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A “Practical” Ethic for Animals

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KEYWORDS

animals, animal ethics, animal welfare, conservation, ethics, environmental ethics

ABSTRACT

Drawing on the features of “practical philosophy” described by Toulmin (1990), a “practical” ethic for animals would be rooted in knowledge of how people affect animals, and would provide guidance on the diverse ethical concerns that arise. Human activities affect animals in four broad ways: (1) keeping animals, for example, on farms and as companions, (2) causing intentional harm to animals, for example through slaughter and hunting, (3) causing direct but unintended harm to animals, for example by cropping practices and vehicle collisions, and (4) harming animals indirectly by disturbing life-sustaining processes and balances of nature, for example by habitat destruction and climate change. The four types of activities raise different ethical concerns including suffering, injury, deprivation, and death (of individuals), decline of populations, disruption of ecological systems containing animals, and extinction of species. They also vary in features relevant to moral evaluation and decision-making; these include the number of animals affected, the duration of the effects, the likelihood of irreversible effects, and the degree to which the effects can be controlled. In some cases human actions can also provide benefits to animals such as shelter and health care. Four mid-level principles are proposed to make a plausible fit to the features of the four types of human activities and to address the major ethical concerns that arise. The principles are: (1) to provide good lives for the animals in our care, (2) to treat suffering with compassion, (3) to be mindful of unseen harm, and (4) to protect the life-sustaining processes and balances of nature. This “practical” approach arguably makes a better fit to the complex, real-life problems of animal ethics than the single foundational principles that have dominated much recent animal ethics philosophy.

Introduction

There have been many recent attempts to formulate an ethic for animals,¹ mostly by applying one or other foundational principle drawn from existing ethical theory. Well-known examples include the principle of utilitarianism extended by Singer (1990) to animals that experience pleasures and pains, deontological approaches that extend rights to those animals that meet the criteria of rights-holders (Regan 1983), and neo-Aristotelian approaches that call for animals to be treated in ways that respect their “natures” (Rollin 1993) or that allow them to develop their “capabilities” (Nussbaum 2004). Such ideas have given rise to

vigorous discussion about the merits of the various ethical theories, the appropriateness of applying them to animals, and the conflicts that arise when the different principles lead to different conclusions (Sunstein and Nussbaum 2004; Taylor 2009). In fact, as Broglio (2009) has observed, these ideas have become so well known that discussions of animal ethics by the public and the media often adopt, either explicitly or implicitly, an approach based in analytical philosophy.

However, the theory-based approaches sometimes fail to address the ethical concerns of conscientious people facing complex, real-life problems of animal ethics. As one example, much animal ethics philosophy has provided very broad prescriptions that people can implement in their personal-choice decisions, but that provide little guidance that makers of social policy can implement within the scope of decision-making that is open to them. Thus, various philosophers have argued that it is wrong to hunt (Kheel 1996) or to eat meat (Regan 1983; Fox 1999), and based on such conclusions, individuals may make personal-choice decisions about their diet or leisure activities. However, public health veterinarians, conservation agencies, international development workers, and others are often required to formulate policy to address complex moral decisions involving the treatment of animals (Fraser 2011). For instance, some 600 million of the world's poorest people, including many landless people, depend significantly on animals as a source of food and income (Seré 2003). The current increase in demand for animal products in the least developed countries could improve the lives of small-scale animal producers, but the demand occurs mainly in cities and it could lead to more intensive, grain-based production in peri-urban areas, possibly to the detriment of poorer farmers in remote areas; and the health and welfare of the animals is affected differently by small-scale, forage-based production versus large-scale, grain-based production. The situation creates a complex moral problem for policy-makers (Pinstrup-Andersen et al. 1999). Specifically, how should we act when very different options have complex effects on animal welfare, rural poverty, and food availability? Faced with such issues, policy makers are likely to find little practicable guidance from animal ethics philosophy that focuses on such basic questions as whether it is right to eat meat.

Human actions that affect animals in indirect and unintentional ways create another area of misalignment between people's ethical concerns and much animal ethics philosophy. Many biologists have raised concerns about unintended harms to animals caused by cars (Forman and Alexander 1998), windows (Klem 2009), agricultural machinery (Davis 2003), and many other aspects of human life (Sainsbury et al. 1995). However, animal ethics philosophers, working largely from traditional ethical thinking which generally focuses on intentional actions, have tended to disregard harms to animals that are caused unintentionally. When philosophers have commented on such harms, it has sometimes been to downplay their importance. For example, in stressing the importance of intentional harms, Lamey (2007, page 343) proposed, "surely we recognize a distinction between accidentally hitting an animal while driving on the highway" and intentional killing; and Francione (2010, page 72) proposed, "the fact that animals are accidentally or incidentally killed in the cultivation of crops is different morally from intentionally killing individual animals." However, many people do express concern over unintended and indirect harms, and in a survey of the general public, many participants rated such harms as more serious than common forms of intentional harm (Dubois and Fraser 2011).

As a third case, animal ethics philosophers tend to use theories that see sentient individuals as the only focus of concern whereas many people also have concerns about the decline of animal populations, the loss of animal habitat, and the extinction of animal species. For instance, in an effort to protect Kirtland's warbler from extinction, people have killed tens of thousands of brown-headed cowbirds that parasitize the warblers' nests and destroy their eggs (Askins 2000). The cowbirds likely suffer from being captured and killed, whereas the eggs that they destroy presumably do not; and the warbler parents seem content to raise young cowbirds instead of their own offspring. The program would presumably be condemned by

influential theories of animal ethics because it is a violation of the cowbirds' rights; it represents discrimination of the basis of species; and the killing of the cowbirds almost certainly causes more suffering than it prevents. Cases such as these have stimulated environmental ethicists to propose ethical theories that attach value to broader goods such as biodiversity, ecological systems, or the "biotic community" (Callicott 1989), and these theories have clashed famously with theories of animal ethics that focus on individuals (summarized by Taylor 2009). In the cowbird-warbler case, however, the issue is primarily about animals. Specifically, certain animal-oriented people are more concerned about the extinction of a rare species than about killing members of a very abundant one, and they feel that ethical theories that ignore such concerns must be flawed.

