (1991) found that declining participation was associated with a decreasing percentage of individuals who spend their teens in rural communities, and, in general, an increasing number of people living in urban, as opposed to rural, settings. Other factors correlated with decreasing hunting participation included a declining percentage of the white population and increasing average education level (Heberlein and Thomson 1991). Related factors affecting declining hunting participation may include a lack of a family mentor who hunts and isolation from social systems that support hunting (e.g., Decker, Provence, and Brown 1984; Brown et al. 1987; Applegate 1991; Organ and Fritzell 2000). Other wildlife-dependent activities, such as bird watching, appear not to be predominantly rural (McFarlane and Boxall 1996).

Public Acceptance of Hunting in the United States

Public acceptance of hunting in the United States hinges on ethical considerations such as fair chase, the perceived humaneness of the hunting method, whether hunting is conducted primarily for sport/recreation, the extent to which hunting is viewed as necessary (e.g., to resolve a human-wildlife conflict or to provide food), and whether hunters respect laws and regulations (Duda 1993; Posewitz 1994; Kellert 1996). For example, in a survey Kellert (1988) found that more than 80 percent of the general public approves of Native American subsistence hunting as well as any hunting done exclusively to obtain meat. Hunting for sport or recreation is acceptable to most Americans (64 percent) only if the meat is used. However, 60 percent of those surveyed indicated an opposition to hunting done solely for recreation or sport, and 80 percent were opposed to trophy hunting (Figure 1). Results of other surveys have mirrored these findings, indicating that public approval of hunting is stronger when the motivation for hunting is not solely for recreation or a trophy (Bissell, Duda, and Young 1998; Minnesota Department of Natural Resources 1992).

Urban vs. rural residency is correlated with public opinion on hunting in the United States (as elsewhere, see Macdonald and Johnson 2003) and with attitudes toward wildlife and other animals in general. In survey studies, Kellert (1996) found that people who own large amounts of land or reside in open country areas tend to hold a more utilitarian view toward

![Figure 1](source: Kellert 1996)
nature and animals compared with those who live in large cities, own little or no land, or are college-educated, and compared with younger adults. Relatively “urban-oriented” people in the United States tend to express a greater concern for the protection of wildlife and wildlife habitat, and exhibit levels of knowledge about nature that are not significantly different from those of rural residents. Similarly, Manfredo and Zinn (1996) found that urban Coloradans are more likely than rural residents to have positive value orientations toward wildlife rights or welfare, and are less likely to value wildlife use, including hunting (Figure 2).

Perhaps because of changing demographics, the prevalence of Kellert’s (1988, 143) “utilitarian” attitude, defined as the “practical and material exploitation of nature” for the purpose of “physical sustenance/security,” appears to have declined substantially between 1900 and 1976 (Figure 3). This analysis was based on the frequency of occurrence of the utilitarian attitude in newspaper articles from two rural and two urban newspapers. Interestingly, the decline in utilitarian attitudes depicted by Kellert (1988, 1996) would be more substantial if Kellert had accounted for the fact that the proportion of the human population living in rural areas had changed from 60 percent in 1900 to 25 percent in 1976.

In addition to the urban-rural split, several researchers have found opinions of hunting in the United States that vary with age. Kellert (1996) suggests that changing values of young children may reflect, at least in part, a developmental process similar to Kohlberg’s (1984) stages of moral development in children. For example, very young children view animals in egocentric, exploitative ways. However, by age nine, children appear to “develop a conscience toward the nonhuman world, recognizing animals and nature as having the right not to be selfishly manipulated, a view motivated by more than just the possibility of being punished for harming other creatures” (Kellert 1996, 49). Utilitarian aspects of children’s attitudes toward animals decrease by their late teens, while attitudes reflecting support for conservation or an interest in animal welfare increase.

Kellert (1996) also found that views toward wildlife differ between young adults and older individuals. In particular, elderly Americans tend to have less interest in and affection for animals and for nature in general. Manfredo and Zinn (1996) also found differences between young adults and older age groups in Colorado: younger adults (ages 18–30) tended to view wildlife rights or welfare more positively and wildlife use (e.g., hunt-
Attitudes of U.S. Wildlife Management Professionals

Changes in both attitudes and curriculum also are evident in the professional wildlife management community. Organ and Fritzell (2000) conducted a survey of university fisheries and wildlife programs in the United States to assess changes in student interests and attitudes and in the curriculum and course content. Senior faculty members from the twelve programs responding to the survey estimated that approximately 25 percent of fisheries and wildlife program undergraduates participate in hunting. Faculty estimated that as many as 24 percent of the undergraduate students in this discipline are likely have “anti-hunting” views, though this ideology was attributed more often to fewer than 10 percent of the students. Over the past twenty years, the numbers of students who hunt were estimated to have decreased by 10 to 60 percent, while the numbers of students opposed to hunting may have increased by 30 to 50 percent. Changes in course content at the universities surveyed by Organ and Fritzell (2000) include a greater emphasis on conservation biology and rare-species conservation and reduced time devoted to harvest management. These estimates and trends are based solely on the perceptions of senior faculty members at a small number of universities and should be interpreted with caution. However, this brief survey suggests that the ethical views of students going into the wildlife management field are changing along with those of the public as a whole.

Among members of professional associations of wildlife biologists and wildlife managers in the United States, Muth et al. (1998) found that 49.4 percent considered themselves to be hunters; as one would expect, this is a much higher percentage than...
is found in the public as a whole (see Table 2a). Surprisingly, however, only a bare majority—52.5 percent—of those surveyed agreed with the statement that “[w]ildlife and fish species are resources to be harvested in a sustainable way and used for human benefit.” This suggests that one of the foundations of the wildlife management discipline (Leopold 1933) has not prevailed in the seventy years or so since its establishment. Organ and Fritzell (2000) cite unpublished data suggesting that wildlife managers who had been in the profession for five years or fewer are much less likely to support consumptive uses of wildlife (e.g., hunting, trapping, and fishing) compared with veterans of twenty years or more. Thus, individuals now entering the wildlife management discipline in the United States appear to represent a change in ethical views. This shift may be reflected in growing consideration for the humaneness of management actions and for management actions that benefit non-game species.

**Divisions Among U.S. Hunters**

In 1913 Theodore Roosevelt identified three groups of people concerned with wildlife conservation: “the true sportsman, the nature-lover,” and “the humanitarian” (Roosevelt 1913, 161). Today these categories may still approximate, respectively, the subset of hunters concerned with conservation; non-hunting conservationists such as bird watchers; and animal protectionists. However, the distinctions among these categories often are blurred and each could be further subdivided. For example, only some hunters actively participate in conservation, beyond the now-involuntary contributions to wildlife conservation through the purchase of licenses or equipment (Holsman 2000). Bird watchers and other naturalists may be hunters or may lean more toward an animal welfare or animal rights philosophy. Finally, there is a growing number of people who consider themselves to be both animal protectionists and conservationists.

Divisions among hunters in terms of their concern for conservation, animal welfare, or other ethical considerations have certainly existed since the late 1800s and early 1900s. Mighetto (1991) provides several illustrations of interpersonal differences among hunters. For example, one may contrast Roosevelt’s writings, which focused on the excitement of pursuit and of the kill, with those of Ernest Thompson Seton. Roosevelt particularly relished hunting dangerous predators and, in general, revealed through his writings a “streak of bloodthirstiness” (Mighetto 1991). Seton was also a hunter, but in his writings, such as *Wild Animals I Have Known*, he portrayed animals as individuals and showed concern for their suffering, in part by using anthropomorphism as a literary device. Another contrast can be seen between Aldo Leopold and those hunters who vexed him through their increasing dependence on “gadgets” as a means of facilitating hunting (Leopold 1966, originally 1949). Interestingly, Leopold started off with a Rooseveltian disrespect for wolves and other predators; his attitude toward wolves later changed with his realization of the important role of predators in an ecosystem (Leopold 1966).

More recently, several authors have attempted to differentiate types or subgroups of hunters based on different motivations for hunting and/or the degree of specialization (Duda 1993). Kellert (1980, 1996) characterizes the attitudes and values of three main types of hunters. “Nature hunters” include those who emulate Aldo Leopold in their desire to be a part of nature, filling a role that they consider to be much like that of a nonhuman predator. Nature hunters include a greater proportion of women compared with other categories and are, on average, more likely to be college educated and to engage in nonconsumptive wildlife activities such as wildlife watching or hiking (Kellert 1980). Kellert (1996) estimates that nature hunters make up 10 to 20 percent of all hunters in the United States. Another category, “meat hunters,” includes those whose primary motivation for hunting is obtaining food. These hunters are more likely than nature hunters to be older and male and to live in rural areas. Meat hunters, according to Kellert (1996), make up around 40 percent of all hunters. Of course, most of Kellert’s meat hunters are not true subsistence hunters in that they do not depend upon meat obtained in this way to survive. It is conceivable that some meat hunters use the meat of the animals they kill as a source of protein in much the same way that they would use farm animals; however, it is likely that the use of wild meat as a substitute for farm animals is decreasing in the United States. Finally, “sport hunters,” who account for around one-third of all hunters, hunt primarily for recreation rather than for food or to be close to nature. These hunters primarily cite reasons for hunting that are related to social companionship and a chance for competition. Sport hunters differ from nature hunters in that they tend not to have exceptional knowledge regarding wildlife. Moreover, unlike meat hunters, they are less concerned for the usefulness of the animals they kill (e.g., for meat). Hunting purely to obtain a trophy is included in this category (Kellert 1980; Kellert 1996). Other studies have generally supported these or similar categorizations (e.g., Brown et al. 1987; Allen 1988; but see Causey 1989). Some authors suggest that a temporal progression often occurs in a given individual’s motives for hunting that essentially leads from a sport hunter perspective to one of a nature hunter (e.g., Decker et al. 1987). Others suggest that, when changes in attitude occur over a hunter’s lifetime, this often can be characterized as an increase in specialization, in terms of either the species hunted or the hunting method employed (e.g., Bryan 1979; Ditton, Loomis, and Choi 1992). Some of the more specialized
Data and Observations on Duck Hunting in the United States

For nearly a century, wildlife managers have pointed to waterfowl conservation, an ambitious effort designed to preserve an abundance of ducks across the length and breadth of a continent, as the crown jewel of North American wildlife management.

It began in 1916 with the signing of the North American Migratory Bird Treaty between the United States and Canada. A second treaty with Mexico in 1936 extended these protections south of the Rio Grande. This allowed each North American nation to ban the commercial sale of wild waterfowl and restrict the sport kill to prevent over-shooting.

A second initiative began in the 1930s when severe drought seized the northern prairies, the major breeding ground of North America’s continental flocks. Duck populations plummeted. This prompted a drive to protect breeding wetlands in both the northern United States and prairie Canada. Protection of breeding grounds was accompanied by the establishment of waterfowl refuges across the middle and southern United States to provide wintering habitat and give ducks a measure of protection from hunters. The protection was accomplished via both public and private efforts that continue to this day.

But it was not until the latter half of the twentieth century that the focus shifted to attempts to develop a scientific management approach, based on data collection and mathematical analysis. The 1950s witnessed the first continental surveys of the breeding and wintering grounds. The breeding grounds extend from South Dakota northward across the Canadian Prairie provinces and boreal forest to the Beaufort Sea. The wintering grounds extend across the middle latitude and southern United States into Mexico.

These surveys were (and are still today) unprecedented in scope. Although they are still incomplete, they represent the longest-running continental wildlife surveys in the world. The breeding-ground survey tallies eleven species—mallards, northern pintails, gadwalls, shoveler, wigeon, green-winged teal, blue-winged teal, canvasbacks, redheads, and scaup (both lesser and greater). The survey data are the basis for the government analysis used to judge whether populations are...
increasing or decreasing.

In 1961 biologists began gathering additional data designed to give them greater insight into the population dynamics of various species. These data include counts of nesting potholes on the northern-prairie breeding grounds; age-ratios of ducks taken by hunters (which index annual reproductive success); numbers of hunters; and the number of each species killed by hunters. In addition, a number of ducks each year are captured and fitted with leg bands. When hunters return these bands, the data are used for statistical estimates of annual mortality from natural causes (disease, predation, etc.) and sport hunting.

These data are designed to allow biologists to create a population model that will allow waterfowl managers to predict and control numbers of ducks. They permit wildfowl managers to make decisions, largely based on changing hunting regulations, that should lead to an increase in the breeding population of a species in decline or to a reduction in the numbers of an overabundant species.

However, the enormous amounts of data have not yet led to a general agreement on what determines spring breeding success and whether changing hunting regulations have any significant impact (see Grandy 1983). Those who assert that waterfowl management has succeeded in maintaining an abundance of waterfowl cite as evidence the overall breeding-ground counts. A look at the average numbers of all species counted during the spring breeding-ground survey suggests that, despite weather-related population fluctuations, the overall numbers of ducks have remained essentially stable in the past half-century.

Critics argue that the monolithic “total-duck” argument avoids the central issue of whether wildlife managers have really learned how to manipulate waterfowl populations. They point to declining numbers of those species most prized by hunters—northern pintails, black ducks, scaup, and mallards—as evidence that management is not achieving what it claims. Some indication of the trend line for duck populations from the late 1800s through the early 1900s might have helped support or refute management claims. Unfortunately, no data are available prior to the 1950s.

Two primary causes for the pintail’s losses are given by wildlife managers—the loss of short-grass prairie nesting habitat on the western plains and over-shooting, especially in recent years. Unlike prairie-nesting species, the black duck has not suffered extensive loss of its eastern-forest nesting habitat. Its decline is attributed largely to
Over-shooting, although some argue that mallards have displaced black ducks from portions of their range.

Restrictive hunting regulations have been imposed for nearly a quarter-century, but these restrictions have not allowed the species to rebuild its numbers. In recent years, in spite of the low population levels, hunting regulations have been liberalized, permitting an even greater kill of black ducks by hunters. A detailed analysis and critique are provided in Grandy (1983).

The remaining species—gadwall, shovelers, wigeon, green-winged teal, and blue-winged teal—make up approximately another 12 million wildfowl but have not been subjected to much analysis.

Half a century of data collection and associated scientific analysis does not appear to have brought the authorities much closer to their goal of understanding the factors affecting duck populations.

The debates continue unabated. Some blame the loss or degradation of northern-prairie breeding habitat. However, no study has shown that all available nesting habitat for any species is filled to capacity. Indeed, the evidence suggests—and several studies have found—that there is more habitat than ducks to occupy it, especially for mallards and pintails (Bethke and Nudds 1995). However, few studies have attempted to determine the carrying capacity of available nesting habitat in the northern prairies or whether carry-

Figure E
Canvasback Breeding Populations

Figure E. The beleaguered canvasback, once the most celebrated duck in North America, has so far not responded to a forty-year effort to increase its breeding numbers, although the last ten years have produced an upward trend. This increase may not continue because hunting of this species was closed in the 2002 season when breeding numbers dropped to 487,000 (Wilkins and Otto 2002).
that time were among those least likely to support conservation of biodiversity or an emphasis on management of endangered species; according to these studies, hunters also were least likely to engage in environmentally responsible behaviors. Williams (1986) and Holsman (2000) both cite examples of hunters and hunters’ associations opposing attempts to restore native wildlife to regions from which they have been extirpated, especially wolves and other predators. More recently the U.S. Sportsmen’s Alliance has opposed efforts to end bear baiting and to restrict the release of pen-raised non-native pheasants.

Other outdoor recreation enthusiasts, such as bird watchers, may be more likely to support such goals, either by volunteering their time or through financial contributions (Theodori, Luloff, and Willits 1998; see also McFarlane and Boxall 1996 for evidence of bird watchers’ willingness to contribute to conservation). Wildlife protection advocates also are demonstrating their willingness to protect habitat. For example The Humane Society of the United States Wildlife Land Trust, an affiliate of The HSUS, has grown steadily since its inception in 1993 to encompass sixty thousand acres in twenty one U.S. states and four countries outside of the United States. The Wildlife Land Trust is one of a growing number of organizations that seek to protect wildlife, not only through habitat protection but also by prohibiting hunting and trapping in protected sanctuaries.

Figure F. The population of the mallard, North America’s most abundant and adaptable duck, has essentially been stable over the last fifty years (Wilkins and Otto 2002). The data indicate that mallards are holding their own in the face of heavy shooting pressures and agricultural degradation of the northern prairie breeding grounds.

Hunting and Shooting in the United Kingdom

“Hunting” versus “Shooting”

In the United Kingdom, the term hunting generally refers to the use of dogs—hounds, fast coursing dogs, and sometimes terriers—in a hunt; it does not include the use of retrieving dogs or pointers, which neither pursue nor kill the quarry. Typically hounds chase the fox, deer, hare, or other animal and humans follow on horseback, on foot, or in vehicles. The term shooting, on the other hand, is used in the United Kingdom to
describe the use of a rifle or shotgun to kill foxes, deer, or other animals and does not involve the use of dogs for pursuit.

In the case of fox hunting as defined above, despite wide variation, the average pursuit lasts half an hour (Macedonald and Johnson 1996; Masters of Foxhounds Association [MFHA] 2000), and about 75 percent of foxes found during a mounted hunt evade capture (n=149 hunts, data, 1990–1996). On average, 64 percent of fox kills are made by the hounds. In 30 to 40 percent of cases where a fox is killed (by any means) during a mounted hunt, a terrier is used either to kill the fox underground or to locate it or flush it out so it can be killed by hounds or shot. In the United Kingdom, packs of foxhounds, occupying largely non-overlapping territories, are registered with the Masters of Foxhounds Association. In common British usage, each of these is referred to as a Hunt. (The proper noun distinguishes these organizations from a hunt, the common noun referring to a particular chase. Internationally, this usage can be ambiguous, so here we refer to each “club”—a word that itself would have different connotations in this context in Great Britain—as a “pack of foxhounds.”) However there is enormous variation among packs of foxhounds: some dig out no foxes, while in others up to 86 percent of fox kills are dug out by terriers, having gone underground after being pursued (Macedonald et al. 2000). Digging to reach the fox and/or fighting between fox and terrier underground may last from ten minutes to three hours (Phelps, Allen, and Harrop 1997). This activity is not considered to be part of hunting “proper.” From an anthropological perspective, at “this point hunting has ceased and vermin control takes over” (Marvin 2000, 195). Indeed, MFHA rules stipulate that those out hunting may not participate in digging to reach a fox.

In a deer hunt, the average overall time for a deer to be successfully hunted, brought to bay, and killed is around three hours, though hunts can go on for up to six hours (Bateson 1997). More than 80 percent of hinds are pregnant during the hind hunting season (Langbein 1997): the extent of abortions among hinds that escape the hounds is not known. More than half of the deer roused and hunted escape without being brought to bay (Masters of Deerhounds Association 2000). Once the deer has been brought to bay or has stopped running and attempting to escape, it normally is killed by a shot at close quarters with a modified shotgun, pistol, or, under some circumstances, a humane killer (a captive bolt pistol used from extremely short range). Staghounds are trained to surround the deer and bark at the end of the hunt, and should not attack or savage the deer, although Bradshaw and Bateson (2000) report attacks by dogs in one out of four deer kills observed. Hunting deer to hounds is now restricted almost entirely to one small part of England lying within West Somerset and North Devon.

Hares are hunted with dogs either using packs of hounds, or by coursing in competitions or on an ad hoc basis. With packs of hounds, a hunt usually lasts for an hour to an hour and a half, and only an estimated 5 percent of hares sighted are killed (Association of Masters of Harriers and Beagles 2000). During organized competition coursing, dogs are not released until the hare is at least 80 meters away; the hare must be “in a fit condition”; nothing must hinder the hare’s escape; and it must have “sufficient knowledge” of the ground (National Coursing Club 2000). An average greyhound course lasts 35 to 40 seconds, and an average of 13 percent of the hares chased are killed, either by the dogs or by human “pickers-up,” the latter of whom have a duty to ensure that hares are killed quickly and humanely (National Coursing Club 2000). There are no data on the extent or nature of ad hoc coursing, which often is associated with illegal gambling and use of land without the owner’s permission.

Although it has attracted a much lower level of public controversy than has hunting with dogs in the United Kingdom, and access to guns is regulated heavily, shooting is widespread and is probably the predominant means of wildlife culling (Macedonald et al. 2000). Shooting by stalking with a rifle or large bore shotgun is the most common method used to cull deer in England and Wales, as well as in Scotland and Northern Ireland (British Association for Shooting and Conservation 2000; British Deer Society 2000). Shooting, particularly as part of organized Deer Management Groups (groups of adjoining landholders coordinating their deer management), is the method of deer control recommended by government (MAFF 2000). From its 1996 survey, the British Association for Shooting and Conservation (BASC) estimated that 10,000 of its members were active deer stalkers. Of these, 87.6 percent (8,700) were “recreational” stalkers, and 12.4 percent (1,300) were “professional” deer stalkers who accounted for 40 percent of the total deer cull.

One part of the debate surrounding the hunting of foxes with dogs in the United Kingdom is whether it is more or less humane than shooting. Supporters of hunting argue that shooting leaves wounded foxes to die long, lingering deaths and that shooting would necessarily increase should hunting be banned. An alternative view is that foxes killed by shooting die quickly and painlessly, without the distress of the chase and capture. Foxes are shot mainly either at night with a spotlight and rifle (known as “lamping”) or during the day by groups or individuals, sometimes at the cubbing den (or “earth”). Gun packs and shooting at earths may combine shooting with the use of dogs to find, bolt, or flush out foxes. Research commissioned by the All Party Parliamentary Middle Way Group (Fox et al. 2003) formed the first experimental attempt to address the humaneness of shooting foxes. The research used colored cut-out fox silhouettes as targets to assess the penetration, kill rate, and wounding rate of fifty-one different shooting
regimes, including different shot sizes and user competencies. Fox wounding rates increased significantly when No. 6 shot was used in shotguns, due to poor penetration, but the use of BB shot minimized wounding rates. Experienced shooters using correctly zeroed rifles achieved a high kill rate. While studies such as this can point to ways of making culling more humane, it remains extremely difficult to compare different types of suffering. Welfare science is advancing rapidly in this respect; for example, McLaren et al. (in press) have recently described a measure of stress based on leucocyte competency that can provide rapid results in the field.

Attitudes toward Hunting/Shooting in the United Kingdom

There have been few studies examining attitudes of either the general public or landowners toward hunting and shooting. Those that do exist have occurred largely in response to public concern over mounted fox-hunting, therefore this section focuses largely on culling of foxes, the most abundant mammalian carnivore in the United Kingdom. Although both include a significant element of sport, hunting and shooting in the United Kingdom often are justified in terms of their contribution to pest control (Burns et al. 2000). When questioned, however, neither farmers nor members of the public necessarily consider either method—especially hunting with dogs—to be acceptable or effective for wildlife damage reduction or sport.

For example, in a public opinion poll of 801 adults throughout Great Britain regarding fox hunting, 63 percent of respondents either supported or strongly supported a ban on hunting foxes with dogs. Most people (69 percent) disagreed with the statement that fox hunting is a necessary means of preserving the balance of wildlife in the countryside; more rural (39 percent) than urban (20 percent) respondents considered fox hunting to be necessary (Macdonald et al. 2000). As in the United States, urban residents appear less likely than farmers to find culling of foxes by any method to be acceptable. In a questionnaire-based study, Macdonald and Newdick (1982) found that urban dwellers were much less likely to state that foxes needed to be controlled and were less likely to state that any of the listed motives for culling was acceptable (Table 3). Urban dwellers were also more likely to approve of the active conservation of foxes. Upbringing appears to play a role in attitudes toward fox hunting and other forms of fox control: respondents raised in the country were significantly more likely to favor fox control in the countryside (53 percent) than were those brought up in the city (46 percent).

Baker and Macdonald (2000) asked farmers in the county of Wiltshire to say which, among a list of non-exclusive options, were their principal motivations for hunting. All respondents opted for “recreation,” while 55 percent said “to control foxes as a pest.” Farmers’ perceptions and practice of hunting and shooting are likely to be colored by the extent to which they consider target species to be a pest, the extent to which they

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**Table 3**

Responses of Urban Dwellers and Farmers Regarding the Acceptance and Need for Fox Control

<table>
<thead>
<tr>
<th>Questions</th>
<th>Urban Respondents (percent in agreement)</th>
<th>Rural Respondents (percent in agreement)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Where do foxes need to be controlled?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>In the country?</td>
<td>47.7</td>
<td>73.9</td>
</tr>
<tr>
<td>In towns?</td>
<td>61.9</td>
<td>70.7</td>
</tr>
<tr>
<td>Why do foxes need to be controlled?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To control disease?</td>
<td>56.6</td>
<td>45.7</td>
</tr>
<tr>
<td>To protect livestock?</td>
<td>48.7</td>
<td>67.6</td>
</tr>
<tr>
<td>To protect game species?</td>
<td>14.4</td>
<td>44.5</td>
</tr>
<tr>
<td>Foxes too numerous</td>
<td>21.1</td>
<td>65.1</td>
</tr>
<tr>
<td>Do you approve of fox control for these reasons?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>To improve shooting?</td>
<td>6.7</td>
<td>42.0</td>
</tr>
<tr>
<td>For pelts?</td>
<td>3.3</td>
<td>16.8</td>
</tr>
<tr>
<td>For sport with hounds?</td>
<td>11.8</td>
<td>68.4</td>
</tr>
<tr>
<td>Do you approve of active conservation of foxes?</td>
<td>46.0</td>
<td>19.3</td>
</tr>
</tbody>
</table>

Source: Macdonald and Newdick (1978). Results are based on a questionnaire distributed to 14,000 households in Oxford, England, of which 3,468 (26 percent) were returned the following day. The differences between urban and rural respondents were statistically significant overall: $X^2(n > 23, P<0.0001).$
themselves hunt or shoot for sport, and the extent to which they believe a method to be humane and effective for pest control (Macdonald and Johnson 2002).

Mounted fox hunting occurs over about two-thirds of England and Wales (Macdonald et al. 2000), but a farmer allowing hunting on his land does not necessarily see it as part of a strategy for fox control. For example, in the English county of Wiltshire, only 31 percent of farmers encouraged the hunt; 6 percent did not allow it and 63 percent “tolerated” or “discouraged” it (Table 4) (Baker and Macdonald 2000). The high proportion of tenant farmers, and the retention of sporting rights (Parkes and Thornley 1994) by the local authority (Wiltshire County Farms Estate), may create this complex situation in Wiltshire. In 1995 the sporting rights on 88 (73 percent) of the local authority’s 120 farms had been retained by the local authority, and fox hunting was automatically permitted regardless of the farmer’s wishes. In a questionnaire survey of gamekeepers, slightly fewer than half (48 percent) of 203 respondents (persons employed on shooting estates) cited hunting with dogs as one of the methods they used to cull foxes (National Gamekeepers’ Organisation 2000). Arable farmers (those who raise food crops but not livestock) are less likely than those with game birds or livestock, especially more vulnerable animals such as chickens, to consider the fox a pest on their farm, although most farmers consider the fox to be a pest in the wider sense (Baker and Macdonald 2000; Heydon and Reynolds 2000a).

Two questionnaire surveys, one covering 859 farmers from ten regions in England in 1981 (Macdonald and Johnson 1996) and the other covering 72 farmers in Wiltshire in 1995 (Baker and Macdonald 2000), have assessed whether farmers believe different methods of fox control are “humane.” In both surveys and all regions, shooting was consistently considered the most humane method of fox control (69 percent overall in 1981, 58 percent in 1995; Table 5); in 1995 49 percent considered it effective as well as humane. In 1981, 47 percent of farmers believed that shooting with hounds was humane, although more than half

### Table 4
Farmers’ Attitudes toward Hunting on Their Land, according to Enterprise, “Pest” Status, whether Gameshooting Took Place, or the Farmer Himself Hunted

<table>
<thead>
<tr>
<th></th>
<th>Encourage Hunting</th>
<th>Tolerate Hunting</th>
<th>Discourage Hunting</th>
<th>Disallow Hunting</th>
</tr>
</thead>
<tbody>
<tr>
<td>All Farms (n=97)</td>
<td>30.9</td>
<td>50.5</td>
<td>12.4</td>
<td>6.2</td>
</tr>
<tr>
<td>Dairy (n=63)</td>
<td>23.8</td>
<td>55.6</td>
<td>14.3</td>
<td>6.4</td>
</tr>
<tr>
<td>Non-Dairy Stock (n=13)</td>
<td>53.9</td>
<td>30.8</td>
<td>7.7</td>
<td>7.7</td>
</tr>
<tr>
<td>Mixed (n=16)</td>
<td>31.3</td>
<td>50.0</td>
<td>12.5</td>
<td>6.3</td>
</tr>
<tr>
<td>Arable (n=5)</td>
<td>60.0</td>
<td>40.0</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>“Pest” Farms* (n=25)</td>
<td>40.0</td>
<td>56.0</td>
<td>4.0</td>
<td>0.0</td>
</tr>
<tr>
<td>“Non-Pest” Farms (n=52)</td>
<td>26.9</td>
<td>50.0</td>
<td>17.3</td>
<td>5.8</td>
</tr>
<tr>
<td>Game-shooting Farms (n=31)</td>
<td>41.9</td>
<td>48.4</td>
<td>9.7</td>
<td>0.0</td>
</tr>
<tr>
<td>Non-Game-shooting Farms (n=66)</td>
<td>25.8</td>
<td>51.5</td>
<td>13.6</td>
<td>9.1</td>
</tr>
<tr>
<td>Hunting Farmer (n=12)</td>
<td>66.7</td>
<td>33.3</td>
<td>0.0</td>
<td>0.0</td>
</tr>
<tr>
<td>Non-Hunting Farmer (n=63)</td>
<td>23.8</td>
<td>55.5</td>
<td>15.9</td>
<td>4.8</td>
</tr>
</tbody>
</table>

Numbers shown are percentages of farmers who encouraged, tolerated, discouraged, or disallowed hunting.

1Some farms comprised Council Farms on which the farmer surveyed was a tenant and may not have had control over whether or not hunting occurred on his land.

2Pest status indicates whether a given farmer considered the fox to be a pest.

still thought hunting with hounds humane. Macdonald et al. (2000) investigated whether these farmers’ judgments regarding the humaneness of different methods, and the justification of different motives, were influenced by damage they had sustained that they attributed to foxes, and by the field sports in which they participated. In Wiltshire the proportion of farmers who considered each method to be humane did not vary significantly from the proportion who had, and had not, designated the fox a pest on their farms (Baker and Macdonald 2000). However, more farmers reporting actual stock loss to foxes in the previous year said hunting was humane compared with those who did not. This contrasts with findings in 1981 (Macdonald and Johnson 1996), which suggested that farmers were more likely to think shooting, snaring, poisoning, or the use of terriers humane if they had suffered losses to foxes, but that their opinions of hunting and gassing were not affected. The differences between these studies could reflect regional variation, changes since 1980, or the smaller sample size in the Wiltshire study.

According to 1981 data, farmers who reported that they had sustained damage by foxes were more likely to say that killing foxes to improve pheasant shooting or for fur were acceptable motives (Table 6). Damage had no effect on the likelihood of farmers approving the active conservation of foxes. Hunting farmers were less likely to say that shooting and gassing were humane and more likely to state that digging with terriers was humane. Paradoxically, farmers who considered hunting to be a form of pest control were also more likely to approve of the active conservation of foxes. This may be because hunting farmers are more likely both to cite pest control as a rationale for the sport and to want foxes to persist in the locality of a pack of foxhounds.

In the United Kingdom as a whole, 75 percent of farmers (including those who did not consider foxes a problem on their farms) said they would instruct their member of Parliament (M.P.) to vote for “no change” in the legislation governing fox hunting (Produce Studies, Ltd. 1995; n = 831); 11 percent said they would instruct their M.P. to vote for a ban on foxhunting; while 14 percent held no strong view. Regionally, those in favor of no change varied between 86 percent (southwest England) and 56 percent (Scotland). Those in favor of a ban varied between 6 percent (southwest England) and 26 percent (Scotland).

### Hunting/Shooting and Wildlife Damage Reduction

The motives for culling wildlife in the United Kingdom are not always clear-cut, and different groups of people take contrasting views on the desirability of certain motivations. For example, the only way to prevent local extinction of some populations of water voles, a species native to Britain, is to remove (de facto, to kill) American mink, an introduced species. Conservationists may see this as a regrettable necessity, whereas

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**Table 5**

Percentage of English Farmers Replying “Yes” When Asked Whether They Believed a Method Was Effective or Humane in Controlling Foxes

<table>
<thead>
<tr>
<th>Control Methods</th>
<th>Effective</th>
<th>Humane</th>
<th>Effective</th>
<th>Humane</th>
</tr>
</thead>
<tbody>
<tr>
<td>Wiltshire County (1995 study) n=72, except hunting and snaring, n=71</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shooting</td>
<td>62.5</td>
<td>58.3</td>
<td>68.8</td>
<td>68.8</td>
</tr>
<tr>
<td>Hunting</td>
<td>54.9</td>
<td>52.1</td>
<td>43.7</td>
<td>54.8</td>
</tr>
<tr>
<td>Gassing¹</td>
<td>38.9</td>
<td>29.2</td>
<td>61.0</td>
<td>49.2</td>
</tr>
<tr>
<td>Poisoning¹</td>
<td>22.2</td>
<td>8.3</td>
<td>41.2</td>
<td>8.3</td>
</tr>
<tr>
<td>Terriers/digging</td>
<td>19.4</td>
<td>9.7</td>
<td>34.2</td>
<td>23.0</td>
</tr>
<tr>
<td>Snaring</td>
<td>7.0</td>
<td>1.4</td>
<td>39.1</td>
<td>13.2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>10 Regions in England (1981 study) n=859</th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Shooting</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hunting</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Gassing¹</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Poisoning¹</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Terriers/digging</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Adapted from Baker and Macdonald (2000); Macdonald and Johnson (2000, 2003).

