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Philosophical Ethology: On the Extents of What It Is to Be a Pig

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Abstract

Answers to the question, “What is a farm animal?” often revolve around genetics, physical attributes, and the animals’ functions in agricultural production. The essential and defining characteristics of farm animals transcend these limited models, however, and require an answer that avoids reductionism and encompasses a de-atomizing point of view. Such an answer should promote recognition of animals as beings with extensive mental and social capabilities that outline the extent of each individual animal’s existence and—at the same time—define the animals as parts of wholes that in themselves are more than the sum of their parts and have ethological as well as ethical relevance. To accomplish this, the concepts of both anthropomorphism and sociobiology will be examined, and the article will show how the possibility of understanding animals and their characteristics deeply affects both ethology and philosophy; that is, it has an important influence on our descriptive knowledge of animals, the concept of what animal welfare is and can be, and any normative ethics that follow such knowledge.

Keywords

animal ethics, animal welfare, ethology, philosophy, sociobiology

Preface

The historical and theoretical background for this article is an ongoing debate in the interdisciplinary fields of biology and philosophy. On the one hand, the ideas presented in this article originate in the descriptive biological sciences—for example, classic and cognitive ethology, genetic evolutionary theory, and sociobiology. On the other hand, the article derives its most fundamental explanatory tools from philosophical discourses directed at understanding what it means to be an animal and the normative ethical implications of such an understanding.

Biologist Edward O. Wilson published the first edition of his book *Sociobiology: The New Synthesis* in 1975; it was followed a year later by zoologist Donald R. Griffin’s *The Question of Animal Awareness*. Although the books had

different subject matter—the former, evolutionary theory and the latter, a theory of mind applied to animals—they were both fundamentally opposed to the zeitgeist of their scientific environment in their antireductionist approach to animals and the animal sciences. The two books, their authors, and the theories they represent broke new ground and were, through the 1980s and 1990s, trailed by such scientists as Marian E. S. Dawkins (1993), Colin Allen and Marc Bekoff (1997), and Elliot Sober and David Sloan Wilson (1998), who all contributed to the field of cognitive and social animal research. Concurrent with E. O. Wilson's and Griffin's pursuit of new frontiers in the natural sciences, a small group of theoretical thinkers was heading an animal revolution in philosophy and ethics. With his book *Animal Liberation*, published in 1975, Peter Singer set a utilitarian agenda that has been a dominating force with regard to philosophical concepts of animals and our moral duties toward them. He was quickly followed—and opposed—by other philosophers such as Baird Callicott (1980) and Tom Regan (1985), who respectively proposed a more holistic and a rights-based view of animals and animal ethics.

The past two decades have seen an interest in animal philosophy from philosophers with a background in the Aristotelian tradition. Alasdair MacIntyre's *Dependent, Rational Animals* (1999) and Martha Nussbaum's *Frontiers of Justice* (2006), together with the writings of Bernard E. Rollin (1989) have set forth theories describing the *telos* or the essence of being an animal and subsequent applications of moral theory. The present article is in line with such an Aristotelian approach and will develop as an investigation into the fundamental nature of farm animals, drawing on theories and knowledge from both classic and cognitive ethology, sociobiology, and philosophical theory. This investigation and the ensuing analysis will be defined as a "philosophical ethology," a term coined by Gerald J. Massey (1999), who states that philosophical ethology should be understood as "a philosophical account or treatment of animals." (Though Massey's terminology is new, the accounts and treatment of animals in philosophy are as old as the discipline itself.)¹ Philosophical ethology is not natural science; it is a way of doing philosophy with a firm foothold in the many different natural sciences focusing on animals. Philosophical ethology embodies the significant connections between philosophical analysis and the animal sciences that constitute the foundation of this article. Furthermore, philosophical ethology is the term used in this article to suggest clear connections with philosophical anthropology, the somewhat more commonplace and recognized philosophical exploration of what it means to be a human/person.

Hypothesis

The epistemological foundations of the two predominant animal ethics theories—animal rights ethics and utilitarian ethics—are problematically limited in their understanding of animals. Rights theory sees each individual animal as intrinsically separated from all other beings. The rights of any being is founded on capabilities entirely internal to the being and the only relational property of rights theory is the demand of others to respect the individual's right to be left alone. Utilitarianism, on the other hand, acknowledges the connectedness of beings. It has nothing to say, however, about that connectedness or the relational systems themselves but merely understands animal groupings through a lens of addition in which the focus becomes the combined sum of each individual animal's positive or negative experiences.

The contention of this article is that a clearer and philosophically more relevant understanding of animals is to recognize more than just the traditional individual physiological and ethological attributes of the animals. In this case, the focus is on farm animals, who, by their integration into the human world and (agri)culture, are under the direct and continuous influence of human actions. This inquiry will investigate and discuss the mental and behavioral capabilities of farm animals and the extents of these capabilities—as well as the notion of the animals as social beings whose existence, identity, and active being-in-the-world² exceed their own individual physical and mental structures.

The two main questions to be pursued are: What are the fundamental and defining characteristics of a farm animal? And do these characteristics have philosophical and ethical relevance? In answering this we must give up our ingrained notion of defining beings as one thing and one thing only. This article will argue that in assessing animal welfare and in the layout of any normative ethical theory concerning animals, we ought to understand the animals as both individuals and parts of wholes that are more than the sum of their parts. Such an understanding would, as mentioned earlier, pose problems for many different ethical theories and would make assessments of animal welfare even more difficult than hitherto. This, however, does not outweigh the benefits associated with a more comprehensive and multilayered epistemology of animals and their lives, which would provide a better background against which to construct ethical theories and would, in the practical realm of animal welfare assessment in agriculture, furnish the opportunity for developing better assessment tools and procedures, benefiting farmers and animals alike.

