

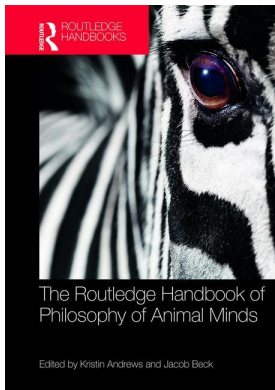
This article was downloaded by: 10.3.98.104

On: 27 Feb 2021

Access details: *subscription number*

Publisher: *Routledge*

Informa Ltd Registered in England and Wales Registered Number: 1072954 Registered office: 5 Howick Place, London SW1P 1WG, UK



The Routledge Handbook of Philosophy of Animal Minds

Kristin Andrews, Jacob Beck

Animal Mind and Animal Ethics

Publication details

<https://www.routledgehandbooks.com/doi/10.4324/9781315742250.ch49>

Bernard E. Rollin

Published online on: 11 Jul 2017

How to cite :- Bernard E. Rollin. 11 Jul 2017, *Animal Mind and Animal Ethics from: The Routledge Handbook of Philosophy of Animal Minds* Routledge

Accessed on: 27 Feb 2021

<https://www.routledgehandbooks.com/doi/10.4324/9781315742250.ch49>

PLEASE SCROLL DOWN FOR DOCUMENT

Full terms and conditions of use: <https://www.routledgehandbooks.com/legal-notices/terms>

This Document PDF may be used for research, teaching and private study purposes. Any substantial or systematic reproductions, re-distribution, re-selling, loan or sub-licensing, systematic supply or distribution in any form to anyone is expressly forbidden.

The publisher does not give any warranty express or implied or make any representation that the contents will be complete or accurate or up to date. The publisher shall not be liable for an loss, actions, claims, proceedings, demand or costs or damages whatsoever or howsoever caused arising directly or indirectly in connection with or arising out of the use of this material.

49

ANIMAL MIND AND ANIMAL
ETHICS*Bernard E. Rollin*

My ingression into the philosophical questions raised by animal ethics and animal mind took place in virtue of both theoretical and practical issues pressed upon me in the mid-1970s. On the theoretical level, I had been teaching history of philosophy for many years, and was struck by how little attention philosophers paid to the moral status of animals, even as they regularly developed arcane proofs that time was unreal, motion was impossible, and the world was an unchanging Plenum; and they engaged questions of whether the Absolute was happy or not, whether the mind exists in the brain or the brain exists in the mind, and so on.

Ignoring the question of our moral obligations to animals struck me as inexplicable, given the degree to which the conduct of human daily life has rested foursquare throughout all of history on the use and consumption of animals. Although at that point in my career I knew very little about animal use in society, I did know that in the United States alone, we utilized billions of animals for food; tens of millions of animals for research and toxicity testing; and killed millions of unwanted animals in pounds and “shelters,” the latter a practice for which there did not exist even a slight semblance of justification. I also came to learn, *mirabile dictu*, that in none of these uses did animals enjoy the best possible treatment even commensurate with that use!

In the history of philosophy, I found only sporadic mention of the relevance of morality to animal use. St. Thomas Aquinas, for example, stressed the point that lacking immortal souls (?), animals enjoyed *no moral status*, but that one should avoid the infliction of deliberate, sadistic, deviant acts of cruelty upon them, since people who perform such acts will inexorably move to abusing people, a position echoed by Kant later based on the fact that animals are incapable of rationality. (In the 20th century, psychological research confirmed the inevitable progression from animal cruelty to abuse of humans; see Ascione 1993; Felthous and Kellert 1987.)

