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Fredrik Karlsson

Anthropomorphism and Mechanomorphism

A project has been underway in human-animal studies to redefine anthropomorphism from being viewed as an absolute fallacy to a linguistic habit that may or may not be used fallaciously.¹ This project has often taken form as resistance against mechanomorphism, i.e. the habit of attributing mechanical properties to non-mechanical entities. Those who avoid analogies that use human terms in referring to non-human animals, the argument goes, will instead use mechanistic ones to make those analogies, because we inexorably do make analogies. In order to avoid comparing obviously living animals to dead machines, we should instead make anthropomorphic projections. Animals would then be acknowledged as fully living beings with agency and a certain authority.²

This paper proposes to call into question the dichotomizing view that anthropomorphism is necessarily incompatible with mechanomorphism. I will argue that the progress that has been made in reforming the notion of anthropomorphism can also be helpful for understanding mechanomorphism more generously. Indeed, both anthropomorphic and mechanomorphic thinkers must agree, and actually do seem to agree, that the ultimate issue at hand is not which morphism to use, but to find appropriate ways to communicate percepts of animals, and, through them, to understand non-human animals to the fullest extent possible.

The meaning of anthropomorphisms. Anthropomorphism is the habit of using terms salient for human traits to refer to non-human traits. The term thus implies a distinction between human beings and other beings, which makes it a position that is increasingly questioned.

With increasing intensity, the human/non-human dichotomy is being deconstructed, linguistically blurred, analytically criticized, or simply discarded in human-animal studies. The disruption of the human/non-human dichotomy invalidates many conventional habits of communicating about animals. As a consequence, the contemporary academic movement of human-animal studies that is characterized by such relativization of “the animal” demands better ways to talk and think about non-human animals.

Anthropomorphism is one of the linguistic habits that, in its traditional and rather naïve form, is questioned in contemporary human-animal studies. Nevertheless, the everyday linguistic habits of anthropomorphism may contain vital insights that assist us in establishing better habits for talking about animals. Anthropomorphism may reflect how terms based in human experiences and preserved in human languages can be projected onto those who share neither the experiential pool nor that kind of language (e.g. non-human animals). A critical understanding of anthropomorphism might then help human-animal studies to project human notions onto animals and challenge the view that the above mentioned experiential pool is uniquely human.

The ambiguity of anthropomorphism may be said to arise from the co-incidental expression of two ideas: first, that it can be meaningful to talk selectively about human beings (*anthropo-*), and, second, that terms developed in a certain context may be applied to another context (*-morphism*). Those who think about animals may need the *-morphism* of anthropomorphism badly enough to accept the term until we pry out the essentializing aura of *anthropo-*.

It has been claimed that it is intrinsic to human nature to conceive of other beings as having human characteristics (Hume xix). While not confirming such an essentialist claim, some results from psychological studies do confirm that it is common for people to anthropomorphize both natural and artificial entities, although the tendency varies in strength and is not universally observed (Waytz et al. 221-22). This view resonates with the contemporary understanding of anthropomorphism as an inevitable part of our language and percepts that does not necessarily imply an error (Daston and Mitman 6).³

At the same time, the accusation of anthropomorphism has long been a feared judgment about people's perceptions of animals, implying a category mistake, or a fallacy in interpreting facts (Midgley 331).⁴ It is unclear whether such critics understand anthropomorphism as making comparisons of analogy or of homology. If anthropomorphism is understood as making homologous comparisons, then the criticism may be understood as a warning against presuming unwarranted similarities between human beings and other animals. If anthropomorphism is instead understood as making analogous comparisons, then the criticism may be understood as a wish to prohibit certain linguistic manoeuvres when talking about animals. The former interpretation is the less problematic one,⁵ although there are certain occasions, as demonstrated below, where the latter kind of criticism is deployed.

Anthropomorphism may involve analogies of physical, psychological, or cultural terms (Everndon 52–55; Waytz et al. 220). Physical anthropomorphism was originally a heresy, (mis)used to make claims about the form of God and other divinities.⁶ Today, physical anthropomorphism is uncontroversial, perhaps thanks to its use in the rationale underlying animal experimentation (Everndon 54).