Other Minds in Other Bodies

Our first challenge in respect to a better philosophical ethology is to move beyond a blunt physiological descriptive focus to a more encompassing and, at times, speculative analysis of the mental capabilities of farm animals.

The physical body of the individual animal—together with the functioning of said body—not only sets limits to what a certain animal is but also gives rise to some of the extents.³ From this naturalist premise, all other conclusions and theoretical developments must proceed. One such theoretical development is the investigation of mental capabilities. Philosophy of mind is a major field in human-focused philosophy, and this article will—with a focus on nonhuman animals⁴—revisit some of the classical problems and theories in this field.

The fundamental premise is simple: animals have minds. Or at least some animals have minds, and farm animals, who are at the center of this article, all have minds of varying kinds and degrees. This premise is usually taken to be somewhat uncontroversial, and the Cartesian idea of animals as merely complex, unfeeling, biological machines or “automata” (Descartes, 1912) is correspondingly rare in the scientific community of today.⁵ Mind, encompassing elements like consciousness, perception, emotion, and more (depending on the being in question) is, in humans as well as in animals, intrinsically subjective and only indirectly accessible to others. One can observe physical objects like bodies and brains, but the minds—and mental lives—of even our closest and most intimate friends and family members are categorically closed to our direct perception, and this blockage is, of course, all the more evident when we turn our attention to an animal, from whose lifeworld we are significantly excluded. This, however, qualifies as a difference in degree and not in category between humans and animals.

Social scientist and philosopher Donna Haraway has suggested that a deeper understanding of the inner lives of animals—as, indeed, of ourselves—is to be found in the relational structures between living beings. Rejecting the special status of human beings—what she defines as exceptionalism—Haraway’s analysis enforces an almost holistic epistemology where humans engage with a host of other nonhuman beings and life forms in an ongoing “becoming with” (Haraway, 2008). This relates especially to animals such as Haraway’s pet dog or agricultural animals who share their lives with—or even owe their existence to—humans. When facing other beings as entities with whom we not only coexist but with whom we exist in an inescapable togetherness of “species interdependence” (Haraway, 2008, p. 19) we can never be said to be wholly separated from the inner lives of our others. When we, as human beings, do not have the kind of direct perceptual access to the minds of our fellow human beings that they have themselves, we are left to conclude that they have minds,

based on indirect phenomena such as their behavior, their relations to us and others, their physiology, and their general likeness to us (whom we know to have minds). In much the same manner, but admittedly with more difficulty, our attribution of mind to animals should be based on studies of their physical and behavioral/relational characteristics—and their likeness to us.⁶ The utter refusal of the idea that animals have minds is thus merely biased solipsism—a self-defeating and somewhat irrational point of view that clearly can only lead to either dropping the bias or to fully fledged solipsism, and with this, to the denial of all other minds than our own individual one. The latter outcome should be viewed, as indeed most researchers do, as initially thought-provoking yet unproductive and ultimately uninteresting. As Bernard Rollin writes, “What would solipsistic science be like? Why publish?” (1998, p. 235).

The questions surrounding an account of animal minds are numerous and intertwined. Let us consider two aspects that are of consequence for the development of a philosophically and ethically relevant ethology. First, mind is a significant, though not exhaustive, criterion for setting the boundaries for ethical “patienthood”—i.e., the characteristics that individuals would have to possess in order to be ethically relevant. It is through certain processes of mind that individual animals achieve sentience and the capability of feeling pain and pleasure, as well as the ability to seek the latter and shun the former as a matter of reflective choice. Second, the possession of mind is also a matter of more elaborate capabilities within the individual animal. The limits and extents of a particular mind open and close paths of possible realization of potential and thus also set the negative and positive boundaries for individual welfare.

The concept of mind as setting boundaries for ethical consideration was our first aspect:

Only mind-havers can care; only mind-havers can mind what happens. If I do something to you that you don't want me to do, this has moral significance. It matters, because it matters to you. It may not matter much, or your interests may be overridden... If flowers have minds, then what I do to flowers can matter *to them*... If nobody cares, then it doesn't matter what happens to flowers. (Dennett, 1996, p. 4)

Dennett wants us to recognize the specific abilities of the mind that easily let us identify a creature who inhabits the sphere of ethical worth and recognition—a creature that by its capabilities for sentience, memory, and perception can suffer and care about its suffering at the hands of other creatures. In other words, a being against whom one can act unethically.⁷ This distinction is already clear in many of the rules governing today's agricultural practices. Laws have been passed setting out guidelines and restrictions in order to

protect individual farm animals from (some) harm, but no laws have been set forth protecting straws of wheat or potato plants from mutilation and wanton cruelty. A pig's mind and the capability for mindful suffering that springs from the complexity of this mind endow it with a clear standing within the boundaries of ethical consideration. The wheat straw and the potato plant neither have minds nor do mind, and as such fall short of the criteria for ethical consideration. Obviously, plants do have the ability to have lives that can deteriorate or flourish. The deterioration of the plant on the office windowsill, which is frequently forgotten and does not get water, can be construed as a worsening of the plant's life. But the concept of "suffering" can here only be applied metaphorically. Because there is no perceiving mind in which this worsening of life is integrated, it is a categorically different sort of life deterioration than the suffering of a mind-full animal.⁸