¹Gassing was made illegal in 1987, poisoning in 1963.
welfarists may not. Another recent example in the United Kingdom is the proposed cull of introduced hedgehogs from Scottish islands where they threaten endangered seabirds. In general, however, the two major reasons people hunt or shoot in the United Kingdom are, first, to control wild mammal populations that are believed to damage livestock, game birds, or crops and, second, for sport (Macdonald et al. 2000). Conflicting management aims therefore arise, particularly for species such as hares and some deer, which are simultaneously considered pests, game species, and quarry, and are of conservation concern.

Although damage reduction is a frequently cited motive and justification for hunting and shooting in the United Kingdom, there are few comparative assessments of the effectiveness of different control methods in the literature for any mammalian species. Assessing effectiveness is complicated by a lack of data pertaining to cull levels (as there is no obligation to report numbers killed) and to population sizes (monitoring is largely absent or rudimentary); by the lack of coherent management goals and strategies over areas larger than individual estates or farms; and by the fundamental difficulty in assessing the extent of damage attributable to any one species. Nevertheless such studies as there are for foxes have generally found that the population impact of hunting and shooting is small (Phillips et al. 1972; Hewson and Kolb 1973; Storm et al. 1976; Harris 1977; Macdonald 1980; Hewson 1986; Voigt 1987; Wandeler 1988; Baker, Harris, and Webbon 2002), though, in some upland areas of the United Kingdom, hunting may contribute more substantially to fox mortality (Heydon and Reynolds 2000a,b). Macdonald et al. (2000) estimated that registered mounted foxhunts, together with upland foot and gun packs, probably take a cull in the region of 21,500 to 25,000; this represents perhaps 4 percent of annual fox mortality in the United Kingdom. There are no U.K.-wide data regarding numbers of any mammal shot. However in three regions of England, the proportion of the fox cull taken by methods involving shooting was 46 percent, 62 percent, and 68 percent, in mid-Wales, east Midlands, and west Norfolk, respectively, while that taken by methods involving dogs (some of which also involved shooting) was 73 percent, 18 percent, and 11 percent for the same three regions, respectively (Heydon and Reynolds 2000a,b; Heydon, Reynolds, and Short 2000). Attempts to model the effects of hunting with hounds further suggest that this method, by itself, has little impact on the abundance of foxes at a national or regional level. Shooting is more likely to effectively reduce populations regionally, provided that it takes place over a high proportion of the region (Macdonald et al. 2000). In addition to human-induced mortality, fox populations appear to be regulated by density-dependent effects on reproductive output, likely as a result of food availability and social (stress-mediated) suppression of reproduction (e.g., Maedonal et al. 2000; Heydon and Reynolds 2000b).

Table 6
The Effect of Fox Damage and Hunting Participation on the Perceived Humaneness of Different Control Methods

<table>
<thead>
<tr>
<th>Motive</th>
<th>Fox Damage?</th>
<th>Farmer Hunts?</th>
<th>Farmer Shoots?</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>No</td>
<td>Yes</td>
<td>No</td>
</tr>
<tr>
<td>Protect pheasants</td>
<td>35.3</td>
<td>56.5</td>
<td>43.8</td>
</tr>
<tr>
<td>For fur</td>
<td>12.8</td>
<td>25.1</td>
<td>18.9</td>
</tr>
<tr>
<td>Humaneness</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Shooting</td>
<td>70.7</td>
<td>77.3</td>
<td>80.5</td>
</tr>
<tr>
<td>Gassing</td>
<td>48.8</td>
<td>62.0</td>
<td>59.9</td>
</tr>
<tr>
<td>Snaring</td>
<td>9.1</td>
<td>24.6</td>
<td>14.3</td>
</tr>
<tr>
<td>Hunting</td>
<td>59.0</td>
<td>59.3</td>
<td>41.4</td>
</tr>
<tr>
<td>Poisoning</td>
<td>17.4</td>
<td>32.6</td>
<td>24.2</td>
</tr>
<tr>
<td>Terriers</td>
<td>21.2</td>
<td>34.8</td>
<td>19.1</td>
</tr>
</tbody>
</table>

Percentage of respondents approving of the motive or stating that the control method is humane.

Although damage reduction is a frequently cited motive and justification for hunting and shooting in the United Kingdom, there are few comparative assessments of the effectiveness of different control methods in the literature for any mammalian species. Assessing effectiveness is complicated by a lack of data pertaining to cull levels (as there is no obligation to report numbers killed) and to population sizes (monitoring is largely absent or rudimentary); by the lack of coherent management goals and strategies over areas larger than individual estates or farms; and by the fundamental difficulty in assessing the extent of damage attributable to any one species. Nevertheless such studies as there are for foxes have generally found that the population impact of hunting and shooting is small (Phillips et al. 1972; Hewson and Kolb 1973; Storm et al. 1976; Harris 1977; Macdonald 1980; Hewson 1986; Voigt 1987; Wandeler 1988; Baker, Harris, and Webbon 2002), though, in some upland areas of the United Kingdom, hunting may contribute more substantially to fox mortality (Heydon and Reynolds 2000a,b). Macdonald et al. (2000) estimated that registered mounted foxhunts, together with upland foot and gun packs, probably take a cull in the region of 21,500 to 25,000; this represents perhaps 4 percent of annual fox mortality in the United Kingdom. There are no U.K.-wide data regarding numbers of any mammal shot. However in three regions of England, the proportion of the fox cull taken by methods involving shooting was 46 percent, 62 percent, and 68 percent, in mid-Wales, east Midlands, and west Norfolk, respectively, while that taken by methods involving dogs (some of which also involved shooting) was 73 percent, 18 percent, and 11 percent for the same three regions, respectively (Heydon and Reynolds 2000a,b; Heydon, Reynolds, and Short 2000). Attempts to model the effects of hunting with hounds further suggest that this method, by itself, has little impact on the abundance of foxes at a national or regional level. Shooting is more likely to effectively reduce populations regionally, provided that it takes place over a high proportion of the region (Macdonald et al. 2000). In addition to human-induced mortality, fox populations appear to be regulated by density-dependent effects on reproductive output, likely as a result of food availability and social (stress-mediated) suppression of reproduction (e.g., Maedonal et al. 2000; Heydon and Reynolds 2000b).

Stag hunting kills, on average, 228 red deer per year, roughly 13 to 17 percent of the total cull required to prevent further population increases within the stag hunting area. Shooting with a rifle kills at least 1,000 per year (Macdonald et al. 2000). Shooting is the most common method to control population numbers of all six of the deer species present in Britain, as well as in most other countries.
throughout Europe and in North America, though it is not clear the extent to which human-induced mortality may be compensatory with other sources of mortality. The total annual red and roe deer mortalities due to shooting during 1995–1996 in six countries of Western Europe were 110,000 and 1,750,000, respectively (Deutscher Jägerversband 1997). Macdonald et al. (2000) calculate that, as a percentage of the pre-breeding population (Harris et al. 1995), shooting kills approximately 14 to 20 percent of red deer, 29 to 40 percent of fallow deer, and 16 to 22.5 percent of roe deer. These estimated percentages fall within the range of human-induced mortality thought to be necessary to contain population increase, provided that population sizes are not greatly underestimated. There are no data on the extent to which population control is reflected in damage control.

Macdonald et al. (2000) concluded that, for deer, foxes, mink, and hares, hunting with dogs is generally less effective than alternative methods of population and damage control, with the possible exception of the use of terriers to control foxes in upland areas. The potential for non-lethal methods to mitigate the need for lethal control is at an early stage of exploration (Baker and Macdonald 1999).

Hunting and Shooting as Monitoring Tools

While there is no legal requirement for packs of hounds to record the number of foxes killed, MFHA packs record this information voluntarily and have proven willing to make it available for scientific scrutiny. In the context of monitoring in general in the United Kingdom, the use of voluntary contributions seems likely to continue to form an important component of the total endeavor. While the ecological importance of monitoring is reflected in national and international agreements, government core-funding will not be adequate to supplant the need for voluntary involvement for the foreseeable future (Macdonald and Tattersall 2002). Some effort is now being applied to assessing the factors determining the efficiency of volunteers (e.g., Newman, Buesching, and Macdonald 2003).

Macdonald and Johnson (1996) analyzed a time series of approximately thirty years of cull data generated by MFHA packs, quantifying both regional differences and temporal trends; these were thought to reflect real patterns in fox abundance. The recent establishment (in 2000) in the United Kingdom of an Independent Supervisory Authority for Hunting (ISAH) has presented an opportunity to standardize and regulate the collection of these data and to ensure that all potentially useful data are recorded. Packs of hounds are now recording, where possible, the sex and age of culled foxes. Early returns suggest interesting and hitherto unrecognized patterns. For example of the approximately 6,000 foxes culled in the (at the time of writing, incomplete) 2002/2003 season, the sex ratio (male:female) as recorded for adults is approximately 2.1.

The commissioners of the ISAH (who include D.W.M.) have encouraged the MFHA to maximize their utility in monitoring a number of other species. These wildlife reports seem likely to yield some fascinating geographic patterns when subjected to close scrutiny. For example at a national level, we can already see that perceived trends in deer species differ markedly: the majority of respondents record that Roe and Muntjac deer are more abundant than they were ten years ago, while most record no change in fallow deer numbers.

The United Kingdom’s Game Conservancy Trust has for some time made similar efforts to use shooting bags and gamekeeper records to study trends in pest and quarry species on large estates. Tapper (1992) gives an account of these data.

Hunting, Shooting and Habitat Preservation

In the United Kingdom, where much of the landscape is dominated by the effects of farming, the existence of hunting and shooting as sports activities may provide an incentive for the preservation and restoration of some habitat types. For example, mounted packs have traditionally managed woodland and copses as cover for foxes and maintained their hedgerows and dry stone walls to provide jumps for followers on horseback (where otherwise lower-maintenance wire fences, which are much less desirable from the biodiversity perspective, might have been substituted). Macdonald and Johnson (2000) used farmer questionnaire data to identify patterns in habitat management across different sporting interest groups in the 1970s and 1980s. They found that there was a tendency for hunting and shooting farmers to report having removed less hedgerow in the decade preceding the survey, particularly in the 1970s (rates of removal were everywhere much lower in the later period). There was also evidence that other non-productive habitats were better treated by these interest groups. Oldfield et al. (2003) have recently reported a similar result. Aerial photography and questionnaires showed that farms where hunting and shooting occurred had more woodland, and had planted more new woodland and hedgerow, than did farms where these activities were absent.

Conclusions

In both the United States and the United Kingdom, attitudes toward hunting—and toward animals in general—have changed in the past several decades. Interestingly, the public’s acceptance of hunting, at least in the United States, is dependent largely on hunters’ abilities to justify this activity for the sake of providing food, rather
than merely as a sport; simultaneously, Americans’ attitudes toward wildlife have become less utilitarian. If the emphasis on the non-utilitarian values of wildlife increases, the public may also increasingly question utilitarian motivations for hunting.

Mirroring the changing perception of hunting in the United States, participation there has declined steadily over the past twenty years. Though potentially constrained by a financial dependence on this dwindling population of hunters, professionals in wildlife management appear to be placing less importance on “producing” wildlife as a “crop.” Instead, broader concepts from conservation biology are increasingly prominent in the profession, with management seeking to integrate the needs of non-game wildlife species.

Management of mammalian wildlife in the United Kingdom is minimally regulated in governmental terms and lacking in any cohesive national strategy. Culling, mainly for pest control and sport, occurs largely on private land and out of public view, and public debate regarding the acceptability of hunting and shooting revolves mainly around foxhunting and hunting with dogs in general. This is perhaps unfortunate, as it has deflected attention away from other issues relating to wildlife issues such as this will be heavily influenced by ethical considerations. However, these judgments, and the ethics that decide them, should be based on the clearest possible understanding of what is known factually, and an equally clear appreciation of what is not known.

Notes
1. Limitations of space preclude a full discussion of the means by which wildlife damage may be reduced through either lethal or non-lethal means. See Henderson and Spach (1980), Robel et al. (1981), Baker and MacDonald (1999), and Knowlton, Gese, and Jaeger (1999) for a discussion of this issue.


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Fürth: Filander Verlag.


Over the last fifteen years, a diverse succession of disease-related crises has befallen farm animal and food industries in the United Kingdom. Some have involved animal health, with little risk to humans. Some have involved human health, with animals acting as a reservoir for infection but little affected themselves. Some, however—including the most alarming—have involved both animal and human health through zoonoses, diseases transmittable from animal to human. All of these crises are linked in the public mind and in many commentaries, and indeed there are issues that many of them share. The most common of these is concern for food safety, but concern for animal welfare is also a recurrent theme. These concerns play out against a backdrop of:

- Prevalent attitudes, including complacency, about issues of biosecurity, from animal health to food safety;
- Relevant legislation, law enforcement, and law breaking;
- The practices of transporting animal feed, animals, and animal products; and
- An emphasis on the economics of animal production to the exclusion of all other considerations.

Few of these crises have been limited to the United Kingdom, but the problems do seem to have been worse and more frequent there.

Salmonella in Eggs

In 1988 a government minister’s statement that “most egg production in the United Kingdom is infected by salmonella” received wide publicity (BBC 1999). The statement proved to be true, and it was confirmed that salmonella bacteria from eggs cause food poisoning. Egg sales fell by about half. To some extent this was a “non-story,” since salmonella had not recently increased, the number of eggs affected was small, and the health risk for consumers was relatively minor. (Healthy adults are unlikely to suffer more than a stomach upset even from raw, infected eggs, although children and old people may be more seriously affected. Cooking infected eggs kills the bacteria.) However, the scare demonstrated clearly that public expectations of food safety had increased, and understandably so, since an earlier time when occasional food poisoning was routine.

Fifteen years later, the food industry is only beginning to grapple with this heightened expectation. The industry’s complacency has been hard to shake off and, although perhaps ill-founded, this could be justified at least partially by the fact that the poultry sector has led other agricultural sectors in health care for its animals. Because of the susceptibility of chickens and other poultry to disease, in the years following World War II the industry developed a positive approach to health control, including farm design, hygiene, preventative vaccination, and general management (Julian 1995). Perhaps the most important element of general management has been the “all in, all out” approach in which houses are emptied completely between one flock’s departure and the next’s arrival. The ability to clean facilities thoroughly between flocks and to reduce transmission of disease vectors from old to young animals, has
made a paramount contribution to poultry health. It also underscores the irony of the 1988 scare’s relationship to poultry products rather than to others more vulnerable. (The approach is only now, many years later, being adopted by other agricultural sectors such as pig farming.)

Despite all this, the industry has not eliminated salmonella in eggs, in part, perhaps, because there are many different types of bacteria involved. The consequences for poultry are variable (Curtis 1990); mortality ranges from 1 to 75 percent (Sainsbury 2000) but is usually low. By contrast, “a few areas of the world, notably Scandinavia, have been able to virtually rid themselves of salmonella infections in animals” (113).

The furor in the United Kingdom provoked an extensive response from the government, including three orders introduced in 1989. The Zoonoses Order required registration of flocks, regular testing for salmonella, and stringent measures if it was detected. The Processed Animal Protein Order and the Importation of Processed Animal Protein Order required salmonella testing of such protein, intended for feeding animals—although it is notable that these orders did not identify the sort of problem that was even then exacerbating Bovine Spongiform Encephalopathy, or BSE (see the next section). The promise of such measures, and their implementation, reassured the public. Egg sales slowly recovered. However, salmonella in eggs still has not been eliminated in the United Kingdom and in most of the European Union (EU). Sainsbury (2000, 116) suggests that even if it were, this status would be difficult to maintain. He comments as follows about the lack of effective government policy to reduce salmonellosis and other zoonoses:

Our poultry…will always be vulnerable to the introduction and re-infection from other sources, such as wildlife, over which we have no control, the whole environment around them and above all from man himself….Also, animal products, including poultry, enter the United Kingdom from European Union sources in an almost unrestricted way, and several EU countries have no salmonella control programmes. Poultry products are currently entering the United Kingdom from other parts of the world where salmonella control programmes are absent. Thus, with people and animal products constantly putting our birds at risk, the United Kingdom government’s policy is, at the least, worrying.

By contrast, Pennington (BBC 1999)—professor of bacteriology at the University of Aberdeen and well known due to the E. coli inquiry (see page 153)—suggests that salmonella should not still be a problem:

I don’t know why we have a problem with salmonella still, probably because we have not worked hard enough to try to get rid of it. We shouldn’t have a problem with salmonella. We know how to sort it out. Other people have sorted it out, we should have had it sorted out long ago.

In 2001 the EU Commission announced that it would target salmonella poisoning as a number one priority in a food safety crackdown, bringing in new controls affecting producers of breeding poultry, laying hens, broilers, turkeys, and pigs over the next eight years (Meade 2001).

In the United States, about 40,000 cases of salmonellosis are reported annually (more probably go unreported), and about 1,000 deaths (Marler Clark, L.L.P., PS. 2001). Evidence that a significant number of these cases derives from animal products is circumstantial, but convincing, given the extent of infection in poultry and other units (Altekruse, Cohen, and Swerdlow 1997):

The doubling of salmonellosis incidence in the last two decades has accompanied modern food industries’ centralized production and large-scale distribution. …The trend toward larger markets and consolidation of industry has exacerbated the Salmonella enteritidis problem in another way. Changes in egg production have adversely affected infection control in poultry flocks. In 1945, a typical hen house contained 500 birds. By 1995, many houses contained 100,000 hens, and multiple houses were often linked by common machinery, resulting in large flocks with common risk profiles. Large-scale distribution of shell eggs from infected flocks has caused outbreaks in which contaminated eggs were distributed in many states over a period of months.

**Bovine Spongiform Encephalopathy**

As its name indicates, BSE—a disease discovered in 1986—causes the brains of cattle to become spongy. The resulting behavior, such as staggering, has given rise to BSE’s common name, “mad cow disease.” After 1986 the incidence of BSE increased gradually and then rapidly, peaking in 1992 at more than 3,000 cases per month in the United Kingdom. Early on, there was concern that BSE might be transmittable to humans, and in March 1996 it was confirmed that such is probably the case. Eating infected animal material is the likely cause of a new variant of Creutzfeldt-Jakob disease (vCJD), which has similar physical symptoms in humans to those of BSE in cattle. As of 2000 about 115 people had died from vCJD, mostly in the United Kingdom, according to an official inquiry set up in 1997 and chaired by Lord Phillips (Phillips, Bridgeman, and Ferguson-Smith 2000).

BSE must have become established in U.K. cattle in the 1970s. Its origin is not known, but a major possibility is that it arose from a similar disease in sheep called scrapie (Horn et al. 2001). Other sources suggested include a mutation in a single cow, zoo antelopes (Phillips, Bridgeman, and Ferguson-Smith 2000), and U.S.
cattle (H.W. Reid, Moredun Research Institute, personal communication, June 27, 2001). The latter idea stems from the fact that U.S. mink have had outbreaks of a similar disease since the 1940s, of which beef is a likely source (Phillips, Bridgeman, and Ferguson-Smith 2000).

It quickly became clear that the disease was spread by feeding cattle meat and bone meal (MBM) from animal carcasses. The biological agent that causes scrapie may have changed to make it infective in cattle. Alternatively or in addition, new management practices introduced in the 1970s and 1980s probably increased infectivity; these included changes in how MBM was produced, and increased feeding of MBM to young calves (Horn et al. 2001).

In 1988 the Ministry of Agriculture, Fisheries, and Food (MAFF) introduced a ban on feeding ruminant protein to ruminants. This was followed in 1990 by a ban on using material from cattle tissue most likely to be infective (brain, spinal cord, and intestines) for human food, and another in 1991 on using such material for feeding pigs and poultry. Unfortunately, implementation of these bans was made less effective by two mistaken assumptions. First, it was thought that the infection was coming directly from sheep. In fact, whatever its original source, the infection now was being spread by MBM from infected cattle being fed to other cattle. This had a self-amplifying effect that was not understood for several more years: as more animals were infected, so the rate of infection accelerated. The assumption that scrapie was responsible also inappropriately lessened the urgency of measures to protect human health, as scrapie is not transmittable to humans. Second, it was thought that infection was possible only if a large amount of infective material was eaten, whereas it proved that as little as one gram was needed. Perhaps because of this assumption, farmers and feed suppliers were relaxed about continuing, illegally, to use existing stocks of MBM for their cattle and to export MBM around the world. There also was contamination of cattle feed from that prepared for pigs and poultry (Phillips, Bridgeman, and Ferguson-Smith 2000).

The result of the mistaken assumptions was that the disease became much more widespread than it otherwise might have. As of 2002 there had been more than 180,000 cases of BSE in the United Kingdom. In the rest of Europe, more than 3,000 cases had been reported; presumably these started from MBM from the United Kingdom, but recycling of infected MBM also is likely to have been a problem within those European countries. There also had been a small number of cases in non-European countries; these involved imported animals.

One reason it was difficult to understand—and therefore control—BSE more quickly is that the disease has a long incubation period; it takes four to six years before infected cattle show symptoms. Most have been slaughtered before then. For a long time, it was mistakenly believed that animals not showing symptoms could not infect others. Indeed, confidence that beef was safe to eat meant that for some time even animals slaughtered because they were showing symptoms were used for human food. The incubation period in humans may be ten or more years.

With increased knowledge of BSE, including its probable transmission to humans, a complete ban was imposed in the United Kingdom in March 1996 on use of all mammalian MBM in farm animal feed. Even this ban could be described as conservative, and indeed there is a lack of clarity on exactly what has been banned. Phillips, Bridgeman, and Ferguson-Smith (2000) get it wrong in their summary (vol. 1, 66):

[Previous measures] were replaced after 20 March 1996 by the radical step of banning the incorporation of all animal protein in animal feed.

Phillips, Bridgeman, and Ferguson-Smith are suggesting that, despite all that had happened up to that point, the ban still seemed radical. That certainly is not true now, especially since the ban includes not “all animal protein” but only mammalian MBM. They make this clear elsewhere, but this still leaves room for confusion. It remains legal, for example, to feed poultry protein to animals, including poultry. Even as of 2002 a complete ban on intra-species recycling was only being considered, not pressed.

Whether or not the ban was radical when it was introduced, MAFF resisted it for a long time. It seems bizarre now, but this resistance came in the face of proposals from feed manufacturers, as represented by the U.K. Agricultural Supply Trade Association (UKASTA) (Phillips, Bridgeman, and Ferguson-Smith 2000):

MAFF was concerned not to do anything that would lead UKASTA members to cease using animal protein as an ingredient of feed for non-ruminant animals. UKASTA, for its part, was anxious that its members should be able to continue to do this without incurring risk of prosecution should it result, on occasion, in cross-contamination of ruminant feed. UKASTA was to threaten repeatedly that it might have to advise its members to cease using animal protein, while MAFF officials sought to allay UKASTA’s anxieties. (vol. 1, 63)

No cases of BSE had been diagnosed in the United States as of mid-2003. Importation of ruminants and ruminant by-products from countries with BSE have been banned for some years, and in 1997 the U.S. Food and Drug Administration banned the use of mammalian carcasses in the production of feed for ruminants. A study commissioned by the U.S. Department of Agriculture concluded that risk of BSE in the United States is low (Harvard Center for Risk Analysis 2001), but some commentators argue that there is much too little surveillance, especially as compliance with feed rules is known to be weak (Newman 2001).

At the height of the BSE epidemic there were at least four serious public concerns in addition to the obvious
worries about possible effects on human health and the farming industry. First was a view that MAFF was divided in its loyalties on the BSE issue and could not be trusted to defend consumers’ interests as well as those of farmers. Second, there was a perception that the government had concealed the truth about the risk to humans. Phillips, Bridgeman, and Ferguson-Smith (2000) reject both of these charges. Nevertheless, they acknowledge (vol. 1, xviii) that “confidence in government pronouncements about risk was a further casualty of BSE.” One consequence of this (in combination with other crises, particularly the outbreak of E. coli discussed next) was the establishment in 2000 of an independent Food Standards Agency. Another was redistribution of MAFF’s responsibilities after the 2001 general election and its replacement with a Department of Environment, Food, and Rural Affairs.

The third public concern had to do with the effects of the disease on the cattle themselves. There has been surprisingly little discussion of the actual impact of BSE on cattle welfare. However, Phillips, Bridgeman, and Ferguson-Smith (2000) make it clear that vCJD is very unpleasant for humans (Table 1), and it may be presumed that BSE in cows has at least some similar mental as well as physical effects. Furthermore, media coverage suggested that concern for the animals involved was not limited to considerations of suffering. It also expressed that it is wrong for animals to have a disease, especially one seen as avoidable, irrespective of its mental effects, and that killing of animals (including healthy herd mates of cows with BSE) is of serious ethical concern. The concern about killing may be based in part on the fact that the animals are not being used for meat or other purposes. It also is possible that the concern simply came to the fore because the killing was brought to public attention. These ideas will be discussed again below, in the context of foot and mouth disease.

The fourth and most fundamental concern was that the whole process of forcing herbivores to eat animal protein, of making cows into cannibals, was an unnatural practice. This may be partly a concern for the cows, partly a feeling that treating animals unnaturally is wrong in itself, and partly an opinion that it should have been obvious that such a practice would lead to disaster. Phillips, Bridgeman, and Ferguson-Smith (2000) reject this last point:

The practice of feeding MBM to animals in the United Kingdom dates back at least to 1926. . . . It is a practice which has also been followed in many other countries. It was recognised that it was important that the rendering process should inactivate conventional pathogens. Experience had not suggested that the practice involved any other risks. In these circumstances we can understand why no one foresaw that the practice of feeding ruminant protein to ruminants might give rise to a disaster such as the BSE epidemic. (vol. 1, 20)

If producers were going to give cattle supplementary protein to boost their productivity, then perhaps it was not unreasonable for them to use animal protein that was readily available and had the right mix of nutrients. However, the practice now can be seen to be part of a general approach to animal agriculture, common particularly in the second half of the twentieth century, that pushed for increased production at decreased cost with scant regard for the animals concerned. It now is well recognized that dairy cows are under huge metabolic stress to maintain their greatly increased milk production, with many effects on welfare such as negative energy balance and lameness (Webster 1994). In developed countries most people do not need milk to be as cheap as it currently is, so that less economy-oriented dairy systems—those that do not use protein supplementation—could be adopted.

The most important question now is not whether the practice of feeding cattle protein to cattle was culpable, but how to adapt agriculture to reduce the chance of similar disasters in future—disasters that are perhaps intrinsically unforeseeable. An important part of the answer must be to reduce the emphasis on cheap production and to take into account the evolutionary history and biology of the animals involved—in other words, to treat the animals more naturally.

Table 1

<table>
<thead>
<tr>
<th>Symptoms of vCJD in Humans</th>
</tr>
</thead>
<tbody>
<tr>
<td>An early age of onset or death (average 27.6 years, range 18–41 years).</td>
</tr>
<tr>
<td>A prolonged duration of illness (average 13.1 months, range 7.5–24 months).</td>
</tr>
<tr>
<td>A predominantly psychiatric presentation including anxiety, depression, withdrawal, and progressive behavioral changes.</td>
</tr>
<tr>
<td>First evidence of neurological involvement in four patients was dysaesthesiae (unpleasant abnormal sensations) in the limbs and/or face.</td>
</tr>
<tr>
<td>Development of a cerebellar syndrome, with problems with gait and limb muscle coordination after a period of weeks or months.</td>
</tr>
<tr>
<td>Development of forgetfulness and memory disturbance, often late in the clinical course, which progressed to severe cognitive impairment and a state of akinetic mutism (paralysis and inability to speak) in the majority of cases.</td>
</tr>
<tr>
<td>Development of muscle twitching or spasms in the majority of patients (myoclonus), preceded by purposeless involuntary movements in some (chorea), with EEG appearances typical of sporadic CJD absent.</td>
</tr>
</tbody>
</table>

Source: Phillips, Bridgeman, and Ferguson-Smith 2000, 8:2
Escherichia coli O157

Many strains of the bacterium *Escherichia coli* live harmlessly in the guts of humans and animals. One of the exceptions is *E. coli* O157, a virulent, toxin-producing strain first identified as causing human illness in 1982. Infection is frequent; for example, there are estimated 73,000 cases of infection and 61 associated deaths in the United States each year (Centers for Disease Control and Prevention 2001). The main reservoir is in cattle and sheep, for whom it causes no illness. The main route of human infection probably is contamination of meat by animal feces. Heating of meat kills *E. coli*, but only if it is thorough. People also can be infected directly by live animals and each other—for example, in nursing homes where hygiene is poor.

An outbreak of *E. coli* food poisoning in central Scotland in 1996 affected about 500 people, 18 of whom died (Pennington Group 1997; most of this account depends on this report, supplemented by Pennington 1999). This was the world’s second highest number of deaths from such an outbreak.

Events moved with impressive speed (Table 2). A likely outbreak was identified on Friday, November 22, 1996, with fifteen confirmed or suspected cases. By that evening it was known that at least eight had eaten food from John Barr’s butcher shop in Wishaw (although that did not prove it was the source) and health officials visited the premises. On Saturday, November 23, an outbreak-control team was formed, chaired by a local health board consultant. On Wednesday, November 27, Barr’s closed. On Thursday an inquiry was announced in Parliament, chaired by Professor Hugh Pennington of Aberdeen University.

Barr’s shop was indeed the source. He had supplied contaminated food to many private customers and several institutions and groups. These included the three clusters worst affected. Eight people who died had been at a church lunch in Wishaw on Sunday, November 17; six who died were at a nursing home in Bonnybridge (all whom were aged 69 or older); and a number of non-fatal cases had followed a birthday party on Saturday, November 23. Some cases resulted from sales Barr made from the back door of the shop after it was shut on November 27.

The main problem was that Barr and his staff did not keep raw and cooked meat properly separated. This was exacerbated by a general lack of proper hygiene in the handling and preparation of food. When contaminated raw meat came in, the contamination spread to cooked meat, which customers did not heat enough to make safe. Thus the contamination got progressively worse rather than being eliminated. In January 1998 Barr’s company was fined for breaching food hygiene regulations.

Because failure to follow regulations contributed to this outbreak, the Pennington Group (1997) emphasized the need to educate people on the importance of such regulations, and to improve enforcement of compliance. But it also stressed the importance of events all along the way from cattle to table—on the farm, during animal transport, at the slaughterhouse, during meat transport, in premises processing and selling food, and in the home. The report recommended new regulations, better education, and a general change in attitude to improve hygiene. Involvement of farms, slaughterhouses, and food distributors will be mentioned here.

Farmers have a responsibility to send animals to slaughter in clean condition. This is affected by a number of factors, such as whether they are given clean, dry bedding and whether they are crowded in holding yards (which increases the likelihood that they will soil each other (C.B. Tucker, University of British Columbia, personal communication, June 30, 1999). The Pennington Report also criticizes a practice of “feeding up” cows before slaughter to increase live weight and hence the price obtained; feeding up increases the chance of intestines bursting during removal, and hence contaminating carcasses. By contrast, in instances where the same company both owns and slaughters animals, it is common for food to be withheld before slaughter.

Slaughterhouses also must avoid slaughtering dirty cattle, and must

| Table 2 |
| Events in the 1996 Outbreak of *E. coli* Food Poisoning in Central Scotland |
| Sunday, November 17 | Wishaw Parish Church lunch |
| Friday, November 22 | Likely outbreak identified Barr’s butcher shop visited by health officials |
| Saturday, November 23 | Outbreak Control Team formed Birthday party at Cascade Public House, Wishaw |
| Wednesday, November 27 | Barr’s closed |
| Thursday, November 28 | Expert Group set up under Professor Pennington |
| Thursday, December 5 | Fatal Accident Inquiry announced |
| Tuesday, December 31 | Pennington Group submitted interim report |
| March 1997 | Report commissioned on setting up a Food Standards Agency |
| April 1997 | Pennington Group submitted final report |
| 2000 | Food Standards Agency established |
improve various practices to safeguard hygiene. The Pennington Group comments that:

There clearly has to be a cultural change amongst slaughterhouse operators and their staff. . . . Notwithstanding commercial considerations and the implications of, for example, piece rates of payment for workers [in which they get paid for work done rather than time worked], the speed of the production process within abattoirs needs to be controlled so as to permit the achievement of adequate food safety standards.

(1997, 19)

The report includes this statement concerning food distributors:

The distribution chain of meat and meat products from Barr’s was diverse and complex and it took some days for the details on that to be unravelled from a painstaking investigation of the company’s records. That caused delays in relation to the identification, publicly, of some of the outlets involved or potentially involved in the outbreak. Some 85 outlets . . . were eventually identified as being supplied by the company, making the task of outbreak management and control extremely difficult. (5)

So, while response to the Barr’s outbreak was rapid, it could have been more rapid—and prevented many cases—if it had not been for this complexity of food distribution.

Around the time of this outbreak, other food safety problems also were publicized, including the danger of Listeria in unpasteurized cheeses. As a response to the accumulating list of such problems, the United Kingdom’s Labor Party commissioned a report in March 1997 on the possibility of setting up a food standards agency. Labor won the general election that May, formed the new government, and, shortly thereafter, accepted the report’s proposals. The Food Standards Agency was established in 2000.