One notable exception to ignoring the intrinsic rather than instrumental moral status of animals was provided by utilitarian philosopher Jeremy Bentham. As Bentham opined,

Other animals, which, on account of their interests having been neglected by the insensibility of the ancient jurists, stand degraded into the class of things. . . . The day has been, I grieve it to say in many places it is not yet past, in which the greater part of the species, under the denomination of slaves, have been treated . . . upon the same footing as . . . animals are still. The day may come, when the rest of the animal creation may acquire those rights which never could have been withholden from them but by

the hand of tyranny. The French have already discovered that the blackness of skin is no reason why a human being should be abandoned without redress to the caprice of a tormentor. It may come one day to be recognized that the number of legs, the villosity of the skin, or the termination of the os sacrum, are reasons equally insufficient for abandoning a sensitive being to the same fate. What else is it that should trace the insuperable line? Is it the faculty of reason, or perhaps, the faculty for discourse? . . . The question is not, Can they reason? nor, Can they talk? but, Can they suffer? Why should the law refuse its protection to any sensitive being? . . . The time will come when humanity will extend its mantle over everything which breathes.

(Bentham 1789: 310–311)

Although Bentham's arguments were revolutionary, and utilitarianism persisted into the 20th century as a basis for according moral status to animals, I do not find it adequate. For example, it is difficult to see how one gives, as Bentham suggests, a numerical score to pain. How, for example, does one weigh physical pain against psychological pain on the same scale? How does one score the pain resulting from branding a cow versus the suffering engendered by removing a calf from mother shortly after birth? Also, people can and do feel comfortable rejecting a utilitarian basis for ethics. I wanted a basis for ethics that follows from what people already believe.

On the practical level, I had been asked in the mid-1970s by faculty members of the College of Veterinary Medicine at Colorado State University (CSU) to develop the first course ever taught in the world on veterinary medical ethics – in essence, to create the field. Part of the charge was extrapolating to where the moral status of animals would go in the near future, and what effect that would have on veterinary medicine. I agreed, and propaedeutic to actually teaching the course, I immersed myself in the field of veterinary medicine. In my naïveté at the time, I took it for granted that I could find no greater champions of animal welfare than veterinarians – animal doctors – even as pediatricians in the 19th century were leaders of the social fight for child protection.

After years of preparation, I taught the veterinary ethics course for the first time in the spring semester of 1978. I found myself being educated by the students in a manner that quickly dashed my utopian attitudes toward veterinary medicine. I learned of numerous atrocious laboratory exercises that students were compelled to perform during the first two years of their education – for example, being forced to bleed out dogs in order to learn that dogs without blood died of hemorrhagic shock. Or being forced to administer cyanide to animals to learn that cyanide was toxic. Or, that in the third week of the first year in veterinary school, one anatomy professor had devised a diabolical laboratory exercise. Working in groups of four, the students were ordered to feed cream to young adolescent cats, and then, *without an iota of training in surgery or anesthesia*, the students were obliged to perform exploratory visceral surgery, ostensibly in order to watch the transport of cream through the intestinal villi. Inexplicably, the professor in question was so proud of the lab that he invited me in as an observer. Morally shaken by what I saw, I asked him to explain the true purpose of the lab. With a knowing smile, he replied that it is to “teach them that they are in veterinary school now, and, if they are ‘soft,’ to get the hell out early.”

I was treated to even more shocking revelations as the semester progressed. The most horrific thing I learned was how surgery was taught in the second year. Each small group of students was provided with a pound dog and required to do nine successive unrelated surgeries on that animal over three weeks. Even worse, only one nurse was available to provide care for those animals post-surgically. Given that we had 140 students in a class at that time, and commensurately a significant number of animals, there was little she could do. If the students wanted to provide

aftercare, they needed to cut class to do so, and these students did not cut classes. At the behest of an older student, I visited the ward in which these luckless animals were held between surgeries, and what I found was a scene worthy of Hieronymous Bosch, populated by dogs in excruciating pain, not even provided with an aspirin.

I immediately protested this outrageous state of affairs and was effective in putting a stop to it (Rollin 2011a). But not before I learned that not only did these animals never receive analgesia (i.e. post-surgical pain control), but essentially no animals did in veterinary medicine. The protocol for teaching surgery was radically changed, with the animals being euthanized on the table after the first surgery, and similarly for each lab thereafter, thereby eliminating postsurgical pain.