As an alternative to the theory-based approach of much animal ethics philosophy, how might we create an ethical system that would make a better fit to the concerns and issues of conscientious people faced with complex, real-life interactions between people and animals? One possible option involves care-based ethics, as advocated by Donovan and Adams (2007), Engster (2006) and others who propose that people should approach animal issues not through ethical theory but by applying virtues such as care and empathy. Another option involves communitarian or relational approaches, developed by Midgley (1983) and others, which recognize ethical obligations as arising from different forms of community that we have with animals. The "pragmatic" approach advocated by Thompson (2004), Kupper and De Cock Buning (2010) and others provides a third. However, a related but less explored option is provided by the work of Toulmin (1990) whose description of "practical philosophy," although by no means intended as a guide to animal ethics, suggests a distinctive approach.

Following Toulmin's description of practical philosophy, a "practical" ethic for animals might have the following features. First, it would be contextual more than theoretical, and hence rooted in a robust understanding of how people actually affect animals. Second, it would be (in Toulmin's words) "timely" rather than "timeless"—that is, designed to deal with current problems, not necessarily to capture eternal truths that would apply to all issues at all times. Third, it would be (again in Toulmin's words) more "oral" than "written"—that is, it would draw its problems from the ethical concerns that people voice in their daily lives, rather than from debates arising in the philosophical literature. Fourth, it would be "reasonable" more than "rational"—that is, it would give guidance that makes a plausible fit to real-life experience more than following logically from one or other foundational principle.

In summary, then, a practical ethic for animals would take account of the concerns that people express about how human actions affect animals; it would be based on a detailed understanding of animals and how human actions affect them; and it would proceed more from the ground up (by induction from observations) than from the top down (by deduction from theory) to provide insights and identify principles that people can apply to the ethical problems they face.

Conceptual Framework

Ethical Concerns that People Express

People express many different ethical concerns about how human activities affect animals. These may be divided as follows.

1. Ethical concern arises over causing animals to suffer.² For example, many jurisdictions have laws against causing "suffering," "unnecessary suffering," or "pain and distress" to animals (e.g., Radford 2001; Rowan and Rosen 2005; Brown et al. 2006), and the ideal of animals having freedom from fear, distress, and pain was adopted by the World Organisation for Animal Health with the support of more than 170 countries (OIE 2011).

2. Ethical concern arises over causing disease, injury, or other impairment to the biological functioning of animals. For example major efforts are made to restore the health of oiled seabirds (IFAW 2011), and to prevent the international spread of animal diseases (OIE 2011). Such efforts are sometimes linked to economic or health benefits to people, but concern also occurs where no obvious human benefit is involved. For example, people express concern over ocean pollution affecting the health of orcas (Olsen 2006), or the spread of animal diseases such as myxomatosis that affect only wild animals (Bartrip 2008). Some concerns over causing impaired health are linked to concerns that animals might suffer as a result, but the impairment of health can raise concerns whether or not suffering is involved. For example people express concern about breeding dogs with congenitally impaired vision (Crook et al. 2004), or causing deafness in mice (Herzog 2010), even if there are no signs that the animals suffer.

3. Ethical concern arises over depriving animals of what they need to live a full or natural life. For example, major concerns arise about farm animals kept in cramped, barren environments where they cannot behave in a natural manner (Rollin 1993), and about primates that are raised in isolation and do not develop normal social relations (Harlow and Harlow 1962). A similar concern also arises if habitat fragmentation prevents wild animals from maintaining their normal manner of living; for example, Paquet and Darimont (2010) speak of wild animals living in “wilderness ghettos” where impoverished habitat commits them to a poor quality of life.

4. Ethical concern arises over causing the death of animals, especially if the death is seen as serving no purpose. Biologists express concern about marine mammals that are killed by fishing gear (Lewison et al. 2004) or birds killed by communication towers (Anderson 2003); and scientists commonly try to reduce the number of animals killed in scientific research (NC3Rs 2008). Concern over killing animals is sometimes linked to the suffering that may be involved, but concern also arises even if the death is quick and painless. For example, many veterinarians consider it wrong to euthanize healthy animals for the owner’s convenience even if the procedure is painless (Rollin 1987), and many farmers question whether it is right to kill healthy animals in disease containment programs (Meijboom et al. 2009) irrespective of how the killing is done.

5. Ethical concern arises over depleting populations of animals. For example, governments and other organizations have taken many actions to protect declining populations of sea turtles (Committee on Sea Turtle Conservation 1990), birds (Askins 2000), and many other animals (Hobbs and Mooney 1998). In part this concern may arise because a decline in populations can contribute to the extinction of species. However, concern over declining populations also occurs for non-endangered species. For instance, concern over the killing of bats by wind turbines (Kunz et al. 2007), and campaigns to reduce the killing of birds by urban lighting (FLAP undated), are not limited to endangered species.

6. Ethical concern arises over disturbing ecological systems that contain animals. People express concern, for example, about the destruction of animal habitat and about climate change altering the arctic ecosystem that supports polar bears (Slocum 2004). Disturbing ecological systems raises additional concerns, for example to preserve the beauty and integrity of nature (Callicott 1989) and to maintain the “ecological services” that natural systems provide (Millennium Ecosystem Assessment 2005). However, concern about animals is often an integral element in people’s desire to protect ecological systems (Caro and O’Doherty 1999).

7. Ethical concern arises over driving species to extinction.³ For example, the Convention on Biological Diversity notes that “the conservation of biological diversity is a common concern of humankind” (SCBD 2010), and conservation advocates often use the risk of species extinctions to motivate people to preserve natural environments (CWS & CWF 2003). Concern over extinction goes beyond concerns over merely causing death. For example, people may kill abundant prey animals such as chickens in order to

feed endangered predators (Cade 1980), or conversely people may kill abundant predators such as raccoons in order to protect endangered animals such as sea turtles (Garmestani and Percival 2005).

The various actions that give rise to ethical concern—causing suffering, causing injury, causing death, and so on—are commonly regarded as types of harm. For each type of harm, there is, at least in principle, a corresponding type of benefit that people could provide for animals such as relieving suffering, treating injuries, and preventing death. To some extent, ethical concerns arise over withholding benefits that could be provided. For example, some veterinarians are concerned about failure to manage pain, and many people consider it their duty to seek assistance for injured wildlife or to arrange veterinary treatment to prevent the death of companion animals.

Levels of Biological Organization

Human actions that harm or otherwise affect animals can be considered as acting at different levels of biological organization—the individual animal, the group (including the family), the population, and the ecological system.⁴ “Species” is not a level of biological organization in the same sense, but for the present purposes species can be usefully treated in a similar way.

Harms at these different levels of biological organization are inter-related to varying degrees.

