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Animal Ethics and Animal Consciousness Commentary on Marino and Allen (2017) The Psychology of Cows

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This is a superb paper for a number of related reasons. Not only does it carefully assemble a great deal of relevant work regarding the mind of the cow, it is also emblematic of a much-needed revolution in the field of animal behavior that not only straightforwardly acknowledges consciousness in cattle, but also weaves into the narrative insights that are highly relevant to a scientifically informed approach to cattle welfare. Those of us who have been working in animal welfare for more than four decades are particularly appreciative of the approach embodied in this paper. In order to fully grasp the value of the paper, a brief historical aside is warranted.

From the mid-1970s to the early 1980s I was actively engaged in developing a number of neglected areas in animal bioethics. In 1978, I taught the world's first course in veterinary medical ethics at the Colorado State University College of Veterinary Medicine. Shortly thereafter I developed a course in ethics and animal agriculture for agricultural students, and an NSF-funded year course in freshman biology, team taught with a botanist, teaching ethical and conceptual issues in biology along with the empirical material. And, I published an early book on ethics and animals (Rollin, 1981).

These activities required that I master a number of areas with which I had previously enjoyed little familiarity. Much of what I learned then determined the subsequent course of my career. In particular, I became acquainted with two presuppositions of science that were so deeply ingrained that I later called them major components of *scientific ideology*. One presupposition was that science was “value-free” in general and, in particular, did not make ethical judgments. The latter was trumpeted in the introductions to all biology textbooks that I examined, because ethical judgments could not be empirically verified. At most, allegedly, science provides relevant information for society to make informed ethical judgments.

The ultimate expression of this ideology can be found in a statement made by a former director of the National Institutes of Health (NIH). This position, it is important to remember, requires both excellent scientific abilities and political astuteness. In 1989, the then Director of NIH and therefore arguably the chief representative of biomedicine in the U.S., was visiting his alma mater. He was talking to a group of students informally, and was apparently unguarded in his remarks, not realizing that a student reporter for the school paper was present. The students asked him about the ethical issues associated with genetic engineering. His reply was astonishing: He opined that “though scientific advances like genetic engineering are always controversial, *science should never be hampered by ethical considerations.*”

When I pose the question to my students of who made that statement in the 20th century, they invariably say “Hitler” (see Rollin, 2007).

The second ideological dogma I encountered was a ubiquitous belief that scientists needed to be agnostic about animal thought and feeling, and even about animal pain, because one could not verify claims about animal mentation empirically. In my first year of teaching veterinary students, I found out that they learned surgery by using the same unwanted dog for nine surgical procedures over three weeks without the animal receiving any pain control. I quickly determined that in fact analgesia was rarely used in veterinary medicine nor taught in veterinary schools, nor utilized even in the most invasive research protocols (see Rollin, 1989).

Outraged, I, together with two veterinarian colleagues and an attorney wrote the federal law that required the use of analgesia in research and biomedical teaching for painful procedures. This amendment to the Animal Welfare Act (AWA) was “The Improved Standards for Laboratory Animals Act” (December 23, 1985; public law 99-158). The other law that complemented the AWA amendment was “The Health Research Extension Act of 1985” (November 20, 1985; public law 99-198). When I carried this legislative proposal to Congress in 1982, I was asked to demonstrate that there was a need for it. I did so with the help of the Library of Congress, who performed for me a literature search on “analgesia for laboratory animals.” To my amazement, not a single reference was found. When I broadened the search to “animal analgesia,” only two papers were found, one asserting that there ought to be papers and the other one asserting nothing was known. The law passed in 1985 and, when I redid the search eight years ago, I found over 12,000 papers!

One more historical anecdote will help underscore the immeasurable value of this paper. In the early 1980s, I was preparing a lecture on cattle and could find nothing on bovine mentation. I approached a veterinarian colleague who had been a cattle vet for more than 40 years, and asked him what he could tell me about “the mind of the cow.” His reply was fascinating: “I could write an entire book on that! But I don’t care to do so, because I would be ostracized by my colleagues.” He went on to say that talking about cow subjective experience would make him appear non-scientific and mystical to his veterinarian peers.

Anyone who attends to cultural evolution must realize the extent to which societal concern for animal welfare all over the world has increased exponentially since the 1970s. This is evident in the degree to which severe confinement agriculture has been mitigated both by legislation and corporate response to consumer demand. Similarly, major changes in the use of animals for research and in the development of non-animal alternatives for toxicity testing evidence the direction of social thought. Just last year in the US we have seen an end to the Ringling Brothers Circus and to killer whale shows. Zoos with exhibits that lacked awareness of species’ social and environmental needs, and instead focused only on ease of access for the public, which were considered state-of-the-art in my youth, are largely a thing of the past for many mainstream zoos that now focus much more on species appropriate environments and on promoting species typical behaviors (see Maple & Perdue, 2013).