The second aspect takes our investigation in the opposite direction. Where a theory of mind as the basis for ethical patienthood was a search for a common foundation or a lowest common denominator, a theory of mind that wishes to approach and lay the foundation for an extended welfare discussion should explore the very constitution of animal mind, as well as the "upper" limits of the minds of animals. The classical attempt at taxonomy (Bynum, 1975) was by and large to create a linear ladder of life or *scala naturae* (Aristotle, 1984c) by placing living things higher or lower according to their "complexity." Within this classification, human beings are to be found at the very top because of their unique abilities for abstract thought and rationality. But these faculties only constitute a part of the Aristotelian philosophy of mind, which also covers areas that, according to Aristotle, human beings have in common with animals. Both humans and animals possess the abilities for sentience, memory, and rudimentary knowledge of the world, and this forms the foundation for the mental ability to desire and/or detest certain things and situations.⁹ But what are the extents of these mental abilities? And can animals really so categorically be denied the ability of rational reasoning as defined by Aristotle and many later writers?

One answer to these questions is found in the works of noted animal behavior scientist Donald R. Griffin. His approach to the question of animal mind is not dissimilar to that of the Aristotelian scaling of increasingly complex levels of mental abilities. According to Griffin, we must move away from the rudimentary understanding of animal minds as cognitive neural computers that process information, allowing the animal to act accordingly (Griffin, 1999). Animal cognition is at the bottom of Griffin's scale and as such is a necessary foundation for Griffin's real objective: animal consciousness. Mere cognition—the mental computation of input—is not a sufficient description

of the mental life of (certain) animals and their awareness. Cognition alone is in this view *unconscious*. It is the computational act of stimulus and response, and it is well documented in humans and animals alike. Many things, from breathing to small hand movements and complex behavior are—at times—done unconsciously. To establish a first level on the consciousness scale, Griffin introduces the concept of “perceptual consciousness.” This is a low order of consciousness and simply means that the subject is mentally aware or conscious *of* something. It is cognition plus an active directedness of mind that together enable the individual animal to be aware of things that it perceives—e.g., the animal standing next to it or the texture and taste of certain foods. Perceptual consciousness does not include the awareness of one’s perceptions, thoughts, and feelings. Awareness of one’s own perceptions is a reflective consciousness or a knowing about one’s own knowing, and it is a capability of such a complex and internal nature that making any kind of reasonable assumptions as to its existence in anyone (especially beings unlike ourselves) appears to fall short of the scientific mark. What Griffin is doing here is addressing what Chalmers (1996) calls “the hard problem” (Introduction, p. xii). How can we understand and explain our qualitative phenomenal experiences? What evidence do we have that there are conscious events taking place in the minds of animals? It is indeed a hard problem, which can nevertheless be overcome by a combination of modern comparative biology, philosophical scrutiny, relational empathy, and common sense—an approach that could be described as a reasonable anthropomorphism.

Anthropomorphism—or Asking What it is Like to be a Pig

A significant subject matter in ethology and most other sciences dealing with studies of the nonhuman animal world is the dilemma of anthropomorphism¹⁰—the humanization of nonhumans. Often this concept is considered as normatively tainted and as a negative term (Wynne, 2007). In the following discussion I will endeavor to show how anthropomorphism actually provides an important basis for our experience and knowledge in general and in the animal sciences in particular. Thus, from the outset, this article has an understanding of anthropomorphism in its neutral sense, though this certainly does not imply that all variations of anthropomorphism are neutral or equally advantageous in the pursuit of knowledge and validity in the animal sciences. In his article “Anthropomorphism and Anthropodenial: Consistency in Our Thinking about Humans and Other Animals” (1999), biologist Frans de Waal provides an argument against what he calls “anthropodenial.” He uses this

concept to describe the almost complete rejection of relevant human-animal similarities in some scientific works. He contends that an irrational fear in the biological sciences has resulted in this methodological mistake and that this is on par with the error for which anthropomorphism is usually used as a label: the meaningless and irrational ascription of uniquely human attributes to animals.

I will argue—largely in agreement with de Waal’s theory—that anthropomorphism is a necessary and even inescapable part of both experience—i.e., *Erkenntnis*¹¹—and, indeed, of being human. In *The View from Nowhere* (1986), the American philosopher Thomas Nagel illustrates the unobtainable nature of a truly neutral and fully objective *Erkenntnis* of phenomena in the world. He writes that we are limited by our subjective nature in achieving objective perception of the world only as a matter of degree. Because of human rationality and our capability for reflection, we have the ability to take steps away from our pure subjective access to things and reach an increasingly objective *Erkenntnis* without ever leaving our subjective selves entirely behind. A similar analysis of human perception in the animal sciences could argue that anthropomorphism is the only way for anyone to actually do science in this field: in some parts of the field—for example, in the genetic sciences—to a lesser degree and in other parts, like ethology and other behavioral sciences, to a degree where it influences most of the discipline. Anthropomorphism means shaping the object of one’s inquiry over the human mold, so to speak, and it is simply the only way to do such inquiry. Our cognition and understanding of the world are inherently limited by the fact that we are humans and that *human* understanding and *human* cognition are the only means through which we can access and interpret the world in which we live. In other words, humans are limited to one kind of “direct” knowledge: the knowledge of what it is to be human in the world. This knowledge is then the foundation of all other knowledge acquisition and therefore the groundwork for our understanding of other phenomena and systems—in the present case, the world and life of animals. We cannot know what it is like to be a bat (Nagel, 1974), but our understanding of humans, together with careful empiric research and comparative analysis, can help us to understand as much as possible about what it means to be a bat without actually being one.