Actions that cause harm at the individual level—such as slaughtering a pig or trapping a rat—may or may not cause harm at other levels. In groups of mutually dependent animals such as packs of wolves, harming one individual may have important effects on the functioning of the group and on other group members, for example by disrupting the care of young. With solitary animals, or animals living only in simple social relationships, harming one individual may have little effect on others. For example, killing a solitary moose, or killing an animal in a simple aggregation such as a school of fish, may have little effect on other individuals or on the group or population. Harming individuals may or may not have effects at the level of the ecological system. For example, killing a top predator can have significant effects on an ecological system involving many animals (Sergio et al. 2008), whereas killing a prey animal of a locally abundant species may have no such effect.

Actions that cause harm at the level of the group or population—such as culling a pack of wolves or poisoning the rodents in an orchard—inevitably harm individuals and may have important effects at other levels. For example, reductions in prey populations are likely to disrupt ecological systems (Gaston and Fuller 2007); reductions in predator numbers is likely to result in an over-population of prey animals followed by starvation and disease (Young 1994); and the disappearance of local populations is often an important step toward the extinction of species (Hobbs and Mooney 1998).

Actions that harm ecological systems—such as clear-cutting a forest or polluting a lake—are likely to cause harm at all “lower” levels of biological organization. For example, destruction of a forest by clear-cutting is likely to harm many individuals (Blumstein 2010) and destroy whole populations of certain species (Moses and Boutin 2001); nutrient loading of coastal waters can lead to death (by suffocation) of many fish and the depletion of populations (Diaz and Rosenberg 2008).

The extinction of species also seems likely to have effects at various levels of biological organization. Broad harms can result especially from the extinction of a common prey species, a top predator, or a “keystone” species that performs some ecologically important function such as the transmission of seeds. Such cases are likely to cause disruption of ecological systems and result in harms to individuals, groups and populations.

When actions have effects at more than one level, they are likely to raise ethical concerns of more than one type. For example, if harms to populations or ecological systems also involve harms to individuals, they may raise additional concerns such as suffering and death.

Like harms, the benefits that people provide for animals can occur at different levels of biological organization, but in practice most benefits appear to occur at the level of the individual or group. For example, a family dog or a herd of cattle may benefit from vaccination, or a fatally injured wild animal may benefit from being killed painlessly. Benefits are occasionally directed at the level of the population or ecological system, for example when people try to maintain a population of starving deer by providing hay in the winter. However, because of the complexity of natural systems, attempts to provide benefits at the level of populations or ecological systems may cause unintended harms. For example, artificial feeding may lead to over-population, destruction of habitat, and more severe harm in the future.

In summary, actions can cause harm at different levels of biological organization; harms to individuals may or may not cause harm to other individuals and at other levels of organization; harms at the “higher” levels are likely to have effects at other levels and hence raise additional concerns; and benefits generally occur at the level of the individual or group.

Morally Relevant Features of Activities that Harm or Benefit Animals

Activities that harm or benefit animals have certain features that differ from case to case and can be used in moral evaluation and decision-making following the kind of common-sense logic proposed by Bentham (1789, Chap. IV).

One obvious feature is simply the number of animals affected. For some activities, such as chicken production, the number of animals affected is relatively well known, as noted below. For actions such as the introduction of a novel disease, a single event may continue to have effects long into the future, and the number that are likely to be affected may be very difficult to estimate.

A second feature is the duration of the effect within the lifespan of the individuals involved. A snap-trap that kills rodents quickly harms animals for only a small fraction of their lives, whereas some anti-coagulant poisons may cause impaired health and suffering for hours or days (Sainsbury et al. 1995; Mason and Littin 2003). If animals are raised in unhealthy or distressing circumstances, or live in disturbed ecological systems, they may be in a state of distress or deprivation for most or all of their lives. For purposes of moral evaluation and decision-making, it would seem uncontroversial that, other things being equal, activities are of greater concern inasmuch as they affect animals for a greater portion of their lifespan.

A third feature is the degree to which a given harm has long-lasting or irreversible effects. Certain harms to ecological systems, such as the introduction of a foreign species or the extirpation of ecologically important predators, are often very difficult or impossible to reverse. For example, the introduction of opossums into New Zealand has led to widespread harm to native animals, to ecological systems, and to generations of opossums themselves through control measures (Morris and Weaver 2003), and these effects seem likely to continue indefinitely. In contrast, some harms to individuals, such as shooting individual animals of an abundant species within a robust ecological system, may have no lasting or irreversible impact beyond the effect on the individual. In light of this distinction, activities raise additional concern inasmuch as they cause long-lasting or irreversible effects. For example, killing the last bears of an endangered species would be of greater concern than killing a similar number of an abundant species because the former action is irreversible in a way that the second is not.

A fourth feature is the potential for people to control or mitigate the harms (or provide benefits) to animals. In general, actions that affect animals directly and immediately tend to allow a high degree of control, whereas actions that affect animals indirectly and in the future allow less or no control. For example, when shooting an animal (a direct, immediate harm) a hunter can try to minimize suffering by ensuring a clear shot with appropriate equipment; but when animals are harmed by the destruction of habitat or the introduction of a new pathogen, there may be little or no scope to control the eventual effects on animals. Harms that act at the level of the individual (hunting, slaughtering) are often direct and immediate, whereas harms to populations or ecological systems often affect animals indirectly and in the future, and their eventual effects on animals tend, therefore, to be difficult or impossible to control. For purposes of moral decision-making, activities are of particular concern if they allow little or no scope to control or mitigate the eventual effects on animals; in such cases the only option to prevent harm to animals may be to prevent the original activity from occurring.

How People Affect Animals

Animals are affected by many if not most human activities but in different ways and to different degrees. One way of grouping the activities focuses on four broad types of human interaction with animals as described by Fraser and MacRae (2011). The following summary (abbreviated from Fraser and MacRae 2011) gives numerical data to indicate the relative magnitude of the effects on animals, together with examples in more detail to illustrate the less familiar types of effects.

Keeping Animals

Much of the direct contact between people and animals involves the keeping of animals for purposes such as food production, companionship, labor, and entertainment. Numerically the most significant examples are the roughly 23 billion terrestrial vertebrates that are raised for food at any given time, the large majority being chickens (FAO 2011a), and the 10-100 billion fish raised in aquaculture (Mood 2010). Dogs and cats may number roughly 1 billion at any given time, many being strays (WSPA 2009). The number of working animals, especially equines and bovines, was estimated at 0.4 billion in the 1990s (Ramaswamy 1994). Other examples of animal-keeping include the 0.1 billion animals, mostly rodents and fish, that are raised per year for scientific purposes (Taylor et al. 2008), and a roughly similar or smaller number that are kept for entertainment in zoos, aquaria, and other facilities (Fraser and MacRae 2011).