**Classical Swine Fever**

Classical swine fever (CSF), or hog cholera, is one of the most important virus diseases of pigs. It is a fast-spreading disease, limited to pigs, with high mortality. Outbreaks are intermittent in Europe. There was a major outbreak in the Netherlands in 1997, for example, and many, smaller outbreaks in Germany (where it is endemic in wild boar) from 1998 to 2000. North America is free of CSF.

A CSF outbreak in southeast England started on August 8, 2000. On August 14 movement restrictions were imposed, which, over the next four months, would affect 264 farms suspected of disease and 907 more in the infected areas. CSF was confirmed on sixteen farms; 41,000 pigs were slaughtered on those and neighboring farms as a direct result of the outbreak and 34,000 more as “dangerous contacts.”

On December 30 (Anonymous 2001) the outbreak was confirmed to be over, and movement restrictions were lifted. While the outbreak was confined and eliminated relatively rapidly, it had a severe financial effect on a pig industry that already was in difficulties; many pig farmers left the business. It is also noteworthy that the outbreak was at its height when the Phillips report on BSE was published in October 2000.

The most likely source of disease is thought to have been an infected pork product, illegally imported, perhaps dropped on the farm by a member of the public or a wild animal (Gibbens et al. 2000). Initial detection was slow, perhaps in part because CSF’s symptoms are similar to those of other, prevalent diseases. The disease probably was present in June, so that movements of pigs to other farms already had occurred before CSF was identified (Sharpe et al. 2001). Subsequently there was some spread between neighboring farms, but no evidence of irresponsible movements. By contrast, one of the ways in which disease spread in the Netherlands in 1997 was via trucks moving between farms (Elbers et al. 1999). Another major problem in the Netherlands was the concentration of its industry, enabling the virus to spread readily from house to house and farm to farm.

In many ways, control of the U.K. outbreak was a success story, and one that must have influenced decisions on handling foot and mouth disease, which followed hot on its heels. However, it renewed concerns about vigilance and effective surveillance for diseases, and about general attitudes regarding the importance of disease control. (The United Kingdom’s state veterinary service has been reduced in size, and the number of veterinarians working in large animal practices has been declining (Anonymous 2000).) It also renewed concerns about the killing of animals, many of whom were found to have been healthy. There is an effective vaccine for CSF, but EU and U.K. policy is not to use it on animals who have the disease, who are suspected of having it, or who might become infected. This is because vaccinated animals cannot be distinguished from infected animals, so vaccination hinders eradication. An EU directive adopted in 2001 continued this policy but placed increased emphasis on development of “marker vaccines” that would allow vaccinated and infected pigs to be distinguished.

**Foot and Mouth Disease**

Foot and mouth disease (FMD) appeared in northern England in February 2001 and rapidly became an epidemic. It broke out on a pig farm and spread to neighboring sheep farms. Sheep from this farm were moved around the country before the disease was diagnosed. Three days after the diagnosis, the U.K. minister for agriculture imposed a complete ban on animal movements. By then, however, the disease had been established for several weeks; the Department of Environment, Food, and
Rural Affairs (DEFRA)—which replaced MAFF in June 2001—estimated that there had probably been over 2 million movements of sheep in that period. Many of these movements were not recorded, as they should have been. Furthermore, farmers continued to move animals illegally during the crisis (Lashmar 2001). Some of these movements were for the animals’ sake—for example, because they were in fields with insufficient food—and the government soon issued guidance and help for such cases. However, some movements must have been for commercial reasons. Some animals were moved abroad both before and after the ban, and the disease spread to the Netherlands, France, and Ireland. It reached Ireland by an illegal movement of animals across the border from Northern Ireland.

This was the first outbreak in the United Kingdom since 1967, apart from a small outbreak on the Isle of Wight, off the south coast, which rapidly was controlled. The latter demonstrated, though, just how infective the disease is, as it was caused by the virus blowing across from France. DEFRA attributed the decades-long period without infection, in a world with widespread FMD, to tightened control of imports from countries with the disease after 1967 and improved hygiene and animal health standards. However, illegal importation of meat is common, with more than 200 consignments intercepted on their way into the United Kingdom every month and unknown numbers missed. Some of these go to restaurants, and waste food from a restaurant was found at the pig farm in question. Use of waste food for pigs has been common, and although it is supposed to be heated at 100°C for an hour—which would kill the FMD virus—this often does not happen (Lashmar 2001). (Feeding of waste food to pigs now is banned.) While exactly what happened on this farm has yet to be established, it seems that the farmer failed to notice symptoms of FMD, although his pigs were infected for several weeks before officials traced the source of the outbreak to his farm.

So far, Australia, New Zealand, and the United States have managed to keep FMD out, presumably by more rigorous import controls than are achieved in Europe.

As with CSF, during the 2001 epidemic, the policy of the United Kingdom and the rest of the EU was to slaughter animals with FMD, those who might have it, and those who risked spreading it. The main reason was commercial: a country with infected or vaccinated animals may not export animals or meat to countries free of the disease. At the peak of the epidemic, about fifty farms where the disease was present were identified daily. After about two months, the number had dropped to fewer than ten per day. The outbreak had a long “tail,” with three or four farms being infected per day before the disease finally was eliminated late in the year. More than 1,900 farms were affected directly, and 7,000 neighboring farms also were cleared of animals. About 4 million animals were slaughtered.

The slaughter policy was hugely controversial. This was largely a result of the issue’s high profile, as television broadcasts showed thousands of farm animals being killed, many of them healthy, and their carcasses burned. Individual stories of pet animals and prime breeding herds received considerable publicity. As with BSE, even though the farm animals would eventually have been killed anyway, the fact that they were being prematurely and very visibly killed was morally repugnant to many people. The outrage probably was exacerbated by the fact that, for many, the killing was seen not to have a useful purpose—such as meat production—but to be done for defense of a meat export trade that they regarded as unnecessary. Indeed, losses to the tourism industry, caused by people being unable to move around in the countryside, heavily outweighed the value of the meat exports. Furthermore, suggestions that the disease is not very severe if left untreated gave rise to discussion of whether it should be allowed to continue rather than eradicated by draconian measures. (In fact, symptoms of the disease vary in severity; it sometimes causes considerable suffering and in particular causes major problems in breeding animals, such as abortion and loss of milk production, and mortality in the young.) On balance, it seems appropriate to eradicate an eradicable disease. However, even though FMD was eventually eradicated, it might break out again sooner or later. If that were to happen, the U.K. government says it would employ vaccination rather than extermination as its strategy in dealing with the disease. (Countries in which FMD is endemic use regular vaccination and, as is the case for CSF, development of marker vaccines has been proposed.)

To re-emphasize the commercial basis of the policy not to vaccinate, the decision to end vaccination in the EU in 1991 was taken on the basis that a major outbreak every ten years would be less costly than annual vaccination (Nettleton and Reid 2001). There were reasons other than the slaughter policy for controversy. It was apparent that the United Kingdom was ill-prepared for the crisis. The early slaughter and carcass disposal were relatively slow, delaying containment of the epidemic. In addition, the methods used for handling and slaughtering animals evidently were not as humane as they might have been. Accusations also were made against farmers. Some were seen to be profiteering by pushing claims for compensation higher than reasonable, with the direct cost of FMD reaching £1 billion by August. There were suspicions that some deliberately spread the infection to their own animals to claim compensation above market values (Hetherington and Lomax 2001). On the other hand, many farmers were hurt both emotionally and financially by the crisis; a number even committed suicide.

Apart from inquiries into the epidemic and its handling, the FMD epi-
sis finally precipitated wide-ranging discussion of the future of farm animal production in the United Kingdom. One result was establishment by the government of a Policy Commission on the Future of Farming and Food, which produced a report (2002) emphasizing the importance of sustainability.

Is the United Kingdom Exceptional?

One obvious question that arises from this succession of crises is whether the United Kingdom is doing something different from other countries, something culpable. It is true that agriculture is more industrialized in the United Kingdom than in many other European countries, with larger farms and a smaller proportion of the population involved. It also is true that the drive for greater and cheaper food production after World War II was stronger in the United Kingdom than elsewhere, arguably because the United Kingdom is an island nation. It is possible that these factors led to widespread laxity in food handling, which magnified the disease crises. However, it also is apparent that the United Kingdom is not the only country with such problems. Reprehensible actions occur elsewhere; for example, in 1999 it became known that human and animal feces were being incorporated illegally into feed for farm animals in France (Meade 1999). This practice was both repugnant and as risky as those that gave rise to BSE. While the United Kingdom has been hit particularly hard by farm animal diseases in recent years, this must at least partly have been bad luck. The lessons to be learned are relevant to all countries.

Biosecurity

When international travellers enter the United States or New Zealand they are asked whether they are bringing in food and whether they have visited farms or plan to do so. While this is done with varying stringency, it is strikingly different from the lax approach used in other countries. Indeed, New Zealand is the only country with a minister for agriculture and biosecurity, and its Biosecurity Authority produces a regular magazine intended for the general public as well as specialists. By contrast, although DEFRA launched a biosecurity campaign in the United Kingdom in June 2001, it was aimed solely at farmers.

Obviously, other countries should adopt policies on biosecurity similar to those of New Zealand. Given that classical swine fever and FMD probably were introduced into the United Kingdom by illegal imports, the fact that the United States and New Zealand have remained free of FMD must partly be luck. However, stringent regulations and stringent enforcement of those regulations must reduce the chance of disease transmission.

The United States and New Zealand are not blame-free: they are guilty of double standards in restricting imports while aggressively exporting agricultural products. So long as these export policies continue, the two countries risk exporting any disease that does get into their animals or animal products in the future. They also reinforce the tendency to regard such exportation as routine, acceptable, and inevitable. In fact, on the contrary, it is evident that international movement of animal feed, animals, and food from animals is dangerous, largely unnecessary and damaging to animal welfare and the environment (Lucas 2001). Ways must be found of reducing such movement.

Similarly, movement of animal feed, animals, and food from animals within countries must be reduced. A major factor in the foot and mouth epidemic was the enormous scale of sheep movements. Animals often are driven very long distances to slaughterhouses, for instance, frequently passing by nearer slaughterhouses on the way. For biosecurity and animal welfare, animals should be slaughtered at facilities as close as possible to the farm where they are produced; yet the number of slaughterhouses in the United Kingdom has declined considerably over recent years. Local food production and consumption clearly are desirable for animal health—and many other reasons (Valen 2001). Traceability—the principle that it should be possible to track any product “from farm to fork” or vice versa—also is gaining importance, with obvious relevance to animal health and food safety.

Biosecurity frequently has been regarded with complacency. It is imperative that vigilance become the norm, with systems in place in the food industry that lead to containment or prevention of disease.

In the United States, such vigilance has been discussed much more since the events of September 2001 raised the possibility that disease outbreaks might be introduced purposefully. It is striking that little of that discussion has addressed the fundamental structure of the U.S. agricultural industry, despite the prominent role such structure was seen to have had in causing the crises in the United Kingdom—and the fact that the agricultural industry in the United States is much more concentrated and more intensive than that of the United Kingdom, and that there is much more movement in the United States of animal feed, animals, and food from animals. The future is difficult to predict, but it does seem extremely likely that if there is a serious out-
break of a disease such as FMD in the United States—whether accidental or deliberate—it could rapidly become very serious, indeed. These issues would then be given the attention they deserve. What seems surprising, especially as salmonellosis and E. coli infection already are widespread, is that such attention isn’t already forthcoming. It would obviously be better to address these issues properly before such an outbreak—reducing the chance of it occurring—than after.

## Economics of Animal Production

Biosecurity will not come cheap. However, it is increasingly apparent that pressure for cheap food has incurred many external costs, that “cheap food at any price” is not a sustainable policy, and that cost-cutting elsewhere (such as in veterinary surveillance) also has been damaging. As the Pennington Group (1997) emphasized in relation to E. coli, disease control includes events on the farm, during animal transport, at the slaughterhouse, during transport of meat, in premises processing and selling food, and in the home—and supply of animal feed should be added to the beginning of that sequence. Improvement of disease control at all those stages will require expenditure.

How is it to be paid for? One mechanism might be a levy on food from animals, to be spent on improving animal health and welfare. A decent, reliable income for farmers—not huge wealth, but a reasonable living—must be part of a sustainable future for farming.

On the farm, relevant issues include:

- **Group size:** Maintaining smaller groups of animals restricts disease transmission.
- **Housing conditions:** Giving animals sufficient space and clean, dry conditions, including bedding, increases their health and cleanliness. Hygiene is not increased by barren conditions.
- **Feeding methods:** These are critical and have many effects on health and welfare. Consideration must be given to the biology of the animals involved, that is, to treating the animals as naturally as possible.
- **Concentration of animals:** Large, closely spaced units increase disease transmission. Small, well-spaced houses and farms should be favored.

Consideration also should be given to licensing farms or farmers. Most farmers are not criminal or irresponsible, but it should be possible to exclude the minority who are.

Minor increases in expenditure on food and on other aspects of biosecurity related to food production could produce major improvements in farm animal health and welfare. Mechanisms should be explored to achieve these changes.

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The EU Ban on Battery Cages: History and Prospects

Michael C. Appleby

Introduction

On June 15, 1999, the European Union (EU) passed a directive on the welfare of laying hens, requiring that battery cages (so called because they are arranged in batteries of rows and tiers) be phased out by 2012. Enriched laying cages (which may also be arranged in batteries but which provide increased area and height, when compared with conventional cages, and a perch, nest box, and litter area) will still be allowed. This chapter outlines how this directive came about, and the social, economic, and political issues involved. It considers prospects for the future, both within and outside the EU, and implications for welfare of laying hens in the United States.

The Council of Europe and the European Union

First it is necessary to explain the institutions involved. One influential grouping—little known, even in Europe—is the Council of Europe. The Council was established in 1949 to increase cooperation among nations; it represents most of the countries of Europe (the number was forty-four in 2002). Perhaps its most important activity is the preparation of conventions. The only one widely known is the European Convention on Human Rights, and most people assume that the EU produced it. One area in which the council has been active is animal welfare. Indeed it has stated that “the humane treatment of animals is one of the hallmarks of Western civilisation” (Appleby, Hughes, and Elson 1992). In 1976 it produced the Convention on the Protection of Animals kept for Farming Purposes. Though not legally binding on member countries until they ratified it, member countries accepted the responsibility to include the convention’s provisions in their national legislation. This convention will be considered later.

The EU, which has existed under a number of names, such as the European Community and the European Economic Community, started as a subset of the Council of Europe and now includes fifteen countries (Table 1). It has three key bodies. The European Commission is appointed by member countries to run the show, including drafting legislation. The European Parliament consists of members elected by constituents in each country; it shares with the Council of Ministers the power to legislate. The Council of Ministers (sometimes called the Council of the EU but not to be confused with the Council of Europe) is the main decision-making body. It includes one representative from each country; a confusing feature, however, is that these representatives vary. For agricultural matters, the Council of Ministers consists of the ministers of agriculture from fifteen countries. A vital aspect of the Council is that its presidency is held for six months by each country in turn, and the presiding country takes most of the initiative for that period, often attempting to impose its own agenda. The United Kingdom presided for the first half of 1998. Germany presided for the first half of 1999. Both periods were critical in the course of the battery cage issue, as shall be seen.

The EU can enact regulations and directives, among other legislation. Regulations are binding throughout the EU and override any contradictory national legislation. Directives, by contrast, are not operative in the member countries. They direct each country to pass national legislation to put them into effect. This requirement is binding, so that countries will have at least the same minimum stan-
standards (for example, the same minimum space allowance for hens in cages). It has to be said, though, that when countries are unenthusiastic about directives they may delay passing legislation as long as possible and skimp on the details. If they wish, countries may legislate for higher standards within their own borders—for example, a greater space allowance in cages—but they cannot generally restrict imports of related products from other member countries—such as eggs produced more cheaply. (For one exception, see the section on page 164 on Sweden.) For regulations and directives, the mechanism is as follows: The Commission drafts legislation, either on its own initiative or when requested to do so by the Council. The Parliament may amend the draft. The Council amends it further and passes or rejects the final version, with joint authority from the Parliament. On matters such as those of concern here, this decision is made by “qualified majority,” with votes weighted by countries’ populations (Table 1).

The emergence of these complex structures is in large part accounted for by the diversity of the countries of Europe, and all that this has meant historically and politically. That diversity is further reflected in attitudes about animals.

### Attitudes about Animal Welfare

It is well recognized that concern for animal welfare varies across Europe, being generally stronger in the north—particularly the United Kingdom, the Netherlands, Germany, and Scandinavia—and weaker in the south. Reasons are complex. A number of factors correlate with this variation, including temperature (it is hotter in the south, which affects how animals are kept) and religion (Catholicism is commoner in the south, Protestantism in the north, and this affects attitudes). The most persuasive explanation, though, is that concern has developed largely in people who were less involved with animals than were others. The United Kingdom and the Netherlands, for example, are more industrialized than many other countries, and pressure for animal protection has come mostly from city dwellers rather than those involved in farming. A revealing snapshot was provided in 1981 by a review of which countries had then ratified the Council of Europe’s 1976 Convention on the Protection of Animals kept for Farming Purposes (Table 2). Of the twenty-one member countries, most of the eleven that ratified first were from the north and had an average of only 6 percent of the population involved in agriculture. Switzerland is relatively southern but also relatively industrialized and ratified early, along with northern nations. Countries that ratified later had a population average of 21 percent involved in agriculture. Most of these countries were southern. Though a northern country, Ireland was in this group, too, and 23 percent of its population was involved in agriculture. The north-south dichotomy may have reflected not only differences in attitude but also the fact that, where many people are engaged in agriculture, governments are unwilling to impose restrictions that may affect their livelihood. Indeed, the agricultural industry has always been particularly vociferous and effective in lobbying for its interests.

It is relevant to note that priorities other than animal welfare may also influence welfare, and that such priorities also vary among countries. Norway, for example, has legislation to limit farm size because it regards rural employment as important, and this limitation probably has some benefits for animal welfare. France puts emphasis on food quality, which also has some positive effects: many people believe that non-cage eggs taste better, and some of these eggs are probably bought in France for this reason.

In recent years concern for animal

### Table 1

**Countries of the European Union and the System of Qualified Majority Voting Used by the Council of Ministers**

<table>
<thead>
<tr>
<th>Country</th>
<th>Votes</th>
<th>Country</th>
<th>Votes</th>
</tr>
</thead>
<tbody>
<tr>
<td>Austria</td>
<td>4</td>
<td>Italy</td>
<td>10</td>
</tr>
<tr>
<td>Belgium</td>
<td>5</td>
<td>Luxembourg</td>
<td>2</td>
</tr>
<tr>
<td>Denmark</td>
<td>3</td>
<td>Netherlands</td>
<td>5</td>
</tr>
<tr>
<td>Finland</td>
<td>3</td>
<td>Portugal</td>
<td>5</td>
</tr>
<tr>
<td>France</td>
<td>10</td>
<td>Spain</td>
<td>8</td>
</tr>
<tr>
<td>Germany</td>
<td>10</td>
<td>Sweden</td>
<td>4</td>
</tr>
<tr>
<td>Greece</td>
<td>5</td>
<td>United Kingdom</td>
<td>10</td>
</tr>
<tr>
<td>Ireland</td>
<td>3</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td>87</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Required for Directive to be adopted</strong></td>
<td>62</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Blocking minority</strong></td>
<td>26</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*Number of votes is determined primarily by population. Source: Council of the European Union 2003*
welfare has grown in southern Europe, as indicated by public opinion polls. There is public sympathy for high-profile campaigns by celebrities such as Brigitte Bardot, and scientists and scientific bodies have increased their interest in, and support for, animal welfare research. The story that follows is, therefore, not simply one of the north outvoting the south or browbeating it into agreement. However, southern governments do continue to be less positive than northern governments about animal welfare (Sansolini 1999a).

Publication of Ruth Harrison’s Animal Machines in the United Kingdom in 1964 had a huge, international impact. It greatly increased awareness of factory farming methods, including battery cages, and concern for farm animal welfare. The U.K. government set up the Brambell Committee (which issued a report in 1965), passed the Agriculture (Miscellaneous Provisions) Act in 1968, and established an independent Farm Animal Welfare Council (FAWC). Both the Brambell Report and FAWC have had an international influence, too, including their development of the concept of Five Freedoms (Table 3).

### Table 2

<table>
<thead>
<tr>
<th>Ratified</th>
<th>Agricultural Labor (percent)</th>
<th>Not Yet Ratified</th>
<th>Agricultural Labor (percent)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Belgium/Luxembourg</td>
<td>4</td>
<td>Austria</td>
<td>9</td>
</tr>
<tr>
<td>Cyprus</td>
<td>—</td>
<td>Greece</td>
<td>30</td>
</tr>
<tr>
<td>Denmark</td>
<td>8</td>
<td>Iceland</td>
<td>9</td>
</tr>
<tr>
<td>France</td>
<td>9</td>
<td>Ireland</td>
<td>23</td>
</tr>
<tr>
<td>Netherlands</td>
<td>5</td>
<td>Italy</td>
<td>12</td>
</tr>
<tr>
<td>Norway</td>
<td>8</td>
<td>Liechtenstein</td>
<td>—</td>
</tr>
<tr>
<td>Sweden</td>
<td>5</td>
<td>Malta</td>
<td>5</td>
</tr>
<tr>
<td>Switzerland</td>
<td>5</td>
<td>Portugal</td>
<td>26</td>
</tr>
<tr>
<td>United Kingdom</td>
<td>2</td>
<td>Spain</td>
<td>17</td>
</tr>
<tr>
<td>West Germany</td>
<td>4</td>
<td>Turkey</td>
<td>54</td>
</tr>
<tr>
<td><strong>Average</strong></td>
<td><strong>6</strong></td>
<td></td>
<td><strong>21</strong></td>
</tr>
</tbody>
</table>

Source: Ludvigsen et al. 1982

### Table 3
The Five Freedoms*

<table>
<thead>
<tr>
<th>Animals should have:</th>
<th>Ratified</th>
</tr>
</thead>
<tbody>
<tr>
<td>Freedom from hunger and thirst</td>
<td>by ready access to fresh water and a diet to maintain full health and vigour</td>
</tr>
<tr>
<td>Freedom from discomfort</td>
<td>by providing an appropriate environment, including shelter and a comfortable resting area</td>
</tr>
<tr>
<td>Freedom from pain, injury and disease</td>
<td>by prevention or rapid diagnosis and treatment</td>
</tr>
<tr>
<td>Freedom to express normal behaviour</td>
<td>by providing sufficient space, proper facilities, and company of the animal’s own kind</td>
</tr>
<tr>
<td>Freedom from fear and distress</td>
<td>by ensuring conditions and treatment which avoid mental suffering</td>
</tr>
</tbody>
</table>

*The concept originated from a phrase in the Brambell Report (Brambell 1965) and was developed by the U.K. Farm Animal Welfare Council (1997). Brambell Report: Farm animals should have freedom “to stand up, lie down, turn around, groom themselves and stretch their limbs.”

Source: FAWC
Housing Systems for Laying Hens

Another important development in the United Kingdom and elsewhere, beginning in the mid-1970s, was work on alternatives to battery cages. In the developed world, by about 1970 most hens kept for egg production (called laying hens or layers) were housed in conventional laying cages or battery cages. It is widely acknowledged that battery cages cause many welfare problems. They compromise most or all of FAWC’s Five Freedoms, and indeed contravene the very limited “freedoms” listed in the Brambell Report (Table 3). Work on alternative housing systems, primarily aimed at reducing welfare problems, was most active in the 1970s and 1980s.

Much of this work was funded by national governments in northern Europe. The main emphasis was on use of non-cage systems such as deep litter, straw yards, and free range in the United Kingdom (Appleby et al. 1988; Gibson, Dun, and Hughes 1988; Keeling, Hughes, and Dun 1988); slatted floors in Denmark (Nørgaard-Nielsen 1986); and tiered wire floors in the Netherlands (Ehhardt and Koolstra 1984). There also was work in the United Kingdom and Germany on a modified cage called the Get-away cage (Elson 1981; Wegner 1990). However, all these systems have one major welfare problem that battery cages do not. Birds in these facilities have to be beak-trimmed—a mutilation that has become increasingly controversial—otherwise cannibalism is likely, often affecting a high percentage of birds. The cannibalism apparently is related to group size, which in all these systems is larger than in battery cages.

Therefore, work began in the mid-1980s, in Edinburgh and elsewhere, on modifying cages for small groups. What have come to be called enriched or furnished cages provide increased area and height compared with conventional cages, and also a perch, a nest box, and a litter area. The term furnished cages probably is best, because it is descriptive rather than judgmental (Appleby et al. 2002), but the EU 1999 directive refers to enriched cages, so that term will be used here. The author suggests that welfare is improved in enriched cages, and more reliably so than in alternative approaches such as percheries and free range systems (Appleby 1993). This argument is still controversial and unfamiliar to the public. The public tends to think that “free range” means small, farmyard flocks, whereas commercial free range systems house hundreds or thousands of hens. Such conditions have numerous problems, including—to emphasize the point—the fact that unless part of the birds’ beaks is amputated, the birds often peck each other to death.

Other important work on improving cages included that of scientist Ragnar Tauson in Sweden. He surveyed the incidence of trapping and injury of caged hens (Tauson 1985). This led to design of improved cages, use of which resulted in reduction in incidence (Tauson 1988). Tauson also developed an abrasive strip which, when attached to the egg guard behind the food trough, prevents overgrowth of claws (Tauson 1986).

Beginning in 1979 the EU financed background scientific work on poultry welfare in a “farm animal welfare co-ordination program.” The author was employed under this program starting in 1981 (Appleby 1983). Another important effort has been the series of European symposia on poultry welfare held by the World Poultry Science Association every four years; the first symposium took place in 1981 (following a predecessor in Denmark in 1977), and the sixth was in Switzerland in September 2001.

Two problems arose in general understanding of the production methods used. First, systems were given a bewildering variety of names—those already listed as well as aviaries, percheries, and others—and, second, systems had no official specifications. Eggs sold as free range, for instance, might come from hens allowed to “range” only inside a house or only if they could find one small exit from a huge building. The EU addressed these problems in 1985 by imposing a regulation defining four labels that can be put on eggs and the corresponding conditions in which hens must be kept (Table 4). In the absence of one of those labels, eggs are presumed to come from cages. This regulation immediately slowed the name-changing and had a

<table>
<thead>
<tr>
<th>Label</th>
<th>Criteria</th>
</tr>
</thead>
<tbody>
<tr>
<td>Free range</td>
<td>Continuous daytime access to ground mainly covered with vegetation</td>
</tr>
<tr>
<td></td>
<td>Maximum stocking density 1,000 hens/hectare</td>
</tr>
<tr>
<td>Semi-intensive</td>
<td>Continuous daytime access to ground mainly covered with vegetation</td>
</tr>
<tr>
<td></td>
<td>Maximum stocking density 4,000 hens/hectare</td>
</tr>
<tr>
<td>Deep litter</td>
<td>Maximum stocking density 7 hens/m²</td>
</tr>
<tr>
<td></td>
<td>A third of floor covered with litter</td>
</tr>
<tr>
<td></td>
<td>Part floor for droppings’ collection</td>
</tr>
<tr>
<td>Perchery or barn</td>
<td>Maximum stocking density 25 hens/m²</td>
</tr>
<tr>
<td></td>
<td>Perches, 15 cm for each hen</td>
</tr>
</tbody>
</table>

Source: Commission of the European Communities 1985
big impact on how non-cage hens are kept. For example, there are no laws in any EU country on maximum floor stocking rates but to get a premium for deep litter eggs a producer must not exceed seven hens per square meter. Exceeding the limit means selling the eggs unlabeled, at a loss.

The battery cage system is the least costly approach in use for egg production (Table 5). However, over the same period, in the 1970s and 1980s, a market for non-cage eggs was developing. Some people, again particularly in the north of Europe, will pay more for such eggs either because they are concerned about the welfare of hens or because they perceive the eggs to be more nutritious, tasty, or healthful. Thus some producers continued to keep hens in non-cage systems, covering the higher cost with a higher selling price for the eggs. No full economic analysis of enriched cages has been published, but egg production probably costs around 10 percent more from these than from battery cages (Appleby 1998). This is cheaper than using most non-cage systems, but since eggs from enriched cages cannot be given any of the labels in Table 4, shoppers cannot distinguish them from battery eggs. As a result farmers will not use enriched cages unless required to do so by law.

Egg labels often confuse customers. Many people think (or perhaps hope) that eggs sold under names that sound appealingly rural or wholesome do not come from cages, but such brand names actually have no official status. About 20 percent of eggs sold in the United Kingdom do come from non-cage systems, either free range or barn. In the Netherlands, Germany, and Denmark, deep litter eggs (which are called “scratching eggs” in their languages) are more popular. In recent years, some supermarkets in northern Europe have responded to customer concerns by labelling eggs from caged hens as such. The EU as of 2002 was moving toward making this labelling mandatory.

Table 5
Cost of Egg Production in Different Systems, Relative to Laying Cages with 450 Square Centimetres Per Bird

<table>
<thead>
<tr>
<th>System</th>
<th>Space</th>
<th>Relative Cost (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Laying cage</td>
<td>450 cm²/bird</td>
<td>100</td>
</tr>
<tr>
<td>Laying cage</td>
<td>560 cm²/bird</td>
<td>105</td>
</tr>
<tr>
<td>Laying cage</td>
<td>750 cm²/bird</td>
<td>115</td>
</tr>
<tr>
<td>Laying cage</td>
<td>450 cm²/bird + nest</td>
<td>102</td>
</tr>
<tr>
<td>Shallow laying cage</td>
<td>450 cm²/bird</td>
<td>102</td>
</tr>
<tr>
<td>Get-away cage</td>
<td>10–12 birds/m²</td>
<td>115</td>
</tr>
<tr>
<td>Two-tier aviary</td>
<td>10–12 birds/m²</td>
<td>115</td>
</tr>
<tr>
<td>Multi-tier housing</td>
<td>20 birds/m²</td>
<td>105–108</td>
</tr>
<tr>
<td>Deep litter</td>
<td>7–10 birds/m²</td>
<td>118</td>
</tr>
<tr>
<td>Strawyard</td>
<td>3 birds/m²</td>
<td>130</td>
</tr>
<tr>
<td>Semi-intensive</td>
<td>1,000 birds/ha</td>
<td>135 (140 including land rental)</td>
</tr>
<tr>
<td>Free range</td>
<td>400 birds/ha</td>
<td>150 (170 including land rental)</td>
</tr>
</tbody>
</table>

Source: Elson 1985

Space refers in cages to cage floor area, in houses to house floor area, and in extensive systems to land area.

Developments in Individual Countries

Animal welfare legislation in individual European countries shows a dichotomy that reflects differing attitudes. Northern countries have detailed laws, with codified lists of actions that are prohibited. Southern countries tend simply to state that animals must not be ill-treated. Legislation also is enforced more strictly in some countries than in others.

Several northern countries have passed legislation or made other changes over the last half century that have affected the welfare of caged hens both within and outside their borders. This section considers Denmark and the United Kingdom (both of which joined the EU in 1973), Sweden (which joined in 1995), and Switzerland (which is not a member).

Denmark

In 1950 Denmark passed a comprehensive Protection of Animals Act, which stated (T. Ambrosen, University of Copenhagen, personal communication, May 16, 2001) that:

Animals must be properly treated and must not by neglect, overstrain or in any other way be subject to unnecessary suffering; anyone keeping animals should see that they have sufficient and suitable food and drink, and that they are properly cared for in suitable accommodation.

This language was interpreted as prohibiting battery cages, so there were no cages in Denmark for many years. However, Danish companies...
started building farms over the border in Germany and bringing the eggs to Denmark. By the 1970s the law was being flouted with impunity: battery cages were being installed in Denmark and even supported by government grants. A compromise was reached in 1979, when a new law was passed that allowed cages, but with a minimum area of 600 square centimeters per bird. In a typical cage of 2,500 square centimeters, this meant housing four instead of five birds. Denmark became a net importer of eggs rather than a net exporter, but the Danish egg industry survives, even if smaller than before.

**United Kingdom**
The U.K. Agriculture (Miscellaneous Provisions) Act of 1968 had important provisions in addition to those already mentioned, particularly a requirement to produce Codes of Recommendation for the Welfare of Livestock. Contravention of these is not a legal offense in itself but can be used as evidence in prosecution for cruelty. (In the same way, breaking the better-known Highway Code by driving on the wrong side of the road is not illegal but would be evidence in a prosecution for dangerous driving.) The 1969 Code for domestic fowls stated:

In cages holding three or more lightweight birds, the floor area should normally allow not less than 1 sq m per 39.1 kg live-weight. For heavier birds the allowance should not normally be less than 1 sq m per 44 kg live-weight. (Ministry of Agriculture, Fisheries, and Food 1969, 5)

Strains of heavier brown hens were becoming common in the United Kingdom by 1969, and they soon became ubiquitous. This was an interesting result of consumer preference: people bought brown eggs (which come from brown birds) even though they cost more, because the eggs were perceived to be tastier or more natural than white ones (which come from white hens). Brown birds weighed about 2.5 kilograms by the end of the laying year, so they ought to have been given more than 550 square centimeters of living space. They probably had about 500 square centimeters, corresponding to a body weight of 2.2 kilograms.