Psychological (also called emotional and mental) anthropomorphism, ascribing a human-like mind and emotions to animals, has long been controversial within science (Midgley 332; Kennedy 151-60), although many signs point to a change in attitude.⁷ The issue is further complicated by differing opinions concerning the observability of mental states.⁸ The animal sentience that is implied by psychological anthropomorphism has had far-ranging consequences for ethical theory.⁹

Cultural anthropomorphism, using notions of human culture to explain animal relations, is also controversial. Donna Haraway, for example, uses museum dioramas to argue that such visualizations of animals are used to reconfirm patriarchal values of transcendence over bodily vulnerabilities (Haraway 26–58). It has been argued that contemporary trophy hunting carries similar values (Kalof & Fitzgerald 119-22). Wildlife television shows arguably reconfirm both gender and sexual stereotypes (Ganetz 208-09). Even Darwinist theory and contemporary, biological research, it has been suggested, carry such values.¹⁴

Anthropomorphism is, thus, a composite notion. The simplistic idea that anthropomorphism is a vaguely defined, absolute flaw of thought seems ungrounded, considering the diversity of views surrounding the notion. Instead, anthropomorphism may be viewed as a functional method of understanding otherness (Doniger 33-34). Furthermore, while the presumptuousness of some anthropomorphism is problematic, anthropomorphic projections *per se* are not (Rollin 130–1; Mitchell 102). It has also been pointed out that *not* granting non-human beings human-like traits can be as great a flaw in interpreting facts as claiming the opposite – it all depends on the actual nature of the non-human being in question (Doniger, *loc. cit.*). Anthropomorphism is, then, sometimes conceived to be an intellectual sin *per se*, while it may actually be an epistemically neutral or even potentially benign linguistic and perceptual habit of analogy that co-incidentally, and perhaps unfortunately, is used with high frequency in brash statements.

Anthropomorphic or technical descriptions? Opponents of the use of anthropomorphic projections have sometimes been associated with mechanistic views of animals.¹¹ This is not always the case, however. Pamela Asquith, for example, admits to the emotional life of animals while arguing that “nonhuman rationality,” which would include emotions, can be described without using anthropomorphism. She argues that the combination of predictability, confirmed observations, and behaviorist terminology can be sufficient. That said, I will elaborate on an opponent to anthropomorphism who does indeed show quite strong mechanistic tendencies in order to prepare an opening for some kinds of mechanomorphic thinking in the realm of human-animal studies.

John S. Kennedy’s *The New Anthropomorphism* (1992) is a major work opposing anthropomorphism in ethology. Kennedy portrays anthropomorphism as a “creeping” (166) and “dangerous” (159) “disease” (160). He identifies an anthropomorphic tendency in the neobehaviorism of ethology. The “old,” explicit anthropomorphism was done away with by the radical behaviorists, but as behaviorism was adapting to a more complex view of the causality of animal behavior it also became vulnerable to unconscious anthropomorphic assumptions (4, 157). Kennedy’s remedy is to use technical language that leaves aside all references to an inner life when describing animal behavior (161-7).

Kennedy admits that anthropomorphism is inherent in human language (5, 160). He even grants that anthropomorphic language has heuristic functions, but insists that it should only be understood metaphorically (9, 88-9, 162-4). As an approach for directly describing animal behavior, anthropomorphism necessarily mis-attributes properties, not the least among them conscious intentionality, to animals (31-2, 157-8). Kennedy supports this claim principally by insisting on the distinction between evolutionary causes and proximate causes.

Evolutionary causes describe why a behavioral pattern has been established within a species, while proximate causes are part of the description of how this behavioral pattern is manifested by an individual representative of the species (49-54), reflecting the distinction between *why* and *how*, and, thus, seems useful enough. Kennedy’s way of proposing and using the distinction, however, also involves mechanistic assumptions.

The distinction is expressed by an analogy to a missile. A heat-seeking missile is constructed for a purpose and therefore the missile moves in accordance with a purpose; the missile itself, however, cannot be considered purposeful. The evolution of

an animal's behavioral pattern follows certain evolutionary purposes and therefore the animal moves as if it were reflecting such purposes, but the animal itself cannot be called purposeful (68-75). To insist that certain non-human animals do have a conscious purpose for their actions (e.g. eating because of hunger, or fleeing because of fear) would be as presumptuously anthropomorphic as would the ascription of purposefulness to missiles.