The animals kept by people live under an extremely wide range of conditions. Among food-producing animals, for example, some live permanently on pastureland; others are kept in buildings and fed on grain-based diets; others survive on arid scrubland. The care they receive from people is also variable: some are kept by small-scale herders who know their animals individually but may lack access to vaccines and other amenities; others live under impersonal, quasi-industrial systems with little individual attention; others are left to find food in villages and garbage dumps. Such differences, and the very large numbers involved, create great scope for both harms and benefits to animals.

Causing Intentional Harm to Animals

People cause many kinds of intentional harm to animals, for example in slaughtering animals for food and in hunting, fishing, pest control, and some scientific research and testing. The capture and killing of wild fish is estimated in the order of 1,000 billion annually (Mood 2010). Slaughter of animals for food involves some 53 billion chickens killed each year, 1.3 billion pigs, 1 billion sheep and goats, 1.2 billion rabbits and 0.3 billion cattle (FAO 2011b), plus one or more tens of billions of finfish slaughtered annually through aquaculture (Mood 2010). Hunting and trapping may claim 1–2 billion terrestrial animals per year, and

deaths caused by pest control may involve similar numbers (Fraser and MacRae 2011). As noted above, scientific research involves roughly 0.1 billion animals per year (Taylor et al. 2008).

Intentional harms are extremely variable in their effects on animals. Using fish as an example, those caught by deep-sea trawlers are dragged from the ocean floor in nets where the weight of other fish may cause death by injury and suffocation; others are killed in processing plants that use percussive stunning to render the fish unconscious before they are killed; others are impaled live on hooks as bait to catch other fish (Mood 2010). Here too, such differences, and the large numbers involved, create great scope for harms to animals.

Affecting Animals in Direct but Unintended Ways

Many kinds of human activity affect animals directly but in ways that are not intended and often not even recognized. These have received so little attention that they are difficult to quantify.

Many agricultural practices have major effects on animals. Small mammals are injured by tillage and harvesting operations, die in burrows when the soil is compacted by farm equipment, suffocate when stubble is burned, and die from predation when their burrows or covering vegetation are destroyed (Nass et al. 1971; Tew and Macdonald 1993). Ground-nesting birds are commonly destroyed by operations such as mowing, especially if unfledged birds are still in the nest at the time (Nocera et al. 2005). In a study of common voles in farm fields, Jacob (2003) found that nearly half the animals disappeared after the harvesting of beans, and virtually all disappeared when fields were plowed, presumably (in Jacob's view) because of death rather than emigration. Given that there are 1.4 billion hectares of arable land in the world (FAO 2009b), and that densities of vertebrate animals can be in the tens or hundreds per hectare (Fraser and MacRae 2011), yearly deaths caused by plowing and other crop production practices will certainly number in the billions of mammals, and likely in the tens of billions.⁵

Roads and vehicles also have major effects on animals. A scientific review in the 1990s concluded that roads and vehicles killed roughly a million vertebrates per day in the United States, and had replaced hunting as "the leading direct human cause" of death of wild vertebrates on land (Forman and Alexander 1998), quite apart from the (likely even greater) effects that roads exert through the fragmentation of animal habitat.

Windows represent an important danger to birds. Klem (2009) concluded that windows and other reflective and transparent surfaces are second only to habitat destruction as a threat to wild birds, with billions of birds killed or injured annually worldwide.

Communication towers and other lit structures kill many birds, especially by disorienting them during night-time migration such that the birds fly near the structure and collide with it. In studies over several decades, single television towers have commonly been found to kill 2,000 to 3,000 birds per year (Banks 1979; Kemper 1996; Crawford and Engstrom 2001), and the burgeoning use of mobile telephones and high-definition television is leading to several thousand new towers being added per year in North America alone (Crawford and Engstrom 2001; Anderson 2003).

Deliberate and accidental release of oil into the environment causes significant harm to wild animals. Large, individual oil spills can kill hundreds of thousands of animals (e.g., Ford et al. 1996), but the damage from smaller and largely unreported releases of oil is probably more significant. For example, the routine discharge of machinery waste oil from ships is thought to kill over 300,000 birds each year off the coast of Newfoundland alone (Wiese and Robertson 2004).

The use of chemicals can cause unintended harm to animals. Populations of raptors and fish-eating birds declined severely in many areas during the 1900s because of organochlorine pesticides (Hickey and Anderson 1968; Elliott et al. 2005). The use of mercury-based fungicides on seed grain has led to widespread poisoning of seed-eating birds, small mammals, and their predators (Clarkson 1992). Even seemingly innocuous chemicals can harm animals. In India, for example, the veterinary anti-inflammatory drug diclofenac remained in the bodies of dead farm animals and proved so toxic to vultures that it killed most of the vultures in the Indian sub-continent (Oaks et al. 2004).

The above examples use data on deaths as a rough indication of the scale of harm, but many other types of harm (suffering, ill health, population decline) are undoubtedly involved, and the number of deaths likely represents only a fraction of the total number harmed.

Affecting Animals Indirectly by Disturbing Life-Sustaining Processes and Balances of Nature

In addition to the effects described above, some human activities affect animals indirectly by disturbing life-sustaining processes and balances of nature.⁶

Altering the chemistry of aquatic systems can have devastating effects on animals. Agricultural fertilizers and livestock waste, carried by rivers into the sea, can create hypoxic “dead zones” in coastal areas; these have affected nearly 25 million hectares of coastal waters and result in “mass mortality” of fish and other animals (Diaz and Rosenberg 2008). The discharge of sulfur and nitrogen oxides into the air has increased the acidity of water and killed fish and other animals in an estimated 14,000 lakes in Canada alone (Nixon and Curran 1998).

The introduction of foreign animals into new environments can lead to incalculable effects on animals. Animals of introduced species, such as rabbits in Australia and rats in many countries, may become pests and be killed by the billions. The harm caused to native animals is so great that many species have been driven to extinction by the introduction of non-native animals (Hobbs and Mooney 1998).