At the same time, I established a relationship with a new staff member hired to oversee our use of laboratory animals. He had an extensive history of managing laboratory animals in both Britain and Canada, and wanted a philosopher to help sort out the many ethical issues involved in the use of animals in research. We also enlisted a world-famous professor of veterinary surgery who had helped found the professional association for laboratory animal veterinarians. He confirmed the total lack of analgesic use, even in research surgeries generating the most extreme pain. He told the story of coming to CSU to set up a research laboratory for experimental surgery. Since many of his experiments, such as those that resulted in developing the artificial hip joint for humans, involved a fairly severe level of pain for the animals, he visited the veterinary school pharmacy in order to lay in a supply of opiate analgesics. The veterinary staff was bewildered, totally unaccustomed to any use of analgesia. "If they hurt, give them an aspirin" was their response.

Thus, by the late 1970s, I was engaged both in writing a book designed to establish a higher moral status for animals than had hitherto been socially acknowledged, which book was published in 1980 (Rollin 1981), and, in consort with the above two veterinarians, attempting to create federal legislation requiring the control of pain for animals used in research, testing, and education (Rollin 2006).

In that book, and in subsequent writings, I stressed the absence of morally relevant differences between people and at least those animals we can argue are conscious. I equally argued for morally relevant similarities, most specifically that what we do to animals *matters to them*, as they possess what Aristotle called a *telos*, a biological and psychological nature consisting of a unique set of interests – what we may call the "pigness" of a pig, the "cowness" of a cow. We determine this *telos* in a common-sense manner by sympathetic observation of the animal's life.

What is particularly useful and important about my approach to animal ethics is that it is a natural consequence of our societal consensus ethic for *humans*, where we protect fundamental features of *human nature* from encroachment by use of the concept of *rights*. This approach has intuitive appeal to ordinary people, who want to see animals protected in the law, and I have used it to good effect in achieving major change in research and agriculture. In Plato's terms, I thus depend on *reminding*, rather than *teaching*.

Surprisingly, having later done more than 1,500 lectures all over the world attempting to show the need and the rationale for a higher moral status for animals, I found that it was easier to achieve that goal than to bring pain control for animals into science. In the ensuing 10 years, it became clear to me that it was easier to elicit sympathy for animal suffering from ordinary people than from scientists. The reason for this was that, by and large, ordinary common sense never denied thought and feeling to animals; rather, it did not concern itself with animal pain and suffering. In other words, as in fact occurred in society, raising moral concern for animals was largely a matter of overcoming *apathy*. The cowboys who castrate and hot-iron brand cattle never deny that it hurts. Rather, they tend to *minimize the importance of that pain*. Scientists, on

the other hand, insulated themselves from the pain they cause, as we shall see, by *denying its reality, by appealing to an ideology that denies the knowability of animal thought and feeling, including pain.*

Philosophers in the Anglo-American tradition before the 20th century did not deny the presence of consciousness and mind in animals. John Locke, for example, responding to Descartes' claim that animals were simply machines, makes patent his belief in their mental lives. After affirming that perception is indubitably in all animals, and thus that they have ideas, he asserts that if they have any ideas at all, and are not bare machines, we cannot deny that they have some reason:

It seems as evident to me, that they do some of them in certain instances reason, as that they have sense; but it is only in particular ideas, just as they received them from their senses. They are the best of them tied up within those narrow bounds, and have not (as I think) the faculty to enlarge them by any kind of abstraction.

(Locke 1689: Book II, Chapter XI, Paragraph 11ff, p. 127)

In another passage, he mocks those who would assert "that dogs or elephants do not think, when they give all the demonstration of it imaginable, except only telling us that they do so" (Locke 1689, Book II, Chapter I, Paragraph 19, p. 87).

Arguably the greatest skeptic in modern philosophy was David Hume. In his philosophical writings, he denied the reality and knowability of external reality, mind, body, God, causation, and knowledge of the past or the future. Despite this radical skepticism, Hume nonetheless extends no doubt to animal mind. In section XIV of the *Treatise of Human Nature*, "*Of the Reason of Animals*," he affirms

next to the ridicule of denying an evident truth, is that of taking much pains to defend it; and no truth appears to me more evident, than that beasts are endowed with thought and reason as well as men. The arguments are in this case so obvious, that they never escape the most stupid and ignorant.