The analogy to machines is an appropriate pedagogical approach to the extent that it clarifies the distinction between "why" and "how" in behavioral issues. The reader is expected to understand that Kennedy uses the apparent intentionality of missiles as a metaphor to explain that animal behavior may not be easy to explain after all. But Kennedy says more than what such a metaphor would allow. He also uses the comparison between animals and missiles in a homologous sense. Not only should the reader accept her own limitations in understanding animals, she should also accept that animals are not consciously intentional. Why? Because, the argument goes, *missiles* are not consciously intentional.

The analogy is originally about a conceptual distinction, but is then thwarted and carried too far. Animals cannot, *prima facie*, sensibly be compared to missiles. Using missiles as a metaphor for animals can only be about establishing apparent intentionality, which is a common and typical property of both groups. Kennedy, however, tacitly turns this analogous comparison into a homologous one, involving full-natured animals and full-natured missiles — "animals are (in a specific sense) like machines" turns into "animals are machines."

Kennedy speaks appreciatively of the view that animals are complex machines consisting of physiological mechanisms honed by natural selection. He further argues that this is not at all reductionist because the complexity of animal behavior is honored by the view (2-3, 62-3, 121). These statements do not comport very well with his claim that his aim is merely to point out that it is wrong to assume animal minds, not that they may not exist (157-8). To assume that animals are like machines is usually associated with the assumption that they do not have minds. Still, the ambivalence in attitude about the existence of animal minds makes it clear that his reasoning, including the suggested solution to anthropomorphic errors, does not rely on denying the existence of animal minds. It might be combined with theories that assume the existence of animal minds, as long as the arguments for such an assumption do not rest on fallacious anthropomorphism.

The solution of describing animal behavior in technical, allegedly objective language may further support the suspicion of an underlying mechanistic view. It might also, however, be understood as a call for a less biased language in describing animals. Other sections of Kennedy's text can be interpreted as attempts to develop a method for studying animals with an open mind about differences from human beings that may or may not be combined with the mechanistic view.

The analogy to heat-seeking missiles, misformulated as it may be, might then be understood as treating animals as mindless things *methodologically*, in order not to misunderstand their inner life. To speak only of physiological mechanisms might be a sign of humility before all the possibilities of animal natures. Although the formulation of the analogy gives the impression that animals are believed either to be conscious in a goal-directed sense or not to have minds at all, it should actually be understood as saying that a human-like (i.e. goal-directed) mind should not be projected onto the animal without further evidence, in order to preserve all other possibilities.

Other instances of Kennedy's reasoning contain the same kind of interpretive ambiguity. For example, he views intentionality as inappropriate for descriptions of animal behavior. Instead, he recommends describing behavioral patterns as harmonizing with other such patterns in the same individual (87). This would allow animal behavior to be conceived as a self-referential, harmonious network, as opposed to implying human-like motivation. This might be viewed as stemming from a mechanistic view of animals. If, on the contrary, the use of behaviorist language is viewed analogously, then the avoidance of intentionality-oriented explanations seems to be inspired by the desire to keep open the possibility of animal minds without biases of human-likeness.

Another, similar, example is Kennedy's reluctance to attribute cognition to animals (102-3). The case may be interpreted as a refusal to entertain the possibility that any non-human animals have cognition. Still, it might be understood as a wish to preserve all the possibilities of different kinds of animal cognition (as well as the possibility that there is none) until we know more. Since Kennedy claims that we cannot assume whether animals have consciousness or not, the latter interpretation is preferable.

The option of cleansing anthropomorphism from academic thought may, thus, be founded on a concern for animals. It is actually the same kind of concern as that of scholars who worry that the mechanomorphism of authors such as Kennedy

misrepresents animals. Both share the concern for describing animals well. This interpretation of Kennedy, however, assumes a generous reading of an otherwise ambiguous text.

I will shortly elaborate on the rationale of one of Kennedy's critics in order to develop this thought. Kennedy's approach is based on the claim that the use of technical language attempts to avoid ordinary language's tendency to treat animals as acting subjects (Asquith 2). Technical language thus creates a space where perceptions of animals can be explained without the normative disturbances of everyday language, allegedly avoiding anthropomorphism (Crist 2–6). Eileen Crist disputes this notion that technical languages are neutral.