Spreading disease organisms can cause enduring harm to animals (e.g., Daszak et al. 2000, 2001). In earlier times rinderpest, carried by Asian armies, caused the death of hundreds of millions of ruminants in Europe and Africa (Blancou 2003). More recent examples include the spread of myxomatosis through rabbits in Europe (Fenner 1959) and the transmission of monkeypox from African rodents to prairie dogs and people in North America through the importation of animals in the exotic pet trade (CDC 2003).

The continued destruction of wildlife habitat affects a vast number of animals. Clearing of forests claims an estimated 13 million hectares per year (FAO 2010), mostly to replace the 10 million hectares of agricultural land lost each year because of poor farming practices (Pimentel et al. 1995). Habitat loss is likely to increase in the future because of anthropogenic climate change that is likely to destroy habitat through rising sea levels and droughts (IPCC 2007).

The harms caused to animals by disturbing life-sustaining processes and balances of nature are almost impossible to quantify, but data on species extinctions and biodiversity provide some indication of the relative seriousness of the effects. For example, of the 76 extinct species of birds considered by Mackenzie (1977), 13 had succumbed to intentional harm (hunting), whereas 63 species disappeared because of disturbance to natural systems, specifically 14 because of habitat destruction and 49 because of the introduction of non-native animals. The Millennium Ecosystem Assessment (2005) identified five major threats to biodiversity; one of these (overharvesting) consists of deliberate harm, whereas four (habitat change, climate change, pollution, and invasive species) involve harming animals indirectly by disturbing natural processes and balances. To predict the effects of climate change, Thomas et al. (2004) applied climate-change models to a wide range of animal species and regions of the world; they predicted

that by 2050, 15 to 37% of species in their sample would be “committed to extinction” as a result of climate change induced by human actions. If the prediction is accurate, climate change would dwarf all other human activities as a cause of extinction. Although the above examples have used extinction and biodiversity to indicate the relative seriousness of disturbing life-sustaining processes and balances of nature, other harms (suffering of individuals, damage to ecological systems) are almost certain to be involved on a very large scale.

To summarize this section of the paper, all four of the ways that people affect animals—keeping animals, deliberate harm, direct but unintended effects, and indirect effects—affect vast numbers of animals. Where it is possible to estimate numbers, we see that vertebrate animals are affected in the tenths of billions each year by the use of animals for labor, science, and entertainment and likely by communication towers; in the billions by mammalian food production, vehicle collisions, hunting, pest control, and windows; in the tens of billions by chicken production, aquaculture, and possibly crop production practices; and perhaps a thousand billion are involved in capture fisheries. Where harms are caused indirectly by disturbing the life-sustaining processes and balances of nature—for instance by introducing foreign species, spreading pathogens, or altering climate—the number of animals affected is impossible to know, but the number of species extinctions, compared with the number caused by other types of human activity, suggest that disturbing natural processes and balances has the most profound effects of all.

Four Mid-Level Principles

In applying the conceptual framework, we see that the four types of human activities differ in a wide range of ways: in the levels of biological organization at which they act, in the types of harm or benefit that they involve (and hence the ethical concerns that they raise), in the duration of the effects within the lifespan of the animals, in the likelihood of long-lasting or irreversible effects, and in the opportunities they create to intervene by controlling harms or providing benefits to animals, as summarized in Table 1.

Given that the effects of human actions on animals are so diverse, it is not surprising (as noted in the Introduction) that no one foundational principle appears to provide plausible guidance that can be applied in all cases—to social-policy decisions as well as personal-choice decisions, to unintended harms as well as intended harms, and to concerns at the “higher” levels of organization as well as individuals. An alternative approach, however, is to identify “mid-level” ethical principles. These have been described by Espinoza and Peterson (2010) as expressing key values that need to be taken into account in particular situations, that are compatible with different moral theories, and that may be adopted without taking a stand in favor of any one foundational theory. Such mid-level principles are most familiar in the four principles of biomedical ethics—beneficence, non-maleficence, justice, and autonomy—championed by Beauchamp and Childress (2009). In this section I suggest four mid-level principles that, I believe, make a reasonable fit with the features of the different types of activities and address the main ethical concerns that arise.

Principle 1. To Provide Good Lives for the Animals in our Care

The keeping of animals, considered collectively and on a global scale, can cause indirect harm to wild populations and ecological systems. For example, domestic cats have significant effects on populations of wild birds (Coleman et al. 1997); waste from farm animals contributes to water pollution (Diaz and Rosenberg 2008); and domestic ruminants are an important source of climate-altering gases (Steinfeld et al. 2006). These harms, which occur mainly to ‘non-target’ animals, need to be addressed in efforts to protect the processes and balances of nature as discussed below.

Table 1 Four types of activities that affect animals together with examples, the types of harm (or benefit) involved, the levels of biological organization at which they act, the duration of effects within the lives of affected animals, whether long-lasting or irreversible effects are likely, and opportunities for intervention by providing benefits or controlling harms

Types of activities that affect animals	Examples	Levels of biological organization	Types of harm (or benefit)^a	Duration (within the animal's life)	Long-lasting or irreversible effects?	Opportunities for intervention
Keeping animals	Keeping companion animals, raising animals on farms and in zoos	Individuals, groups	1, 2, 3, and corresponding benefits; maybe others	Often entire life		Can control harm and provide benefits
Intentional harm	Hunting, slaughter, pest control, invasive research	Individuals, groups; maybe populations, ecological systems and species	Usually 2 or 4; often 1; maybe others	Often a small fraction of life	Sometimes causes extinction of species	Can often control or prevent associated suffering
Direct but unintended harm	Cropping practices, window strikes, vehicle collisions, unintended poisoning	Individuals, groups; maybe populations, ecological systems and species	1, 2, 4; maybe others	Often a small fraction of life		Can sometimes control or prevent harm
Indirect harms used by disturbing life-sustaining processes and balances of nature	Destroying habitat, introducing species and pathogens, pollution, climate change	Individuals, groups, populations, ecological systems; maybe species	All	Often entire life	May cause extinction and irreversible effects to ecological systems	Little opportunity to control or prevent eventual harm to animals

^a Harms are: 1 suffering, 2 disease, injury or other impairment of biological function, 3 depriving animals of what they need to live a full or natural life, 4 death, 5 depletion of animal populations, 6 disturbance of ecological systems, and 7 extinction of species

However, the direct effects of animal-keeping occur at the level of individuals or groups. Harms, where they occur, mostly involve the “quality of life” of the animals, and may include suffering, ill health, and deprivation, possibly for the whole of the animals’ lives (Table 1). For example, people may keep farm animals in barren environments where they cannot live full or natural lives; they may breed dogs that are predisposed to painful joint defects; and they may over-work horses to the point of damaging their health. Although other ethical concerns are sometimes raised, it is these quality-of-life issues that are the primary focus of concern as evidenced by a great many publications, animal protection activities, and advocacy campaigns designed to improve the quality of life of the animals kept by people.