In the late 1970s, the U.K. Parliament set up a Select Committee on Agriculture, whose members chose to consider animal welfare before anything else. They produced a report in July 1981 concluding that: Agreement should be sought in the European Community to a statement of intention that after, say, five years egg production will be limited to approved methods which will not include battery cages in their present form. . . . This should be pursued during the UK Presidency. . . . Meanwhile the Minister should seek Community agreement to a minimum standard for adult laying birds in battery cages of not less than 750 sq cm per bird. He should refuse to agree to anything less than 550 sq cm. (House of Commons 1981, 53)

The proposal for a ban on battery cages received widespread publicity, but the timing was poor. The United Kingdom had just started a six-month term as president of the Council of the EU, and it was too late for the detailed preparation that the battery cage action would have needed. Perhaps partly for this reason, the proposal was not taken up by the U.K. government.

The U.K. Farm Animal Welfare Council (FAWC) also arose from the 1968 Act, and it has produced a succession of influential reports. These include an assessment of egg production systems (1986), a report on the welfare of laying hens in colony systems (1991), and a report on the welfare of laying hens (1997).

**Sweden**
In 1988, at a time when Sweden perhaps did not expect to join the EU, the country passed a new Animal Welfare Act. This required that, starting in 1989, all new cages should provide 600 square centimeters per hen. The country also took account of Tauson’s work (mentioned above), mandating, for example, that by 1994 all cages should be fitted with a claw-shortening system and a perch. More radical change was to follow (R. Tauson, Swedish Agricultural University, personal communication, August 20, 2000):

- Animals should be able to perform natural behaviours and be protected against disease and unnecessary suffering;
- Impaired animal health;
- Increased medication;
- Introduction of beak trimming or
- Impaired working environment.

Despite the ban on cages, remarkably little was done on alternative systems in the next few years, by either the government or the industry, and the industry suggested that the required conditions would be “difficult, if not downright impossible to meet” (Fredell 1994, 1). More than 40 percent of producers said they would leave egg production and predicted that imports would rise to more than 60 percent (Sørensen 1994).

Tauson agreed that the required conditions were inconsistent with a cage ban, and started work on enriched cages in collaboration with this author (Abrahamsson, Tauson, and Appleby 1995). In 1997 Sweden accepted the industry’s arguments and deferred implementation of the ban, requiring instead that all cages be enriched. (By then Sweden was in the EU.) A ban on cages remains on the statute but in abeyance; enriched cages were introduced in Sweden on a large scale beginning in 1998 (Tauson 2000; Tauson and Holm 2001).
The actual threat from imports was not as great as the industry claimed. Restrictions on imports are not generally allowed within the EU. However, the Swedish egg industry is almost free of salmonella, so that Sweden can refuse imports from countries with salmonella—including the rest of the EU, apart from Finland.

**Switzerland**

Switzerland is the only country in the world to have banned laying cages. The ban was imposed in 1992, after a 1978 referendum in which citizens were informed of the economic consequences of the proposed action. Not being in the EU, Switzerland can restrict imports of cheaper eggs. Some imports are permitted, though, despite the fact that they come from systems that are illegal in Switzerland, because the country’s egg production is insufficient to meet demand.

The Swiss law is framed as a ban on any enclosure for fewer than forty birds. Various designs based on the Dutch tiered-wire floor systems are used (Matter and Oester 1989). Performance of these, and the welfare of the birds, were relatively poor at first but have improved with experience (Fröhlich and Oester 2001).

### The 1976 Convention and the 1986 Directive

From the late 1970s on, an underlying influence on poultry welfare was the Council of Europe’s 1976 Convention on the Protection of Animals kept for Farming Purposes. As mentioned above, once members ratified the convention they were obliged to take it into account in their countries—and that included all the countries in Table 2, except Turkey (which still has not ratified). It also includes other countries that subsequently joined the council. The convention was concerned with the care, husbandry, and housing of farm animals, especially those in intensive systems (Table 6). Its recommendations are couched in general terms, but the drafting committee commented that it tried to lay down principles precise enough to avoid a completely free interpretation, yet wide enough to allow for different requirements. Because the convention itself is very broad, the Council of Europe has a standing committee with a responsibility for elaborating more specific requirements. One of the first areas in which it became active was that of poultry welfare.

In addition to individual countries, the EU became a party to the convention in 1978. Not surprisingly, the EU decided it should act on the welfare of laying hens. After several years of negotiation, an EU directive was adopted in 1986 which establishes minimum standards for the protection of hens in battery cages (Commission of the European Communities 1986). By January 1988 all newly built cages had to provide 450 square centimeters of space per hen and meet other requirements (Table 7); these standards were to apply to all cages by January 1995.

In hindsight the directive seems minimalist to many in Europe. However, it was one of the first Europe-wide statutes that actually specified how animals were to be kept. Prior to this approximately half the hens in Europe were given less than 450 square centimeters each, and probably few cages in Europe met all the

### Table 6

**Extracts from the Convention on the Protection of Animals Kept for Farming Purposes**

| Article 3 states: | Animals shall be housed and provided with food, water and care which—having regard for their species and to their degree of development, adaptation and domestication—is appropriate to their physiological and ethological needs, in accordance with established experience and scientific knowledge. |
| Article 4 states: | The freedom of movement appropriate to an animal, having regard to its species and in accordance with established experience and scientific knowledge, shall not be restricted in such a manner as to cause it unnecessary suffering or injury. Where an animal is continuously tethered or confined it shall be given the space appropriate to its physiological and ethological needs. |
| Article 5 | deals with lighting, temperature, humidity, air circulation, ventilation and other environmental conditions such as gas concentration and noise intensity. |
| Article 6 | deals with the provision of food and water. |
| Article 7 | deals with inspection, both of the condition and state of the animal and of the technical equipment and systems. |

Source: Council of Europe 1976
criteria specified for area, feeding space, height, and floor slope. The governments of southern Europe resisted inclusion of a space allowance as high as 450 square centimeters, agreed to this provision reluctantly, and subsequently implemented it slowly. However, all members of the EU did have to translate the directive into national legislation. In the United Kingdom, for example, this was done in 1987. The United Kingdom also amended its Welfare Code to recommend only the legal minimum of 450 square centimeters (Ministry Of Agriculture, Fisheries, and Food 1987). Denmark and Sweden, by contrast, continue to provide more than the minimum.

### Developments Leading to the 1999 Directive

One further provision of the directive raised the possibility of future changes, for example a ban on cages, by saying that:

Before 1 January 1993 the Commission shall submit a report on scientific developments regarding the welfare of hens under various systems of rearing. (Commission of the European Communities 1986, 3)

The Scientific Veterinary Committee (Animal Welfare Section) of the commission did produce a report in 1992 (de Wit 1992), but it did not receive widespread circulation or publicity and the commission took no direct action on it. In that same year, however, the commission issued a draft for a new directive (Commission of the European Communities 1992) which surprised everyone by recommending that cages should provide 800 square centimeters of area and 20 centimeters of perch per hen. A minimum height of 50 centimeters was included, with a height of at least 60 centimeters over 65 percent of the area. This was generally interpreted as “testing the water” rather than a serious proposal, and no mention of 20 centimeters of perch or 60 centimeters of height was ever seen again—although requirements for 800 square centimeters of area and 50 centimeters minimum height were retained to the next stage.

Meanwhile much relevant research continued. For example, in 1989 Dawkins and Hardie reported that brown hens take up 475 square centimeters just standing still and 1,272 square centimeters simply turning around.

By 1995 the commission had decided that it had to take further action, and asked the Scientific Veterinary Committee to update its report. The updated report, issued in 1996, listed welfare benefits and deficiencies of cages and non-cage systems. It concluded that:

Because of its small size and its barrenness, the battery cage as used at present has inherent severe disadvantages for the welfare of hens. . . . To retain the advantages of cages and overcome most of the behavioural deficiencies, modified enriched cages are showing good potential in relation to both welfare and production. . . . Mainly because of the risk of feather pecking and cannibalism, [non-cage] systems have severe disadvantages for the welfare of laying hens. (109)

In the first half of 1998, the United Kingdom held presidency of the council and was pressing for change. That March the commission brought out another proposal for a new directive. The proposal was oddly framed, however, requiring hens to be provided with nests and litter but stating that:

Member states may authorise derogation from [those requirements] in order to permit the use of battery cages if the following conditions are met:

(a) At least 800 cm$^2$ of cage area . . . shall be provided for each hen;

(b) Cages shall be at least 50 cm high at any point. (Commission of the European Communities 1998, 5)

Enriched cages, “equipped with litter, perches, and a nestbox,” were mentioned as a possible housing system; they were required to be 50 centimeters high but no more than that.

Then a critical coincidence occurred: Sweden started introducing enriched cages on a commercial basis. In late 1998 a number of key players in the Council of Ministers and the Commission’s Directorate-General for Agriculture were able to

### Table 7

<table>
<thead>
<tr>
<th>Extracts from the EU 1986 Directive Laying Down Minimum Standards for the Protection of Laying Hens Kept in Battery Cages</th>
</tr>
</thead>
<tbody>
<tr>
<td>A minimum area of 450 cm$^2$ per bird and 10 cm of feeding trough per bird</td>
</tr>
<tr>
<td>A continuous length of drinking trough providing at least 10 cm per bird or if nipple drinkers or drinking cups are used, at least two shall be within reach of each cage</td>
</tr>
<tr>
<td>Cage height of at least 40 cm over 65 percent of the cage area and nowhere less than 35 cm</td>
</tr>
<tr>
<td>Cage floors capable of supporting adequately each forward-facing claw and not sloping more than 8 degrees, unless constructed of other than rectangular wire mesh</td>
</tr>
</tbody>
</table>

Source: CEC 1986
visit Sweden and see the cages for themselves. They doubtless took note of the fact that egg production from enriched cages is cheaper than from most non-cage systems.

Meanwhile Germany, hungry for substantial progress on animal welfare during its forthcoming presidency of the council in the first half of 1999, was gearing up to ensure adoption of the directive in that period. The German presidency—that is, the German ministry of agriculture, with support from the rest of the German government—recognized that the proposed directive did not give enough details of enriched cages for these to be properly regulated. They put forward an amended version in early January. This avoided the words battery and enriched altogether, and said that:

All cage systems [must] comply at least with the following requirements:

(a) Where the cage contains eight hens or more, at least 550 cm² of cage area… must be provided for each hen;

(b) Where the cage contains fewer than eight hens, at least 800 cm² of cage area must be provided for each hen…

(f) Cages must also provide: a nest and an area with or without litter enabling hens to peek and scratch. (Commission of the European Communities 1999a, 7)

In other words, they proposed to ban battery cages, but not enriched cages.

The European Parliament—which, it will be remembered, is the directly elected, democratic body representing the public throughout the EU—debated the proposed directive in late January 1999. In the convoluted political process that constitutes the EU, the version it debated was that first proposed, not the version amended by Germany. However, the members of Parliament were aware of the German initiative and most of them agreed with it. The Parliament amended the first version of the directive, voting heavily to replace the derogation for battery cages with a provision that “the use of battery cages shall be prohibited”: the vote was 58 percent for, 38 percent against, 4 percent abstaining. The increasing concern for animal welfare among southern Europeans may be illustrated by the fact that the amendment was presented by an Italian member of the Parliament and signed by Italian and Greek members, among others (Sansolini 1999b). The Parliament did not delete the mention of enriched cages as a permissible system, though. Thus it, too, voted to ban battery cages but not enriched cages.

This was the first stage of the debate to hit the headlines, making the front page at least in the poultry and animal welfare press, if not in the popular media. The coverage emphasized that the European Parliament had voted to ban batteries. But the most important stage was still to come. The final decision would be taken by the Council of Ministers. Strictly speaking, the decision might not be completely final. If the Council did not act as the Parliament wanted, the Parliament could then require it to think again—as it did recently when the Parliament voted to ban sales of cosmetics tested on animals and the Council demurred. However, the Parliament might well not have persisted, so the Council decision would be momentous.

### The 1999 Directive

The next months were busy. Governments put the proposals out for consultation—for example, the author was on the list of those consulted by the U.K. government. Lobbying intensified because the Council would be using qualified majority voting (Table 1) so that, if several countries voted against the directive, it would fall. Indeed, the directive probably would not even reach a vote because, although the Council does not need unanimity, it attempts to achieve it, rather than forcing minority countries to accept change against their will. If several countries were known to be planning to vote against the directive, the Council probably would have deferred the vote and considered further amendments.

Those thought most likely to vote against were France, Greece, Italy, Portugal, and Spain; these countries have a total of 38 votes, more than the 26 needed for a blocking minority. Portugal, for example, stated publicly that it planned to vote against (Aguirre y Mendes 1999). Groups supporting the ban, such as Eurogroup for Animal Welfare and Compassion in World Farming (CIWF), were particularly active in lobbying those five countries but also lobbied countries thought to be in favor—to ensure their continued support and to persuade them to put pressure on the possible dissenters. The action that received most publicity was a hunger strike by Adolfo Sansolini, the Italian head of Compassion in World Farming’s campaign in Mediterranean countries. On May 20, 1999, Italy announced that it would support the ban (Sansolini 1999b).

Details of the negotiations among the EU ministers of agriculture are, of course, not public. It is possible that some who opposed the ban finally agreed to support it in return for some other political favor. Stories have circulated that they were warned that, if the directive failed, there would be increased pressure for more radical change, such as a complete ban on cages. It also happened that the final vote came just after a discussion on the dioxin scandal (Commission of the European Communities 1999b), which is rumored to have diminished any trust that the agricultural industry could be left to regulate itself. (Not long before, there had been a widespread problem in Belgium of dioxin contamination of animal feed, leaving toxic residues in the carcasses after slaughter.) Serendipity may well have played some part in the vote. However, it can also be said...
that this was a vote whose time had come.

On June 15, 1999, thirteen of the fifteen countries voted for the directive (Compassion in World Farming 1999). Only Austria voted against, and it did so because it did not believe the directive went far enough. Spain abstained.

The key provisions of the directive are shown in Table 8. It will phase out barren battery cages by 2012, with an interim measure requiring 550 square centimeters per hen by 2003. All new cages starting in 2003 and all cages starting in 2012 must provide 750 square centimeters per hen, as well as a nest box, a perch, and a litter area for scratching and pecking. Requirements for non-cage alternatives also change. Litter is not currently required in percheries (Table 5), but as of 2007 it will be needed in all houses. (The situation will be reviewed before the end of 2004.)

Not surprisingly, given the complex process leading up to the directive and the various forms it went through, there was confusion for some time about exactly what had been decided. Headlines were along the lines of “Battery Cages Banned.” As many people, even within industry and welfare groups, were unaware of the existence of enriched cages or gave them little thought, they believed that cages had been prohibited altogether. The situation was clarified to some extent by articles such as that by Elson (1999), entitled “Laying Cages to be Enriched, Not Banned,” but it still is not clear what actually will happen on most commercial farms, as shall be seen below.

**Commentary**

Welfare groups enthusiastically welcomed the directive. Compassion In World Farming (1999), for example, called it a “huge victory for animal welfare.” However, the groups are unenthusiastic about enriched cages. Peter Stevenson (2001a) of Compassion In World Farming calls on the industry not to install these, but instead to move to non-cage systems. The Royal Society for the Prevention of Cruelty to Animals (RSPCA) (undated [a], 9) says that “as more producers become familiar with the design and management of alternative systems, enriched cages offer few benefits.” The RSPCA’s Freedom Foods standards do not allow cages. The group does not mention the problems of beak trimming, cannibalism, and occupational safety in alternative systems. In this context, the EU Scientific Veterinary Committee report may be recalled; it described both battery cages and non-cage systems as having severe welfare disadvantages but said that modified enriched cages had good potential for both welfare and production (Scientific Veterinary Committee 1996).

Perhaps the most important point is that it seems extremely unlikely that a complete ban on cages would have been possible in the EU in 1999 or the foreseeable future. Such a ban would have faced the arguments that caused Sweden to defer its own ban in 1997—arguments that there would be problems in both practical and welfare terms. It also would have been much more difficult for the countries of southern Europe to accept a change that would have had even more economic impact; some of the northern countries might also have rejected such a change. Finally, the Council of Ministers may believe that the EU can protect an industry shoulders 10 percent cost increases against competition from the rest of the world, but it probably would have balked at a higher cost increase.

There is, therefore, a strong case that it was the availability of enriched cages as a viable system that enabled the ban on battery cages to be accepted. Some commentators suggest that enriched cages will not be economically competitive with non-cage alternatives (Compassion in World Farming 1999) and thus will never be common commercially outside Sweden. Even if that is true, however, the cages have moved the issue forward. Germany decided in 2001 that, in the context of a Europe-wide phasing out of battery cages, it will disallow enriched cages within its own borders, producing a situation similar to that in Switzerland. This is despite Germany’s part in promoting the directive, including its provision for enriched cages. The Netherlands and the United Kingdom are considering similar moves (Department for Environment, Food and Rural Affairs 2002).

What was the egg industry’s response to passage of the directive? It was horrified. In the United Kingdom, egg producers met on June 15, the very day of the decision, and “as details of the directive were revealed, they were received with a stunned silence” (Cruickshank 1999). A September meeting of the International Egg Commission, representing thirty-three countries, including all of the major producing countries except China, resolved to raise $1 million for action to overturn the ban. The resolution was supported by countries worldwide, including the United States. One reason must have been solidarity in face of what was perceived as a direct attack on the European members; in addition, “a domino effect is feared by the United States, Canada, and Australia” (Farrant 1999).

The industry may have been encouraged in the hope that it could overturn the ban by the complex circumstances leading up to the vote. Ben Gill, president of the U.K. National Farmer’s Union, wrote to the U.K. Minister of Agriculture describing the changes as “ill thought through” (Cruickshank 1999). However, the complexities should not be taken as indicating that Europe was half-hearted on this measure. Such a negative conclusion is denied by the strength of the vote in Parliament and by the fact that fourteen of fifteen ministers voted for or wanted the ban.

At least since publication of Animal Machines in 1964, “Ban the Battery Cage” has been one of the most common protest calls. In the twentieth century, it probably was surpassed as a popular cause by very few others, such as “Votes for Women” and “Ban the Bomb.” Ruth Harrison lived to see...
the directive passed (and, characteristically, immediately started considering how it could be improved), but died in 2000. If full implementation of the directive is achieved by 2012, as planned, it will be forty-eight years after Animal Machines fired the indignation of the European public. Taking half a century to achieve just one of the changes called for in that book, and arguably only partially at that, is hardly rushing things.

Immediate Developments

What happens next obviously will be affected by the timing and content of the EU Scientific Veterinary Committee’s review and the subsequent Commission report (Table 8).

Installation of non-cage systems probably will increase slowly in the short term. Those who are ahead of the game will get premiums for their egg sales for the next few years.

Various manufacturers are offering models of enriched cages, and research on design details is in progress. The U.K. Ministry of Agriculture, for example, commissioned research on cage height, group size, and space allowances with the intention of making the results available to the Scientific Veterinary Committee’s review in 2003 or 2004. However, few enriched cages will be installed outside Sweden before the Commission report is out.

No doubt producers continued to install conventional cages right up to December 2002. Some used models that are convertible to enriched cages; for example, a model of this kind is sold by Big Dutchman, the largest European cage manufacturer. Others used standard models, taking the risk that they will be usable only until 2011 (J. Campbell, Glenrath Eggs, personal communication, March 15, 2001), or perhaps a while longer if the directive’s deadline is not strictly enforced.

The review will consider performance of different systems (including enriched cages in Sweden) and their “socio-economic implications,” together with “the outcome of the World Trade Organization negotiations” (Table 8). So the latter must be considered next.

World Trade Organization Rules

Negotiations are under way to extend the rules for free trade established by the World Trade Organization (WTO) to agricultural products, preventing individual countries and trade zones such as the EU from limiting imports, subsidizing exports, or applying any other process that favors domestic versus foreign producers. The EU pro-

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Table 8

Extracts from the EU 1999 Directive Laying Down Minimum Standards for the Protection of Laying Hens

<table>
<thead>
<tr>
<th>Un-enriched (conventional) Cages</th>
<th>Review</th>
</tr>
</thead>
<tbody>
<tr>
<td>From 1st January 2003 no new conventional cages may be brought into service and existing cages will have to provide 550 cm² per bird and a claw shortener</td>
<td>By 1st January 2005 “the Commission shall submit to the Council a report, drawn up on the basis of an opinion from the Scientific Veterinary Committee, on the various systems of rearing laying hens, and in particular on those covered by this Directive, taking account both of pathological, zootechnical, physiological, and ethological aspects of the various systems and of their health and environmental impact.</td>
</tr>
<tr>
<td>From 1st January 2012 conventional cages are prohibited</td>
<td>“That report shall also be drawn up on the basis of a study of the socio-economic implications of the various systems and their effects on the Community’s economic partners.”</td>
</tr>
<tr>
<td>Enriched Cages</td>
<td>“In addition, it shall be accompanied by appropriate proposals taking into account the conclusions of the report and the outcome of the World Trade Organisation negotiations.”</td>
</tr>
<tr>
<td>From 1st January 2002 enriched cages must provide:</td>
<td>Alternative Systems</td>
</tr>
<tr>
<td>• 750 cm² per bird, of which at least 600 cm² is at least 45 cm high</td>
<td>From 1st January 2002 new non-cage systems must have:</td>
</tr>
<tr>
<td>• A minimum total cage area of 2,000 cm²</td>
<td>• A maximum of 9 hens per m² of usable area</td>
</tr>
<tr>
<td>• A nest</td>
<td>• Litter occupying at least one third of the floor</td>
</tr>
<tr>
<td>• Litter such that pecking and scratching are possible</td>
<td>• 15 cm perch per hen</td>
</tr>
<tr>
<td>• 12 cm of food trough per hen</td>
<td>From 1st January 2007 all non-cage systems must comply with these conditions</td>
</tr>
<tr>
<td>• A claw shortener</td>
<td>Source: Commission of the European Communities 1999c</td>
</tr>
</tbody>
</table>

Source: Commission of the European Communities 1999c
poses that animal welfare be taken into account in trade, by allowing labelling; agreements between trading partners that safeguard welfare; or payment of subsidies to producers who maintain high welfare (European Communities 2000). This will meet resistance from other countries, including the United States. However, it is possible that welfare can be taken into account even under existing WTO rules. Article XX of the WTO’s General Agreement on Tariffs and Trade says (Stevenson 2001b, 13):

Nothing in this agreement shall be construed to prevent the adoption or enforcement by any contracting party of measures:

a) necessary to protect public morals,

b) necessary to protect human, animal or plant health.

The possibility of using this article to justify measures within the EU to protect animal welfare has not yet been fully explored. This possibility is strengthened by the fact that the United States recently used similar arguments to justify a ban on trade of dog and cat fur (United States Congress 2000). The act’s preamble states (Stevenson 2001b) that:

The trade of dog and cat fur products is ethically and aesthetically abhorrent to U.S. citizens;

[The] ban is also consistent with provisions of international agreements to which the United States is a party that expressly allow for measures designed to protect the health and welfare of animals;

[U.S. consumers have a right to] ensure that they are not unwitting participants in this gruesome trade.

Thus the United States cannot consistently argue against attempts by the EU to prevent import of battery eggs, on the grounds that banning of batteries in Europe is a matter of public morality and protection of animal health.

Perhaps some countries will suggest that such attempts by the EU to prevent import of battery eggs are protectionist rather than concerned with welfare. However, under no possible construction could it be argued that the ban on use of batteries within Europe—with all its fantastical history—is itself motivated by protectionism. One additional piece of evidence against such an interpretation is that any tightening of legislation on housing of laying hens always has been resisted by the industry (cf Jorêt 1998). Examples in the United Kingdom and Sweden have been mentioned above, and the horror provoked in egg producers by the 1999 directive has been described. Clearly, egg producers did not regard the legislation as a potential defense against imports from the rest of the world. Nevertheless, not unexpectedly they did ask for protection; indeed, they believe that the Commission and the agriculture ministers have promised it (Farrant 1999). In fact, most reports, from varied sources, recommending tighter legislation on housing of laying hens in Europe have recommended such protection (House of Commons 1981; Scientific Veterinary Committee 1996; Farm Animal Welfare Council 1997; Royal Society for the Prevention of Cruelty to Animals undated [b]). Still this cannot be described as protectionism. Certainly protection of European egg producers is envisaged, but on the two grounds of fairness and animal protection. It would be unfair to require producers to adopt more costly, humane systems and then suffer competition from cheaper, inhumane imports. And this would not protect animals if sales of eggs from cages outside Europe displace egg production from more humane systems in Europe; the common phrase is that “we would be exporting our welfare problems.” Clearly, if the main effect of the directive is a great reduction in European egg production and substitution by battery egg production elsewhere in the world, it will have failed in its intentions. The Scientific Veterinary Committee suggested that “high standards of laying hen welfare can only be implemented and sustained if the EU market is protected against imports of eggs from third countries with lower standards” (Scientific Veterinary Committee 1996, 111).

If the EU succeeds in restricting import of battery eggs, or in other measures such as being allowed to label eggs from different systems or subsidize farmers required to renounce batteries, the Commission surely will recommend few, if any, changes to the directive. In that case, changes to existing battery cage systems will accelerate in 2010 or so. Indications are that most producers will choose to use enriched cages rather than other alternatives, particularly in the colder northern countries.

However, success for the EU in the WTO negotiations is not assured.

**Prospects Under Free Trade**

What will the socio-economic implications be if such protection cannot be achieved? Could the directive still be implemented? Yes, it could. The chance of a great reduction in European egg production is small. The suggestion of the Scientific Veterinary Committee (1996), just quoted, probably is an overstatement. So is the following statement by Jorêt (1998) in responding for the U.K. egg industry to proposals for the directive: “There is no point in legislating our own industry out of existence only to turn round and import that product from those very same systems, but operated to much lower standards than were in use at home.” The phrase, “legislating our own industry out of existence,” is an exaggeration. For years, as mentioned, Denmark has had more stringent legislation on cages than the rest of Europe. Its egg industry survives, albeit perhaps smaller than it might otherwise have been. If this applies to trade within Europe, it applies even more to the threat of longer-distance imports to European countries from outside Europe, at least with regard to whole eggs (which the industry...
calls “shell eggs”). The industry acknowledges this. Mary Ann Sörensen of the Federation of Swedish Egg Farmers considers that the importance of freshness in shell eggs should enable countries to retain this market for local production (Farrant 1999). Similarly, Mike Ring, director general of the International Egg Commission, says that “the EU shell egg market will be largely protected by the freshness needs of that market” (Farrant 1999).

There is a possibility, though, that imports of processed eggs, which make up 25 percent of European egg production, would rise. In fact, as these would be from battery cages, the result would be to continue a trend that already is present. Ref-erences to people’s willingness to buy non-cage eggs apply mainly to fresh eggs; few people consider where the eggs come from in processed food. If other countries increase exports of processed eggs to Europe, it is likely that European egg production would shrink under the proposed changes, but it would not disappear.

Precisely how the European Commission, Parliament, and Council would act in response to such a likelihood is hard to predict, but it is difficult to believe that they would back-track completely and rescind the ban on battery cages. Given the manifold circumstances leading to the ban, such a move would be seen as a betrayal and would lead to a huge outcry. It seems more likely that, if anything, compromise proposals would be made, lengthening the phase-out period for batteries, for example, or reducing the space requirements in other systems. One additional argument for Europe “putting its own house in order” in this matter, despite world-wide pressures, is that there is reason to believe that the rest of the world will eventually follow. Canada, Australia, and New Zealand—and McDonalds and other chain restaurants in the United States—already have moved toward matching European space allowances in battery cages. The egg industry also believes that the European battery ban may in due course lead to a “domino effect” in the United States, Canada, and Australia (Farrant 1999).

If Europe cannot protect its egg producers under WTO rules, there will be considerable discussion and lobbying. One additional complicating factor is the potential accession of up to twelve new countries as EU members; these countries are likely to argue that they need more time for implementation than those with a head start. Nevertheless, it is almost certain that there will be major changes to the housing of many or most laying hens in Europe in 2010 and 2011.

Long-term Prospects

Obviously, longer-term prospects depend on many factors, including the WTO negotiations, but one point needs to be made. It has been emphasized that non-cage systems have two major, alternative welfare problems: cannibalism, and the beak trimming required to prevent it. If strains of birds can be developed that do not show cannibalism, then eventually cages probably will be phased out altogether. Such genetic selection is possible (Muir 1996). However, it is not in the economic interests of the poultry breeders, for two reasons: adding any such criterion would reduce breeders’ ability to breed for other, more profitable characteristics, and success would favor the move from cages to other systems, which the industry sees as unfavorable. Thus one of the most important requirements for long-term improvement of laying hen welfare is legislation requiring such selection against cannibalism. If that legislation is passed, enriched cages will perhaps have been a medium-term development, although certainly one that facilitated further change. However, non-cage systems do have other problems that remain to be solved, such as parasite infestation and poor working conditions for operatives.

Implications for the United States

What are the lessons from such a labyrinthine history for a single country such as the United States?

1. Don’t expect too much too soon. The First (and so far only) North American Symposium on Poultry Welfare was held in 1995 (in Edmonton, Canada)—compared with the European Symposia that effectively started in 1977—and related changes of attitude still have not gathered pace.

2. Change is possible. One of the most important agents for that change is public opinion. Politicians in every European country and related institution comment that they receive more letters on animal welfare than on any other subject, and that this influences and strengthens them in countering industrial muscle. American politicians make similar comments. Furthermore, it seems that expectations of American citizens are being affected by developments in Europe. Differences between the American political system and that in Europe probably will mean, however, that even more public pressure will be needed to effect similar change in the United States.

3. The United States is a single country, but as a union of semi-autonomous states it has much in common with the EU. Individual European countries were successful acting alone, and these actions finally led to communal action. Similarly, single American states could take the lead, and persuade others to follow, on hen housing as on hog factories.

4. In fact, most of the above history shows that piecemeal change is worthwhile in itself, and finally leads to wholesale change. This obviously applies to labelling. Much of the dis-
cussion about labelling refers to giving consumers a choice. In regard to welfare, choice is not actually what is desired; it is desirable to improve the welfare of all hens, not just a small, labelled proportion of them. Yet the fact that some people buy Free Range eggs—and Freedom Foods demonstrates that a significant proportion will “put their money where their mouth is”—has led the way for more widespread change. Labelling schemes in the United States—such as the Farm Free label of the American Humane Association—could receive much more emphasis, to useful effect.

5. Similarly, the initiative by McDonalds in 2000 to require its egg suppliers to increase their cage size parallels the actions by some European supermarkets and has influenced other commercial companies to make similar moves. It is possible that nongovernmental action to influence market structure is a more promising route than regulation in the United States (Thompson 2001).

6. The EU ban on battery cages is the cumulative result (and even now only a partial result) of activity on many different fronts. Some of these have not even been discussed in this account, such as the pressure on the EU to agree—which it finally did (Commission of the European Communities 1997)—that animals are “sentient beings,” not just products. Any campaign in the United States must be similarly multifaceted, bringing pressure to bear on all relevant groups, including producers, retailers, consumers, legislators, and the media.

Note
Another version of this article is cited as Appleby 2003.

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The State of Meat Production in Developing Countries: 2002

Neil Trent, Peter Ormel, Jose Luis Garcia de Siles, Gunter Heinz, and Morgane James

Introduction

Billions of animals are killed for food annually in developing countries, more than half of them without the benefit of stunning (a procedure that induces an unconscious state through administration of a severe blow to the skull or the application of an electrical charge).

The slaughter process begins most often with food animals crowded into inadequate vehicles with little protection from the elements and transported long distances without water over harsh roads. In a typical developing country, few slaughter facilities have any government oversight of sanitation or veterinary care. Animals may be stunned by repeated hammer blows to the head. They may be stabbed with sharp knives until they collapse. While the animals are still conscious, their throats are cut, and they die from excessive blood loss after minutes of struggling.

These brutal methods cause immense animal suffering. They also have significant economic impact: bruising of the meat renders it unfit for human consumption; damage to the hides causes loss of product; and worker injuries result in decreased productivity. At the same time, unsanitary methods spread such diseases as salmonellosis, cholera, E.coli poisoning, and Listeria and cause contamination of the meat, a serious public health concern.

More humane transport, handling, and slaughter practices and the introduction of modern systems and equipment in the slaughter process not only decrease animal suffering but also provide economic benefits for the human population, as the amount of meat and hide wasted is reduced. At the same time, worker and meat safety is greatly increased.

Two organizations—one dedicated to the elimination of animal suffering and the other to encouraging sustainable agriculture and rural development—have joined forces to address animal welfare issues in the global livestock industry. The mission of The Humane Society of the United States (HSUS) and its international arm, Humane Society International (HSI), is to create a humane and sustainable world for all animals, including people, through education, advocacy, and the promotion of respect and compassion. The Food and Agriculture Organization (FAO) of the United Nations has as a specific priority to increase food production and food security while conserving and managing natural resources. The aim is to meet the needs of both present and future generations by promoting development that does not degrade the environment and is technically appropriate, economically viable, and socially acceptable.

Since 1994 HSI has worked with the FAO to introduce techniques and equipment for humane transport, handling, and slaughter of food animals in developing areas. The most important of these techniques is the use of the captive bolt stunner (see sidebar on page 181).

HSI has underwritten the cost of FAO slaughter-training workshops, providing equipment, and/or participating in presentations in Asia and the Caribbean. HSI also has produced a laminated poster for FAO use in its training workshops, co-sponsored the publication of a booklet (Guidelines for Humane Handling, Transport, and Slaughter of Livestock), and begun development of a training video for distribution worldwide.

