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THE ANTHROPOCENTRIC BIAS IN ANIMAL COGNITION

El sesgo antropocéntrico en la cognición animal

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ABSTRACT: In the classical philosophical tradition, animals had the special function of serving as "objects of comparison" concerning humans. In that sense, philosophy adopted a peculiar comparative perspective focused on the categoric difference that separates humans from other creatures: an exceptionalist perspective. The Humanities developed an *anthropocentric canon* for the study of animals and privileged the search for differences over similarities of these with humans. On the other hand, the great boost that animal studies received under the influence of Darwin's work promoted a different comparative perspective in the natural sciences. However, especially in comparative psychology, ingent efforts were devoted to avoid the errors that anthropomorphism would entail: attributing human properties to other creatures and privileging similarities over differences. It assumed that *anthropomorphic bias* entails a more fundamental type of error than *anthropocentric bias*. Now, this asymmetric diagnosis has beenunmasked with different arguments. In the context of both disciplinary traditions, it is timely to reexamine the most persistent and negative manifestations of *anthropocentric bias* as a comparative bias for the study of animal cognition. In this work I will identify the following: the homogenization of animals into a single general category; psychological speciesism and the "de-mentalization" of

animals; the survival of a hierarchical conception of cognitive abilities; the selective application - only to animals - of Morgan's Canon or *anthropodenial* and its complement, the assumption of idealized mental capacities in the human case or *anthropofabulation*; asymmetrical or distorsive methodological strategies for the study of animals versus humans which affects the comparative interpretations; and different manifestations of semantic anthropocentrism.

Keywords: animal cognition, anthropocentric bias, anthropomorphic bias, anthropodenial, anthropofabulation.

RESUMEN: En la tradición filosófica clásica, los animales tuvieron la función especial de servir como "objetos de comparación" con respecto a los humanos. En ese sentido, la filosofía adoptó una peculiar perspectiva comparada, centrada en la diferencia categórica que separa a los humanos de otras criaturas: una perspectiva excepcionalista. Así, las Humanidades elaboraron un *canon antropocéntrico* para estudiar a los animales y privilegiaron la búsqueda de las diferencias sobre las semejanzas de estos con los humanos. Por su parte, el gran impulso que recibieron los estudios animales bajo el influjo de la obra de Darwin, alentó una perspectiva comparada diferente en las ciencias naturales. Sin embargo, sobre todo en la psicología comparada, se dedicaron ingentes esfuerzos a evitar los errores que conllevaría el antropomorfismo: atribuir propiedades humanas a otras criaturas, privilegiando las semejanzas antes que las diferencias. Se asumió con frecuencia que el *sesgo antropomórfico* acarreaba un tipo de error más fundamental que el *sesgo antropocéntrico.* Ahora bien, ese diagnóstico asimétrico ha sido desenmascarado con distintos argumentos. En el contexto de ambas tradiciones disciplinares, resulta oportuno reexaminar las manifestaciones más persistentes y negativas del *sesgo antropocéntrico* como un sesgo comparativo para el estudio de la cognición animal. En este trabajo identificaré las siguientes: la homogeneización de los animales en una única categoría general; el especismo psicológico y la "desmentalización" de los animales; la supervivencia de una concepción jerárquica de las capacidades cognitivas; la aplicación selectiva -sólo a animales- del Canon de Morgan o *antroponegación* y su complementaria, la suposición de capacidades mentales idealizadas en el caso humano o *anthropofabulación*; las estrategias metodológicas asimétricas o distorsivas para el estudio de animales vs humanos que afectan las interpretaciones comparadas; y distintas manifestaciones del antropocentrismo semántico.

Palabras clave: cognición animal, sesgo antropocéntrico, sesgo antropomórfico, antroponegación, antropofabulación.