(Hume 1739, p. 176)

As we have indicated earlier, Jeremy Bentham not only attributed mind to animals, but also drew moral consequences from the indubitably of animal mentation, as did his radical empiricist successor, John Stuart Mill (Mill 1848).

On the other hand, Continental philosophy was endowed with skepticism regarding animal mind, originating with Descartes. (The snide remark at the end of the Hume statement on animal reason is presumably directed at Descartes.) For Descartes, animals were simply machines of the sort contrived by clever watchmakers at the period he was writing. Lacking language, unlike other humans, animals could not be said to be capable of thought, feeling, or any of the subjective experiences we take for granted in human mentation. With this assertion, Descartes believed he had assured the special place for humans stipulated in Catholic theology, while at the same time paving the way for scientific experimentation on animals regardless of how much putative pain it engendered. (Seventeenth-century reports documenting in lurid detail the "vivisection" occurring at the Port Royal Abbey evidence the extent to which Descartes' followers put his theories into practice.) Skepticism regarding animal mind continued in Europe, culminating in the atrocious animal experimentation evidenced in the 19th century by the work of Pasteur and Claude Bernard. In fact, it was the testimony of a European physiologist, Emmanuel Klein, before a Royal Commission investigating the use of animals in research that probably forced the

passage of the British Act of 1876, the first national law protecting research animals. In accord with the Cartesian tradition, Klein made the following extraordinary assertion:

Just as little as a sportsman or cook goes inquiring into the detail of the whole business while the sportsman is hunting or the cook putting a lobster into boiling water, just as little as one may expect these persons to go inquiring into the detail of the feeling of the animal, just as little can the physiologist or the investigator be expected to devote time and thought to inquiring what this animal will feel while he is doing the experiment. His whole attention is only directed to the making [of] the experiment, how to do it quickly, and to learn the most they can from it.

(Emmanuel Klein 1875, quoted in R. D. French 1975, p. 104)

The philosophical acceptance of animal consciousness continued to dominate English philosophy through the 19th century. Most notable, of course, was the work of Charles Darwin. Throughout his life and works, Darwin made it clear and unequivocal that if physiological and morphological traits were phylogenetically continuous across humans and animals, so too were psychological traits. In addition, Darwin was very much concerned about the welfare of animals, and was very much personally affected by seeing animals in pain or fear. Although he tended to avoid involvement in political controversies, he was actively involved in drafting and supporting what became the British landmark act of 1876, imposing strict regulation upon animal research. Although Darwin supported animal experimentation as a way of making medical progress, he both believed and helped express in law the notion that animals should not suffer in the course of research, and insisted on liberal use of anesthesia for all procedures that might cause pain or discomfort.

In *The Descent of Man* (1871), Darwin specifically affirmed that “there is no fundamental difference between man and the higher animals in their mental facilities,” and that “the lower animals, like man manifestly feel pleasure and pain, happiness, and misery” (Darwin 1871). In the same work, Darwin attributed the entire range of subjective experiences to animals, taking it for granted that one can gather data relevant to our knowledge of such experiences. Evolutionary theory demands that psychology, like anatomy, be comparative, for life is incremental, and mind did not arise *de novo* in man, fully formed like Athena from the head of Zeus.

In the course of his research, Darwin collected a great deal of material pertaining to animal consciousness, which material was entrusted to his colleague and friend, George John Romanes. Carefully editing this material, and equally carefully justifying the use of anecdotes, Romanes published two extensive volumes, *Animal Intelligence* (1882) and *Mental Evolution in Animals* (1883). These books remain a virtual treasure trove of common-sense understanding of animal thought and feeling.

In addition to the careful observations he made, Darwin also pursued a variety of experiments on animal mentation, including a largely forgotten series of studies on the intelligence of earthworms! Discussion of these experiments occupy some 35 pages of Darwin’s *The Formation of Vegetable Mould Through the Action of Worms with Observations on their Habits* (Darwin 1886). The question Darwin asked was whether the behavior of worms in plugging up their burrows with leaves in the rainy season could be explained by instinct alone or by “inherited impulse” or chance, or whether something like intelligence was required. In a series of tests, Darwin supplied his worms with a variety of leaves, some indigenous to the country where the worms were found, others from plants growing thousands of miles away, as well as parts of leaves and triangles of paper, and observed how they proceeded to plug their burrows, whether using the narrow or

the wide end of the object first. After quantitative evaluation of the results of these tests, Darwin concluded that worms possess rudimentary intelligence, in that they showed plasticity in their behavior, some basic “notion” of shape, and the ability to learn from experience.