We should, as de Waal reasons, take advantage of the fact that we ourselves are animals and, taking into account the specific *Umwelt*¹² of particular animals, develop testable ethological theories. Such an animal science would encompass anthropomorphism as the basis of experience and cognition, and it would illustrate that the more meaningful and theoretically rewarding option would be to distinguish between the two forms of *problematic* anthro-

anthropomorphism: on the one hand, the concept of anthropodenial, as described by de Waal, which pertains to the wrongful rejection of relevant similarities between humans and nonhuman animals, and thus a certain understanding of animal mentality that this comparison would entail, and, on the other hand, misappropriations of the concept of anthropomorphism that open themselves up to valid criticism. Such a version can be seen as falling into one (or even both) of the following two categories (Rollin, 1998): 1) It is inappropriate to the specific species discussed. This is what happens when animal protection organizations get concerned phone calls from people worried about cows suffering in the fields during the cold winters, and the cows in question turn out to be Highland cattle, for whom the normal winter day does not pose much of a challenge;¹³ 2) It is inappropriate in respect to the extreme level of speculation involved. Examples of this category would be the idea of dogs looking forward to their birthday or pigs contemplating the meaning of anthropomorphism. This is a misuse of anthropomorphism that goes far beyond any reasonable explanation and, as such, is best named unreasonable anthropomorphism.

This terminology underlines the importance of doing proper anthropomorphism in animal science. One must at all times emphasize rationality when deriving reasonable explanations from anthropomorphism, and—almost as a second nature—continually reflect on the anthropocentric pitfalls of anthropomorphism and our inescapable subjective roots, or what Rollin calls our “me-thropomorphisms” (1998, p. 237). Such a reflective and comparative exercise does not make reasonable anthropomorphism foolproof or give us exact parameters for definitions of reasonableness. It does, however, give us a relevant framework for judging whether an anthropomorphic understanding of a particular animal (or type of animal) is reasonably contended.

Criteria for such an approach must, in view of the arguments above, include that the employed anthropomorphism be in accord with the *telos* (Rollin, 1989) of the animal in question. The concept of *telos* corresponds to the speciesness of the animal and, on a corresponding lower level, the personal characteristics of individual animals. On both these levels the specific physical, behavioral, and social capabilities of individuals and types of animals must be asserted through a wide range of scientific approaches—e.g., genetics, anatomy, ethology, social studies, and theory of science. Ascending to a position that could be defined as reasonable anthropomorphism is, at least, a two-step ladder. It entails, on step one, a combination of all available knowledge of an animal, from genetic make-up and villosity of the skin to social preferences and our anthrozoological “becoming with” (Haraway, 2008), and, on step two, an acceptance of the fact that full knowledge and exact truth about

animals is unattainable—and thus the benefit of this doubt must be extended to the beings in question. Gordon Burghardt describes this as retaining “respect for what they may be experiencing” (1985, p. 918).

Furthermore, reasonable anthropomorphism necessitates willingness to ask the question of animal being empathically. Empathy as an ethological tool requires us to use our own emotional experiences and intuitions to further our understanding of animals. There is much knowledge and understanding to be gained from using one’s own introspections and feelings in questioning what it is to be someone or something else. Self-knowledge, however, is only one side of this coin, and in order to arrive at a critical and reasonable anthropomorphism it must be “tempered by objective knowledge of the particular species’ (or individual animal’s) life history, behavior, and physiology” (Morton, Burghardt, & Smith, 1990, p. 14).

*Zoon Koinonikon*¹⁴

A natural description of the various behavioral, physical, and specific mental aspects of an individual farm animal cannot truly constitute a philosophically valid characterization of farm animals and farm animal life. An important further dimension must be added. Thus, a proper and comprehensive description must inevitably—also in the tradition of Aristotle—understand farm animals as living beings already and always situated in a social/relational context. This theory of *zoon koinonias* is present on two distinct levels. First of all, it pertains to the individual farm animal in a very unambiguous way. Traditional livestock are herd or flock animals whose social interactions and relational associations are socioenvironmental groundworks for the animal’s behavioral requirements, which “represent the external, material and phenomenological complement to the animal’s intrinsic nature or ‘speciesness’” (Fox, 1985, p. 28). In other words, what it means to be a pig—an individual pig—is always, and always will be connected to a social foundation. Second, the thoughts and theories within sociobiology suggest that the understanding of certain social animals and what they fundamentally are is not only a matter of the individual and the individual in relation to other individuals, but also a matter of understanding social groups as “wholes” that in themselves have existence and “fitnesses” and that “evolve” (Wilson & Wilson, 2007).

The first level mentioned involves describing the individual animal’s relation to others and examining the capability (or capabilities) for social interaction and relational contact. Such capabilities are not entirely self-regarding; rather they are a question of both interior (mind) and exterior (relations)

potentials. The theories of sociality focus on the capabilities of mind that constitute the basis for the social and relational features of farm animal life, or, in other words, the mental capability for affiliation. Almost all animals have affiliations with other animals of their kind; even typically solitary animals like polar bears have affiliation with each other in connection with mating, rearing of cubs, and—at times—playing together (Latour, 1981). The food-producing farm animals can all be designated as naturally social. Cows, pigs, and hens all form groups and interact with each other within these groups in ways that define and constitute the boundaries of the group and group membership (Houpt, 1998). The foundation of the interrelational capabilities in the mind of the individual animal and the complex structures of sociality among farm animals are impossible without such mind-correlated concepts as “the other,” “me,” and “us.” Such concepts or understanding enable the individual animal to navigate the internal social structures, associations, and pecking orders within the group. Group animals understand themselves in this internal context as, for example, mothers, leaders, underlings, and companions/friends within a framed social structure of alternating flexibility (Illmann, Schrader, Špinka, & Šustr, 2002). But, at the same time, every individual in the group has an understanding of “us” and thus of “them,” which entails a comprehension—beyond family bonds—of which individuals belong to the group and which are strangers (Heinsohn & Packer, 1995). Such a concept of community not only shows a behavioral characteristic of a certain species of animal but also indicates to what extent we can grasp, in an epistemological sense, the animals’ being-in-the-world.