In *Images of Animals* (1999), Crist argues that the use of technical language in descriptions of animals is no less normative, and no less prone to mistakes, than explicitly anthropomorphic approaches. She, too, directs her attention to the sciences of animal behavior, but suggests an alternative solution. Technical descriptions of animals, she claims, generalize the animal to the extent that particular, real animals disappear (92). The descriptions are instead flooded by technical terms that make the animal merely a symbolic carrier of the underlying theory or paradigm in question. Anecdotal descriptions using everyday language, filled by anthropomorphic terminology, can, by contrast, acknowledge individual animals with all their particularities (68, 84-5, 90).

Informal, everyday language, in Crist's view, implies that the acts of animals are meaningful, authored, and continuous. It does not, as technical language does, dichotomize the percepts and descriptions of animal acts into subjective and objective aspects (4, 38-9). Such a dualism between object and subject creates a mechanistic view of animals. Instead of human terms, mechanical terms (perhaps primarily the sign of the nonliving instrument) are transferred to animals; instead of anthropomorphism, mechanomorphism (9).

Anthropomorphism bridges the objective and the subjective aspects of percepts. Animals should, Crist contends, be described by active verbs where the animal is the grammatical subject (77-8, 82). "The grub is witnessed as owning a world and authoring the work of its world. It thus becomes a subject" (82). Crist here uses the early naturalists' concept of lifeworld to make her point. The intention is not to claim that grubs consciously hold a worldview. Rather, she views anthropomorphic descriptions as helping the perceiver to gain an understanding of the actual animal as being alive,

and that this understanding may involve more than general facts of physiology. Anthropomorphic language reminds us that the apparent object is a subject, or rather a quasi-subject/quasi-object. It is itself, beyond our construed categories. The particulars of the circumstances under which grubs pursue an authored and coherent life may remain to the greater part obscure and indescribable, and we may be forced to retreat to terminology carrying uniquely human notions in order to make some headway. Such terminology, albeit imprecise, acknowledges the variety of individual animals in a way that technical language never can, according to Crist.

The lack of substantial general content in such language suggests that the animal has a role in a greater context to which human beings also belong. That role means that even the acts of a grub are authored, meaningful, and continuous, whether they are conscious or not. Anthropomorphic language is a reminder both that the describer, too, is an animal, and that the grub, too, is fully alive. The grub and the human are both, to an extent, part of the same environment. If human lives are authored, meaningful, and coherent, then the grub's life is as well – but in a sense that may escape human language. Anecdotal descriptions of grubs or wasps or ants by the early naturalists may not provide correct information about insects in general, but they do, instead, remind us of the significance of each wasp's life by making analogies to human lives. Quite obviously, this approach to anthropomorphism is not anthropocentric, but is based rather on the notion that there is no dichotomy between “Nature” and “Man.”

Kennedy and Crist obviously approach anthropomorphism, as well as animals, quite differently. Kennedy is happy to use mechanistic terminology, while he considers human-oriented terminology to be saturated with misleading normativity. Crist promotes the opposite view. Crist recommends flourishing descriptions of animals, while Kennedy wants to take the minimalist skeptic's path. (Crist, incidentally, does not agree that science takes a minimalist stance.) Kennedy wants measurable, scientific truth, while Crist wants to provoke the interpretation of percepts. Crist promotes an individualist and situational take on animals, while Kennedy frames animals as part of a generalizable community, namely a scientifically defined species.

Even so, there are also important similarities. Both are concerned with describing the animal well. Kennedy focuses his arguments on biases of human-likeness, while Crist criticizes overly rationalized generalizations. Even if this similarity also contains differences in the concept of the animal, both insist on carefully considering tacit prejudices in descriptions of animals. Both authors are troubled by descriptions using tacitly connotative terms. They agree that people should be freed from normativity that

channels perception through stereotypical notions. Kennedy's salvation is the alleged value-neutrality of numbers and technical terms, while Crist wants to give us an imaginative normativity that helps us to see the agency and authority of particular animals.