As part of this collaboration with the FAO, HSI has solicited overviews on the various aspects of animal welfare and the livestock industry in Latin America (contributed by FAO representatives Jose Luis Garcia de Siles and Peter W. Ormel); the Asia-Pacific region (contributed by FAO consultant Gunter Heinz); and South Africa (through a case study of the status of livestock contributed by Morgane James of the National Council of SPCAs).
Introduction

Food security has been defined as access by all people at all times to adequate quantities of safe food required for a healthy and active life. Although food availability has increased noticeably during the last thirty years in developing countries, there currently are more than 800 million people without adequate access to food, and more than 24,000 people die each day because of lack of adequate food supply.

In developing countries, where diets are composed of a few staple foods, meat and meat products are especially important in preventing malnutrition and contributing to food security.

In developing countries some traditional methods of handling, processing, and marketing of meat undermine quality, and poor sanitation leads to considerable loss of product as well as to the risk of food-borne diseases (García de Siles et al. 1997).

The safety of meat calls for control from the farm until the time the meat is consumed. It is recognized that stock handling, slaughtering conditions, carcass dressing, and meat handling as well as the hygienic and environmental surroundings, contribute to the nutritional properties and commercial value of the finished products.

Evolution of Meat Production

As shown in Table 1, the world livestock population has grown steadily for all major species involved over the last forty years.

The increase in the number of animals slaughtered per year led to a 280 percent increase in the production of meat at the world level over the last forty years.

Regional Comparison

The number of animals slaughtered worldwide per region is presented in Table 3. For each species involved, Asia leads the world in terms of number of animals slaughtered per year.

Livestock Evolution in Latin America and the Caribbean

In Latin America and the Caribbean, the cattle and buffalo population more than doubled from 1961 to 2001 (see Table 4).

During this same period, the total meat production in Latin America and the Caribbean increased from 7.9 million metric tons to more than...
31.7 million metric tons. This increase was caused mainly by the increase in the production of poultry meat, and to a much lesser extent, by the increase in beef and pork production (see Figure 1).

### Subregional Comparison in Latin America and the Caribbean

The number of animals slaughtered in the Latin American/Caribbean region is presented in Table 5. Brazil leads the region in terms of number of animals slaughtered for cattle and buffaloes, pigs, and poultry, whereas the most sheep and goats are slaughtered in the Mercosur and the Andean countries.

### Livestock Revolution

Over the past decade, the International Food Policy Research Institute, the FAO, and the International Livestock Research Institute have combined their efforts to produce a global view of the developments in the livestock sector to 2020 against the background of world globalization. A revolution is taking place in livestock production that could have vast implications for people and the environment in both developed and developing countries. This livestock revolution is being caused by population growth, urbanization, and income growth in developing countries, which have led to a massive increase in the demand for products of animal origin, such as meat, milk, and eggs. However, unlike the so-called green (or environmentally-conscious) revolution, which was supply driven, the livestock revolution is demand driven.

The increased demand for meat and meat products has come from a growing urban population with changing diets and sufficient income to increase animal products in their diets.

A major change of this revolution is a shift in the balance of meat consumption from developed countries to developing countries. The developed countries showed an annual growth in meat consumption of only 1.0 percent from 1982 to 1994. At the same time, the developing countries increased their meat consumption by 5.4 percent annually. In 2020 people in developing countries are expected to consume a total of 188 million metric tons of meat, whereas people in developed countries are expected to consume 115 million metric tons.

These expected consumption increases will lead to equivalent increases in production, with production of livestock products growing most rapidly in areas where consumption grows (Table 6). Total meat production for developing countries in 2020 is expected to reach 183 million metric tons; for developed countries the projected

### Table 3

**Animals Slaughtered Worldwide Per Region: 2001** (in million heads)

<table>
<thead>
<tr>
<th>Region</th>
<th>Cattle and Buffaloes</th>
<th>Pigs</th>
<th>Poultry</th>
<th>Sheep and Goats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Africa</td>
<td>29</td>
<td>12</td>
<td>2,539</td>
<td>151</td>
</tr>
<tr>
<td>Asia</td>
<td>98</td>
<td>678</td>
<td>17,396</td>
<td>439</td>
</tr>
<tr>
<td>Europe</td>
<td>53</td>
<td>294</td>
<td>7,440</td>
<td>98</td>
</tr>
<tr>
<td>Latin America and the Caribbean</td>
<td>65</td>
<td>62</td>
<td>8,581</td>
<td>31</td>
</tr>
<tr>
<td>North America</td>
<td>41</td>
<td>119</td>
<td>9,525</td>
<td>4</td>
</tr>
<tr>
<td>Oceania</td>
<td>12</td>
<td>8</td>
<td>510</td>
<td>66</td>
</tr>
<tr>
<td>World</td>
<td>298</td>
<td>1,173</td>
<td>45,991</td>
<td>789</td>
</tr>
</tbody>
</table>

### Table 4

**Livestock Population in Latin America and the Caribbean, 1961–2001** (in million heads)

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Cattle and Buffaloes</td>
<td>176</td>
<td>224</td>
<td>294</td>
<td>330</td>
<td>360</td>
<td>105</td>
<td>2.6</td>
</tr>
<tr>
<td>Pigs</td>
<td>50</td>
<td>65</td>
<td>74</td>
<td>76</td>
<td>81</td>
<td>61</td>
<td>1.5</td>
</tr>
<tr>
<td>Poultry</td>
<td>359</td>
<td>577</td>
<td>1,071</td>
<td>1,461</td>
<td>2,513</td>
<td>601</td>
<td>15.0</td>
</tr>
<tr>
<td>Sheep and Goats</td>
<td>155</td>
<td>148</td>
<td>143</td>
<td>146</td>
<td>117</td>
<td>(25)</td>
<td>(0.6)</td>
</tr>
</tbody>
</table>
total production in the same year is 121 million metric tons. However, the rapid growth in products of animal origin has not been, nor is it expected to be, evenly distributed across or within countries.

The livestock revolution will produce a drastic increase in the capacity of existing production and distribution systems and have possible effects in such key areas as environmental pollution, public health, food safety, and animal welfare. The changes that are inherent to the livestock revolution can be seen both as threats and as opportunities for the sustainable development of developed and developing countries.

When not managed well, these changes could give rise to various problematic situations, with negative effects for animal welfare, public health, and the environment. Animal welfare is a growing ethical concern, especially in developed countries. There, public awareness of environmental contamination of natural resources (air, water, and land) by intensive livestock production systems is high. Many countries have established rules and regulations to mitigate and compensate for the effect these production systems have on the environment. However, developing countries generally have much less experience with the negative environmental and public health effects of these systems. This might explain a general absence of policies and regulations in many developing countries with regard to monogastric production systems. Given the drastic increase these systems will suffer in the near future and their general proximity to urban centers, this regulatory vacuum easily could lead to substantial environmental problems and important increased dangers for public health.

Several basic aspects of the livestock revolution offer threats as well as opportunities to the sustainable development of countries and regions (Delgado et al. 1999):

1. the revolution implies a substantial increase in livestock production in the near future;
2. the majority of this increase will be in developing countries;
3. the function of livestock will change from non-tradable, multipurpose to more market-oriented functions;
4. people will continue to substitute grains for meat and milk in their diets;
5. the rapid increase in monogastric production systems will lead to a rapid increase in the use of cereal feeds;
6. the stress on grazing systems and expansion of monogastric production systems close to urban centers will increase;
7. rapidly changing technologies will be incorporated into intensive production systems.

The livestock revolution is a demand-driven process that cannot be stopped. The final overall effects (positive and negative) for the rural poor, the environment, public health, and

![Figure 1](image-url)

**Figure 1**
Latin America and the Caribbean Meat Production: 1961–2001

2018 The State of the Animals II: 2003

<table>
<thead>
<tr>
<th>Region</th>
<th>Cattle and Buffaloes</th>
<th>Pigs</th>
<th>Poultry</th>
<th>Sheep and Goats</th>
</tr>
</thead>
<tbody>
<tr>
<td>Brazil</td>
<td>30</td>
<td>25</td>
<td>4,641</td>
<td>7</td>
</tr>
<tr>
<td>Mexico</td>
<td>7</td>
<td>14</td>
<td>1,107</td>
<td>5</td>
</tr>
<tr>
<td>Andean Countries</td>
<td>8</td>
<td>9</td>
<td>1,204</td>
<td>8</td>
</tr>
<tr>
<td>Caribbean</td>
<td>0</td>
<td>1</td>
<td>157</td>
<td>0</td>
</tr>
<tr>
<td>Central America</td>
<td>3</td>
<td>5</td>
<td>604</td>
<td>1</td>
</tr>
<tr>
<td>Mercosur</td>
<td>17</td>
<td>9</td>
<td>868</td>
<td>10</td>
</tr>
<tr>
<td><strong>Latin America and the Caribbean</strong></td>
<td><strong>65</strong></td>
<td><strong>63</strong></td>
<td><strong>8,581</strong></td>
<td><strong>31</strong></td>
</tr>
</tbody>
</table>
animal welfare depend on the willingness of developing countries to regulate the projected changes.

**Slaughtering Meat Animals in Developing Countries**

Both meat quality and quantity are very much affected by pre-slaughter conditions. In developing countries, meat animals are transported from the farm to the slaughterhouse on foot, by road, or by rail. Frequently, livestock must travel on foot for several days to reach the abattoir. Since the distances involved often are quite substantial and the management of the animals during this process is poor, transportation has deleterious effects that result in significant food losses.

Livestock who have traveled long distances on foot or in transport frequently are insufficiently rested before slaughter, negatively affecting the quality of the meat. Often holding pens are overcrowded, causing unnecessary stress to the animals.

The quality and condition of the carcase and its storage depend greatly on the care taken prior to slaughter. Nervous, tired, and excited animals may have a raised body temperature, causing imperfect bleeding. Muscular fatigue reduces glycogen content in the blood, which after slaughter changes into lactic acid, thus causing favorable conditions for spoilage and the growth of food-borne bacteria. Fatigue and excitement also cause penetration of bacteria from the intestinal tract to the meat.

Holding animals in vehicles or lairages without adequate litter and/or drainage frequently results in fecal soiling of the skin. Cattle entering slaughterhouses often are very dirty, their legs covered with manure. In these cases, the knife used for bleeding and de-hiding will have to cut through manure and fecal residues, resulting in a great possibility for meat contamination.

Slaughter methods vary widely and include, among others, simple decapitation (in India), severing the medulla (in some Latin American countries), and severing of the major blood vessels with or without previous stunning.

Animals going to slaughter should be rendered unconscious in order to make death as stress-free and painless as possible. Nevertheless, in the Jewish (kosher) and the Muslim (halal) slaughter of livestock, stunning generally is not allowed, and the animal is bled directly, using a sharp knife to cut the throat and sever the main blood vessels. This results in sudden and massive loss of blood, with loss of

<table>
<thead>
<tr>
<th>Table 6 Projected Trends in Production of Various Livestock Products, 1993–2020</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Region/Product</strong></td>
</tr>
<tr>
<td>Developed Countries</td>
</tr>
<tr>
<td>Beef</td>
</tr>
<tr>
<td>Pork</td>
</tr>
<tr>
<td>Poultry</td>
</tr>
<tr>
<td>Meat</td>
</tr>
<tr>
<td>Developing Countries</td>
</tr>
<tr>
<td>Beef</td>
</tr>
<tr>
<td>Pork</td>
</tr>
<tr>
<td>Poultry</td>
</tr>
<tr>
<td>Meat</td>
</tr>
</tbody>
</table>

Source: Delgado et al. 1999

Notes: Total and per capita production for 1993 are calculated from FAO (1998). Projections are updated figures, following the same format as that reported in Rosegrant et al. 1997. Meat includes beef, pork, mutton, goat, and poultry. Milk is cow and buffalo milk and milk products in liquid milk equivalents. Metric tons and kilograms are three-year moving averages centered on the two years shown.
consciousness and death. These types of slaughtering can be very unsatisfactory since the animal may not be rendered unconscious and may suffer considerable discomfort and pain in the slaughter process. Many Muslim authorities permit some form of pre-slaughter stunning such as electric stunning of cattle, sheep, and poultry (see sidebar on page 181) (Chambers and Grandin 2001).

The use of humane methods in the handling of livestock prevents needless suffering, results in safer working conditions, reduces meat losses, and improves meat quality. However, cruelty to animals exists in developing countries because of unsatisfactory slaughtering procedures and infrastructures. Animals may be pulled, beaten, or dragged on their way to slaughter and are allowed to see other animals being slaughtered. Animals frequently are slaughtered without being stunned. These practices need to be examined, since people in many developing countries take cruelty to animals for granted and its prevention is often an acquired concept (Mann 1984).

Dressing the carcass, which is defined by the Codex Alimentarius (a collection of international food standards adopted by the Codex Alimentarius Commission, responsible for execution of the FAO/WHO Food Standards Program) as the progressive separation of an animal into a carcass (or sides of a carcass), other edible parts, and inedible parts, is the next step in the slaughter process. The simplest structure used in slaughtering and dressing livestock is the gantry hoist. Animals who have been slaughtered on the ground are then hoisted via the gantry so that the carcass can be dressed. One step better than the gantry method is utilization of a slaughter slab, an area of concrete on which the animal is slaughtered and dressed. When rural slaughtering takes place on relatively small premises, very simple equipment, such as hooks or ropes for hanging animals and chopping blocks for breaking down carcasses, may be available. However, it remains a common practice to dress carcasses on the building floor.

Under these conditions, the utilization of animal by-products generally is low or nonexistent, since the by-products are considered a nuisance. Improved slaughter methods can result in edible by-products which, properly utilized, may be a source of animal protein for human consumption. They can assist in increasing living standards in rural communities by improving the nutritional level, and at the same time increasing employment possibilities.

Rural Slaughter

In developing countries, a high percentage of animal slaughter takes place in rural areas under very primitive conditions that do not meet even minimal technical and hygienic requirements. Animals are slaughtered in all kinds of places, such as converted buildings or rooms, under the shade of trees, and on open, bare ground.

Because of the level of bacterial contamination, meat produced under such conditions can deteriorate easily and lead to food poisoning. Since there is no meat inspection, meat from sick or parasite-infested animals may well be a vector in spreading disease, affecting human beings as well as animals. In addition, unsatisfactory slaughtering techniques can cause unnecessary losses of meat and valuable by-products. Such losses constitute a major constraint in increasing animal production.

The essential problem in many developing countries is the failure to provide for hoists or hooks, hardware which permits the dressing of carcasses to take place off the floor. The contamination resulting from floor dressing of carcasses is considerable, especially where the removal of hides and the cleaning of stomachs are carried out in the same location as the dressing of the carcass itself.

Urban Slaughter

Many of the large-scale slaughterhouses in developing countries are in poor condition. These usually are located in or around large cities and may be categorized as follows:

(a) Old and dilapidated slaughterhouses established originally on the outskirts of cities but now found within the city limits due to rapid expansion of the urban area. These slaughterhouses present a serious environmental hazard, in addition to using unsanitary slaughtering and meat handling practices;

(b) Slaughterhouses built in the last two decades, with an excessively high level of technical equipment. Problems with ongoing maintenance, inadequate staff training, and high energy consumption have resulted in much of the specialized equipment being shut down. Consequently, many of these plants now resemble the ones mentioned under category (a); and

(c) Slaughterhouses for export, which are technically and hygienically of a very high standard, since they have to comply with export requirements. The local population usually does not benefit from these quality meat-producing plants because their products are too expensive and are directed to external markets.

Even in larger towns, abattoirs that have been designed specifically to supply meat to the expanding centers of urban population all too often are unsatisfactory from a hygienic viewpoint.

Once the meat leaves the abattoir, its hygienic quality also is influenced by careless and poor handling. Carcasses, quarters, unwashed offal, and other items are placed together on the floor of the market or on dirty concrete or wooden tables in meat shops, increasing the microbiological contamination of the meat.
Humane Stunning: Two Techniques

Captive Bolt Stunning
The captive bolt stunner is used commonly in stockyards, slaughterhouses, and packing plants where animals are slaughtered for food. The primary objective of the captive bolt stunner is immediately to induce an unconscious state by administering a severe blow to the skull. The captive bolt is a humane stunner—not a humane killer—and stunning must always be followed immediately by bleeding out.

Captive bolt stunners are comprised of a steel bolt with a flange and a piston at one end that is held in the barrel. The piston fits tightly into the breech and the bolt is free to move forward and backward in the barrel. Upon firing, the expansion of gases, produced by the explosion of the charge, propels the piston forward, and the bolt projects through an aperture in the front of the barrel. The bolt remains captive in the barrel, however, because the flange at the rear prevents it from passing through the hole. The impact of the flange at the front of the barrel is absorbed by either cellular buffers (also known as recuperator sleeves) or a grease collar, depending on the type of stunner.

There are two types of captive bolt stunners: penetrating and non-penetrating. Penetrating stunners cause unconsciousness as a result of a concussive blow to the skull and the physical damage caused by the entry of the bolt into the brain. They are generally preferred, as they result in more rapid unconsciousness and death. Non-penetrative stunners have a “mushroom-headed” bolt which comes in contact with the skull but does not enter the brain. They cause unconsciousness due to concussive force alone and should only be used on cattle.

Both types of stunner are powered by blank cartridges. Cartridges vary in strength and are classified according to the amount of propellant they contain, as measured in grains. It is most important that the correct cartridges be used for each model of stunner.

It also is essential that the correct cartridge be used for the size and species of animal being stunned. In emergency situations, it is acceptable to use a cartridge designed for a larger species, but never one designed for a smaller species. To obtain maximum effect, the muzzle of the captive bolt stunner must be held firmly against the head of the animal.

Electrical Stunning
Electrical stunning involves passing (by means of voltage, or electrical pressure) an electric current (the rate of flow of electricity) through the brain, severely disrupting the brain’s normal electrical activity and causing an immediate state of unconsciousness and insensitivity to pain.

Electrodes must be placed on the animal in a manner to ensure good electrical contact, and they must span the brain, enabling the current to pass through it. The animal remains unconscious while his or her throat is cut and dies from loss of blood. It is important that all major blood vessels are severed. If only one carotid artery is cut, the animal may take over a minute to die.

Whenever an animal is stunned using a captive bolt stunner, he or she must be bled out within fifteen seconds to ensure a rapid and painless death. A maximum stun-to-stick interval of fifteen seconds is essential for all species in the field.

The most practical method of bleeding out is to make a deep transverse cut with a six-inch knife across the animal’s throat at the angle of the jaw (i.e., a cut across the throat). The cut should be deep, severing the blood vessels, trachea and esophagus, and continue until the blade of the knife touches the spine. The intention is to severe the carotid arteries and the jugular veins.

Physiological Effects of Stunning
The initial effect on the animal is immediate unconsciousness, accompanied by what is known as “tonic” activity. The animal collapses, stops breathing, and becomes rigid. This period of rigidity normally lasts for ten to twenty seconds following stunning. The forelegs may be flexed initially and then gradually straighten out, but this depends on the species and the severity of the blow. Tonic activity is followed by a period of involuntary kicking, which gradually subsides.

If an animal is stunned properly, he or she collapses immediately. There is no rhythmic breathing, no blinking, no corneal reflex, and no vocalizing. The animal has a fixed, glazed expression and relaxed jaw, and the tongue is hanging out.

Bleeding Out
To prevent the risk of recovery, animals must be bled out (sometimes referred to as “sticking” or exsanguination) as soon as possible after stunning, ideally while the animal is still in the tonic (rigid) phase. Bleeding out involves severing the carotid arteries and jugular veins of the ventral neck and thorax region. The animal then dies from loss of blood. It is important that all major blood vessels are severed. If only one carotid artery is cut, the animal may take over a minute to die.

Whenever an animal is stunned using a captive bolt stunner, he or she must be bled out within fifteen seconds to ensure a rapid and painless death. A maximum stun-to-stick interval of fifteen seconds is essential for all species in the field.

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—Neil Trent
When meat is sold on one or two market days, meat stalls often are crowded, and customers lean on the stall; the meat becomes contaminated through contact with their hands, bank notes, baskets, clothes, and other objects. The behavior of butchers is not always the most appropriate from a hygienic point of view and may contribute to the problem.

In urban areas the traditional marketing of meat begins with early morning slaughter and delivery of the unchilled meat to the marketplace a few hours later. The FAO recommends that in the long term this be improved to a complete “cold chain” system, with the meat being cooled down at the slaughterhouse and then transported in refrigerated trucks to controlled butcher outlets. The development of the meat sector, in particular in the rapidly expanding population centers, will have to move in this direction for both public health and environmental reasons (Garcia de Siles et al. 1997).

The availability of shelf-stable meat products is very important for a continuous supply of animal protein and essential minerals during periods when there is no fresh meat available. Shelf life ranging from a few days to a number of months can be achieved, depending on the processing methods. Meat processing therefore is essential to enhance food security and cope with periodic deficits in meat supply.

However, in many developing countries the hygienic conditions of the manufacturing process are generally very poor. Machinery is obsolete, places are dirty, and meat is handled carelessly.

The FAO Contribution

Dramatic changes in the current situation of the meat sector are difficult to achieve in the short to medium term, as they would require considerable investment in facilities and infrastructure. Developing countries cannot afford this capital investment.

The FAO addresses this issue through technical strategies and technology packages that include inter alia assistance for improved hygiene, handling, and preservation of livestock products; development of appropriate processing technologies, including development of low-cost and shelf-stable meat products; and establishment of small-scale meat processing plants.

1. Slaughter Facilities

It is evident that unsatisfactory slaughtering techniques and lack of appropriate slaughtering facilities may cause unnecessary losses in meat as well as in valuable by-products. Under these circumstances, commonly found in developing countries, the establishment of slaughter facilities of a sufficiently high standard but still simple and inexpensive would improve the above conditions. For these reasons the FAO has developed a model project in which the main component is a small-scale, modular slaughterhouse. In addition, designs have been prepared for the construction of a meat market in order to facilitate the integration of production, processing, and marketing. Further details of this slaughterhouse design and operation can be found in FAO publications (FAO 1988, 1994).

2. Processing

Taking into consideration that an uninterrupted cold chain for meat cannot be expected in many developing countries in the near future, the FAO is assisting developing countries in the use of existing national and alternative regional meat preservation.

3. Training

The lack of adequately trained personnel in the meat and dairy industry has been recognized as one of the main constraints limiting the improvement of the hygienic and technical quality of meat. Training is therefore a prioritized integral component of FAO projects for meat and dairy sector development. For strategic delivery of training, FAO focuses on regional training of trainers courses to stimulate the multiplier and catalytic effect at member country level.

Animal Welfare in the Livestock Sector in Asia-Pacific

Asia, which is home to almost half of the world’s human population, traditionally has also been a region with a large livestock population. Year 2000 statistics reveal that, of the global livestock population, Asia—including the Pacific countries—rears 35 percent of cattle, 97 percent of buffaloes, 59 percent of pigs, 42 percent of sheep, 59 percent of goats, 46 percent of chickens, and 88 percent of ducks.

Over the last decades, Asia had average annual growth rates in livestock production of up to 7 percent. In the medium term, Asia will continue to display the world’s highest growth rates for livestock, approximately 3 percent, compared with 1.7 percent annual global growth.

The Asia-Pacific region comprises three developed countries—Japan, Australia, and New Zealand—and twenty-seven developing countries. Animal welfare issues usually are higher on the agenda in the developed Asian-Pacific countries than in the developing countries. In particular, New Zealand and Australia have stringent animal welfare laws and detailed rules and regulations.

However, even in well-organized animal welfare environments, unprecedented animal suffering may occur. Australia exports not only meat from cattle and sheep but also live animals. Although the numbers of livestock sent to not-too-distant Southeast Asian countries such as Indonesia and the Philippines are high, no major animal suffering has been reported, as transport distances are relatively short.

The situation is different when...
The State of Meat Production in Developing Countries: 2002

lucrative Near East markets are supplied with sheep and cattle for slaughtering upon arrival according to the Moslem halal method—cutting the throat without pre-stunning. In the past many animals did not survive the long voyage. To shorten transport distances, it is now required that these shipments disembark exclusively from Western Australian seaports. (As a consequence of loss of life due to extreme high temperatures in the summer of 2002, Australia announced it would ban cattle transport until cooler weather returned.) New Zealand banned all live animal shipments to overseas markets some years ago.

In Japan animal welfare is governed by economic and public health factors. Guidelines for Industrial Livestock Rearing (Cabinet Office of Japan 1987) and Slaughter Methods for Livestock (Cabinet Office of Japan 1995) have been introduced. Due to the emergence of food poisoning from enterotoxins produced by microorganisms in meat, slaughter guidelines were strengthened in 2000, and more stringent requirements for livestock transports and holding pens at slaughterhouses must be followed.

In developing Asia the countries with the largest human population also account for the largest livestock numbers. Livestock is used for food (meat, milk), industrial products (mainly leather), and draft power for agriculture and transport. In rural areas manure from livestock still plays an important role as a fertilizer. In the pig and poultry sector of developing Asia, there is a strong trend toward industrial production.

China is by far the largest producer of pigs in Asia, due to the enormous demand created by more than one billion people. China also accounts for 55 percent of Asian chicken production and 78 percent of duck production.

Large and small ruminants in Asia are kept primarily under traditional rearing on pastureland. Around some large population centers, dairy cows may be kept under semi-industrial conditions, and there are also a few feedlots for cattle fattening.

Cattle prevail in India (46 percent of Asia-Pacific’s total), where they are used only for milk production. India also has the highest buffalo population in Asia, followed by Pakistan and China. Buffaloes in India, Pakistan, Nepal, and Bangladesh are of the riverine type kept predominantly for milk. Buffaloes in Southeast Asia are of the swamp type; they are not suitable for milk production but serve for draft power and are slaughtered for meat at the end of their working lives.

Regrettably, swamp buffalo populations in Southeast Asia have been declining rapidly over the last ten to fifteen years, being replaced by motorized vehicles. It is feared that this development will work against small farmers and deprive many of their livelihood, as buffaloes may be more cost-effective than motorized vehicles, and buffalo manure is the much-needed fertilizer for agriculture.

Small ruminants (sheep and goats) in developing Asia are kept for meat only.

Industrial livestock production of so-called short-cycle animals (pigs and chicken) for meat and eggs is increasing greatly in and around the population centers, as per-capita meat consumption in urban areas is increasing. The impact on livestock production is best illustrated by the example of China. Over the last two decades, the annual per-capita meat consumption in China has gone up from 5 kilograms to more than 30 kilograms. Egg production accounts for comparable increases. Growth rates in most other Asian countries are also high, and one can imagine the challenges faced by industrial livestock producers regarding procurement of feed, environmental problems with animal waste, and proper organizing of livestock marketing and slaughtering.

From the animal welfare point of view, the arguments against industrial livestock production in Asia are the same as those voiced worldwide: sows confined for piglet production in narrow boxes and layer hens confined in small cages. In Asia, where duck eggs are very popular, layer ducks may also be kept this way.

Traditional livestock production systems generally create reasonable conditions for animal well-being. However, there are problem areas. For example, millions of cows in India, who have their role in socio-cultural tradition, are otherwise little used for agricultural production, and are not adequately cared for, fed, and watered. Buffaloes play an important role in India as milk-producing livestock, but there is little interest in young male buffaloes, who are unused for meat production. Consequently, the rural practice is to separate male buffalo calves from their mothers shortly after birth and abandon them to die.

In Asian countries with cold winters, the traditional livestock sector suffers from very different problems. In Mongolia, for example, during the course of two consecutive winters, millions of livestock died of starvation during snowstorms. It is clear that action must be taken to provide better shelters and basic feed reserves for the animals during the winter.

The above are a few examples of livestock suffering on traditional farms. More pronounced and widespread suffering—and not infrequent cruelty—occurs in Asian countries, as elsewhere in the developing world, from the moment when livestock is selected for slaughtering. This stressful and often torturous period lasts from the farm gate to the slaughterhouse. The poorer the infrastructure in the livestock marketing and slaughterhouse sector, the more animal suffering occurs.

The vast majority of Asian livestock is kept in China. China has made enormous progress in the abattoir sector, in particular through provision of large-scale and rather efficient slaughterhouses in the population centers. During the past two decades, transport of livestock by road, rail, and boat also has been improved. The Ministry of Agriculture is the central authority responsible for the supervision and control of abattoirs and pro-
vides recommended best practices for hygiene, transport, and animal welfare. While such guidelines are very helpful, training of meat sector personnel in techniques and humane treatment of animals still is lacking, nor is the subject of animal welfare adequately covered at veterinary and agricultural universities. Nevertheless, all large abattoirs have been equipped with tools, such as captive bolt pistols and electrical tong, for stunning of livestock. In some cases, technically advanced boxes for electrical cattle stunning have been introduced. In China’s vast rural areas, there remains scope for modernization of the meat sector and improvements in humane treatment of livestock.

Indonesia also has a reasonable infrastructure in the slaughterhouse sector. Although Indonesia is a predominantly Moslem country, a rather liberal approach is taken toward pre-stunning of animals; efficient electrical stunning equipment (for cattle) and captive bolt pistols are widely used.

The situation for slaughter animals in the other two large countries in the region, India and Pakistan, is very different. India has a number of slaughterhouses producing buffalo meat for export. These abattoirs must comply with export requirements by using adequate livestock transport by rail or truck, good holding pens, and pre-stunning with captive bolt pistols prior to bleeding. However, for the rest of the slaughter animals, centuries-old conditions prevail, the only difference being that, because of the high demand for meat, all facilities for transport, holding, and slaughter are hopelessly over their capacity. Small animals, such as pigs, and large and small ruminants generally are transported in trucks, most loaded well over capacity. Over shorter distances, these animals may be made to walk. For millions of large ruminants (mostly buffalo) in India, the typical range for the journey to the slaughterhouse can be as far as 300–400 kilometers, during the course of which they lose as much as 5 percent or more of their weight. Some years ago there was a report from India describing how the legs of young buffaloes were broken deliberately by livestock handlers in order to immobilize the animals in waiting pens or transport facilities.

One special aspect of large slaughter animals on the Indian subcontinent is the cross-border transport of cattle and buffalo from India to Pakistan. India has the world’s largest cattle population. The cow is a sacred animal to Hindus and cannot be slaughtered. Due to lack of resources in India, however, the cow cannot be fed adequately either. Up to 50 percent of Pakistan’s large slaughter animals come from India during certain periods of the year. Some of the animals entering Pakistan illegally travel up to 1,000 kilometers further, into Afghanistan, many dying en route as they traverse this desert region without adequate food and water.

Most slaughterhouses in the subcontinent are obsolete. Stunning equipment is not used. Ritual Moslem slaughter in Pakistan does not permit pre-stunning. In other areas, due to overcapacity and poor infrastructure, slaughtering is carried out very inhumanely and in full view of other live animals. Furthermore, as slaughterhouse waste disposal systems also are obsolete, animals often are kept waiting for slaughter amidst mountains of waste—such as intestinal content, manure, and inedible carcass parts—dumped around the slaughterhouses.

In the other countries of the subregion, Bangladesh and Nepal, there is almost no abattoir infrastructure, and animals are slaughtered along roadsides and rivers under the most primitive conditions. In Nepal overcrowded road transports of buffaloes across several mountain passes in one long journey, with the animals hardly able to stand and in many cases lying virtually on top of each other, pose an additional animal welfare problem.

The slaughterhouse sector in Southeast Asian countries (Myanmar, Thailand, Vietnam, Philippines) is better organized. Malaysia, in particular, has a good slaughterhouse infrastructure with efficient sanitary inspection and proper transport and handling of livestock. Pre-stunning is acceptable in this predominantly Moslem country. Thailand and Vietnam have completed new slaughterhouse projects where pre-stunning using proper equipment is carried out. Thailand has a thriving poultry export industry which complies with international standards for animal welfare. In Thailand’s domestic slaughter sector, special government entities have been set up that deal with guidelines for humane treatment of slaughter animals; however, binding laws have not yet been published.

Regarding animal welfare laws and legislation, the Philippines is one of the most advanced countries of the region. An animal welfare act, as well as several codes and regulations, are in place. In each major slaughterhouse, one member of the veterinary staff is responsible for animal welfare issues. The Philippine government’s commitment is evidenced by the fact that the international Manila Conference on Animal Welfare, an initiative of the Department of Agriculture, was to be held in 2003. The conference goal was to produce a Manila Declaration on Animal Welfare, recognizing animal welfare as a common objective for all people and all nations.

Many are of the opinion that standards for animal welfare are perceived differently in Asia than in the West. Consequently, there is fear that it may be difficult to make a major impact in the Asian animal welfare sector. It is true that laws and regulation on animal welfare, which have been established in almost all countries of the region, are not strongly enforced at present by the authorities.

On the other hand, there are encouraging developments—and considerable progress—in a number of Asian countries toward the humane treatment of slaughter animals. It must be acknowledged that much of the progress was triggered by economic factors and considerations for easier animal handling. The desirable side effect, however, is less suffering for the animals.
In Southeast Asia some peculiar methods are used to transport live small animals to market. Chickens and ducks are tied head-down to bicycles, rickshaws, and motorbikes. Fortunately, such methods will disappear automatically with the change of marketing systems, away from the traditional markets, where chicken are slaughtered in front of the customer, toward the newly emerging supermarkets. The increasing popularity of supermarkets will have other indirect positive repercussions for animal welfare. Meat will have to meet certain hygienic standards when a longer shelf life must be guaranteed, thus requiring that supplies come from properly controlled slaughter plants.