The second level in the social descriptive structure of the lifeworld of a farm animal is the notion of understanding animals according to their existence as parts of wholes. Sociobiology provides us with a starting point in this area. Since its modern rebirth¹⁵ in the 1960s and 1970s (Wilson, 1975; Wynne-Edwards, 1965), sociobiology has been the scene of great controversy and much debate. The lines in this “evolution war” are drawn between (a) theories with a foundation in the concept of “selfish genes” (Dawkins, 1989) and evolutionary selection on the individual level and (b) theories defending models of either group selection or multilevel evolutionary selection. As with many other scientific debates, the disagreements have been heavily influenced by the times in which the research has been conducted—both ideologically (related to societal influences) and because of current breakthroughs in the respective sciences (for example, the advancements in the disciplines related to genetic research). It is not the endeavor of this article to mention (let alone solve) the many disputes in this biological field, or—normatively or descriptively—to point out their rights and wrongs. The intention is, rather, to show how

multilevel evolutionary selection theory could help us develop a more well-founded and valid notion of what it means to be a farm animal.

The crux of the matter, pertaining to group selection, is the idea that some groups out-compete other groups because of the superiority of their pro-social/altruistic communal structures. The claim is not a denial of selfish animals' success when competing directly against more altruistically disposed individuals. The point is that this is not the only level at which selection takes place. For a better grasp of the animals and evolution, we must also look at the evolutionary selection between groupings of animals. At this level, the herd/flock with an adequate number of altruists¹⁶ out-competes the herd/flock with an inadequate number of altruists (Wilson & Wilson, 2007; Darwin, 2004). Wilson and Wilson argue that it is fundamental for the successful life and function of an animal group that some of the actions of the individuals in the group are done for the other individuals or for the group as a whole. Such actions and systems of action can under certain circumstances strengthen the relative fitness of the initiating individual, but this is by no means necessarily or even usually so. Neither do the individual's actions for the good of the group always and automatically lead to any kind of extraordinary negative effects on its relative fitness within the group. But as long as the behavior of the individual has a positive effect on other individuals in the group or the group as a whole, it is considered to be altruistic/pro-social. These factors obviously vary tremendously from situation to situation and between specific altruistic or socially directed actions, and as such it is not always entirely transparent whether or not a certain set of behaviors is altruistic.

What, on the other hand, is quite clear to Wilson and Wilson is that single traits can evolve in environments where these specific traits are disadvantageous to the individual animals: "For this to happen, an advantage at a larger scale (between groups) must exist to counteract the disadvantage at a smaller scale (within groups)" (Wilson & Wilson, 2007, p. 330). An example of this can be found in the research of Craig Packer and Robert Heinsohn (Heinsohn & Packer, 1995; Morell, 1995). From their studies of social structure and cooperation among African lionesses, they find that the risks associated with defending the territory, and thus maintaining a protected area for cubs and upholding the integrity of the pack, are distributed very unequally among the lionesses. Typically it is the same few individuals who take the lead in assuming the very real and potentially fatal risks of engaging trespassing and hostile lions from outside the group. The other lionesses either do not join the protection party or they hang back, thereby reducing their risk of injury. This behavior on the part of "the laggards," as Heinsohn and Packer call them, gives them a comparative advantage in relation to the leading lionesses because the latter carry most of the cost from an outside attack. Heinsohn and Packer contend

that this asymmetrical allocation of risk is accepted by the leaders, who do not punish the behavior or withdraw their own defensive leadership. The labor asymmetry, on the other hand, is well understood by the leaders and results in what Heinsohn and Packer describe as “mistrust” (original quotation marks). Accordingly, the leaders exhibit a more careful approach when patrolling with these “cowardly lions” (Morell, 1995; my quotation marks).

In a primarily agricultural framework, a similar view can be taken of the manmade “evolution” among laying hens in groups. One of the major problems in keeping egg-laying hens in multiple-bird cages is the possibility of feather pecking and cannibalism. The direct causes for these negative behaviors have not all been identified, and there are no similar behavioral examples among undomesticated hens. Some theories point to stress associated with cage life and other housing (El-Lethey, Aerni, Jungi, & Wechsler, 2000), but it has also been shown that there is a strong genetic element connecting generations or families of feather peckers (Bijma, Muir, & Van Arendonk, 2007; Muir & Craig, 1996, 1998). These findings have led agricultural researchers to attempt genetic selection for positive traits on a group level instead of on an individual level: “Results show that interaction among individuals may create substantial heritable variation, which is hidden to classical analyses. Selection action on higher levels of organization captures this hidden variation and therefore always yields positive response, whereas individual selection may yield response in the opposite direction” (Bijma et al., 2007, p. 277).

This research points toward the importance of approaching welfare as well as production among laying hens at multiple levels. The fitness, health, and productivity of one individual laying hen might be of relatively little importance if this individual bird feather pecks to such a degree as to injure or even kill the other hens in the group cage. In an analysis from an artificial multilevel selection of laying hens, the focus will be on the relative fitness and productivity of groups, and the multiple-bird cage with the most successful social cooperation will out-compete the cages with one or more antisocial birds.¹⁷ Such results and analysis from agricultural research, development, and production are beneficial to understanding why looking at groups as wholes with welfare of their own adds to both epistemological and ethical theory.