It is essential to realize that animal welfare is not primarily an empirical concept. It is an ethical concept based in the question of what we owe animals and to what extent. What will count as animal welfare depends upon the ethical framework of the person raising the issue (Rollin, 2011). For example, an agricultural industry document in the US once affirmed in 1980 that an animal enjoyed good welfare if and only if it was economically productive. (CAST, 1981) On the other hand, the British Farm Animal Welfare Council based their definition of animal welfare on what the animal experiences, and correlatively on the famous Five Freedoms: Freedom from Hunger and Thirst; Freedom from Discomfort; Freedom from Pain, Injury or Disease; Freedom to Express Normal Behavior; and Freedom from Fear and Distress (fawc.org.uk). These two definitions are based on differing ethical perspectives, and one cannot decide between them by appealing to science. In fact, the situation is reversed. *What one counts as sound science relevant to animal welfare will depend on what ethical perspective one adopts!*

In other work (e.g., Rollin, 1981, 2016), I have argued that the societal view of animal welfare will inevitably prevail – this point is acknowledged even by the agricultural industry. And there are at least two major features of what society considers good welfare. First of all, animals must be kept under

conditions that *meet their psychological and biological needs and natures*—what Aristotle called their *telos*. Second, they should be kept as free as possible from pain and distress.

We can now understand, for example, why I consider the current paper revolutionary and praiseworthy. Obviously, knowing about how animals think and feel, and what they care about, is going to be a mainstay of how we accommodate the above two concerns. Thus, as Smithfield farms informed me (personal communication), 78% of the consumer public thoroughly rejected gestation crates, the 2' x 3' x 7' cage in which breeding sows are kept for their entire productive life. Most members of the general public do not support the dairy industry practice of removing calves from mother cows at birth. Many traditional dairy scientists denigrate such concern as “sentimental, anthropomorphic nonsense.” The current paper presents an unbiased account of what such separation really means to cow and calf alike.

Marino and Allen (2017), in my view, are truly scientific, rather than *scientistic*; that is, they do not follow the trappings of natural science inappropriately. Affirming that science does not make ethical judgments because they cannot be empirically confirmed or disconfirmed is a good example of such inappropriate thinking, known as “scientism.”

In this they follow foursquare in the footsteps of the acknowledged founder of modern biology, Charles Darwin. Darwin (1872) argued that if physiological and morphological traits were phylogenetically continuous, so too were mental, emotional, and psychological traits. Marino and Allen have done a masterful job of explaining what and why certain things matter and to what degree to cattle, data that rarely if ever can be obtained from cattle production literature. In this regard, their explanation of the tendency of industry to treat all cows as repeatable units, and ignore individual differences and differences in personality is spot-on. They explain this activity as a result of commodification of the animals into being seen as identical units, and production systems as genuine factories producing such units, giving credibility to the pejorative vernacular use of the term “factory farms.”

One extremely valuable point forcefully made by Marino and Allen (2017) pertaining to animal welfare has been significantly under-stressed in much of the scientific and philosophical literature addressing such issues. That is the need in assessing animal welfare to consider *individual differences* between animals of a certain species. The situation is in fact analogous to human welfare. For certain children, for example, a Christmas gift of a new baseball glove would be hugely appreciated. For others (nerdy kids like I was!), even others of the same age and cultural demography, there is no interest whatever in baseball, so that the gift of a glove does not augment their well-being. This is true of pain tolerance among animals, just as it is true among humans, even siblings, even identical twins! In creating enriched environments for primates and some other species, scientists have discovered great variations among things that captivate these animals' interests, as well as variations in the cognitive abilities of individuals within species (e.g., Hermann & Call, 2012; Hopkins, Russell, & Schaeffer, 2014; Matzel, Wass, & Kolata, 2011; Vonk & Povinelli, 2011). However, more attention needs to be directed toward individual differences in cognition, and the implications of those differences (see Thornton & Lukas, 2012).

One of many things I particularly admire about these authors is their exhaustive survey of the literature relevant to the mental lives of cows, and their ability to summarize and express the data in clear, jargon-free language. Such an approach is indeed in the great tradition of Charles Darwin, whose best writing was accessible to all. And instead of drawing a sharp barrier between science and animal welfare, their writing serves admirably to bridge that barrier. As such, this paper would be invaluable not only to intelligent animal advocates, but to the industry committed to meeting societal concerns and demands in a preemptive way, before such policy is legislated in a heavy-handed manner that serves neither animals, consumers, nor the industry.

Marino and Allen's (2017) melding of science and ethics into a coherent whole is exemplary, and courageous, a welcome and healthy counter to papers endlessly detailing cortisol levels and similar reductionistic information. Although research of the latter sort can be very valuable, it is not an end in itself and must be interpreted in the context of what we know of the animals' *teloi*. Marino and Allen make it their business to stress neglected areas of study that are highly germane to animal welfare, and even exhort other researchers to engage these questions, clearly for moral reasons.

As someone who is currently editing a new book on cattle welfare, I am certain that I will keep this paper ready at hand so as to be mindful of issues that I and my authors might otherwise forget. And I will use the paper as a required text in my courses on animal ethics and animal welfare.

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