In spite of such similarities in purpose, the debate between authors like Kennedy and Crist has become dichotomous. The promotion of anthropomorphic language is rarely understood as compatible with the scientific approach to animal behavior. Those who prefer to use technical language instead refine behaviorist terminology and other methods to avoid anthropomorphism, without ever mentioning criticisms of implicit mechanomorphism. This is unfortunate, as this issue is not ultimately about human ideology, as both Crist and Kennedy admit, but about animals and describing them well. A short overview of the debate over critical anthropomorphism will show that using refined anthropomorphism may not always contradict the simultaneous use of mechanomorphism.

Critical morphisms. Critiques like Crist's are in line with the view that anthropomorphism is an efficient communicative strategy, instances of which may or may not contain errors. The notion of critical anthropomorphism was introduced in order to provide criteria by which erroneous anthropomorphisms can be distinguished from valid ones. Importantly, since the term "critical anthropomorphism" was first introduced by Burghardt, Morton *et al.*, it has been associated not only with a refinement of anthropomorphic descriptions, but also with the view that scientific and empathetic approaches to study animals can and should be combined.

Many authors of critical anthropomorphism repeat Mary Midgley's suggestion that (psychological) anthropomorphism is worthy of trust if the emotion and the creature that is claimed to feel it are sufficiently familiar. Emotions involve an observable attitude that can assist us in gaining knowledge about the emotion, and thus confirming the anthropomorphic language we use (Midgley 331–8). For example, it has been suggested that if there is observational evidence of causal similarities to human states, then anthropomorphism is appropriate (Mitchell 114). Another suggestion is that critical anthropomorphism is attained if the observable properties building a definition of the human correlative can also be observed among animals (McGrew 72–87). This approach thus utilizes commonly observable aspects of the surroundings in order to validate anthropomorphism.

Another approach is used by Wemelsfelder *et al.* They employ statistics to identify significant commonalities of test subjects' descriptions of animals. The descriptions consisted of adjectives such as "irritable" and "playful," and were thus instances of psychological anthropomorphism. The statistical method correlated the uses of various terms and resulted in graphical representations of consensus profiles. Because similar terms were grouped together, it could be concluded that the test persons indeed described a common experience. Rather than letting the anthropomorphism depend on observable similarities between human and animal, this approach attempts to identify intersubjective content in reported experiences. Critical anthropomorphism would, then, be understood phenomenologically.

A further approach may be to evaluate the use of anthropomorphism in terms of the purpose of the particular practice in question. For example, prediction is often viewed as the functional purpose of science. In correlation with this, it has been suggested that if the attribution of emotional states repeatedly correlates with successful predictions of behavior, then such anthropomorphism is valid for ethology (Andrews 52). Alternatively, it is possible to argue that simplicity is a core value of science, and that any methodology, including anthropomorphism, can be approved if it correlates with simplicity.¹² If anthropomorphism is used in other practices, where other values are important, then the evaluation of anthropomorphism changes accordingly. Understood in this way, this approach has an underlying, pragmatic rationale.

Perhaps other kinds of critical anthropomorphism can be distinguished. These three examples are, however, sufficient to show that the debate over critical anthropomorphism spans several and quite different approaches. Furthermore, they also show that, in spite of their differences, all approaches to critical anthropomorphism relate in some way to science. This association with science is obvious in the first and third approaches. The second approach is associated with phenomenology, which has sometimes invited anti-scientific (or, at least, anti-mathematizing) rhetorics. Wemelsfelder *et al.*'s methods, however, are clearly described and of a repeatable nature.¹³ Also, they have been repeated, confirmed, and controlled for confounding factors.²⁰ Positivistically inclined empiricists may not agree that what is claimed to be observed by Wemelsfelder *et al.* can be observed. That, however, would demonstrate differences between positivism and phenomenology towards mentalism, intersubjectivity, and the scope of perception, rather than showing that Wemelsfelder *et al.* do bad science. And no-one should be surprised to find differences between positivism and phenomenology.

The debate over critical anthropomorphism has, thus, always acknowledged the importance and utility of science. At the same time, it has also been made clear in the very same debate that one of science's most characteristic features — technical language — carries an inherent risk of fallacious mechanomorphism.