The risk, however, is accepting the framework of industrialized agriculture, which has neither epistemological knowledge nor ethical welfare as an objective. First of all, the overly individual welfare definitions of modern agriculture are highly focused on function and production. According to such definitions, there is good welfare if the animals function properly in accordance with a set of parameters to some degree reliant on, but external to, the animals themselves and if they produce the amount and quality of milk, meat, or eggs that they are supposed to, in accordance with the technical and economic

systems. Though both function and production can be essential tools in assessing animal welfare, the externality of these concepts as used by agribusiness in part dislocates welfare from the animals and merges it with the optimal running of agriculture's technical, economic, and political systems. Furthermore, and conjoined with the argument above, the animal groups or multi-individual units in agriculture are often misconstructions of animal existence in which "technological sanders [enable us to] fit square pegs into round holes" (Rollin, 2006, p. 204). Technological developments in breeding, medicine, and environmental control have permitted the construction of animal groups that fit the production system but that do not fit intrinsic animal welfare or better our understanding of species-specific (intrinsic to the beings in question) animal groups as wholes. Lastly, the proposed understanding in this article is of animal groups as wholes that in themselves are types of beings with active existences and capability for welfare. This is in opposition to the language, epistemology, and methodology of industrialized agriculture where a production-induced objectification and commodification of groups relegates these, and by default the individuals that they consist of, to inanimate things.

Conclusion and Perspectives

Now, where has all this led us in our attempt to lay out a foundation for better understanding the nature of animals in agriculture or uncovering what we could aptly call an epistemology of farm animals? My proposed answer is that we now have a better comprehension of the multifaceted existence of the animals. It is becoming more apparent why our thinking about farm animals has to involve seeing them as individuals and, at the same time, as intrinsic parts of groups and social systems—neither level being somehow more principal, more "real," or normatively primary.¹⁸ The notion of complete separateness—an impenetrable and fundamental barrier—between animals, which is the epistemological foundation of animal ethics models such as the animal rights theories (Regan, 1985), limits our understanding of animals. There is an inherent connectedness due to the group nature of farm animals, and thus we must also and always understand farm animals as having existence on different levels simultaneously: being individual animals and, at the same time, also being part of different and varying communities or multi-individual entities such as families, groups, herds, and metagroups¹⁹ such as species and ecosystems.

On the individual level, farm animals can and do understand themselves and are understood by their fellow beings as part of multi-individual wholes as, for example, pairs, families, or certain herds or flocks. Furthermore, there are ways of understanding farm animal existence (or being-in-the-world) that

are not understood or even comprehensible by the animal but that are real and understood by humans—for example, their being part of ecosystems, species, or other metagroups. From these ideas of group and from the sociobiological concept of multilevel evolution and groups as wholes in and of themselves, we must draw a pluralistic conclusion on farm animal being. An antireductionist explanation of animals as mind-full beings actively and constantly relating socially to other beings facilitates a better understanding of what it means to be an animal than purely physical or behavioral approaches. But even this extensive and encompassing approach does not capture the whole picture; the understanding of animals in groups in the context of this article is moreover to stop understanding “animals in groups” and move on to an understanding of “animal-groups” where the individuals are epistemologically dissolved. Such a pluralism of philosophical ethology will not only have significance for our experience and knowledge of farm animals but will necessarily have deep philosophical and ethical consequences. It has not been the focal point of this article to draw conclusions as to how the ethical “ought” should be applied in agricultural production, and the preceding text exclusively investigates the descriptive and epistemological foundations of the life and existence of farm animals. My claim is, however, that the multilevel approach to philosophical ethology forms an epistemology that constitutes frameworks of possibility within which good farm animal life can be unfolded—i.e., a domain of philosophical and ethological knowledge within which questions of animal welfare and animal ethics can rightfully and meaningfully be asked.

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Notes

1. During the 4th century BCE Aristotle wrote extensively and philosophically on animals in both *On the Soul* (Aristotle, 1984c) and in his *A History of Animals* (Aristotle, 1984a), and both St. Thomas Aquinas in the 13th century and Descartes in the 17th century created philosophical ethologies to justify denying animals' ethical relevance (Singer, 1995).

2. Originally a Heideggerian term that was used solely with reference to humans, it is employed by Hub Zwart (1997) to cover aspects of animal existence.

3. I use the term “extents” instead of “limits” to indicate a positive understanding of far-reaching opportunities for development. It should be understood as “potentialities,” but, unlike this word, “extents” emphasizes the dual nature of my approach here, which sees the possibilities of animal life as determined by both internally based potentialities and environmentally set scope.

4. In many texts on animals and ethics, welfare, and/or comparative ontological aspects of the human-animal research field, it is customary to refer to animals as “nonhuman animals” to highlight that humans are animals, too, and to avoid any irrelevant categorical boundaries between *Homo sapiens* and all other species. I concur with this purpose—as I believe this article will show—and indeed it is the premise for many of my proposed arguments. This said, however, I find it unnecessary and inelegant to use the term repeatedly throughout the text and will use it only when and where it is fruitful for descriptive purposes and arguments.

5. The biological psychologist Bob Bermond has made similar Cartesian claims—albeit in neuroscientific terms—in his article “The Myth of Animal Suffering” (2003), and Dr. James D. Rose rejects the concept of pain in fish in his article “The Neurobehavioral Nature of Fishes and the Question of Awareness and Pain” (2002).