Pigs in Southeast Asia are squeezed into baskets and transported on bicycles, etc., to market and slaughter facilities. In the absence of any alternative transport means, this method probably is acceptable, since the pigs are released upon arrival and the transport distances usually are short.

However, another method for individual transport of pigs, practiced in the small to medium slaughterhouse sector in Thailand, inflicts great suffering on the animals. Pigs being moved to slaughterhouses are forced into crates made of steel bars. These crates are so small as to allow almost no movement. Pigs are kept waiting inside the crates, sometimes from morning to night, without water and ventilation. They will be killed, still confined to the crate, by sticking a long knife into their necks. Fortunately, this method of transport and killing, which is very labor-intensive, will disappear gradually with the introduction of industrialized pig slaughtering. It is more economical to transport pigs collectively on trucks and keep the whole group together in a holding pen before slaughtering.

In large-animal slaughtering, efficient immobilization must be coupled with immediate unconsciousness of the animal. Most industrial cattle slaughterhouses in Asia use captive bolt pistols for this purpose; a few even use electrical stunning in specially designed boxes. Both methods are recommended from the technical and animal welfare point of view.

The adequate electric stunning of cattle using electrodes to heart and nose is absolutely painless and of particular interest to Moslem countries. However, the equipment is costly and hence only warranted for larger slaughter operations.

All cattle/buffalo slaughterhouses in Asia outside the Moslem sphere of influence, and even occasionally there, have no objections to using captive bolt pistols, since their use results in the immediate collapse and unconsciousness of the animal, so that slaughtering can start without risk for the slaughter men. However, most medium and small slaughterhouses cannot cover the costs of captive bolt pistols or, more importantly, do not have access to cartridges and spare parts. Instead, they must resort to the inhumane methods of using a sharp-pointed knife to sever the spinal cord or bringing the animal down with a hammer blow.

In camel slaughtering, also daily practice in some parts of Asia, a very inhumane method is the severing of the Achilles' tendons, which leads to the collapse of the animal in full consciousness. The animals may also be immobilized by bending the joints of the fore and hind legs. This forces the animal into a painful position, where he or she may remain for many hours before the Halal throat cut is carried out.

In Moslem ritual slaughtering, cattle and buffaloes are thrown on the ground with a sudden pull, their necks stretched, and the large blood vessels cut with a big, sharp knife. In many Moslem communities, electrical stunning or use of non-penetrative captive bolt stunned is acceptable; others, however, are adamant in refusing any kind of pre-stunning. Time is ripe for Moslem authorities to discuss the issue and to study and evaluate available new technical methods for stunning.

Jhatka is a ritual slaughter method practiced by Sikhs in northern India on sheep and goats only. The head is chopped off the animal with one stroke. In traditional Indian pig slaughtering without pre-stunning, the pig is thrown on his or her back. A short rope is tied round the muzzle to prevent biting and to help press the head of the animal to the ground. A straight, clean cut is made anterior to the sternum, which severs the jugular vein, and with another cut the heart is punctured. In the rest of Asia, where no proper method for pig stunning is available, pigs are knocked down with the blow of a pole, hammer, or axe.

In the course of industrial Asian livestock production and slaughtering, prospects are good that efficient, scientifically developed stunning methods will be employed on a larger scale in Asia. At present the main constraints affecting the widespread introduction of stunning equipment are the cost and the challenge of importing the equipment and spare parts from overseas. Efforts in some Asian countries to manufacture stunning equipment locally and at cheaper prices have not been successful. Currently new approaches are being taken by veterinary authorities in some countries. The assistance of development projects and NGOs is envisaged.

In the Philippines national veterinary authorities, in cooperation with engineering departments, developed a program to manufacture electrical tongs for pigs, captive bolt pistols for bovines, and the ammunition necessary for captive bolt pistols. The FAO, in cooperation with some other donor organizations and HSI, is committed to cooperate in the project.

It would be most beneficial if inexpensive electrical stunning equipment for pigs could be made available. The economic benefits of import versus in-country development of captive bolt pistols need to be analyzed, and, whether the pistols are imported or not, a supply of suitable ammunition for them must be assured. Responsible veterinary authorities in the individual countries should become involved in the distribution of the ammunition to the slaughterhouses.
If such a system could be brought into function, a great step forward toward humane treatment of slaughter animals in Asia would be made.

Humane Slaughter in South Africa

Introduction

South Africa is a vast and diverse country; however, only 12 percent is arable. Lack of water is one of the most severe constraints faced by the farming community. Because of this, crop production is not a viable activity over large parts of the country, and extensive livestock (especially sheep) production is undertaken in the drier areas, particularly in the western and central parts of the country (Table 7).

Species Utilized for Slaughter

Poultry, pigs, cattle, and sheep represent the largest numbers of animals slaughtered for commercial production in abattoirs. The number of goats slaughtered is difficult to determine because in rural areas many are kept and slaughtered for home consumption (Table 8).

Although not bred for this purpose, equines also are slaughtered. Surplus, unwanted, and non-viable equines are purchased and slaughtered for export to Europe, for provision to local niche markets or for feeding to captive predators, such as lions.

There is a variety of farming systems in South Africa, from very traditional and extensive to intensive and modern (Table 9). The diverse cultures influence how many animals are farmed.

The vast majority of poultry are farmed under intensive systems for both egg and meat production. In recent years there has been an increase in the production of free-range products; although this still is a relatively small niche market, consumers are becoming more aware and opting to purchase these products despite their higher cost.

The majority of pigs also are farmed under intensive systems. The tethering of sows is not permitted. Phase-out of existing tethering systems has been nearly completed, with only two producers still using a limited number of tethers.

Although some sheep are fattened in feedlots, the majority are farmed under extensive grazing systems. The vast majority of goats are farmed under extensive grazing systems, many in communal grazing areas.

While high numbers of cattle are fattened in feedlots, a large number also are kept in extensive grazing systems.

Legislation

In 1962 South Africa’s first animal welfare legislation, the Animals Protection Act No. 71, was promulgated. This act covers all animal species and does not exclude any sector of animal utilization (Table 10).

Other acts relating to animals, such as the Livestock Brands Acts 1962 (Act No. 87 of 1962), do not necessarily incorporate welfare requirements. The SPCA (society for the prevention of cruelty to animals) movement enforces specific welfare legislation, with qualified and authorized inspectors trained through a national course to perform these functions. Investigations are undertaken and, where appropriate, offenders are charged and prosecuted. Under certain sections of the Animals Protection Act and regulations pertaining to the act, authorized inspec-

Table 7

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<tbody>
<tr>
<td>Cattle</td>
<td>12.527</td>
<td>11.234</td>
<td>13.2</td>
<td>13.5</td>
<td>13.74</td>
<td>9.68</td>
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<tr>
<td>Pigs</td>
<td>1.492</td>
<td>1.205</td>
<td>1.348</td>
<td>1.539</td>
<td>1.540</td>
<td>3.22</td>
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<tr>
<td>Poultry</td>
<td>0.0187</td>
<td>0.0263</td>
<td>0.0313</td>
<td>0.0883</td>
<td>0.1193</td>
<td>537.97</td>
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<tr>
<td>Sheep and Goats</td>
<td>37.9</td>
<td>33.1</td>
<td>31.6</td>
<td>32.6</td>
<td>28.8</td>
<td>(24.01)</td>
</tr>
<tr>
<td>Goats</td>
<td>5.13</td>
<td>5.36</td>
<td>5.79</td>
<td>6.2</td>
<td>6.55</td>
<td>27.68</td>
</tr>
</tbody>
</table>

Table 8
Number of Animals Slaughtered in South Africa, 2001 (in million heads)

<table>
<thead>
<tr>
<th>Cattle and Buffaloes</th>
<th>Pigs</th>
<th>Poultry</th>
<th>Sheep and Goats</th>
</tr>
</thead>
<tbody>
<tr>
<td>2.79</td>
<td>2</td>
<td>.3689</td>
<td>10.71</td>
</tr>
</tbody>
</table>
tors have the power to arrest, seize relevant evidence, and seize animals in need of immediate care.

**Codes of Practice**

A number of codes of practice exist and, while they are not legally enforceable, they are accepted as the norm as underwritten by the different sectors of the livestock industry. The Animals Protection Act is enforceable in all situations where animals are utilized, kept, or slaughtered. Although specific requirements are set down in the relevant abattoir legislation, charges can be made against perpetrators of cruelty as defined by the Animals Protection Act. Conviction on charges of animal cruelty can result in fines, imprisonment, and confiscation of animals.

The Department of Agriculture has appointed inspectors who monitor the conditions at abattoirs, but the focus is on hygiene, of both the facility and the carcasses. These inspectors also are in a position to ensure that the abattoir regulations are adhered to in terms of facilities, handling, and slaughter methods. Failure to comply with the legislation can result in fines and either temporary or permanent closure of the abattoir (Table 10).

**Slaughter Requirements**

South Africa has a wide range of cultures and beliefs; eleven official language groups represent this diversity. The manner in which animals are slaughtered is as diverse as these groups, and the slaughtering of animals for ritual as well as food purposes is very important to many (Table 11). However, in order to ensure meat

<table>
<thead>
<tr>
<th><strong>Table 9</strong></th>
<th><strong>Commercially Utilized Species/Products in South Africa</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Species</strong></td>
<td><strong>Main Product Farmed for (excluding by-products)</strong></td>
</tr>
<tr>
<td>Cattle</td>
<td>Meat, Milk, Hides and other by-products</td>
</tr>
<tr>
<td>Sheep</td>
<td>Meat, Wool/pelts</td>
</tr>
<tr>
<td>Goats</td>
<td>Meat, Mohair</td>
</tr>
<tr>
<td>Calves</td>
<td>Veal/calf meat</td>
</tr>
<tr>
<td>Poultry</td>
<td>Eggs, Meat</td>
</tr>
<tr>
<td>Ostriches</td>
<td>Feathers, Skin, Meat</td>
</tr>
<tr>
<td>Pigs</td>
<td>Meat</td>
</tr>
<tr>
<td>Rabbits</td>
<td>Meat, Pelt</td>
</tr>
<tr>
<td>Game</td>
<td>Meat, Trophies/tourism</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th><strong>Table 10</strong></th>
<th><strong>South African Legislation Incorporating Animal Welfare</strong></th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Name of Legislation</strong></td>
<td><strong>Purpose of Legislation</strong></td>
</tr>
<tr>
<td>The Animals Protection Act No. 71 of 1962</td>
<td>Protect animals, Define offenses, Define responsibilities of animal owners</td>
</tr>
<tr>
<td>The Meat Safety Act, 2000 (Act No. 40 of 2000) and regulations</td>
<td>Define acceptable practices associated with the slaughtering of animals</td>
</tr>
<tr>
<td>The Performing Animals Protection Act No. 25 of 1935</td>
<td>Protection of animals, Relating to animals used for safe-guarding and entertainment</td>
</tr>
<tr>
<td>Standing Regulations under the Animal Slaughter, Meat, and Animal Products Hygiene Act, 1967 (Act No. 87 of 1967)</td>
<td>To define the manner in which animals are handled, held, and slaughtered, To ensure standards set out are adhered to in the production of animal products</td>
</tr>
<tr>
<td>The Societies for the Prevention of Cruelty to Animals Act, 1993 (Act No. 169 of 1993)</td>
<td>To provide controls over societies for the prevention of cruelty to animals, To define specific standards that must be adhered to</td>
</tr>
</tbody>
</table>
sold to the public conforms to recognized standards, products offered for sale must be derived from animals slaughtered in approved abattoirs and in compliance with specific conditions set down in legislation. Abattoirs operate according to a grading system, with A grade being the highest. The system dictates the number and type of animals that may be slaughtered on a daily basis, and the facilities required. The manner in which animals may be handled, off-loaded, and held-over prior to slaughter are specified in the regulations, which currently are being revised. Pre-stunning of animals (including poultry) in abattoirs is a legal requirement, although exemption from pre-stunning may be granted in cases of animals slaughtered for religious purposes, i.e., kosher and halal.

In order to accommodate the formerly disadvantaged sectors of the community, much smaller grade abattoirs, which slaughter only a few animals per week, have been approved. These small abattoirs are not required to have the same infrastructure as the larger abattoirs. They supply meat directly to their local communities, “warm” off the hook. Cold rooms, etc., are not required; however, pre-stunning is required (Table 12).

Slaughtering of animals outside abattoirs is permitted only for home consumption and not for commercial use or gain. In such cases the abattoir legislation does not apply, but the Animals Protection Act remains enforceable. Illegal slaughter does occur—individuals may set up “bush” abattoirs, where animals are slaughtered and the carcases filtered into the commercial market.

Stock theft is rife in South Africa. In an attempt to curb this, the Livestock Brands Act has been revised to make marking of stock mandatory.

Kosher Slaughter

The pre-stunning of animals is unacceptable for meat to be considered kosher. Through negotiations with the Jewish community, advances have been made concerning the manner in which animals are restrained prior to slaughter and in achieving post-stunning of cattle and calves in twenty seconds.

As much as slaughter without pre-stunning is of concern, the manner in which animals are handled and presented for cutting of the throat is in many cases of equal or greater concern. Shackling and hoisting of live animals is totally unacceptable in South Africa and is a prosecutable offense.

| Table 11: Slaughter Methods Used by Different Cultural Groups and Others in South Africa |
|---------------------------------|---------------------------------|---------------------------------|
| Type                           | Most Commonly Used Species      | Brief Description of Slaughter Methods |
| Kosher (Jews)                  | Cattle, calves, sheep, poultry  | Animals are restrained using specific equipment and have their throats cut without pre-stunning. Post-stunning is undertaken in most instances. Slaughter normally takes place in an abattoir. |
| Halal (Moslems)                | Cattle, sheep, poultry, goats   | Most halal slaughter is undertaken in the same manner as for commercial slaughter, and pre-stunning is undertaken. In some instances no pre-stunning is undertaken and the throats are cut. Slaughter normally takes place in an abattoir, however for certain occasions animals are slaughtered at communal site or at private homes, without pre-stunning. |
| Traditional (African)          | Cattle, goats, sheep            | Animals may sometimes be shot or pre-stunned. In most instances pre-stunning does not occur and cattle are poll stuck, then cast and their throats cut. Sheep and goats are cast and their throats cut. Other methods include stabbing, neck-breaking, etc. Slaughter takes place outside of abattoirs. |
| Home Consumption               | All species                     | Animals, especially large stock, may be shot prior to bleeding. The majority of animals, such as sheep, have their throats cut without pre-stunning. Slaughter takes place outside of abattoirs. |
| Commercial                     | All species                     | Animals are pre-stunned and then bled. Slaughter takes place in a registered and approved abattoir. |
The restraint method currently used for cattle is a rotating stun box, with feet clamps. The cattle are individually moved into a stun box and their feet are clamped together with hydraulically operated metal clamps. The box is then rotated, and the animal, lying on its side and prevented from moving by the restraint of the feet, is suspended by the feet. The head is pulled back with the aid of a “devil’s fork,” a semicircular metal frame which gives the operator leverage to hold the head and neck in an upside down, still position. This allows the shochet (a Jewish slaughterman) free access to the arched throat, providing relative safety for personnel but at great expense to the animal.

Attempts currently are being made to install an upright slaughter box, which will eliminate the need to rotate cattle for the cutting of the throat.

Traditional Slaughter

The slaughtering of animals plays an important role in traditional African culture. It is undertaken at various events, such as marriages, births, deaths, and initiation rites, and for numerous reasons, such as celebration and cleansing rites and communication with ancestors. Methods of traditional slaughter of farm animals vary according to the tribal group undertaking the slaughtering, and the reason for the slaughter. Slaughter generally takes place on private property. In most cases the animals are restrained and cast, and the throat is cut. Restraint and casting of cattle often is attempted by stabbing the animal behind the poll to sever the spinal cord and render the animal immobile. Although still conscious, the animal has limited movement, and the cutting of the throat can be performed in relative safety.

Pre-stunning of animals is recommended and encouraged. In some cases participants have allowed the SPCA to pre-stun the animal by means of a captive bolt pistol. There remains, however, a great deal of resistance to pre-stunning.

In some cases the animal is required to vocalize prior to death to indicate that the ancestors have accepted it. While some animals, particularly goats, will vocalize readily, others are inhumanely treated until they do so.

Traditional festivals and occasions also may dictate the manner in which the animal is treated and killed. This is a very sensitive issue and, unfortunately, intervention by animal welfare in these ceremonies often is perceived (erroneously) as racially motivated and in conflict with constitutional rights of individuals and organizations.

Ostrich Slaughter

In 1993 South Africa was supplying approximately 90 percent of the world demand for ostrich products and the export of fertile eggs or live birds was not permitted. The single-channel marketing of ostrich and ostrich products ceased with deregulation in 1993, and the market consequently opened, although the export of breeding material still was strictly controlled. As a result, and with an increase in the demand for ostrich products, an increase in the number of producers and abattoirs was seen. Eventually breeding stock was permitted to leave the country. Shipments of live birds have been investigated and monitored as far afield as Malaysia and the United Arab Emirates. This created concern in the international welfare community, as attempts were made to establish ostrich farming in various countries where climate, management, and specialist knowledge was not available.

While ostriches are valued for their skins, feathers, and meat, the manner in which some producers were harvesting the feathers was found to be unacceptable. Eventually a code of practice was drawn up with the industry, detailing the requirements for feather harvesting and making it illegal to pluck “green” feathers. Only certain “ripe” feathers may be plucked, and clipping of other feathers is permitted. The process is monitored and controlled.

### Table 12
**Stunning Methods in Abattoirs in South Africa**

<table>
<thead>
<tr>
<th>Species</th>
<th>Stunning Methods</th>
</tr>
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| Large stock—Cattle, horses, donkeys, large boars/sows | Captive bolt pistol  
Use of firearm in some circumstances |
| Small stock—Sheep, goats, pigs | Electrical stunning with the use of stunning tongs applied to the head  
Captive bolt in some circumstances/where there is no electricity |
| Poultry                    | Electrical stunning by positioning the head in a fixed head-stunning unit  
Electrical stunning via current in water bath |
| Rabbits                    | Electrical stunning by positioning the head in a fixed head-stunning unit |
| Ostriches                  | Electrical stunning with the use of stunning tongs  
Electrical stunning by positioning the head in a fixed head-stunning unit |
Ostriches' physiological and behavioral requirements are different from those of other farm animals; consequently the manner in which they are held, handled, and slaughtered is more problematic. Due to the positioning and small size of the brain, stunning with a captive bolt pistol is not reliable; therefore ostriches are electrically stunned.

Ostriches are potentially very dangerous and can inflict life-threatening injuries with their powerful legs. This influences the manner in which they are restrained both before and after slaughter. The head of the bird must be held manually for correct placement of the stunning tongs or placed in a small stunning box and restrained prior to electrical current being switched on. Following stunning the ostrich collapses into a sitting position and the legs and feet thrash wildly. In most abattoirs the stunning area is partitioned with steel sheets to protect workers from the powerful, spontaneous kicking of the unconscious bird. Immediately following stunning, after the bird has dropped, a hinged, heavy metal bar is placed over the legs and secured in position. This is to minimize kicking and allow the workers the opportunity to place the shackle over the legs so that the ostrich can be hoisted and bled. Investigation into improved restraint and stunning methods is ongoing.

**Slaughter of Game**

Game—animals such as impala, springbok, blesbok, kudu, and warthogs—are presented at the abattoir in carcass form for dressing and processing. The stress (and costs) of live capture, the danger in handling, and the inability to restrain the animals humanely for slaughter dictate that these animals be shot on site and field dressed.

Shooting of game for commercial use generally is undertaken as a culling operation. The numbers involved and the fact that the animals are not going to be used for trophy purposes means that shots to the brain are favored. Head shots also limit the damage to the carcass and the resultant loss in edible meat.

Crocodiles are farmed primarily for their valuable skin, which is used in the fashion industry. They are reared communally and, when they reach the desirable size, they are slaughtered. They are presented for slaughter by isolating an individual from the other animals, sometimes placing a sack loosely over the snout to calm the animal. Then the animal is shot in the brain with a firearm, at close range.

**Exportation of Animals**

Due, in part, to the vastness of the country and also for economic reasons, animals are moved great distances to central sale points or abattoirs. Transportation of livestock by rail is no longer permissible, so that ground transport is now undertaken by road. Large numbers of animals (predominantly sheep, goats, and cattle) are imported into South Africa from neighboring Namibia. Often these animals are in transit for up to three or four days, resulting in exhaustion, dehydration, bruising, injuries, and even death.

Domestic, wild, and farm animals routinely have been transported by air to various destinations and for various reasons. International Air Transport Association regulations specify the manner in which these animals can be handled, contained, and moved. Due to the high cost, moving animals by air generally is not undertaken for animals who are to be slaughtered, since they have a lower financial value than those destined for breeding.

In recent years, with the opening of international trade, there has been a marked increase in the exportation of slaughter animals by sea, although this is undertaken on a relatively small scale compared with the numbers of animals exported from such countries as Australia. Task teams have been formed to investigate this issue, and attempts have been made to encourage the government either to legislate against this practice or at the very least to regulate it. At the present time, the only controls exerted by the government are those relating to animal health and conditions imposed by the country of destination. Animal welfare is not a criterion. As a result a code of practice was drawn up by the NSPCA and other members of a subcommittee of the Livestock Welfare Coordinating Committee in 2000 to detail minimum requirements for live export.

**Acknowledgements**

Gunter Heinz expresses his sincere gratitude to Hamid Ahmed (Pakistan); Kohei Amamoto (Japan); Ho Hon Fatt (Singapore); and D. Narasimha Rao (India) for their valuable contributions and advice to the Asia Pacific section of this essay.

**Notes**

1 All data presented on the evolution of meat production have been obtained from FAOSTAT Statistics Database (FAO 2002).

2 Cattle and buffaloes, pigs, poultry, and sheep and goats.

3 Six world regions were defined: Africa, Asia, Europe, Latin America and the Caribbean, North America, and Oceania.

4 Six subregions have been defined: Andean Countries, Brazil, Caribbean, Central America, Mexico, and Oceania.

**Literature Cited**


The State of Wild Animals in the Minds and Households of a Neotropical Society: The Costa Rican Case Study

Carlos Drews

Introduction

Our daily choices and behaviors determine to a large extent the impact of our lives on the environment and on our fellow creatures. The sharing of our living quarters with native wildlife is one dimension of such choices and conduct. Currently, there are two obvious manifestations of living with wildlife: the highly questionable acquisition and keeping of wild animals as pets (for example, parrots) and the colonization of our living quarters by animals (for example, bats). The ways in which each person manages these situations are the result of tradition, education, and the scheme of values that governs one’s beliefs, perceptions, and actions. Opposition to keeping wild animals as pets based on ethical considerations and tolerance of the presence of bats in the attic are manifestations of an amicable, compassionate, and respectful attitude toward wild animals. As a working hypothesis, an analysis of the relationship between how people think about wild animals—whether they keep them and how they care for them in their homes—may serve as a lens through which to better observe the relationship between attitudes and behavior in the field of animal protection.

The study of attitudes in a society provides insight into variables that may be pertinent to people’s everyday decisions and practices involving animals. This essay addresses the relationship between attitudes, knowledge, and behavior in the context of the protection of wild animals in the Neotropics and ventures to draw some conclusions about the state of wild animals from this perspective. The Neotropics, a biogeographical region that extends from the Yucatan peninsula to the southern tip of South America, includes some of the most biodiverse countries of the world. Its nations share a common history of Iberian colonization but are nonetheless comparatively heterogeneous in their cultures and social arrangements. Contrary to the number of sources available with information about social attitudes toward animals in the United States (see Herzog, Rowan, and Kossow 2001), surveys based on extensive samples are scant for the Neotropics.

Nassar-Montoya and Crane (2000) reviewed some of the information about attitudes toward animals in Latin America in a series of essays written by experts expressing their perceptions of such attitudes. An additional source of information for this analysis is the national survey about the relationship between Costa Ricans and wild animals carried out in 1999. The survey includes a formal analysis of attitudes, perceptions, knowledge, and practices involving wildlife, with an emphasis on pet keeping. A professional surveying organization administered personal interviews to 1,024 adults and 177 minors, aged nine to seventeen, from a representative, nationwide sample of 1,024 households (for methodological details see
Drews 2001, 2002a). The instrument for the study of attitudes, a battery of questions subject to factorial analyses, was based on Stephen Kellert’s conceptual and methodological framework (e.g., Kellert and Berry 1980; Kellert 1996). In an attempt to provide a robust picture of the relationship between Costa Rican society and wildlife protection, attitudes toward hunting are included in the analysis. Consequently, the analysis sets Costa Rica as a case study and discusses the possible implications of the findings for the rest of the region. Data for Costa Rica shown below come from that survey, unless otherwise indicated. In 2000 a similar, nation-wide survey was carried out in 1,012 Nicaraguan households. Some preliminary results of that study are also included in this chapter (Zegarra and Drews 2002).

**Animals Involved in Wildlife Trade**

An estimated 30,000 primates, 2–5 million birds, 2–3 million reptiles, and 500–600 million ornamental fishes are traded globally each year to satisfy the demand for live animals for the pet trade, zoos, and laboratories (Nilsson 1977; Hemley 1994). Most of these animals are native to tropical countries and wild caught (that is, taken from wild populations rather than produced in captivity) (e.g., Clapp and Banks 1973; Clapp 1975). These estimates do not include the great proportion of animals who die prior to entering international trade, which, in the case of birds, could result in some 100 million individuals being extracted yearly from the wild (e.g., Inskipp 1975). The Neotropics supplies a great volume of wild animals, both legally and illegally, to North America, Europe, and Asia (e.g., Poten 1991; Cedeño and Drews 2000). Green iguanas (3.4 million animals) from South and Central America, for example, ranked first among the non-native reptile species imported into the United States between 1989 and 1997 (Franke and Teledery 2001).

In Latin America there is a constant, and by-and-large illegal, demand for wildlife, especially for psittacids and other birds to keep as pets (e.g., Bolivia: Martínez 2000; Colombia: Nassar-Montoya 2000; Chile: Muñoz-López and Ortiz-Latorre 2000; Ecuador: Touzet and Yépez 2000; Mexico: Benítez-García and Durán-Fernández 2000; Panama: Rodríguez 2000; Salvador: Ramos and Ricord de Mendoza 2000; Venezuela: De Alió 2000). Such demand has been inferred mainly from the detection of a large volume of illegal trade, confiscations, and donations of unwanted pets to rescue centers and zoos (contributions in Nassar-Montoya and Crane 2000).

End consumers are rarely aware of the animal welfare and species conservation implications of such trade in live animals. Injury and death during capture, transport, and quarantine are common. The number of animals lost in the process greatly exceeds the numbers that reach the end consumers (Redford 1992). The survival of wild populations can be compromised from overexploitation. These same concerns apply to the trade of animals for the pet market within tropical countries, but the lack of data has obscured thus far the magnitude of the phenomenon. Beissinger (1994), for example, pointed out the lack of information on—and the urgent need to quantify the demand for—parrots in Latin America as one of the challenges facing those working for their conservation. Local use, consumption, and trade of wild animals (Carrillo and Vaughan 1994), including felids and parrots for pets, have been recognized as having a stronger impact on wild populations in Central America than international trade (Barborak et al. 1983).

Recently, however, a colossal effort by the Brazilian organization Rede Nacional De Combate Ao Trafico De Animais Silvestres has generated a wealth of information about wildlife trade in the largest Neotropical country (Rede Nacional De Combate Ao Trafico De Animais Silvestres 2001). An estimated 38 million animals in Brazil are taken yearly from the wild for the wildlife trade. Of that number a considerable proportion escape injured, die during capture, or are discarded because of their poor condition, and about 4 million individuals are illegally traded in the country. Birds make up the great majority of these animals, accounting for 82 percent of confiscations between 1999 and 2000. The Internet emerges as a new and powerful medium for a clandestine wildlife market. In 1999 Rede Nacional De Combate Ao Trafico De Animais Silvestres found 4,892 advertisements involving Brazilian fauna in illegal transactions. By virtue of the sheer numbers of animals involved in the chain of extraction, trade, and captivity, this issue stands out as probably the most important determinant of the state of the wild animals in the Neotropics.

**Reasons for Concern**

Pets have been commonly and affectionately kept in Middle America since pre-Columbian times (e.g., Mexico: Benítez-García and Durán-Fernández 2000). Animals at home are part of Costa Rican culture and routine: 71 percent of households keep at least one animal (Drews 2001). Overall 68 percent of Costa Rican adults report keeping a pet (domestic, wild, or both). These values are high by international standards, exceeding the incidence of pets in Germany, Netherlands, the United States, Australia, and Japan (Drews 2001, Kellert 1993a). The proportion of households in Costa Rica keeping dogs (53 percent) is 3.6 higher than the proportion of households keeping cats (15 percent). Cats are much less popular than dogs as companion animals in Costa Rica than they are in the United States or Australia. In Nicaragua the proportion of households keeping dogs and cats, 56 percent and 17 percent respectively, is
similar to Costa Rica.

The proportion of households that keep livestock is higher in Costa Rica than in the United States or Germany. While 6.4 percent of U.S. respondents and 10 percent of German respondents raised livestock in the preceding two years (Kellert 1980; Schulz 1985, respectively), in Costa Rica 25 percent of households kept livestock at the time of the survey. The proportion of households that keep horses in Costa Rica (4.5 percent) and Nicaragua (4.4 percent) is three times higher than the 1.5 percent recorded in the United States (American Veterinary Medical Association 1997).

There are few studies of the incidence of wild animals kept as pets in tropical households. Wild, native species are found in 24 percent of Costa Rican households (Drews 2001). This incidence is similar in Nicaragua (22 percent) (Zegarra and Drews 2002) and higher than the incidence in a sample suburb in Panama (14 percent, Medina and Montero 2001). Although parrots are the majority of the wild animals kept as pets, there are at least 45 animal species commonly kept in Costa Rica, including other birds, reptiles, mammals, amphibians, fishes, and invertebrates. These are typically taken from their natural habitat to satisfy the pet market. The extraction from the wild and the keeping of such animals is by-and-large illegal and often involves endangered species. Over half of the respondents have kept a parrot at some point in their lives. A conservative estimate suggests that about 151,288 parrots are kept currently as pets in Costa Rica (Drews 2001). The preference for parrots as pet birds in Costa Rica and Nicaragua is in line with such preference in other societies. In the United States, for example, parrots correspond to 65 percent of species of pet birds kept (Kellert 1980).

The initiative to obtain a wild animal comes mainly from adults. The presence of minors in the household, however, increases the likelihood that an animal will be kept as a pet. In a quarter of all cases, the idea to acquire a wild animal came from a minor. The widespread belief among Costa Rican (Drews 1999a, 2000a) and Nicaraguan adults that keeping a wild animal fosters love and respect for nature in children probably also helps trigger the purchase.

Conditions in captivity suggest that the welfare of wild animals in people’s households is severely compromised (Drews 2000a). The pet is kept in an enclosure smaller than a large television set in 77 percent of the cases, and without the company of any conspecifics in 75 percent of cases. Diets are by-and-large inadequate, and only 16 percent of keepers of wild animals have ever given veterinary care to their animals. An average survivorship of four years for captive parrots (Drews 2000b), animals with a lifespan of several decades, testifies to the inadequacy of the typical husbandry situation. In spite of this, however, a great majority of pet keepers in Costa Rica and Nicaragua state that their animals fare well. There is an evident need to disseminate information about what determines the well being of an animal.

The majority of wild animal purchases were spontaneous: 82 percent in the case of parrots, 61 percent in the case of turtles, and 63 percent of the fish (Drews 1999a). Eight percent of adults who kept a wild animal at home at some point reported cases of venoms stings or bites that caused bleeding; half of these cases involved minors. This fact, in addition to the burden of work associated with the care of the animal (which typically falls onto a female member of the family), probably led 39 percent of the pet keepers to express reservations about keeping wild animals as pets (Drews 2000a). Some 23 percent asserted that they would rather not keep the animal they already had. Only half of the captive animals were replaced after they died or escaped.

All parrot species, primates, and felids documented as pets in Costa Rica are endangered or vulnerable under IUCN (formerly International Union for the Conservation of Nature, now the World Conservation Union) criteria and/or national legislation (Solís et al. 1999). With the exception of white-faced capuchin monkeys, these species are all listed under the Convention on International Trade in Endangered Species of Wild Fauna And Flora (CITES), indicating global concern about the potential harm to their wild populations from international trade. Local trade of these species to satisfy the illegal pet market poses an additional burden on the viability of their wild populations, in addition to other pressures such as habitat destruction. In Costa Rica the yearly extraction rate of parrots from the wild to satisfy the national demand for pets is in the range of 25,000–40,000 chicks (Drews 2000b). This figure does not take into account mortality during capture and transport, which would at least double the estimate (Pérez and Zúñiga 1998). This Costa Rican figure alone exceeds the volumes exported from Central America for the international pet market (Drews in preparation), just as Beissinger (1994) had anticipated. The yearly, mostly illegal, extraction of parrots in Venezuela for international trade is on the order of some 5,000–75,000 individuals (Boher-Bentti and Smith 1994; Desenne and Strahl 1991, 1994). If the thus far unknown incidence of parrots in Venezuelan households is similar to those in Costa Rican households, it is quite likely that the national demand there also exceeds the volumes exported. These calculations show that the internal pet market is a stronger threat to wild populations and compromises the well being of more individuals, than does international trade. The importance of studying and quantifying pet keeping practices and the associated market in Neotropical countries is evident, therefore, both in the context of species conservation strategies (also Beissinger 1994; Morales and Desenne 1994) and in the context of animal protection considerations associated with the capture, handling, care, and captive fate of these numerous individuals.
Attitudes toward Animals in Costa Rica

A nationwide survey in Costa Rica, based on Stephen Kellert’s conceptual framework for the study of attitudes, revealed in 1999 a society with an “animal friendly profile,” based on five attitude dimensions toward animals (Drews 2002a). Overall Costa Rican adults have a strong sentimental attitude, that is, an expression of feelings of affection, toward animals. In contrast, the materialistic attitude, which regards animals as resources (Kellert’s utilitarian attitude) and praises acts of control over them (Kellert’s dominionistic attitude), is weak. This reflects a prevailing opposition to the act of hunting per se: because of harm inflicted on individual animals rather than because of its potentially detrimental effect on natural populations. There is a strong inquisitive attitude, corresponding to a widespread interest in learning about the biology of animals and their habitats. High scores on the ethical attitude indicate concern for the ethical treatment of animals and nature. The schematic attitude emphasizes the role of aesthetic appearance in the preferences for certain animals and acknowledges feelings of aversion, dislike, or fear of some animals. Scores for this attitude were weakly positive. That said, the attitude profile of Costa Ricans is probably incomplete, given the relatively small battery of questions used in this study.