A resolution might be found without banning scientists from the discourse. It may be possible to use scientific thinking substantially in the debate over appropriate descriptions of animals without accepting technical language. It might be possible to build on values such as repeatability, predictability, simplicity, and/or other typically scientific values, while avoiding the linguistic habits that have traditionally been cultivated by the scientific community.

The question remains, why would we accept at the outset an approach that forbids or avoids a certain way to express ideas? And by which kind of mechanomorphism are we offended? If the suggestion is to ban analogies using mechanical terms in descriptions of animals, in what way would that be more precise than a general ban on analogies using human terms?

The case should rather be conceived as one about resisting homologies rather than analogies made between machines and animals. It is true that descriptions of animals consistently using behaviorist terminology, or expressing physiological or cell-molecular functions, give the impression that animals are robots. If one insists that scientific methodology must describe the entirety of animals, then such an impression seems valid. But if we consider scientific methodology to be characterized by, for example, repeatability and intersubjectivity, and that scientific results are simply the kinds of results that such methods produce, then a description of animals based on scientific results could safely be put at the side of, rather than on top of, descriptions resulting from other methodologies. It might be the case, nevertheless, that some descriptions, no matter whether they imply homologies to machines or not, are wrong. That should invite the development of sophisticated tools to distinguish appropriate descriptions critically, rather than the suggestion that certain kind of terms should be banned.

My goal here is to improve the ways in which we describe animals. The scope of descriptive tools needs to be constructively and critically broadened in order to improve the opportunities to describe a greater range of aspects of animals. If analogies in mechanical terms are understood to add to such a range, rather than to invalidate all

other descriptive aspects, then such terms may very well improve descriptions of animals.

If we hope to develop criteria that distinguish excessively romanticizing and misleading anthropomorphic projections from critical anthropomorphism, we must also admit that similar tools may very well distinguish between, for example, the misguided reductionism of some technical language and critically employed technical language that reflects the results of scientific methodology. This specific example builds on the already established distinction between methodological and ontological reductionism. The debate over critical mechanomorphism would surely benefit from the debate over critical anthropomorphism, inspiring phenomenological or pragmatic approaches.

Conclusion. Eventually, one hopes, talk of critical anthropomorphism and critical mechanomorphism will be harmonized to become a discussion about critical morphisms, rather than promoting or forbidding the use of certain kinds of terms. The goal should be to make critical use of terms in order to describe, at least tentatively, agents about whose subjectivity we can have little secure knowledge. The prefixes anthropo- and mechano-, implying essentialist kinds of terms and natures, may safely be forgotten when we are equipped with an ever increasing range of critical tools of description.

Another, and more important, reason to avoid the contempt for mechanical terms is, I would claim, that they may help us to understand the very animals that are supposed to be described. It is true that scientific models often make particular animals invisible, as Crist argues. But again, is the problem scientific methodology, or scientism? Is the particular grub finding its way through a decaying tree-trunk made invisible in the category of “species” and associated, generalized physiological and anatomical models because of the models and means for studying the grub, or is it because the model is mistaken to be the only possible world the grub can have? Taken, truly, as an oh-so-human attempt to understand the world, is it really so contemptible to describe a grub-world as also being affected by quaternary codes of deoxyribonucleic acid, or to describe its behavior in pseudo-geometrical terms?

The rigor of scientific methodology may often force the use of technical language and mechanical terms, but the very same rigor makes such a methodology trustworthy. Genes and proteins, behaviorist descriptions, and statistical representations are incomplete descriptions of animals, but they often reflect something true. If we believe it is necessary to describe animals as having agency *and* behavior, as being both *Leib* and

physiology, then it would be helpful, if not indeed necessary, to expand approaches of critical morphism into a tool-box for thinkers.

Notes

1. See Daston and Mitman.
2. See Crist; de Waal.
3. See also Crist; Elliot.
4. See also Fisher; Mameli and Bortolotti.
5. See Fisher.
6. See Daston.
7. See Schönfeld; Andrews; Asquith.
8. See Fisher.
9. See Singer; Regan; Donovan.
10. See Andersson & Eliasson.
11. See Crist; de Waal.
12. See Sober.
13. See Wemelsfelder *et al.*, "Spontaneous Qualitative Assessment."
14. See Minero *et al.*; Wemelsfelder *et al.* "Effect of Perceived Environmental Background"; Napolitano *et al.*

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