6. See, among others, Griffin’s argument for evolutionary continuity (1976).

7. The philosophical argument for the ethical patienthood of animals due to their capacity for suffering—equal to humans—has been well established since Jeremy Bentham (1748-1832) wrote: “The question is not, Can they *reason*? nor, Can they *talk*? but, Can they *suffer*?” (Bentham, 1970, p. 283). The argument has, in different versions, influenced ethical thought on animals ever since, from Peter Singer’s preference utilitarianism (Singer, 1990, 1995) to Derrida’s “The Animal Therefore I Am (More to Follow)” (2004).

8. The concept of suffering, as used here, refers to both physical and mental anguish.

9. See, among others, *Animal Minds and Human Morals* by Richard Sorabji (1993) on the problems and controversy involving Aristotelian (and other Antique) concepts and understanding of animal mental abilities and extent.

10. From the Greek *ἄνθρωπος* (*anthrōpos*), meaning “human,” and *μορφή* (*morphē*), meaning “form.”

11. The concept of *Erkenntnis* derives from German philosophical terminology where epistemology is also known as the theory of *Erkenntnis* (i.e., *Erkenntnistheorie*). It is used here to emphasize the active aspect of epistemology, in contrast to the often somewhat passive connotations of the English terms “experience” and “knowledge.”

12. Jakob von Uexküll’s famous concept of the perceived outer world of an animal (Uexküll, 1909).

13. A more appropriate reason for concern would be their having no access to shade on a hot summer’s day.

14. “Fellowship being” or “social being,” derived from the term *koinonia* (κοινωνία), meaning “community” or “fellowship.”

15. I say “rebirth,” since a theory of selection on a group level is at least as old as Darwin: “It must not be forgotten that although a high standard of morality gives but a slight or no advantage to each individual man and his children over the other men of the same tribe . . . an increase in the number of well-endowed men and an advancement in the standard of morality will certainly give an immense advantage to one tribe over another” (Darwin, 2004, p. 112). We must understand here that Darwin’s concept of morality is on a par with our notions of unselfishness, social consideration, and altruism.

16. The term “altruism” has in itself been a matter of some controversy and accusations of problematic anthropomorphism. In this article, it is used with reference to group-advantageous traits and/or pro-social behavior/capabilities.

17. The research on the connections between social interaction and genetics has been fairly limited in the agricultural sciences until recently, and, because of their fairly rapid reproductive cycles, hens have been the animal of choice for researchers. There is, however, no reason to think that the theories do not apply to other farm animals—a point that is also argued in the article “The Contribution of Social Effects to Heritable Variation in Finishing Traits of Domestic Pigs (*Sus scrofa*)” by Bergsma, Kanis, Knol, & Bijma (2008).

18. Whereas it is obvious that individual existence is—descriptively—primary to group existence.

19. A metagroup defines a group that exists parallel to the initial groups in which the animals understand themselves. Metagroups are often groups of a size and distribution that make them unfathomable for the animals (species, subspecies, etc.), but they can also include groups with just a few members with no knowledge of each other but with related characteristics (genetic, physiological, behavioral).

References

- Allen, C., & Bekoff, M. (1997) *Species of mind: The philosophy and biology of cognitive ethology*. Cambridge, MA: MIT Press.
- Aristotle. (1984a). *A history of animals (Historia animalium)*. Trans. D. W. Thompson. In R. M. Hutchins (Ed.), *Great Books of the Western World: Vol. 9. The Works of Aristotle, Volume II*. London: John Bell. (original work published 343 BCE)
- . (1984b). *On the parts of animals*. Trans. W. Ogle. In R. M. Hutchins (Ed.), *Great Books of the Western World: Vol. 9. The Works of Aristotle, Volume II*. London: John Bell. (original work published 343 BCE)
- . (1984c). *On the soul*. Trans. J. A. Smith. In R. M. Hutchins (Ed.), *Great Books of the Western World: Vol. 8. The Works of Aristotle, Volume I*. London: John Bell. (original work published 350 BCE)
- Bentham, J. (1970). *An introduction to the principles of morals and legislation*. London: The Athlone Press. (original work published 1789)
- . (1989). A utilitarian view. In P. Singer & T. Regan (Eds.), *Animal rights and human obligations*. Englewood Cliffs, NJ: Prentice Hall.
- Bergsma, R., Kanis, E., Knol, E., & Bijma, P. (2008). The contribution of social effects to heritable variation in finishing traits of domestic pigs (*Sus scrofa*). *Genetics*, 178:1559-1570.
- Bermond, B. (2003) The myth of animal suffering. In S. Armstrong & R. Botzler (Eds.), *The animal ethics reader*. Abingdon, UK: Routledge.
- Bijma, P., Muir, W. M., & Van Arendonk, J. A. M. (2007). Multilevel selection 1: Quantitative genetics of inheritance and response to selection. *Genetics*, 175:277-288.
- Burghardt, G. M. (1985). Animal awareness: Current perceptions and historical perspective. *American Psychologist*, 40(8):905-919.
- Bynum, W. F. (1975). The great chain of being after forty years: An appraisal. *History of Science*, 13:1-28.
- Callicott, J. B. (1980). Animal liberation: A triangular affair. *Environmental Ethics*, 2:311-338.
- Chalmers, D. J. (1996). *The conscious mind: In search of a fundamental theory*. Oxford: Oxford University Press.
- Darwin, C. (2004). *Descent of man, and selection in relation to sex*. New York: Barnes & Noble Books. (Original work published 1871)
- Dawkins, M. E. S. (1993). *Through our eyes only? The search for animal consciousness*. Oxford: Oxford University Press.
- Dawkins, R. (1989). *The selfish gene*. Oxford: Oxford University Press.