As enlightened as Darwin was, and even given that there were some sporadic voices arguing for a higher moral status for animals, deducing that status from evolutionary continuity, there are many other signs far less hopeful. Despite the fact that general anesthesia was first demonstrated by dentist William Morton in 1846, its use for animals was extremely limited in science and veterinary medicine. For that matter, its use in human medicine was also not systematic. Historian Martin Pernick has demonstrated that the use of anesthesia was greatly constrained by questionable ideological pronouncements. For example, it was widely pronounced that educated, wealthy people needed more anesthesia than immigrants or country people. Women got more anesthesia than men, except in the case of childbirth, both because the pain of childbirth was believed to be punishment on women for Eve’s transgression and because it was believed that women would not bond with babies in the absence of pain (Pernick 1985).

In the case of animals, anesthesia was very rarely used, primarily because animals were not highly valued except for their economic worth. (This remains very much the case today for agricultural animals, unfortunately.) This was *not* due to a Cartesian denial of consciousness and pain in animals. Rather, it represented a *totally cavalier disregard for the importance of animal suffering*. Merillat’s 1906 textbook of veterinary surgery summed up the situation that obtained throughout the 19th century and well into the 20th. As Merillat put it,

In veterinary surgery, anesthesia has no history. It is used in a kind of desultory fashion that reflects no great credit to the present generation of veterinarians. . . . Many veterinarians of rather wide experience have never in a whole lifetime administered a general anesthetic. It reflects greatly to the credit of the canine specialist, however, that he alone has adopted anesthesia to any considerable extent. . . . Anesthesia in veterinary surgery today is a means of restraint and not an expedient to relieve pain. So long as an operation can be performed by forcible restraint . . . the thought of anesthesia does not enter into the proposition.

(Merillat 1906)

As Darwin’s work quickly became the regnant paradigm in biology and psychology, one would expect that the science of animal mentation would have steadily evolved during the subsequent century and a half as a subset of evolutionary biology. Strangely enough, this is not the case. Despite Darwin’s influence, animal mentation disappeared as a legitimate object of study, not only in a Europe influenced by Cartesianism, but in the Anglo-American world as well. This occurred not because of a further social dis-valuing of the moral status of animals, but by the ingression into science and veterinary medicine of an ideology, based in Positivism and Behaviorism at least as destructive to the recognition of thought and pain in animals, and to ethical issues in science. Ironically, by the end of the 20th century, this ideology had essentially thoroughly dominated science, even as societal concern for animal treatment continued to grow.

In the early 1980s, I began to wonder why, if Darwinian evolution represented the firm basis for biology and psychology, animal mind as an object of study all but disappeared in the 20th century (Rollin 1989). It was dogma in philosophy that theoretical changes in science occur in only two ways: either solid experimental evidence disproves some consequence of the theory, or else some conceptual or logical flaw is unearthed in the foundations of the theory. I knew of no empirical data that disproved the notion that animals were conscious. Nor did I know of anyone who had shown that the belief that animals have thoughts and feelings was in some

way logically flawed. I thus undertook the ambitious project of reviewing the history of biology, and particularly the history of psychology, to determine what had in fact “refuted” the solidly evolutionarily-based theory of the continuity of mentation across the phylogenetic scale.

Much to my surprise, I found nothing. Indeed, it dawned on me that I could not conceive of any empirical evidence that would refute the existence of mind in animals or of any way that hypothesis could be logically flawed. In particular, I looked at standard accounts in histories of psychology of why the thesis that animals have thoughts and feelings was overturned. These books cited an allegedly irrefutable succession of thinkers whose work inexorably led to the denial of animal consciousness instantiated definitively in modern psychology.