Nonetheless, because animal-keeping involves close and direct contact with animals, it affords a high degree of control over how the animals are actually affected. Thus, whether the animals do experience suffering, deprivation and other hardships is, to a great extent, under human control. Moreover, the keeping of animals is one of the few activities by which people can provide animals with significant benefits such as shelter, food, protection, companionship, health care, and painless death, all of which can contribute to a good quality of life. Hence, the keeping of animals is one activity whereby people can, with the necessary motivation, knowledge, and resources, provide good quality of life for animals. Thus, the goal of providing good lives for the animals in our care should be achievable in principle, even if it would require major changes in practice, and it should meet the major concerns that arise over the keeping of animals.

Although the principle applies most obviously to the actions of animal-keepers as individuals, it also applies to collective actions by society. For example, when consumers select low-cost animal products, they may leave animal producers with no economically viable option but to use low-cost production methods that entail poor quality of life for the animals (Fraser 2008). Hence, the principle also implies that society should enable and encourage its animal-keepers to provide good lives for the animals in their care.

Principle 2. To Treat Suffering with Compassion

Activities that cause intentional harm to animals (hunting, slaughtering, pest control, and so on) can, under some circumstances, result in harm at the level of populations, ecological systems, and species. For example, uncontrolled hunting of passenger pigeons greatly reduced populations and was a major factor in the extinction of the species (Halliday 1980). Such harms need to be addressed in efforts to protect life-sustaining processes and balances of nature as discussed below.

For the most part, however, intentional harms occur at the level of individuals or groups, and they involve death, as in slaughter and hunting, or certain injuries such as dehorning of calves and castration of dogs. These intentional harms are often accompanied by animal suffering as an additional, unintended harm (Table 1). In general, people express concern over the unintended (or “unnecessary”) suffering while tending to see some or all of the intentional harms as more acceptable, presumably because these are perceived as serving some worthwhile purpose. For example, although the slaughtering of animals for meat is legal in virtually all countries, there is nearly global agreement that slaughter should be done “humanely” (OIE 2011); and although harmful research on animals is widely accepted, researchers are commonly required to use measures that minimize animal suffering (Passantino 2008).

Because intended harms are the planned and often direct results of human actions, they generally allow a high level of control over the outcome. Therefore, it should be possible to prevent suffering in a great many cases if people treat suffering with compassion.⁷ For example, veterinarians who act with compassion may insist on using analgesics for minor surgery, and pest control workers who act with compassion may take care to use only methods that cause rapid death. Thus, the principle of treating suffering with compassion should be applicable in a great many instances of intentional harm, and it should do much to meet the major ethical concerns that arise.

The principle of treating suffering with compassion can also apply to situations other than intentional harms. Compassion can motivate people to care for injured animals and to refrain from actions that are likely to cause or encourage unintended harm to animals. For example, home owners may install window treatments that reduce the likelihood of bird collisions; farmers may delay mowing fields until after ground-nesting birds have fledged; and consumers may avoid buying cosmetics from companies that continue to use animals to develop products.

Principle 3. To be Mindful of Unseen Harm

Activities that cause direct but unintended harm to animals (cropping practices, window strikes, vehicle collisions, and so on) result in suffering, injury, and death to many individuals, and may cause other harms by depleting populations, disturbing ecological systems, and possibly driving species to extinction (Table 1). Although unintended harms have traditionally played little role in animal ethics philosophy, the level of attention and remediation given to such harms when they are apparent to the public—as in the case of major oil spills—suggests that many people are concerned and motivated to reduce them. A major problem, however, is that the great majority of such harms are so little recognized.

Because the harms in this category occur as relatively direct outcomes of human activities, many of them can be prevented or controlled to some degree once people recognize that they are occurring. For example, once Rachel Carson (1962) alerted people to the unintended effects of organochlorine pesticides on birds, successful campaigns led to the near-elimination of the pesticides; and once the killing of dolphins by purse-seine tuna nets became known, there was widespread public concern and support for “dolphin-friendly” tuna (Wright 2000). As these examples illustrate, it is often possible to reduce direct but unintended harms to animals if people are aware of them.

Developing a sense of “mindfulness” toward unseen harms could thus be a crucial step. Based on the description of “ethical mindfulness” given by Guillemin and Heggen (2009), mindfulness toward unseen harms to animals would include noticing, articulating, and giving thoughtful consideration to such harms, reflecting on one’s own role in the harms, and having the courage to challenge existing practices. Thus, a sense of mindfulness should cause people to pay attention to unseen harms and care about them, and change their behavior so as to prevent or control such harms where it is feasible to do so.

Mindfulness toward unseen harms also applies to a wide range of situations. The keeping of animals, and intentional harms to animals, are often carried out by a small minority of people working on behalf of many other consumers and citizens whose decisions influence how the animals are affected. An attitude of mindfulness toward unseen harms may cause people to change those aspects of their own behavior that influence how others treat animals.

Principle 4. To protect the Life-Sustaining Processes and Balances of Nature

Disturbances to life-sustaining processes and balances of nature (by habitat destruction, pollution, introduction of foreign species, and so on) commonly affect the highest levels of biological organization, and are therefore likely to cause harm at all other levels and of other types. Harms are likely to include suffering, ill health, and deprivation to individuals possibly for the whole of their lives, together with death, depletion of populations, possibly irreversible damage to ecological systems, and in some cases the extinction of species (Table 1). Hence, disturbances to the life-sustaining processes and balances of nature cause many types of harm that are of widespread ethical concern.

As in the case of direct but unintended harm, people are often unaware of the link between their activities and the ultimate effects on animals, but evidence suggests that harms to animals caused in these indirect ways commonly become a focus of active concern and reform once they are recognized. As examples, concern over starving polar bears has become a stimulus for public support to reduce climate change (Slocum 2004), concern over dwindling populations of sea turtles has stimulated efforts to reduce pollution (Committee on Sea Turtle Conservation 1990), and concern over the extinction of animal species stimulates many efforts to prevent habitat destruction.