Kellert (1993a) compared the attitudes toward wildlife in the United States, Germany, and Japan using a standardized methodology. Direct comparisons of attitude score levels between these countries and Costa Rica are not possible due to differences in the composition of question clusters for each attitude and in the scoring method. The relative importance of certain attitudes, however, is amenable to comparisons with Costa Rica. Feelings of affection toward animals scored high among other attitudes in these four countries. The relatively high importance of moralistic traits was similar in the United States (from Kellert 1993a) and in Costa Rica. Germany stands out in the dimension of concern for the ethical treatment of animals, however, by virtue of a score much higher than on any other attitude. In fact, most Europeans are more negative toward the use of animals in research and testing, as well as toward factory farming practices, and are more supportive of organic farming than are Americans (Herzog, Rowan, and Kossow 2001). In contrast, the moralistic attitude garnered one of the lowest attitude scores in Japan. The utilitarian and dominionistic attitude scores were particularly low in relation to other attitudes in Germany and Costa Rica (low materialistic attitude), and relatively high in Japan. The schematic attitude, which includes aesthetic and negativistic elements, was of intermediate importance in Costa Rica. The negativistic attitude was relatively strong in Japan and in the United States, whereas in Germany it scored relatively low.

The profile of Costa Rican attitudes toward animals contrasts greatly with that of another tropical country, Botswana, where the prevailing attitude of the public was utilitarian (Mordi 1991). The next most pronounced attitude in Botswana was the theistic, an attitude introduced by Mordi in his study design, in which the population dynamics of wildlife was believed to be controlled by the supernatural. Other attitudes with high scores in Botswana were the scientific, the neutralistic, and the negativistic. Humanistic feelings toward animals were rare in Botswana, probably because wild animals cannot be friends of the public and meat at the same time (Mordi 1991).

Costa Ricans feel protective toward animals, as reflected in their attitudes and law. They relate to wildlife through strong affection, aesthetic appreciation, ethical concern, and a strong desire to learn. Overall, the general public condemns expressions of mastery over wildlife and the hunting of animals for recreation or even sustainable use (see below). Such a relatively consistent trait is probably the product of the cultural homogeneity of Costa Rican society. In 1924 a series of legal measures were taken to safeguard the well being of animals, including, among several regulations for the husbandry and care of livestock, a ban on bullfighting involving physical injury and death of the bull, cockfighting, dogfighting, cat fighting, and the use of slingshots against birds. A common theme of these protective attitudes and measures is that the suffering and cause of death of the animals involved are visible: bleeding injuries result from fights, bad handling, or the use of a weapon. In contrast, the suffering of caged animals, for example, is subtle and not easily visible to an uninformed person. A cognitively more demanding process is required to appreciate the animal’s suffering, one that combines common sense with additional information. The use of wild animals in circuses and other public performances was banned in Costa Rica in July 2002. The average audience for such performances is not directly confronted with a visible suffering of the animals involved. This ban and a recent series of publicity campaigns against the keeping of wild animals as pets in Costa Rica by government agencies and non-governmental organizations (compiled by Trama and Ramírez 2002) are signs of an increasing awareness of animal protection issues in this society.

Attitudes toward Animals in the Neotropics

Current attitudes toward animals in Latin America are shaped by a multicultural heritage. Attitudes toward wildlife in the Caribbean coast of Costa Rica, for example, can be related to the history of colonization by various ethnic groups, e.g., African,
Caribbean, Hispanic, and their resulting blends in modern culture. Therefore, marine turtles, for example, may have a different significance in different cultures: as deity, merchandise, food, medicine, aphrodisiac, subject of scientific research, protected animal, managed animal, tourist attraction, or art (Vargas-Mena 2000). These categories are not necessarily mutually exclusive for any given person. With the addition of two categories—the animal as subject of superstition and as pet—they inspired an analysis of attitudes toward wildlife in Colombia that illustrated the influence of indigenous and colonizing cultural traits (Nassar-Montoya 2000). Ramos and Ricord de Mendoza (2000) offer a description of current views on wildlife in El Salvador citing these attitudes: utilitarian or consumptive, cruel or contemptuous, dominionistic, compassionate, and naturalistic or scientific. Elements of Kellert's typology can be associated with most of the above-mentioned cultural meanings and views on animals.

In general, a utilitarian attitude, devoid of awareness about the threats to wildlife and the importance of its protection, seems common among Latin Americans (contributions in Nassar-Montoya and Crane 2000). Not just commercial exploitation but also subsistence hunting for food can lead to population declines of various Neotropical wild animals (Bedoya-Gaitán 2000). Ignorance about the finiteness of wildlife as a resource can be high among societies that commonly utilize animals (e.g., Botswana: Mordi 1991). Previous studies in Colombia and El Salvador and on the Caribbean coast of Costa Rica suggested that the utilitarian, materialistic view of wild animals as food and as a source of income is possibly the most prevalent in the region. However, according to the recent national survey, in Costa Rican society, the prevailing attitudes toward animals are the sentimental and inquisitive, whereas utilitarian views on wildlife are not popular (see also public opinion about hunting, below). Direct comparisons of attitudes among Latin American societies are hampered by the different methodologies used to characterize them. Nevertheless, the results of this Costa Rican study suggest that the Neotropical region may be more heterogeneous in its attitudes toward animals than previously thought. The Costa Rican profile is probably not representative of Latin America. For instance, while 59 percent of Costa Rican adults disapprove of keeping wild animals as pets (Figure 1), in Nicaragua only 39 percent of adults share that disapproval.

Although overall participation in hunting was small in Costa Rica, 13 percent of the adults ate meat of a wild animal during that year. This result is surprisingly high given that, with few exceptions, there is no legal access to wild animal meat in public establishments in that country.

Social attitudes and public opinion toward hunting have been studied mostly in developed nations (e.g., the United States: references in Herzog, Rowan, and Kossow 2001; Germany: Schulz 1985; Japan: Kellert 1993a). Although figures from such surveys need to be interpreted and compared with caution, in the light of differences in the phrasing of questions and their impact on the outcome of the study (Herzog, Rowan, and Kossow 2001), there are some recognizable trends. The general public in these nations disapproves of recreational hunting per se, with some allowances for subsistence hunting and meat consumption. This pattern is found in Costa Rica, too.

Neither hunting nor hunters enjoy a generalized acceptance in Costa Rica. The majority (89 percent) of respondents consider recreational hunting an act of cruelty (Table 1). This is a well-established stance in

**Hunting**

The proportion of the population that participates in hunting is smaller in Costa Rica than in the United States. Only 2.4 percent of Costa Rican respondents said to have hunted or captured a wild animal, excluding fish, during the year previous to the survey. Kellert (1993a) reported that 14 percent of Americans, 4 percent of Germans, and 1 percent of Japanese hunted during the two years previous to the corresponding studies. Every fifth Costa Rican adult fished in a river and every tenth adult fished in the sea during the year previous to the study. Although overall participation in hunting was small in Costa Rica, 13 percent of the adults ate meat of a wild animal during that year. This result is surprisingly high given that, with few exceptions, there is no legal access to wild animal meat in public establishments in that country.

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Costa Rican society, with no significant differences related to gender, urban or rural setting, socioeconomic level, or education. The proportion of respondents sharing strongly this opinion increases significantly with age (Figure 2). Two thirds of the adults interviewed do not admire the skill and courage of hunters (Table 1). This Costa Rican stance is similar to that of Japanese and German respondents, who expressed considerable opposition to hunting per se (Kellert 1993a). In the United States, 56 percent of respondents felt that hunting was morally wrong (Princeton Survey Research Associates 1991, cited in Herzog, Rowan, and Kossow 2001). A majority of Americans objected to the activity if it was justified only on the basis of its sporting or trophy values (Kellert 1989, 1993a; Rutberg 1997). In contrast, a majority of Americans supported hunting if the meat was utilized. In Costa Rica there is less disapproval of hunting for deer meat (55 percent) than of hunting for crocodile hides (83 percent). Female respondents disapprove of hunting for the use of venison and hides significantly more strongly than do males. The more likely acceptance of hunting for meat than for hides or for recreational purposes in general mirrors a similar trend in the United States and Japan (Kellert 1993a). The opposition to hunting for venison and hides in Costa Rica is probably a matter of ethical principle, irrespective of species conservation considerations (see phrasing of questions in Table 1).

### Table 1
Adults’ Acceptance of Hunting in Costa Rica

<table>
<thead>
<tr>
<th>Question</th>
<th>Definitely Yes (percent)</th>
<th>In General Yes (percent)</th>
<th>In General No (percent)</th>
<th>Definitely No (percent)</th>
<th>Sample Size</th>
</tr>
</thead>
<tbody>
<tr>
<td>Do you agree with the use of venison as long as deer are not endangered?</td>
<td>18.5</td>
<td>26.2</td>
<td>19.2</td>
<td>36.1</td>
<td>1,006</td>
</tr>
<tr>
<td>Do you admire the skill and courage of a person who hunts successfully in the wild?</td>
<td>11.9</td>
<td>15.3</td>
<td>19.3</td>
<td>53.5</td>
<td>1,017</td>
</tr>
<tr>
<td>If there are enough crocodiles in Costa Rica, do you approve of the hunting of some to sell their hides?</td>
<td>7.4</td>
<td>9.6</td>
<td>21.2</td>
<td>61.8</td>
<td>1,016</td>
</tr>
<tr>
<td>Do you consider any kind of hunting for entertainment or sport an act of cruelty to the animals?</td>
<td>71.3</td>
<td>17.5</td>
<td>4.5</td>
<td>6.8</td>
<td>1,020</td>
</tr>
<tr>
<td>Do you think that the main reason to protect deer is to safeguard the supply of venison?</td>
<td>28.5</td>
<td>24.8</td>
<td>15.5</td>
<td>31.2</td>
<td>1,010</td>
</tr>
</tbody>
</table>

Note: These questions were part of a large battery of items in a nationwide survey carried out in 1999 about the relationship between society and wildlife. They did not appear clustered in the questionnaire. The difference between the total sample of 1,021 adults interviewed and the sample size reported for each question correspond to missing or “I don’t know” answers.
A slight majority of respondents justified protection measures for deer on the grounds of safeguarding the supply of venison, a utilitarian reason (Table 1). Most of the opponents of this utilitarian motive were well-educated, urban adults of high socioeconomic status. A higher education level was associated with a stronger rejection of hunting for venison or hides, less admiration of the skill and courage of hunters, and a stronger disapproval of utilitarian reasons for the protection of wildlife.

The overall disapproval of hunting by the Costa Rican public shown above reduces the viability of projects such as commercial utilization of animals taken from the wild for their meat or hides, the establishment of hunting grounds, and the conceivable promotion of Costa Rica as an international destination for trophy and sport hunters. This country maintains a “green” profile in the eyes of the international community and benefits from this image through the income generated from ecotourism. Currently, therefore, Costa Rica values its live animals more highly than it does carcasses or products thereof. There are no legal exports of wild animals for the international pet market from Costa Rica (Gómez and Drews 2000). In the context of a non-consumptive use policy, the use of native wildlife for pets within the country is contradictory. Taking live parrot chicks from nests may not be generally regarded as hunting and keeping them alive in captivity may not be seen as consumptive.

**Living with Bats**

In the tropics people commonly share their homes with bats, albeit often unknowingly. Modifications of the landscape through logging and through urban and agricultural development have reduced the number of natural roosts for these nocturnal mammals. Several species, however, find adequate shelter in buildings. In Costa Rica at least every tenth adult is aware of the presence of bats in his or her home (Drews 2002b). The incidence of bats in people’s homes is three times higher in rural than in urban areas. At least 87,020 household countrywide share their shelter with bats, a very conservative estimate given that their presence is often unnoticed. A fifth of interviewees knew of bats inhabiting a nearby school and one quarter reported their presence in a nearby church. The species of bats living in buildings feed on insects, nectar of flowers, or fruit. They are harmless and free of diseases that could be transmitted to humans. The vampire bat is not commonly found in people’s quarters. Perceptions of bats worldwide are loaded with prejudices and superstition, which have turned these animals into victims of dislike and unjustified eradication, and Costa Rica is no exception.

Changing attitudes toward bats is a challenging goal. Understanding the nature of the relationship between the society concerned and these animals is a prerequisite for such an endeavor. Costa Rican adults were asked to select one of four choices along a semantic gradient for various attributes. The percentage of answers inclined toward a negative perception of the bats is shown in Figure 3. Most respondents perceive the bats as vermin, dirty, ugly, carriers of disease, and boring. About half consider them dangerous. A fifth of the interviewees attribute supernatural powers to these animals. Female adults have a more negative perception of the bats than do males.

Although in some cases a colony of bats under the roof may cause bad odors and stains on the ceiling, the majority of respondents did not perceive the presence of these animals as problematic (Figure 4). Interviewees who reportedly had bats in their homes, however, considered these a problem in 44 percent of the cases, in contrast to only 28 percent of those who did not notice bats at home. There were no significant differences between these two groups with regard to any of the remaining attributes shown in Figure 3.

Perceptions of bats are closely linked to the level of education (Figure 4). Extremes on the negative side of the attributes studied are found mainly among the less educated. Superstition and fears seem to fade along with increased education. The tolerance of bats at home reflects knowledge about their biology,
responsibility in attending to the needs of other species, and success in challenging the negative myths about bats that still prevail in Costa Rica. This exercise suggests that environmental education efforts are a promising avenue toward a more animal friendly society. It is illustrative of similar processes that govern the perception that the bush is hostile, the urge for biological sterility in urban settings, and the simplistic dichotomy between good and bad organisms. The readiness to share the living space with live members of the national biodiversity without resorting to their control in captivity is a firm step toward a harmonious coexistence with nature.

### Linking Attitudes and Knowledge to Practices

The decision to obtain a wild animal to keep at home is conceivably the product of highly heterogeneous influences, including cultural upbringing and surrounding, attitudes, social condition, education, knowledge of natural history, tradition, gender, and family composition, as well as logistical and legal considerations (Drews 1999b). Aesthetic appeal of the animals, compassion, affection, and a desire to please and stimulate children are important motives for the acquisition of wild animals as pets in Costa Rica. The sentimental attitude was stronger in those who decided to keep a wild animal at home than in those adults who did not initiate the acquisition. Thus, keepers provide wild pets inadequate care despite their strong affection for animals. The result supports the hypothesis that a marked sympathy for and false empathy for the pets perpetuates this practice in Costa Rica (Drews 1999b).

There are further contradictions between attitudes and people’s behavior, showing that the relationship between thought and action is not usually straightforward and can be quite complex. Biophilia, the innately emotional affiliation of human beings to other living organisms (Wilson 1984), can be conceptually linked to values and attitudes toward animals (Kellert 1993b). Biophilia probably contributes to the positive feelings of Costa Ricans toward wild animals, then backfires as it encourages the keeping of wild animals, condemning them to an alien environment and permanent captivity. The contradiction between attitudes and practices is further illustrated by the fact that, despite a stronger affinity with animal protection among households of high socioeconomic status, the percentage of households with wildlife did not differ among the socioeconomic strata (Drews 2000a). At the root of such contradictions may be the invisibility of the animal’s suffering. Rather than changing the attitudes of Costa Ricans toward animals, the challenge is to increase the awareness about the animals’ needs and thereby trigger the ethical concern for their well being.

The underlying assumptions of any such environmental education efforts are that individual attitudes toward wild animals influence people’s behavior, and that attitudes are influenced by culture, and as such are amenable to changes over time. These assumptions, if true, should enable the fostering of respect and compassion through example, guided experiences, and relevant information, conveyed emotionally and intellectually, about the role of the living environment in people’s lives. Values education constitutes a synthesis of cognitive and affective learning, pertinent in this context [c.f. Kellert 1996]). The teaching of values needs to accompany any education effort oriented toward encouraging animal protection and biodiversity conservation.

Understanding the link between attitudes and practices poses an acute challenge to the design of awareness campaigns. Herzog, Rowan, and Kossow (2001) analyzed social attitudes in the United States toward the use of animals in research, the wearing of fur, hunting, farm animal issues, diet choice, and public support of animal protection philosophy. The study illustrates the existence of contradictory results, both
from methodological constraints and flaws and from a “real” lack of correspondence between attitudes and action. For example, in general, public opinion in the United States has become more supportive of animal protection issues in the past fifty years. However, although the majority of Americans have favorable views of the animal rights movement (Roper Center for Public Opinion 1994), their daily behaviors, including meat-eating, are not necessarily compatible with such perception. Positive feelings toward animals do not necessarily lead to kind treatment, respect, and consideration of the animal’s needs (e.g., Herzog, Rowan, and Kossow 2001). The strength of an attitude, and its associated beliefs and emotions, may be decisive to its likelihood of being translated into corresponding behaviors (Herzog, Rowan, and Kossow 2001). Some individuals may have attitudes toward animals that are peripheral or superficial. Such a collection of preferences and isolated opinions has been referred to as “non-attitudes” or “vacuous attitudes” (Eagly and Chaiken 1993). These may have little real salience in a person’s life but can affect responses on opinion polls. The treatment of animals is not an issue of high priority to most people.

Adults who keep wildlife have better biological knowledge than those who never kept wildlife as pets (Drews 2002a). Costa Ricans ranked highest in the percentage of correct answers to five questions about animals, in comparison to U.S. and Japanese citizens (calculated from Kellert 1993a, Figure 5). Such knowledge of natural history per se, however, does not translate into more animal friendly practices, as seen by the widespread keeping of wildlife as pets under conditions of concern. Specific key aspects seem to be dimly represented in biological curricula, such as the social needs of wild animals, their drive for dispersal, exploration, and coverage of wide areas in search of resources and mates, the effects of stress generated by constrained freedom of movement, among others. Previous research suggested that most Costa Ricans have a fairly superficial understanding and awareness of environmental problems (Holl, Daily, and Ehrlich 1995).

A slight majority of Costa Rican adults do not consider acceptable the keeping of wild animals as pets. This tendency, however, is not mirrored among minors aged nine to seventeen (Figure 1). Nature-related values seem to develop later in children than other moral values. Young children typically view nature in highly instrumental, egocentric, and exploitative ways (Kellert 1996). In the course of further development, however, these values change in emphasis toward less utilitarian, relativistic, and dominionistic ones. American children between thirteen and seventeen years of age begin to comprehend relationships among creatures and habitats, as well as people’s ethical responsibilities for exercising stewardship toward the natural world. This is reflected in a sharp increase in moralistic, ecologicist, and naturalistic values of nature (Kellert 1996). Costa Rican children seem to follow this pattern, with regard to their increasing disagreement with people keeping wildlife at home with age (Figure 1). The proportion of respondents who disagree with that practice among nine to eleven year olds, the youngest of the sample, is nearly half that of the adults. This proportion increases steadily with age towards adulthood, reaching 59.5 percent of the Costa Rican adults interviewed (Drews 1999a, 2000a). This suggests a progressively increasing awareness about ethical arguments against the keeping of wildlife at home. Given the central role that children can play in the family initiative to obtain a wild animal, this age group becomes a key target for awareness education—in the hopes of speeding up their acquisition of moralistic values of nature, which may prevent or hinder the acquisition of a wild animal.

The belief that a wild animal kept as a pet stimulates in children love and respect for nature is probably erroneous. Being able to observe a wild animal at close range is a thrilling and stimulating experience. If that animal is in a cage, however, detached from its habitat and natural behavior and deprived of the freedom to come and go as it pleases, the experience is much less rewarding and perpetuates the idea that people can control and subdue nature at will. It is plausible
that outdoor activities—a guided confrontation with the habitat of these species, their ecological role, and their individual needs—stimulates the interest in and reverence for nature more strongly than does the caged animal in the backyard. Such has been the approach taken by the biological education program of the Guanacaste Conservation Area in Costa Rica, which hopes to produce better citizens by increasing their biological literacy (Valverde 2000). 18

**Lessons from and for the Neotropics**

Any progress toward reducing the levels of trade and the incidence of wild animals kept as pets will have a significant and strong positive impact on the state of wild animals in the Neotropics. Progress in such a reduction of numbers seems distant. Nonetheless the information platform about trade, pet keeping habits, and attitudes toward animals has improved considerably in the past five years. Similarly awareness campaigns and more efficient networking between similarly minded organizations in the region are contributing to progress in this direction. The human resources and organizational apparatus dedicated to wildlife protection, both at a government and private level, are growing toward their consolidation. There are indications of an increasing public awareness and concern about wildlife protection in Costa Rica and other countries of the Neotropics: the use of wild animals in circuses has been banned in Costa Rica, the state of Rio de Janeiro (Brazil), and some municipalities of Colombia since 2001.

Confiscated animals from the illegal trade are the tip of an iceberg. Their proper attention in rescue centers is one of the many tasks that a society needs to accommodate in its animal protection agenda. There has been slow progress in the field of wildlife rescue in the Neotropics (Drews 1999e). At the turn of the century, however, various countries have well-established rescue centers, and information about the peculiarities of rescue techniques for Neotropical animals is becoming available.

Academics from the fields of biology, ethology, and veterinary medicine have a key challenge ahead: the production of material that visualizes the suffering of wild, Neotropical animals kept as pets, in relation to their social and ecological needs in the wild. An efficient integration of such material in a society with an affectionate and inquisitive attitude toward animals should trigger ethical concern about the habit of keeping wild animals as pets. A look at perceptions of bats has shown that education is a promising avenue for the improvement of social attitudes toward wild animals. Ultimately, animal-friendly attitudes should translate into animal-friendly actions. The absence of parrots in Neotropical households and the tolerance of bats in the attic will show the success in the endeavor to move toward a more compassionate, biologically literate society, respectful of wild animals.

**Acknowledgements**

I am grateful to Humane Society International (HSUS/HSI, Washington, D.C.) for funding the Costa Rican and Nicaraguan surveys and the preparation of this manuscript. Stephen Kellert provided advice and documents during the early stages of the survey. The Regional Wildlife Management Program of the National University of Costa Rica and personnel from Unimer Research International (San José, Costa Rica) provided logistical support. My sincere thanks to the people of Costa Rica who were interviewed and shared their practices, attitudes, and knowledge about wildlife in a most forthcoming manner.

**Notes**

1 With four million inhabitants and 51,100 km², Costa Rica is a small country.


3 Dogs are kept 1.2 to 1.3 times more often than cats in U.S. households (AVMA 1997 and American Pet Products Manufacturers Association 2000, respectively), and 1.5 times more often than cats in Australian households (www.petnet.com.au/statistics.html, accessed March 17, 2000).

4 Some species of parrot is kept in 91 percent of households that keep wildlife in Nicaragua.

5 Venezuela has a population of about 23 million inhabitants, nearly six times more than Costa Rica. If extraction rates for the national pet market are similar in these countries, Venezuela would need about 150,000–240,000 parrot chicks to satisfy this demand.

6 The humanistic attitude, which is similar to the sentimental dimension identified in Costa Rica, was the most common perspective of animals in a U.S. sample of adult citizens (Kellert 1989).

7 Males represented 80 percent of the 24 people who reportedly hunted the previous year. Among these 24 people, 46 percent reported having hunted more than once in that year.

830 percent of male and 13 percent of female adults fished in a river, 16 percent of male and 4 percent of female adults fished in the sea.

9 The percentage of people participating in hunting has decreased in the United States in the past thirty years (Herzog, Rowan, and Kossow 2001).

10 Spearman’s correlation coefficient r = 1.0, n = 5, p < 0.05.

11 Chi-square = 18.7, df = 3, p < 0.001, chi-square = 14.9, df = 3, p < 0.01, respectively.

12 According to the national census of 2000, there are 937,210 homes in Costa Rica.

13 E.g., rated from dangerous to harmless, with four other options between them. Frequencies of the two options showing an inclination toward a negative perception were pooled to calculate percentages shown in Figure 4. Significant differences between males and females are indicated in Figure 3 by asterisks (chi-square tests, NS = not significant, * = p < 0.05, ** = p < 0.01).

14 Chi-square = 10.7, df = 3, p < 0.02.

15 In Nicaragua the incidence of wildlife kept as pets was significantly higher among middle and high strata households than among households of low socioeconomic level.

16 Respondents were asked in Costa Rica, the United States, and Japan to state for each of the following five statements whether it was true or false: (1) spiders have ten legs, (2) most insects have backbone, (3) a seahorse is a kind of fish, (4) snakes have a layer of slime to move more easily, and (4) all adult birds have feathers.

17 In line with this view, both ethical principles and logistical considerations account, in about equal proportions, for 74 percent of reasons put forward for not having ever had a wild animal at home. A further 5 percent indicated dislike for wild animals, and only 4 percent noted that keeping wild animals as pets is illegal.

18 www.rencostas.org.cr.
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Horse Welfare Since 1950

Introduction

There are approximately 6.9 million horses in the United States, more than in any other country in the world (American Horse Council 2000) (Table 1). That fact alone should inspire Americans to improve equine welfare, although it must be said that the state of domesticated horses is better now than it was fifty years ago.

The advances that have been made in veterinary medicine, including surgical technique and, especially, anesthesia, mean that diagnosis of an intestinal torsion or displacement is no longer an automatic death sentence. Improvements in surgery for lameness and in anti-inflammatory drugs have eliminated such painful practices as blistering or pin-firing a lame horse’s lower limbs, ostensibly to expedite the healing process. Improvements in nutrition and in control of infectious disease have allowed many horses to live into their twenties, thirties, or beyond.

Horse husbandry has improved in one respect: unlike in days past, few horses are kept tied with halter and lead rope in narrow “tie” stalls in dark and dirty stables. But horse husbandry has worsened in another: more horses live in box stalls or isolated in small, grassless corrals than in natural herds on pasture now that fewer horse owners live in rural areas. Box stalls (typically 10–12 feet square) allow the horse to turn around, walk several paces, and lie down in lateral recumbency, but they do not provide a natural social environment that even tie stalls—where horses are stabled closely one to another—provide. Typically a stalled horse seldom has access to a natural, high roughage diet and is fed limited amounts of high-concentrate feed and/or hay that are quickly consumed. Such management leaves a horse in a virtual wooden box with long periods of physical inactivity. This unnatural state leads to the development of stall aggression, stall walking, weaving, wood chewing, or cribbing, or to difficulty in handling. Controlling these “vices” often is done using inhumane methods.

A situation unchanged since the days of Anna Sewell’s Black Beauty (2001), published originally in 1877, is that a horse seldom is kept by one owner for his or her entire adult life. Often a horse changes hands—and careers—a number of times over his or her lifetime. After leaving the breeding farm, an animal may start out as a race horse, then be sold and retrained as a hunter, jumper, event horse, or equitation horse when his or her racing career is over. He or she may then be sold several times when outgrown by one owner, found to be unsuitable for another’s level of experience, or not competitive enough for a third. In mid-life or later, he or she may then be used as a lesson, rental, or camp horse, and finally, when

<table>
<thead>
<tr>
<th>Activity</th>
<th>No. of Horses</th>
<th>No. of Participants</th>
</tr>
</thead>
<tbody>
<tr>
<td>Racing</td>
<td>725,000</td>
<td>941,400</td>
</tr>
<tr>
<td>Showing</td>
<td>1,974,000</td>
<td>3,607,900</td>
</tr>
<tr>
<td>Recreation</td>
<td>2,970,000</td>
<td>4,346,100</td>
</tr>
<tr>
<td>Other*</td>
<td>1,262,000</td>
<td>1,607,900</td>
</tr>
<tr>
<td>Total</td>
<td>6,931,000</td>
<td>7,062,500**</td>
</tr>
</tbody>
</table>

*Includes farm and ranch work, police work, rodeo, and polo.
**The sum of participants by activity does not equal the total number of participants because individuals could be counted in more than one activity.

Source: American Horse Council
infirm, unrideable, or simply too old to be useful, be sold at auction and sent to slaughter. Relatively few horses die of old age, although some fortunate retirees may be euthanized due to age-related ailments.

At the turn of the millennium, the most pressing welfare issues of the domestic horse surround conditions found in slaughter and transport to slaughter; pari-mutuel racing; the pregnant mare urine (PMU) industry; the competitive and show industry; and in the development of husbandry-related stereotypes. (Urban carriage horses are a highly visible problem in some localities, since they usually are part of a local tourist industry, but they often generate concern out of proportion to their relatively small numbers.)

### Slaughter and Transport to Slaughter

Sound, well-behaved, well-trained horses are relatively scarce and can be expensive as a result. There is, however, an oversupply of horses who are lame, suffer from chronic obstructive pulmonary disease or are otherwise infirm, or are unmanageable, unwanted, untrained, or past their useful life.

The fate of most of these “problem” horses is to be slaughtered. Most horses are sold for slaughter for human consumption (primarily outside the United States) rather than for pet food, or are rendered, as they were fifty years ago. They are slaughtered at one of two slaughter plants in the United States, both in Texas. The number of horses being slaughtered is decreasing, as fear of zoonotic diseases and competition from other countries increase (Table 2).

Horses at slaughter are stunned with a captive bolt pistol, then exsanguinated, which should result in a painless death. As with all slaughter procedures, however, much depends upon the competence of the personnel using the equipment provided.

Cruelty can occur if the horse is injured in the handling process, badly frightened, whipped to be persuaded to move, or not properly stunned (Reece, Friend, and Stull 2000). The greater equine suffering occurs not at slaughter but during transport and in the pens used to confine the horses before and after transport. Many slaughter-bound horses begin their journey far from Texas and obviously must be transported long distances as a result. Heat stress is an additional factor in the summer months.

There have been several studies of transport to slaughter under simulated or actual transport conditions. Horses transported for twenty-eight hours in summer can lose 10 percent of their body weight, which results in considerable dehydration (Friend et al. 1998). After transportation for twenty-four hours, 15 percent of the horses (three of twenty) in the Friend et al. study were judged unsuitable for further transport on the basis of weakness or high body temperature. The more crowded the horses, the more likely they are to fall and, once down, to be trampled. In another study horses transported in more crowded (less than 1.3 square meters per horse) conditions had fewer injuries but were more dehydrated and had greater changes in white blood cell counts (Stull 1999). Provision of water in the trailers during rest stops would help the horses compensate for the water they are losing as sweat, but not all horses in the trailers would be willing to move to water since that would involve entering another horse’s personal space (Gibbs and Friend 2000). Double-decker (or possum belly) trucks cause more injuries to horses in the upper levels than do single-deck trucks because the entrances are narrow (Stull and Rodick 2000). The percentage of injured horses was 29 percent for double-decker trailers and 8 percent for single deck trailers. Cortisol, body temperature, and white blood cells were found to be affected by transport. The greatest cause of injury to transported horses, however, was fighting, caused by mixing unfamiliar horses, who normally establish dominance through physical intimidation in corrals prior to loading (Grandin, McGee, and Lanier 1999). The Grandin, McGee and Lanier study found that 8 percent of horses arriving at a slaughter plant exhibited serious welfare problems. In addition 30 percent had visible bite wounds. Examination of the carcases revealed bruises on 25 percent of all the slaughtered horses, more than 50 percent of which were kick or bite wounds. Other problems included foot and limb injuries such as fractures, wounds (including infected wounds), and thinness to the point of emaciation. Owner neglect must have been the major cause of the poor body condition of the latter horses.

The federal Commercial Transport of Equines for Slaughter Act, passed in 1996, stipulates that double-deck-

### Table 2

<table>
<thead>
<tr>
<th>Year</th>
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</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>345,900</td>
</tr>
<tr>
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</tr>
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<td>243,500</td>
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<tr>
<td>1993</td>
<td>169,900</td>
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<td>1994</td>
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<td>1998</td>
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<tr>
<td>1999</td>
<td>62,813</td>
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<tr>
<td>2000</td>
<td>47,134</td>
</tr>
<tr>
<td>2001</td>
<td>56,332</td>
</tr>
</tbody>
</table>

The number has dropped substantially in the past ten years.

Source: U.S. Department of Agriculture
National Agricultural Statistics Service
er trailers can no longer be used to transport equines, the ceilings of equine transport trailers must be six feet (three meters) high, and horses must be rested and watered every twenty-eight hours. In 2002 Representative Connie Morella of Maryland introduced H.R. 3781 in Congress; the bill would ban slaughtering of horses for meat. Such a ban could actually increase equine suffering if horses were transported for slaughter to Mexico, where there are fewer animal care laws, or if horses were allowed to starve to death because they could no longer bring a few hundred dollars from slaughter buyers at auction.