It eventually dawned on me to be suspicious of the account provided in the histories of psychology. After all, as we all know, history is written by the “winners.” Had the British defeated the colonists during the Revolutionary War, the account of the rebellion would be markedly different than what we find in US history books. I thus went back to the original texts of those who were credited with overthrowing the standard views of animal mentation – Conway Lloyd Morgan, Jacques Loeb, and H. S. Jennings. I was astonished to discover that none of these thinkers ever denied the reality of consciousness in animals. Lloyd Morgan proclaimed his “Canon,” namely that one should never accept an explanation of behavior in terms of a higher mental faculty if one could explain it equally well in reference to a lower mental faculty. This Canon already presupposed *consciousness* if it was to make any sense at all! Precisely the same point was true of the writings of Loeb and Jennings. In fact, Morgan was a *panpsychist* who assumed that all of nature was conscious! In the hands of J. B. Watson, Morgan’s Canon, as historian Daniel Robinson (1977) has wittily articulated, became a cannon. Furthermore, Watson argued extensively and persuasively that if psychology would just dispense with consciousness, and adopt learned behavior as its core concept, behavior could be manipulated and shaped to create a utopia, as Watson’s most successful successor, B. F. Skinner, argued later in the 20th century (Watson 1913).

Thus, I argued that the hypothesis of thought and feeling in animals was in no measure disproved; it was rather *disapproved*. Science changed not in the way orthodoxy dictates, but rather resulted from a change in *values*. Watson’s extravagant promises regarding psychology as Behaviorism perfectly played into what I have elsewhere called *Scientific Ideology* or the *Common Sense of Science*, which I discussed at length in my 2006 book *Science and Ethics* (Rollin 2006b).

Ideologies are strongly held, virtually unshakable beliefs that determine how those who believe in the ideology look at the world. Common examples are religious ideology, racist ideology, Marxist ideology, Nazi ideology, etc. Think for a moment of how difficult it is to dislodge the belief that “all black people are stupid” from a thoroughgoing racist, or the congruent belief that “all Jews are evil” from a Nazi. Adherence to such a belief explains how Nazis could easily murder small children, or how American racists could lynch African-American men for simply looking at a white woman, or how Catholics could slaughter Protestants (or vice versa) in the name of doing God’s will.

Ideologies operate in many different areas – religious, political, sociological, economic, ethnic. Thus, it is not surprising that an ideology would emerge with regard to modern science, which has been, after all, the dominant way of knowing about the world in Western societies since the Renaissance. One dominant theme in this ideology was expressed in the ancient atomist’s claim that “by convention is sweet and sour, hot and cold . . . in reality are only atoms and void” (Kirk and Raven 1957, p. 422). While this reductionistic approach to knowledge and reality was vigorously opposed by Aristotle in favor of the metaphysics treating the world of qualitatively different experiences as ultimately real, the Aristotelian world view was then discredited by the likes of Descartes and Newton, who postulated that *scientific reality* was only mathematically describable matter. Most important for our purposes is the denial of ethics as

being relevant to science or even knowable, and the parallel denial of consciousness in humans or animals as knowable. (We will not here discuss the incoherences in this ideology.)

This denial of the scientific reality and knowability of ethics and consciousness was emphatically expressed in 20th-century Logical Positivism and Behaviorism. Wittgenstein, a major influence on Positivism, once remarked that if one takes an inventory of all the facts in the universe, one does not find in it a fact that killing is wrong (Wittgenstein 1965). And J. B. Watson, the father of Behaviorism, came perilously close to proclaiming that we don't have thoughts; we only think we do. Ethical judgments such as "killing is wrong" were explained away as emotive expressions, parallel to "killing yuck!" and thus not subject to rational discussion. And statements about animal mind and consciousness, or even animal pain, were dismissed as scientifically meaningless.