- De Waal, F. B. M. (1999). Anthropomorphism and anthropodenial: Consistency in our thinking about humans and other animals. In G. Massey (Ed.), *Philosophical Topics*, vol. 27. Fayetteville, AK: University of Arkansas Press.
- Dennett, D. (1996). *Kinds of minds*. New York: Basic Books.
- Derrida, J. (2004). The animal that therefore I am (more to follow). In M. Calarco & P. Atterton (Eds.), *Animal philosophy: Essential readings in Continental thought*. London: Continuum Books.
- Descartes, R. (1912). *Discourse on method*. London: Dent. (Original work published 1637)
- El-Lethey, H., Aerni, V., Jungi, T. W., & Wechsler, B. (2000). Stress and feather pecking in laying hens in relation to housing conditions. *British Poultry Science*, 41(1):133-140.
- Fox, M. W. (1985). Philosophies and ethics in ethology. In A. F. Fraser (Ed.), *Ethology of farm animals: A comprehensive study of the behavioural features of the common farm animals*. Amsterdam: Elsevier Science Publishers B. V.
- Griffin, D. R. (1976). *The question of animal awareness: Evolutionary continuity of mental experience*. New York: Rockefeller University Press.
- . (1999). Nonhuman minds. In G. Massey (Ed.), *Philosophical Topics*, vol. 27. Fayetteville, AK: University of Arkansas Press.
- Haraway, D. J. (2008). *When species meet*. Minneapolis: University of Minnesota Press.
- Heinsohn, R., & Packer, C. (1995). Complex cooperative strategies in group-territorial African lions. *Science*, 269(5228):1260-1262.
- Houpt, K. A. (1998). *Domestic animal behavior for veterinarians and animal scientists*. London: Manson.
- Illmann, G., Schrader, L., Špinková, M., & Šustr, P. (2002). Acoustical mother-offspring recognition in pigs (*sus scrofa domestica*). *Behaviour*, 139:487-505.
- Latour, P. B. (1981). Interactions between free-ranging, adult male polar bears (*Ursus maritimus* Phipps): A case of adult social play. *Canadian Journal of Zoology*, 59(9):1775-1783.
- MacIntyre, A. (1999). *Dependent, rational animals*. London: Duckworth.
- Massey, G. (1999). Zoological philosophy. In G. Massey (Ed.), *Philosophical Topics*, vol. 27. Fayetteville, AK: University of Arkansas Press.
- Morell, V. (1995). Cowardly lions confound cooperation theory. *Science*, 269(5228):1216-1217.
- Morton, D. B., Burghardt, G. M., & Smith, J. A. (1990). Critical anthropomorphism, animal suffering, and the ecological context. In S. Donnelley & K. Nolan (Eds.), *Animals, science, and ethics*. New York: The Hastings Center.
- Muir, W. M., & Craig, J. V. (1996). Group selection for adaptation to multiple-hen cages: Selection program and direct responses. *Poultry Science*, 75(4): 447-458.
- . (1998). Improving animal well-being through genetic selection. *Poultry Science*, 77(12):1781-1788.
- Nagel, T. (1974). What is it like to be a bat? *The Philosophical Review*, 83(4):435-450.
- . (1986). *The view from nowhere*. New York: Oxford University Press.
- Nussbaum, M. C. (2006). *Frontiers of justice: Disability, nationality, species membership*. Cambridge, MA: Belknap Press.
- Regan, T. (1985). *The case for animal rights*. Berkeley, CA: University of California Press.
- Rollin, B. E. (1989). *The unheeded cry*. Oxford: Oxford University Press.
- . (1998). Scientific ideology, anthropomorphism, anecdote, and ethics. In *Proceedings of the 32nd Congress of the International Society for Applied Ethology*, Institut National de la Recherche Agronomique, France.
- . (2006). *Science and ethics*. New York: Cambridge University Press.
- Rose, J. D. (2002). The neurobehavioral nature of fishes and the question of awareness and pain. *Reviews in Fisheries Science*, 10(1):1-38.

- Singer, P. (1990). *Animal liberation* (Rev. ed). New York: Avon Books.
- . (1995). Animals. In T. Honderich (Ed.), *The Oxford companion to philosophy*. Oxford: Oxford University Press.
- Sober, E., & Wilson, D. S. (1998). *Unto others: The evolution and psychology of unselfish behavior*. Cambridge, MA: Harvard University Press.
- Sorabji, R. (1993). *Animal minds and human morals: The origins of the Western debate*. London: Duckworth.
- Uexküll, J. von (1909). *Umwelt und Innenwelt der Tiere*. Berlin.
- Wilson, E. O. (1975). *Sociobiology: The new synthesis*. Cambridge, MA: Belknap Press of Harvard University Press.
- Wilson, D. S., & Wilson, E. O. (2007). Rethinking the theoretical foundation of sociobiology. *The Quarterly Review of Biology*, 82(4):327-348.
- Wynne, C. D. L. (2007). What are animals? Why anthropomorphism is still not a scientific approach to behavior. *Comparative Cognition & Behavior Reviews*, 2:125-135.
- Wynne-Edwards, V. C. (1965). Self-regulating systems in populations of animals. *Science*, New Series, 147:1543-1548.
- Zwart, H. (1997). What is an animal? A philosophical reflection on the possibility of a moral relationship with animals. *Environmental Values*, 6(4):377-392.