This category of harms to animals raises challenging problems. In particular, where the life-sustaining processes and balances of nature are disturbed, harms to animals are likely to occur indirectly and in the

future, and they will likely leave little scope for control or mitigation. For example, climate change and the introduction of new pathogens are likely to harm many generations of animals in ways that are difficult or impossible to control. Hence, in contrast to the other types of harm, which generally allow some degree of mitigation, the only effective way to deal with these indirect harms to animals is to prevent the original disturbance to life-sustaining processes and balances of nature. Furthermore, given the pervasive effects that a vast human population has on the natural world, active protection (rather than simple avoidance of harmful actions) will almost certainly be needed if the life-sustaining processes and balances of nature are to be maintained. Hence, the principle of protecting life-sustaining processes and balances of nature, although seen by some philosophers as an element of environmental ethics rather than animal ethics, needs to be seen as fundamental to a practical ethic for animals.

Moreover, all aspects of human interaction with animals (keeping animals, deliberate harms, unintended harms) need to be included in efforts to protect natural processes and balances. As noted above, keeping animals, in addition to its direct effects on target animals, can have important effects on climate and wild animal habitat; and intentional harms such as hunting can deplete populations and cause extinction of species. Hence these activities, like all human activities, need to be managed so as to protect life-sustaining processes and balances of nature.

Discussion

The classification system described in the section “How People Affect Animals” represents only one of the possible ways of dividing human interactions with animals. As an alternative, both the raising and killing of animals are sometimes collapsed under the single heading of “animal use.” The two activities are separated here (under keeping animals and intentional harms) because they create somewhat different ethical issues and opportunities for intervention; specifically, keeping animals allows (in principle) a wide range of actions to improve the animals’ lives, whereas killing, like other intentional harms, generally does not. As another alternative, some of the categories used here could be subdivided further. For example, the fourth category—harming animals indirectly by disturbing the processes and balances of nature—could be sub-divided based on whether the disturbance is intentional (as in deforestation) or unintentional (as with acid rain). These are left as a single category here because, regardless of the original intent, the effects on animals occur indirectly and may last long into the future, and hence raise particular ethical challenges. Finally, the categories are not exclusive of each other; for example, all animal-oriented activities can disturb the processes and balances of nature, and a single activity (such as setting out poison for pests) may cause intentional harm to some animals and unintended harm to others.

What I propose in this essay is not intended to be a complete ethical system or theory, but more an approach to animal ethics—a “way of doing” animal ethics—whose scope will need to be expanded and adapted in light of other insights, problems, and knowledge. The approach has features in common with the four-principles approach to biomedical ethics noted above (Beauchamp and Childress 2009). It also has elements in common with the relational approach of Midgley (1983), Palmer (2010) and others; with the contextual thinking of Anderson (2004) and others; with the “pragmatic” approach that applies the thinking of John Dewey, William James, and other pragmatic philosophers to issues involving the environment and animals (McKenna and Light 2004; Minter et al. 2004; Thompson 2004; Kupper and De Cock Buning 2010); and with the approaches of Katz (1983), Warren (1997) and others who have proposed combinations of principles to incorporate both animals and the natural environment in an ethical system.

The “practical” approach developed here involves three elements. (1) It identifies the consequences of human actions and the ethical concerns that arise, and examines the actual activities that lead to these consequences, sometimes in ways that are little recognized. (2) Without adopting any specific ethical

theory, it uses commonplace logic for moral evaluation of the different activities, noting, for example that (other things being equal) long-lasting effects are more significant than brief effects, and that irreversible harms should be deemed more serious than reversible harms. (3) It identifies mid-level principles that make a plausible fit to the features of the various activities and that address the main ethical concerns that arise.

The principles themselves are heterogeneous. The first specifies an outcome—good lives for animals—that should be achievable in principle for animals in human care, even if it will require enormous change in practice. The second and third do not call for specific outcomes—they do not call for the elimination of all suffering and all unseen harms—but rather identify virtues of compassion and mindfulness that should be applied in relevant contexts. Hence, they do not call for impractical actions such as removing predators from natural systems so as to prevent the suffering they cause (discussed by Everett 2001, and Aaltola 2010). Rather, people who act with compassion and mindfulness should be motivated to avoid and mitigate suffering and unseen harms where they can, while recognizing that some such harms will still exist. The final principle uses the stronger language of calling for action to protect the life-sustaining processes and balances of nature, in recognition of the great and lasting harm to all inhabitants of the planet that seems likely if such action is not taken.

The principles also have very different historical roots. The first two capture long-standing and widespread moral intuitions. The first principle is reflected in the influential pastoralist ethic that dates back at least to the Bible (Preece and Fraser 2000; Fraser 2006) and persists in the values of those farmers and ranchers who speak of their work as benefiting their animals as well as themselves (Rollin 1993; Spooner et al. 2011). The second principle is also a widely shared moral aspiration, seen in the long-standing ethic of compassion toward animals that is deeply embedded in Western and other cultures (Preece 2002; Cohn-Sherbok 2006; Nelson 2006). These two principles are also roughly compatible with more recent care-based and relational approaches to animal ethics (Engster 2006; Donovan and Adams 2007; Palmer 2010). In contrast, the last two principles are much less established in Western thought. The third principle, although seen in some Eastern traditions wherein devout people attempt to avoid causing inadvertent harm to other creatures (Chapple 2006), is not prominent in Western culture. The final principle, although seen in modern conservation ethics, tends to run counter to the Western tendency to see the natural world as a set of resources to be used. However, with the rapid growth of the world's human population and resulting increases in virtually all types of human activity, these two principles are greatly needed in modern animal ethics.

As with all pluralist approaches, a continuing challenge is to decide, often through a process of deliberation, appropriate responses to specific problems, including acceptable compromises and trade-offs when different principles come into conflict. The framework provides a basis for this deliberation by considering the number of animals affected, the nature and duration of the effects in the lifetime of the animals, the degree to which the effects are irreversible, and the opportunity for people to intervene. For example, the keeping of animals, especially fish and chickens, involves vast numbers; therefore, where methods of raising these animals cause harm for a substantial part of their lives, this must count as a very serious problem. Species extinction deserves special consideration because the effect is irreversible. And as noted above, disturbances to the life-sustaining processes and balances of nature are of special concern because they can cause long-lasting or permanent harm over many generations with little chance for people to control or mitigate the outcome.