An excellent example of this phenomenon occurred in 1982, when I was lecturing at the University of London. As it happened, there was a conference being held at the university on pain. The featured speaker was a renowned Scottish expert on animal pain who affirmed, to my amazement, that animals did not experience pain in any sense we could understand since the pain experience was processed through the cerebral cortex, and the electrochemical activity in an animal cerebral cortex was significantly different from that of a human. Though I was allotted 20 minutes to respond to him by the organizers, and I am usually quite verbose, I informed the audience that I would need only five minutes. "Dr. X," I began, "you are a very eminent pain researcher." "Thank you very much," he replied. "If I am not mistaken," I continued, "you do your research on dogs." "That is correct," he responded. "And then you extrapolate your results to people," I affirmed. "Yes," he replied, "that is the purpose of my research." "If that is the case," I continued, "either your speech this afternoon is false or your life's work is." In other words, if what he had affirmed in his speech were correct, i.e. that animal pain was thoroughly dissimilar to human pain, he could not extrapolate the animal results to humans! To be sure, he could doubtless learn about the physiological basis of pain (what is called *nociception* in physiology), even if he denied consciousness in animals. But his work dealt with the *experience of pain*, not merely nociception.

In 1982, I appeared before a congressional committee to defend the 1985 amendments to the Animal Welfare Act. When asked why such legislation was necessary, I told the Congressman that there was virtually no use of analgesia for animals in research. He protested that the research community told him it was liberally used (an outrageous lie), and it was up to me to prove that it was not. I accomplished this by soliciting the help of a librarian friend at the National Agricultural Library. I asked him to search for research papers dealing with analgesia for laboratory animals. He found none. When I broadened the search to "analgesia for animals," he found two papers, one of which affirmed that there should be papers, and the other one affirmed that virtually nothing was known. This convinced the Congressman that the legislation was needed. I repeated the search a few years ago, this time on my personal computer, and found close to 13,000 papers. This represents major progress.

The Positivistic denial of the ethical relevance of animal pain briefly meshed well with the societal lack of moral concern for animal pain, though the latter, as we mentioned, never denied the reality of animal pain. However, in the mid-20th century, as society began to express ever-increasing concern for the moral status of animals, as well as to demand control of animal pain and suffering, scientific ideology clashed with emerging societal ethics for animals, an ethic I have explicated elsewhere (Rollin 2011b).

The rise of this new ethic was potentiated by five factors I have delineated in other writings. These factors include the fact that the former paradigm for animals in the social mind, farm and working animals, has been replaced by the companion animal as a member of the family;

the writings of a variety of philosophers and scientists, like Jane Goodall, have persuasively argued for a higher moral status for animals and an acknowledgment of animal mind; the fact that many leaders in social reform have turned their attention to animal exploitation; the fact that the media has discovered, as one reporter put it to me, that “animals sell papers”; and the fact that the traditional fair contract with animals instantiated in an agriculture based in good husbandry has, in the 20th century, been supplanted by totally exploitative industrial agriculture (Rollin 2011b).

Society has increasingly demanded the codification of moral concern for animals in law, i.e. in the societal consensus ethic. The laboratory animal laws demanding pain control for animals used in research was an early and paradigmatic example of such demand. In addition, in a society where focus on animal mind is a major theme in our culture, scientists’ ideological denial of thought and feeling in animals is not sustainable.

In veterinary medicine, as companion animals have assumed center stage, control of pain has become a prominent (and lucrative) focus in veterinary research and practice. There is every reason to believe that social concern for animal well-being will move well beyond concern for physical pain alone, but will instead encompass all sorts of unhappiness we impose on the animals we use, ranging from solitary housing of social animals, paradigmatically evident in zoos as prisons, and gestation crates for sows; keeping killer whales, who, in nature, range over thousands of miles, in tiny pools; keeping nocturnal animals in 24-hour light; etc. All of the above atrocities have been abolished or rectified in the recent past. It also seems inevitable that society will expand its focus on animal welfare to the conditions that make animals happy (Rollin 2015).

Further reading

- Donald Griffin, *The Question of Animal Awareness*. 1981. New York: William Kaufmann Inc.
Bernard E. Rollin, *Animal Rights and Human Morality*. Third Edition. 2006. Buffalo: Prometheus Books.
Bernard E. Rollin, *Putting the Horse Before Descartes: My Life’s Work On Behalf of Animals*. 2011. Philadelphia, PA: Temple University Press.
Bernard E. Rollin, *Science and Ethics*. 2006. New York: Cambridge University Press.
Bernard E. Rollin, *The Unheeded Cry: Animal Consciousness, Animal Pain and Science*. 1989. Oxford: Oxford University Press.