Local health codes and lack of land leave those owners who euthanize old or ill horses at home (probably the most humane ending for a horse) few options for body disposal other than commercial renderers. More retirement homes for elderly horses are needed. Care must be taken that horses at these facilities live in compatible groups and have adequate feed available. All too often good intentions may lead to welfare problems when inadequate funds are available and/or the managers of retirement homes are not experienced in equine management.

Racing

Although Standardbreds, Arabians, Quarter horses, and other breeds are raced in the United States, Thoroughbred racing is the best known. More than 54,000 Thoroughbred races were held in 38 states in 2002 (Jockey Club 2003). Racing raises several important welfare issues, including the rate of injury among horses racing or in training; the use of medication (both legal and illegal); the racing of two-year-old horses; insurance claims on ill or suffering horses; and the fate of the overwhelming majority of racehorses who have no monetary value to the breeding industry. The rate of injury during an actual race is relatively low (3.3 per thousand race starts). The rate of fatal injury is 1.4 per thousand starts (Mundy 2000).

Horses may race only seven to twelve times a year but may typically stay in training almost year-round. One way to reduce the number of musculoskeletal injuries in racehorses is to determine the factors associated with injuries. Length of pre-race conditioning is an example. A humeral fracture was found to be most likely to occur when the horse returns to training after a two-month period out of training. Apparently lack of high-speed workouts can lead to disuse osteoporosis (Carrier et al. 1998). Musculoskeletal injuries of all types were found to be more likely to occur when horses are exercised less (Cohen et al. 2000). Nonfatal injuries were most likely to be sesamoid, metacarpal, or carpal fractures (Estberg et al. 1998). Track design is another important potential cause of injury during racing. Increasing the radius of corners, the degree of banking, and the placement of inclines on straight sections will reduce strain on the outside leg and consequently reduce low-grade injuries.

Training methods that reduce the load the horse carries may also reduce injury. Using a treadmill or a swimming pool allows the horse to exercise without carrying a rider, whose weight increases the load on the horse’s bones (Evans 2002). There are no statistics concerning injuries during training, but because it is estimated that only 50 percent of Thoroughbred foals actually race, the injury rate must be high. The catastrophic injuries, particularly those in televised races, are most likely to be highly publicized. For example Landseer, a Thoroughbred, sustained a fracture during a Breeders Cup race in October 2002 and was euthanized immediately.

Thoroughbreds “off the track,” who are no longer usable or profitable for racing, can usually be sold for riding, either as hunters, three-day eventing prospects, or trail/companion horses. Such animals may excel at the very top of competition. Of the seventy horses identified as starters in the 2002 Rolex Kentucky CCI**** (the highest level of international competition) three-day event, for example, forty-four were identified as Thoroughbreds, including five of the eventual top ten finishers, although not all necessarily ever had raced (Sorge 2002). Nevertheless many Thoroughbreds do eventually end up at slaughter. McGee, Lanier, and Grandin observed 1,473 horses at auction and 1,348 horses at slaughter plants (2001). They found that Thoroughbred or Thoroughbred type horses constituted about 7 percent of all auction horses and 16 percent of all slaughter horses.

Another problem in racing is age-related. Centuries ago the Jockey Club in Britain declared that all Thoroughbreds would be given a birth date of January 1 to avoid having to print updated programs during the racing season reflecting the changing ages of horses born through the late spring and summer. This tradition is also followed in the United States. Because horses typically begin race training and competition as two and three year olds—far before they mature physically—this tradition has led to breeding mares to give birth earlier and earlier in the calendar year so that the foal will be as old as possible when he or she races. The motivation in turn has led to great advances in the study of equine reproduction, aimed at bringing mares into breeding condition months before the natural spring season. Mares can be “tricked” into spring-like seasonal readiness by the use of artificial light in their barns, but such interference with the natural cycle can cause problems. Some mares are very dangerous during the transition from the non-breeding to the breeding season, when they come into heat but do not ovulate and, hence, are exposed to high levels of estrogen for long periods. Stallions, although less seasonal than mares, can have problems: they are more apt to exhibit poor libido or to “savage” (aggressively attack) mares bred in the winter than those bred in the spring.

The horses that suffer the most from this unnatural breeding season, however, are the foals. Foals born in
January or February in the northern half of the United States are subjected to cold barn temperatures, which may slow the development of standing and teat seeking. Horses born in New York are more likely than those in Florida to acquire insufficient maternal antibodies (Leblanc et al. 1992). The primary cause of this failure of passive immunity is probably climatic; the foal is slower to move in the cold. Failure of passive immunity allows the foal to fall victim to infections of the umbilical cord, respiratory tract, etc., because he or she has not yet acquired immunological protection. Inclement weather may keep the mare and foal indoors so that the young horse does not learn to recognize his or her mother in a group and does not get the exercise needed for optimum muscle development. A change in the Thoroughbred industry to “true” birthdays would wreak havoc for a year or two but would be in the best interests of the horse.

Standardbred horses, who raced in harness pulling a lightweight two-wheeled cart called a sulky, are not so easy as Thoroughbreds to retrain for other uses because they trot or pace rather than canter, and their gaits are not comfortable for a rider (although some are bought by those who eschew modern technology, such as the Amish and Mennonites, as driving animals). McGee, Lanier, and Grandin (2001) found that 4 percent of the horses at both auctions and slaughter plants were Standardbreds.

An unpublicized welfare issue involves those horses who are successful at racing and/or breeding and therefore are insured for a large amount of money. Insurance companies may insist that an insured horse who suffers from a permanently painful condition be kept alive to avoid paying the horse’s value. Conversely an unsuccessful horse may be worth more dead than alive; a 1994 federal investigation of a scheme to kill horses for insurance money resulted in 23 indictments of riders, trainers, and owners (Englade 1996; Chronicle of the Horse 1998).

The Pregnant Mare Urine Industry

The use of horses for production of estrogen came to the attention of the public approximately ten years ago. The resulting criticism of the PMU industry and the industry’s response are a good example of humane problem solving.

Equine estrogens were, until recently, almost the only substances available for treatment of the symptoms of menopause and the prevention of osteoporosis in women. Other benefits of this so-called hormone replacement therapy were a reduction in the risks of heart disease and age-related cognitive decline. Pregnant mares produce the most estrogens and produce the most between the third and ninth months of their pregnancies. They are, therefore, the mares used in the PMU industry. They foal and are rebred on pasture during the spring and summer. During the fall and winter, the mares are housed in barns in tie stalls while straddling rubber harnesses suspended from the ceiling that are used to collect urine.

Public criticism of the PMU industry focused on the mares’ restricted access to water, their lack of exercise during the long months of housing, and the fate of the foals born but not utilized by the PMU industry. Producers limited the mares’ access to water for economic reasons. Because the volume of urine collected from each farm was limited and producers were paid on the basis of grams of estrogen produced, it was in their best economic interest to concentrate the urine. They did so by providing small amounts of water periodically from automatic waterers. Water intake was reduced gradually in the fall, to 3–4 1/100 kg body weight, as compared to 5–6 1/100kg of intake when water is freely available. This degree of water restriction increases osmotic pressure of the plasma and produces clinical signs of dehydration and behavioral signs of increased motivation for water, but it is not life threatening (Houpt et al. 2001). In response to the negative publicity in the media, however, and criticism by an expert committee invited to tour the farms, the limit on volume of urine collected per farm was eased in 1999. Automatic waterers still are used and controlled, ostensibly to keep the stalls drier and to prevent the mares from dunking their hay into the water. (Hay dunking and playing with an automatic waterer so that the water spills on the floor are annoying behaviors that are tolerated by non-PMU horse owners, but the problem is exacerabted in PMU horses by the close proximity of the hay and water sources.)

In the PMU industry, mares remain in their stalls for days to months at a time because of the inclement weather in north central America during the winter and because of the labor and dangers to the horses involved in removing the harnesses and releasing the horses outside. The issue of lack of exercise has been addressed experimentally by two groups. When released after confinement for two weeks, the industry median time between opportunities for the horse to exercise, mares showed compensatory increases in locomotion in comparison to mares exercised daily. The behaviors in the stalls of exercised and confined mares were similar (Houpt et al. 2001). Physiologically the confined mares were not stressed (Freeman et al. 1999), but in late pregnancy they tended to be more edematous in the legs and abdomen (Houpt et al. 2001). Stereotypic behaviors did not develop in the mares chronically confined in tie stalls, probably because in both studies the horses were provided with free choice hay, which will most closely simulate the natural grazing pattern. Flammigan and Stookey (2002) observed 110 horses on ten PMU farms and found a prevalence of stereotypic behavior of 5 percent, less than that observed by McGreevey et al. (1995a) in box-stalled Thoroughbreds. Although the mares could not lie in lateral recumbency, they could...
Managing the Performance Horse

Horses kept for performance or competition, as well as many companion horses, generally spend a great deal of time intensively housed and managed. The stabled/stalled horse experiences different pressures from those kept less intensively. Although food, water, veterinary care, grooming, and shelter are provided, such conditions deviate considerably from the behavioral patterns of the wild or free-ranging horse. Stereotypic patterns of behavior, such as weaving; cribbing and its associated behavior; wind-sucking; wood-chewing; head-nodding; and stall-walking, are particularly associated with stabling. These sorts of behaviors have been estimated to affect 10 to 40 percent of stabled horses in the United Kingdom (Nicol 1999) and, in general, more of these behaviors are seen in racing Thoroughbreds. Stereotypic behaviors such as these are considered to be abnormal since they represent qualitative and quantitative differences in behavior when compared with the behavior seen among free-living horses. Stereotypes are rarely observed in free-ranging horses, difficult to explain in functional terms, undesirable to horse owners, and considered to be indicative of welfare problems the horse has had or is currently experiencing (Cooper and Mason 1998). The behaviors generally are considered to be “stable vices,” and are viewed as unsoundness, leading to a reduction in a horse’s desirability and value (Houpt 1982; Luuseher, McKeown, and Dean 1998).

As more research into the causes of these behaviors is completed, it is becoming clear that the traditional views held about these behaviors are incorrect. When viewed by the layperson, cribbing apparently involves the grasping of a surface (usually horizontal) in the teeth (McGreevy and Nicol 1998a) and the swallowing of air. Cribbing surfaces include horizontal edges of feed and water buckets and wood surfaces such as stall boards and fences (e.g., Winskill et al. 1996). Wind-sucking involves the same contraction of neck muscles and apparent engulfing of air, but without grasping, and often is accompanied by an audible “grunt” (Karlander, Mansson, and Tufvesson 1965; Baker and Kear-Colwell 1974; Kusaari 1983). Traditionally horse owners have believed the horses who crib do so because they are bored and/or hungry. The traditional view is that the horse who is hungry will swallow air while cribbing that will fill his or her stomach. However recent work has demonstrated that horses do not gulp in and swallow air while performing this behavior, as previously believed. When the air movements in the respiratory tracts of wind sucking horses were traced, it became apparent that little or no air is swallowed (McGreevy et al. 1995b).

Recent survey studies have investigated the causes and effects of some commonly observed equine stereotypes (e.g., McGreevy, French, and Nicol 1995; McGreevy et al. 1995a; Luuseher et al. 1998; and Redbo et al. 1998). These consistently relate the incidence of stereotypes to a number of management factors, including social isolation and the feeding of concentrates with little access to fiber. Despite the problems inherent in conducting longitudinal studies of the development of stereotypic behavior, the results of work on weaning and on feeding practices following weaning (Nicol 1999) show the importance of feeding fiber and of avoiding high grain diets during early development. Horses have evolved to digest a high fiber diet and to spend up to sixteen hours foraging each day. Intensively managed horses are expected to perform energy-consuming tasks, and they require a controlled diet rich in the nutrients that enable them to do so. Being stabled (stalled) also presents problems in that horses have no control over the timing of their feeding, the type of food, the amount of contact they have with conspecifics or even the amount of
exercise they have. All of these factors lead to problems. The stabled (stalled) horse may be highly motivated to seek social contact or to have access to food, and this can lead to behavioral frustration. Undesirable behavior such as stall-walking and weaving may be the result of the animal attempting to deal with his or her frustration. Providing horses with a high grain diet may ensure that they have enough energy for performance, but a high grain diet has been shown to cause changes in the digestive system (etc.), leading to cribbing (Nicol et al. 2001).

Various studies have been carried out to determine the effectiveness of the current and new methods for dealing with stereotypic behavior. Many stables used for housing racehorses are fitted with weaving bars, or grills, that are supposed to stop (or block) a horse from being able to perform the behavior. Weaving grills (McBride and Cuddeford 2001), anti-cribbing devices (such as collars) (McGrevey and Nicol 1998a), and pharmacological intervention (Dodman et al. 1987) all have been shown to be of little value in permanently stopping the behaviors. Recent studies also have measured the horses’ physiological distress responses, such as heart rate and adreno-cortical activity (Broom and Johnson 1983), to test if there are any underlying effects on horse welfare of treatment for stereotypic behavior (Lebelt, Zanella, and Unshelm 1998; McGrevey and Nicol 1998b; McBride and Cuddeford 2001). Generally these studies have found that preventative measures alone cause more problems for the horses, probably because they treat the symptoms rather than the underlying cause of the behavior. The horses appear to be more stressed when prevented from performing the behavior, indicating a compromise of horse welfare. A number of alternative, less invasive approaches have been studied. These include foraging devices designed to allow the horse to “trickle-feed” and “work” for food (e.g., Winskill et al. 1996; Henderson and Waran 2001); feed additives such as fiber and anti-acids (Johnson et al. 1998; Nicol et al. 2001); increased social contact (Cooper, McDonald, and Mills 2000); and even mirrors in the stable (Mills and Davenport in press; McAfee, Mills, and Cooper 2002). Initial results from such studies are encouraging, and further work is required in this area.

Restriction of normal social behavior and the feeding of a low fiber, high grain diet are the two main factors consistently related to the performance of stereotypic behavior in horses. Horses used for performance purposes should be prevented from developing such undesirable behaviors by ensuring that management and housing are considered from the horse’s perspective. Horses are social grazing animals. They have physical and behavioral needs (see Cooper and McGrevey 2002) that can be met under conditions of domestication through such measures as feeding high fiber diets, allowing social contact, changing early weaning and feeding practices, giving the animals greater control of their environment, removing restrictions on highly motivated behavior, and understanding the degree to which the horses have had to adapt in order to serve human needs.

Performance-enhancing and Conformation-enhancing Techniques

There are three types of horses: those who labor symbiotically with farmers or ranchers to plow, to handle livestock, or to pull loads; those who live as companion animals and who may or may not have to carry a rider for a few hours a week; and performance horses. Performance horses have a very different relationship with their owners from that of pleasure or companion horses. Although the owner of a performance horse may like or even love the horse, his or her main goal is to win in competitions. The competition may be conformation, high jumping, barrel racing, or dressage, but in all cases if the horse does not win, an effort will be made to improve performance. Sometimes these efforts involve more training, but at other times the welfare of the horse can be compromised. This is probably more likely to happen when the person who owns the horse and who expects the horse to win is not the same as the trainer or manager whose livelihood depends on satisfying the goals of the owner.

Hoof and Pastern Manipulation

Allowing the horse’s hooves to grow to a length incompatible with normal gait in order to obtain an exaggerated gait in the show ring, myectomy (cutting the muscles of the tail), and tail setting harnesses on “gaited” horses such as American Saddlebreds are examples of the at least mildly uncomfortable methods used to improve a horse’s performance. If despite these interventions the horse’s performance does not improve, he or she is sold as the first step in the descent to auction and perhaps the slaughterhouse.

More invasive are such practices as “soring,” in which a caustic compound is applied to the pasterns (above the hooves) of Tennessee Walking horses, then chains linked around the pasterns so that resulting wounds will be abraded as the animal moves. The pain encourages the animals to lift their forelegs high and carry their weight back on their hind quarters in an exaggerated gait, or “lick,” an action admired by judges. The Horse Protection Act passed in 1970 prohibits soring, but there is insufficient funding to allow veterinary inspectors to ensure compliance. Lay inspectors are used, but they usually are affiliated with the industry in some way (DeHaven 2000). One suggestion to improve compliance has been to hire veterinarians who are not equine practitioners but who could, after a training course, examine horses at...
shows in their immediate area. This would eliminate the need for—and possible conflict of interest by—lay examiners.

Other issues of horse welfare seem to be purely cosmetic but are rooted in competitive advantage. These are exemplified by the treatment of the tails of show horses.

**Tail Docking**

The original purpose of tail docking, or amputation, may have been to prevent tangling of the tail of a driving horse with the reins, especially if the driver was standing on the ground rather than high above the wagon or carriage. Long tails would interfere with the driver’s ability to control the horse while plowing. Another reason for tail docking is convenience of harnessing, since a docked tail does not have to be threaded through the crupper or breeching. Because very few horses are used for plowing in the United States, the only reason for docking today is cosmetic. It is practiced with Hackneys and draft horses. In addition to the immediate pain of docking, horses with shortened tails suffer because they cannot defend themselves from flies. Docked horses also cannot effectively signal aggressiveness by lashing their tails from side to side, or signal exuberance by raising the tail.

**Other Tail Manipulations**

The tail also is important in showing two different types of performance horses—Arabians and Western pleasure horses (the latter of whom typically are Quarter horses or color-breed horses).

Arabians are judged for their alertness and spirit. An aroused horse, especially a playful one, will carry his or her tail high. Exhibitors may try to mimic that natural high tail carriage by gingering their horses. Gingering involves placing ointment with a high concentration of ginger into the horse’s rectum and anus. The horse raises his or her tail in response to the irritation of the chemical. The process is not only uncomfortable for the horse but also unethical from a competitive standpoint. Although evidence of gingering can be detected by thermograph, the testing technique is too sensitive to use in the field (Turner and Scoggins 1985).

The optimal tail carriage for Western pleasure horses is just the opposite of that of Arabians. The ideal Western pleasure horse is relaxed and submissive to the rider’s riding aids (legs, seat, hands, and voice), a state expressed through a flaccid tail. Such a look has been so well rewarded by judges of Western pleasure classes that to achieve it, if not the reality of voluntary submission, unethical exhibitors have enervated the tail by cutting the nerves or have used local anesthesia to temporarily prevent tail lashing. (The latter is often a sign of resistance to the rider’s aids and thus a disobedience to be penalized.) Evidence of these practices can be detected electromyographically (Coulter and Luttgen 1994). Other practices to induce calmness are working the horse to near-exhaustion before an event or administering a small dose of a tranquilizer such as acepromazine to chemically calm the animal.

**Pleasure Horses**

Pleasure horse owners have the closest bonds with their horses. They are most likely to affect their horses’ welfare negatively through ignorance of basic horsemanship or an inability to support the horses financially.

An ignorant owner may overfeed a horse, let a horse eat poisonous lawn clippings, or overwork a horse who is out of condition—just a few of the myriad mistakes that can have disastrous consequences to a horse’s well-being.

Many young horse owners can barely afford to feed a horse, so that any veterinary care, even preventative, is out of the question. (They may be unaware of the true cost of horse ownership over and above that of the animal’s feed. A joint survey by the American Veterinary Medical Association, American Animal Hospital Association, and Association of American Veterinary Medical Colleges [Brown and Silverman 1999] found that horse owners reported they would pay an average of $1,827 for a 75 percent chance of curing their horse of an ailment and $828 for a 10 percent chance. They further reported that they would pay an average of $165 per month to keep their horse healthy.)

Other horse owners may experience a reversal of fortune or circumstance yet be reluctant to part with a horse due to personal attachment or unwillingness to sell at a loss. The horse’s care may suffer as a result.

**Carriage Horses**

Approximately one thousand to two thousand horses are used to pull carriages in various North American cities (Merriam 2000). The most urgent problem for these horses is heat stress: carriage rides typically are purchased by tourists, and tourists travel during the summer months when temperatures are high. In southern regions, hours of operation should be limited to cooler times of the day and evening. Horses should have access to water every two hours. Walking or, worse yet, trotting on a paved surface, possibly up and down hills, increases the chance of horses developing lameness. Carriage drivers may be ignorant of basic horse health and therefore may not notice lameness, dehydration, signs of colic, or other health or welfare issues. Carriage horses should be examined every few weeks by a veterinarian.

Some horses may suffer from long-term exposure to air pollution, particularly if they are driven in high traffic areas. Use in high traffic areas also can increase the number of horse-automobile collisions. Carriage horses should have their work hours regulated and their living quarters kept clean, well bedded, and ventilated.
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Wild Horses and Burros in the United States

Allen Rutberg

Treatment of wild horses and burros has improved remarkably over the last fifty years. In the mid-twentieth century, free-ranging horses and burros suffered horribly at the hands of “mustangers” who captured them at will and whim, sometimes using the most brutal of techniques, including aerial pursuit and shooting or crippling key herd members. The horses were packed into livestock trucks hurt, bleeding, and exhausted, and shipped to slaughter without stopping for rest or watering (Ryden 1999). Unprotected by law, only the good will of a few ranchers protected these abused animals. Public awareness of the plight of the wild horses began to grow in the late 1950s, in large part because of the efforts of Velma Johnston, better known as “Wild Horse Annie,” a Nevada-born rancher who witnessed, documented, and publicized the cruelties of the mustangers. First shocked to action after following a blood trail from a truck transporting mustangs to slaughter, Johnston roused the American public, and especially schoolchildren, to demand action from Congress (Ryden 1999). Congress first responded with the “Wild Horse Annie” Act of 1959 (PL. 86-234), which banned pursuit of unbranded horses on federal land by aircraft or motor vehicle. Later Congress enacted the Wild Free-Roaming Horse and Burro Act of 1971 (PL. 92-195). One of the great success stories of animal protection, the 1971 act declared it to be federal policy that “wild free-roaming horses and burros shall be protected from capture, branding, harassment or death; and to accomplish this they are to be considered in the area where presently found, as an integral part of the natural system of the public lands” (16 U.S.C. §1331). (The “public lands” are defined as federal land managed by the Bureau of Land Management [BLM] and the U.S. Forest Service, which therefore excludes national parks and national wildlife refuges.) The act charged the BLM with locating, inventorying, and managing these animals. Regrettably, the BLM—which truly is a land management agency—was unprepared and ill-equipped to undertake this charge.

Passage of the act was the clearest possible statement that the American public would not and will not tolerate any kind of cruelty or abuse of wild horses. This message has been reinforced repeatedly in the form of public outrage, widespread media coverage, and a generous influx of reward money that occurs whenever wild horses are reported to have been shot, maimed, or otherwise abused. In December 1998, for example, thirty-three unbranded, free-roaming horses were found dead of gunshot wounds near Reno, Nevada. (Because these horses were shot on state rather than federal lands, they were not protected by the 1971 act.) The international outrage generated by this senseless killing stimulated the formation of an unusual coalition of wild horse advocates, animal welfare groups, ranchers, and prosecutors to lobby for new state legislation making the malicious killing of unbranded livestock a felony. In June 1999, less than seven months after the shooting, Nevada S.B. 396 was signed by the governor after having been passed unanimously by both houses of the legislature (Nevada Legislature, 70th Session Bill Information, http://www.leg.state.nv.us/70th/Reports/). According to the Reno Gazette Journal (Associated Press 2002), the judge presiding over the trial of the three men accused of killing the horses reportedly received tens of thousands of letters from people upset about the case.

What is a Wild Horse?

The dramatic shift in the treatment of wild horses reflects a deeper shift in American public attitudes towards horses and other animals. Most clearly Americans have come to view wildlife more from a moralistic and humanistic perspective and less from a domin-
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Equally valuable, and breeding of animals—regardless of appearance, genetic or behavior—are considered phenotypic attributes. Other wild horse protectionists may take a position based on traditional humane philosophies, in which all wild horses—regardless of appearance, genetics, or behavior—are considered equally valuable, and breeding of adopted horses is discouraged, just as breeding of animals adopted from an animal shelter is discouraged. Under the humane perspective, wild horses are wild, but only up to a point: when necessary managers should intervene by providing feed and water, controlling the population, or carrying out euthanasia of hopelessly sick or injured animals to assure the health and well-being of individual animals and prevent mass starvation. Yet another group of wild horse advocates takes the position that wild horses and burros are and should be treated as truly wild animals who are part of and subject to natural ecological processes. From this perspective flows a non-intervention philosophy and a strong hands-off approach to management, including an acceptance of suffering and death as a result of “natural” processes. When these diverse positions are applied to specific issues, controversy follows.

Can Wild Horses Survive on Public Lands?

The BLM has made a number of improvements in its range management practices over the last five years. It has strengthened the scientific foundation of its horse and burro management by introducing population modeling into its herd management plans and directly monitoring genetic diversity in a number of populations (e.g., Singer and Schoenecker 2000). The BLM also is standardizing its range inventory methods and its processes for making land use decisions, both of which have varied widely from state to state and district to district, and have furnished ample opportunities for abuse (General Accounting Office [GAO] 1990; BLM 1997).

In addition the BLM has been funding research on wild horse contraception since the 1980s. The first trials were disastrous; scores of wild horses died and more suffered terribly, not because of the contraceptive agents under test (steroid hormone implants, some of which were effective), but because some subjects were misfitted with collars, while others were separated from their home ranges and died of dehydration (National Research Council 1991). In 1992 however the BLM began working with The Humane Society of the United States (HSUS) to support field trials using the porcine zona pellucida (PZP) vaccine; this work followed up on the initial successes of trials on Assateague Island National Seashore (ASIS), Maryland, carried out by Kirkpatrick, Turner, and Liu (Kirkpatrick, Liu, and Turner 1990; Kirkpatrick 1995; Turner et al. 1997). A decade of research since then has produced a one-year, one-shot PZP immunocontraceptive vaccine. While work continues to develop a longer-acting vaccine, the BLM also is carrying out extensive field testing and developing the policies and infrastructure necessary to begin widespread field application of the PZP vaccine (Turner et al. 2001, 2002). But public pressure will be required to assure that improved process and improved science lead to healthy herds of wild horses and burros.

After passage of the 1971 act, the BLM located and delineated 304 public lands “herd areas” which were known to support wild horses. Because they were “snapshots” of herd locations, it is unlikely that these herd areas fully encompassed the areas used by the horses and burros. For a variety of reasons—some sensible, some dubious—the BLM chose to manage horses and burros on only 215 of these designated “herd management areas,” or HMAs; from the remainder, horses were removed permanently. As of 1998 the number of HMAs had dropped to 211, with 204 being the target goal for 2005 (BLM 2002, n.d.). Moreover fourteen HMAs did not support any wild horses or burros in 1998 (BLM n.d.). (Part of the reduction was caused by the transfer of land, including several burro HMAs, from the BLM to the National Park Service by the Califor-
nia Desert Protection Act of 1994.) Thus there has been a gradual rate-utilizing down of habitat available to wild horses and burros.

Whether wild horse and burro numbers have increased or declined historically is debatable. According to BLM figures, the number of wild horses reported in the year 2000 (43,629) closely matches the 42,666 wild horses reported in 1974; burro numbers have clearly declined, from 14,374 reported in 1974 to 4,995 reported in the year 2000 (BLM 1996, BLM 2000). However the reliability of BLM numbers has often been questioned. In fiscal year 2001, the BLM began implementing a five-year plan (“The Strategy to Achieve Healthy Rangelands and Viable Herds”) to reduce the number of wild horses and burros on the range to approximately 27,000, on 204 HMAs. This is a cause for concern, not just because of the total reduction in numbers, but also because the reduction would set average herd size at just over 130, which suggests that many HMAs will contain herds that are too small to be genetically and demographically viable in the long term (Singer and Schoenecker 2000). In 1996 there were almost sixty HMAs with target populations at fifty or below (BLM 1996).

Ultimately however what will determine whether wild horses and burros survive is the condition of the range on which they depend. A century and a half of overgrazing public lands by livestock means that horses and burros compete with livestock and wildlife for a very slender resource base (GAO 1988, 1990). Deterioration of the public lands is reflected not only in the impetus to further reduce horse numbers, but also in the decline in BLM-licensed grazing allocations for livestock. In Nevada, for example, where about half of all federally protected wild horses live, BLM grazing allotments for livestock declined from 3.13 million AUMs (animal-unit-months, roughly the amount of forage a cow eats in a month) in 1960 to 2.10 million AUMs at the time the act was passed in 1971, then to a mere 1.7 million AUMs in 2001, a decline of 63 percent over 40 years (BLM 2001 and previous). Horses are not principally to blame for the deterioration of public lands. Over the 270 million acres of federal land grazed by livestock, livestock outnumber horses on the range by approximately a hundred to one, and most public lands do not contain wild horses (GAO 1990). But regardless of where the blame lies, the land is poor, and the margin of subsistence vanishes rapidly when it is stressed further by fire or drought. Year after year the BLM carries out unplanned “emergency gathers” of horses and burros to head off catastrophic mortality due to dehydration or starvation. In many areas horses and cattle alike will need to be removed to allow the land to recover its productivity and resilience.

The Adopt-a-Horse Program

Since the mid-1970s, the BLM has relied principally on the Adopt-a-Horse and Adopt-a-Burro programs to dispose of surplus animals removed from the public lands. Roughly three to five years in a given herd management area, horses or burros are rounded up (often with the use of helicopters) and sent through a system of corrals in the field, after which some are returned to the range and others designated for adoption. Some adoptions occur on site, but most animals enter an “adoption pipeline” in which they may be held in corrals or pastures for varying lengths of time before being sent out to satellite locations for adoption. The horses remain government property for at least one year, after which title may pass to the adopter (16 U.S.C. §1333 (c)). This program, which adopted out 185,326 horses and burros between 1972 and 2001 (BLM 2001), is the BLM’s best showpiece—and a destructive and unshakeable addiction. Scores of favorable articles tell heartwarming stories about adoption successes, humanizing what usually is perceived as an impersonal and uncaring federal colossus. But the good news has often been shadowed by frustration and horror. Throughout its existence the adoption program has been plagued by accounts of failed adoptions (many wild horses require extra patience and training), and of wild horses diverted for exploitation and sale-for-slaughter by duplicitous “adopters.”

Again the BLM has taken great strides in improving the efficiency and humaneness of the adoption program. Roundups have been increasingly professionalized, making them safer for horse and wrangler alike. Tracking of animals within the adoption pipeline has been improved dramatically, with systems in place to identify animals who have been shipped to multiple adoptions without success. Gelding of stallions is strongly encouraged, and horses in increasing numbers receive some training prior to adoption. Through a series of cooperative agreements, the BLM has vastly expanded its ability to monitor adopted horses and provide mentors to new adopters. The BLM has even established cooperative agreements with U.S. slaughterhouses so that the BLM can be notified when horses bearing the distinctive BLM freeze marks are identified on site. Nevertheless the BLM’s adoption pipeline typically adds 5,000–8,000 horses and burros each year to an already overcrowded domestic population. The result is that some horses, wild or otherwise, will be neglected or sold to slaughter.

To a large extent, the adoption program drives the whole wild horse and burro program. In fiscal year 2000 the operations budget for off-the-range management—capturing, housing, caring for, feeding, transporting, and adopting “surplus” horses and burros—was twelve times the size of the budget for monitoring the range and inventorying horses (BLM 1999). Under the 2001–2005 “Strategy” plan, the BLM expanded its capacity so as to hold approximately 20,000 horses and burros in short-term and long-term holding facilities; recent accounts suggest that capacity
has been filled (BLM 2002, Smith 2002). At this writing approximately half of the program budget is being spent maintaining these horses (J. Fend, BLM, personal communication, July 2002).

The adoption habit leaves precious few resources for monitoring or improving the condition of the horses’ rangelands or observing the wild horses themselves—which is, after all, what the whole program is supposed to be about. The adoption program also warps management goals in other ways: it probably is not a coincidence that national wild horse population targets historically have been set at levels that would produce surpluses matching the number that the BLM believes it can adopt out (e.g., BLM 1992).

The survival of wild horses and burros in the western United States requires a commitment from the BLM and the public to restore the condition of the land and to assure wild horses and burros their fair share of that land. The BLM remains plagued by its multiple use mandate, a legal requirement to balance the needs of livestock, recreational users, resource extractors, wildlife, and wild horses and burros. That balance ultimately depends on who weighs in most heavily in the land use planning process. In the past livestock growers have brought the most weight to bear, as they have the advantage of local access to government and also are suffering deeply, along with their animals, from the deterioration of the land. By legal action and public pressure, horse advocates must assure that the land is restored, and that there are enough horses and burros, in enough places, to guarantee their survival in perpetuity.

To ensure the welfare of its adoptees (as well as strengthen its on-the-range management), the BLM must reduce the number of surplus horses and burros coming off the range. If adoption demand determines population levels on the range, then the BLM will always be under pressure to reduce wild horse and burro populations to levels that threaten their long-term survival—unless population and reproduction can be disconnected. At Assateague Island National Seashore, Maryland, the National Park Service (working with The HSUS) has led the way in humane and sensitive management of wild horses. Since 1995 ASIS has been balancing the needs of horses with the needs of their fragile barrier island environment through an innovative horse immunocontraception program (National Park Service 1995). This program has stabilized the resident wild horse population without the need for euthanasia, roundups, adoptions, or direct handling of the animals. A contraception program, designed to minimize effects on social structure, behavior, and genetics, probably is the BLM’s best chance to sustain adequate numbers on the range while reducing the number of animals entering the adoption program. After more than fifteen years of research into horse contraception, the BLM is close to having and using that tool, and it should not falter now.

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