The “practical” approach differs in several ways from other common approaches to animal ethics. First, as noted above, much animal ethics philosophy draws on established ethical thinking that has traditionally focused on intentional actions rather than the indirect and unintended consequences of actions; and animal ethicists have likewise tended to focus on intentional harms to animals. In contrast, the approach

taken here begins with the ethical concerns that people voice, combined with knowledge of how people affect animals. By this approach, if injuring and killing birds is an ethical concern, and if a vast number of birds are injured and killed by night lighting, then night lighting is an issue for a practical ethic for animals, even if the effect is not intended. Hence, certain unintentional harms—what Lichtenberg (2010) calls “new harms”—are seen to be especially important.

A second and related point of departure is an emphasis on collective as well as individual decisions, and hence on issues of social policy as well as individual choice. As noted above, animal ethics philosophers have often focused on matters of individual responsibility and have provided advice that people can apply to their personal-choice decisions, while paying much less attention to harms caused collectively, for example by climate change and communication towers. However, because people are concerned about many types of harm to animals, and because these harms are caused by both individual and collective actions, a practical approach needs to provide guidance both on personal choices and on social policy. For example, if we are responsible both individually and collectively for the harms caused by the transportation and communication systems that we use, then we need to address the resulting harms through some combination of personal-choice and social-policy decisions.

Third, the “practical” approach tends to break down some traditional divisions between concerns about individual animals versus other levels of biological organization. Scientists dealing with animal-related issues have typically identified themselves either as conservation biologists (who apply ecology and related disciplines to populations, species, and ecological systems), or as animal welfare scientists (who apply veterinary medicine and related disciplines to the well-being of individuals) (Fraser 2010). Somewhat analogously, philosophers dealing with animal-related issues have often divided themselves into environmental ethicists (focusing on populations, species and ecological systems) and animal ethicists (mostly focusing on individuals). The different philosophical approaches are, in some cases, based on different ethical theories and they have led to substantial conflict (e.g., Taylor 2009). However, many people have concerns that encompass different levels of biological organization. Such people are likely to be dissatisfied with conservation-oriented actions that ignore the interests of individual animals, and with animal welfare interventions that are bad for conservation. By beginning not with specific ethical theories or scientific disciplines but with a scan of how people actually affect animals and the concerns that people voice, the “practical” approach must incorporate concerns of different types and involving different levels of biological organization.

Fourth, the approach developed here allows us to acknowledge the genuine and complex ethical dilemmas that arise in real life, and to work toward resolving them through reflection and negotiation rather than deduction from a single foundational principle. In the cowbird-warbler case, for example, the extinction of the warbler species can be seen as a very serious harm because it is irreversible. The ideal solution would be to restore the balance of habitat (which has been severely disturbed by destruction of forest) that would sustain the warblers and curb the explosion of the number of cowbirds. In the meantime, killing some cowbirds might plausibly be seen as a lesser evil than extinction of the warblers as long as it is done with compassion and involves the least possible amount of suffering and death. In contrast, neither utilitarian nor rights-based approaches seem to leave much scope to protect the warblers; in particular, Singer (1979) concluded that he could see few grounds for favoring rare species ahead of abundant ones, and Regan (1983) appeared to regard such interventions as analogous to fascism.

Finally, the “practical” approach, being rooted in context more than theory, also leads us to emphasize contextual details when asking moral questions. Using the framework proposed above, we see that the harm or benefit caused by a given type of activity can vary greatly depending on how it is carried out. For example, if hunting is done by skilful hunters, if it occurs in robust ecological systems, and if it targets

solitary individuals of abundant species, then it is likely to cause harm only at the level of the individual, to affect the animal for only a small fraction of its life, and to cause little harm beyond the individual's death. Under such conditions, hunting may be less problematic than many other actions such as plowing pastureland or felling trees. Under other conditions, however, hunting is capable of harming entire populations and ecological systems; it can drive species to extinction; it can orphan dependent offspring; and non-fatal wounding of animals can cause prolonged suffering. Such variation causes us to focus not simply on generic moral questions (should we hunt? should we keep companion animals?) but to consider how a given activity is carried out and how animals are actually affected.

Although the "practical" approach runs contrary to the theory-based approach of many normative ethicists, in other respects the two approaches are complementary. The framework and four principles provide a system of deciding on moral action and evaluation based on ethical concerns that people have, whereas many normative ethicists attempt to alter those concerns by arguing, for example, that certain animals should have non-interference rights (Regan 1983) or that we should show reverence for all living things (Schweitzer, undated). Obviously these ideas have not been widely adopted as ethical concerns in a world where, for example, the production of animal-based foods rises to new record levels every year (FAO 2009a). However, if and as such normative ideas alter the ethical concerns that people have, a practical ethic will need to be revised accordingly.

Notes

¹ By an "ethic for animals," I mean a system of ethical thought that includes animals, such that people take animals, as well as people, into ethical consideration.

² I am using "suffering" as a short-hand for unpleasant affective states of all sorts including severe pain, fear, hunger, thirst, discomfort, and anxiety.

³ I am using "species" as a short-hand for genetically distinct types including species, sub-species and other taxonomic divisions.

⁴ By group (including family) I mean individuals that interact directly, for example in gathering food, sharing shelter, or moving in concert. By population I mean individuals that interact indirectly, for example by living in the same geographic area or competing for the same resources. By ecological system I mean "a dynamic complex of plant, animal, and microorganism communities and the nonliving environment interacting as a functional unit" (Millennium Ecosystem Assessment 2005).

⁵ The number of animals killed by crop production practices has been debated by Davis (2003), Matheny (2003), and Lamey (2007). However, most of their calculations appear to have been based on data for *Apodemus sylvaticus* taken from Tew and Macdonald (1993) rather than more numerous species such as *Microtus arvalis* as studied, for example, by Jacob (2003).

⁶ By "indirectly" I mean that the harm to animals is separated by an intervening process, and typically by a period of time, from the human activity that caused the harm. For example, methane released into the atmosphere is not toxic to animals but may cause harm in the future by climate change and melting of polar ice; and releasing a new pathogen may cause little harm at first, but great harm in the future after the pathogen multiplies and spreads. The distinction between direct and indirect harm is not always clear-cut, but it is important because people will likely have less opportunity to control the eventual effect on animals if the harm is indirect.

⁷ By "compassion" I mean the feeling of being "moved by the suffering or distress of another, and by the desire to relieve it," and "pity that inclines one to spare or to succour" (OED 2011).

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