References

- Ascione, Frank R. 1993. Children Who Are Cruel to Animals: A Review of Research and Implications for Developmental Psychopathology. *Anthrozoos* 6, 226–247.
Bentham, Jeremy. 1789. *An Introduction to the Principles of Morals and Legislation* (New York: Hafner Press, 1948) Chapter XVII, Sec. 1, Subsection IV, pp. 310–311.
Darwin, Charles. 1871. *The Descent of Man and Selection in Relation to Sex* (reprinted New York: Modern Library).
Darwin, Charles. 1886. *The Formation of Vegetable Mould Through the Action of Worms, With Observations on Their Behaviour* (New York: D. Appleton).
Felthous, A. R., and Kellert, S. P. 1987. Childhood Cruelty to Animals and Later Aggression Against People: A Review. *American Journal of Psychiatry* 144:6, 710–716.
French, R. D. 1975. *Antivivisection and Medical Science in Victorian Society* (Princeton: Princeton University Press).
Hume, David. 1739. *A Treatise of Human Nature* (Oxford: Oxford University Press, 1968), pp. 176ff.
Kirk, G. S. and Raven, J. E. 1957. *The Presocratic Philosophers: A Critical History with a Selection of Texts*, Chapter XVII, n589. Cambridge: Cambridge University Press.

- Klein, Emmanuel. 1875. Quoted in Richard French, *Antivivisection and Medical Science in Victorian Society* (Princeton, NJ: Princeton University Press, 1975), p. 104.
- Locke, John. 1689. *An Essay Concerning Human Understanding*. Book II, Chapter IX, ¶12, P117; Book II, Chapter XI, ¶11ff, P 127.; Book II, Chapter I, ¶19, P 87 (New York: Dutton, 1871).
- Merillat, L. A. 1906. *Principles of Veterinary Surgery* (Chicago: Alexander Eger, 1906), p. 69.
- Mill, John Stuart. 1848. *Principles of Political Economy*, 3rd edition (London: John W. Parker and Son, 1852), Volume 2, p. 546.
- Pernick, Martin. 1985. *A Calculus of Suffering: Pain, Professionalism and Anesthesia in 19th Century America* (New York: Columbia University Press).
- Robinson, D. 1977. Preface to Volume II of *Significant Contributions to the History of Psychology 1750-1920 series D, Comparative Psychology*, C. L. Morgan (Washington, DC: University Publications of America).
- Rollin, Bernard E. 1981. *Animal Rights and Human Morality*, First edition (Buffalo, New York: Prometheus Books).
- Rollin, Bernard E. 1989. *The Unheeded Cry: Animal Consciousness, Animal Pain and Science* (Oxford: Oxford University Press).
- Rollin, Bernard E. 2006a. The Regulation of Animal Research and the Emergence of Animal Ethics: A Conceptual History. *Theoretical Medicine and Bioethics* 27:4, 285–304.
- Rollin, Bernard E. 2006b. *Science and Ethics* (New York: Cambridge University Press).
- Rollin, Bernard E. 2011a. *Putting the Horse Before Descartes: My Life's Work on Behalf of Animals* (Philadelphia, PA: Temple University Press).
- Rollin, Bernard E. 2011b. Animal Rights as a Mainstream Phenomenon. *Animals* 1, 102–115.
- Rollin, Bernard E. 2015. "Beyond Pain." Keynote speech delivered December 10, 2015 at Johns Hopkins University Bloomberg School of Public Health.
- Romanes, George. 1882. *Animal Intelligence* (London: Kegan Paul, Trench, Trubner and Co.).
- Romanes, George. 1883. *Mental Evolution in Animals* (New York: Appleton).
- Watson, J. B. 1913. Psychology as the behaviorist views it. *Psychological Review* 20, 158.
- Wittgenstein, Ludwig. 1965. Lecture on Ethics. *Philosophical Review* 74:1, 3–12.