1. Introduction

> "…man is godlike, animals thinglike…[but] reason looks to me suspiciously like the being of human thought; worse than that, like the being of one tendency in human thought."
>
> (Coetzee, *Elizabeth Costello*, p. 23)

In much of the Western philosophical tradition, for example, in the works of Aristotle, Descartes, and Kant, non-human animals[1] had the special function of serving as *objects of comparison* concerning humans (Glock, 2012). It thought the search for a specific difference would be strengthened by "looking down". Thus, animals are represented as the closest contrast to human "nature." Condillac summarized the motivation for this perspective: "It would be of little interest to know what animals are if it were not a means of knowing what we are".[2] In that sense, the great philosophical tradition adopted a peculiar comparative perspective, based on a categorical difference that separate humans from other creatures: an exceptionalist perspective.

The Humanities and the different "humanisms", including some sophisticated elaborations of the recent philosophy of the animal mind, built an *anthropocentric canon* that extended to all areas of culture. They laid the foundations for the exclusion of animals from Humanities first, and Social Sciences later. According to the canon, animals "belong" only to the natural sciences. For its part, natural-scientific studies on animals, in disciplines such as ethology and comparative psychology, even after Darwin, had to fight an arduous battle against the *anthropocentric canon* for much of the last century. However, the epistemological and methodological discussions were dominated by the "spell of anti-anthropomorphism" (de Waal, 2003), more than by avoiding anthropocentrism.

Anthropocentrism is usually defined as the view according to which cognitive characteristics assumed to be distinctive or unique to human beings are taken as a reference or standard, explicitly or implicitly, for studying and evaluating the cognitive abilities of animals. In this paper, I will only refer to anthropocentrism about cognitive, psychological, or

1. I will refer interchangeably to *animals* or *non-human animals*. But, as will be seen, these and other ways of referring to all species, excluding humans, are not always neutral.
2. E. de Condillac (1755), *Traité des Animaux*, (Paris: Vrin, 1987), 1. (Quoted and translated by Glock, 2012).

mental abilities (I will use these terms interchangeably[3]). In this context, cognition refers to the processes or mechanisms through which a creature perceives, learns, and categorizes, which allows it to have flexible and goal-oriented behaviors (Andrews & Monsó, 2021).

I will try to show that anthropocentrism adopts the structure of a *comparative bias* that continues to influence, through certain persistent but mostly unnoticed tendencies in ways of thinking about animal minds. This bias also influences our general view of animals and the way we conceive our epistemic, moral, and even political relations with them. My purpose is to identify some indicators that evidence the survival of anthropocentrism in scientific and philosophical studies on animal cognition.

de Waal (2003) observes that "…the way we look at other animals reflects the way we look at ourselves…", not only in the natural sciences (which he refers to) but also in the human sciences. Thus, anthropocentrism is usually presented as a fairly natural perspective, rather than a distorted view of animals. That is why it is interesting to examine it as a bias, or a set of biases, rather than as an approach or a conception. As a bias, it has been more debated in the ethical and political literature on animal rights than in the literature on animal cognition. In other words, it seems essential to reflect on how certain characteristic forms of self-understanding permeate our view of other creatures, generating an anthropocentric comparative variety of the Socratic injunction "Know thyself," which distorts our approach to animals. Encouraging an approach free of this anthropocentric bias could indirectly contribute to dismantling the unjustified and persistent gaps between the human and social disciplines and the natural science disciplines of animal studies based on this bias.

As many authors point out, many dimensions are involved in the question of whether animals have some mental capacities, and how it is possible to establish them justifiably. I will refer to some of them: ontological, epistemological, methodological, and semantic. Even though they are closely related and sometimes even strongly interpenetrated - because a question may formulate at one level but obliquely involve or point to another - all must be taken into account for an adequate understanding of the effects of *anthropocentrism* in studies on animal cognition.

3. *Anthropocentrism* is usually defined in terms of different human characteristics, not only cognitive but also agential and moral. The term also refers, more broadly, to a sort of relationship with the environment or nature, including animals, intelligent machines or artifacts, and even hypothetical suprahuman entities.

2. Animals as "objects of comparison": the *anthropological difference*

The concept of *anthropological difference* developed in continental philosophy, refers to the qualities or characteristics that would make the human species unique, i.e., different from any other. Such a difference should explain, in turn, other differences derived from it (cf. Glock, 2012). It would be one or more traits universally shared by all humans, but only by them, that is, traits that distinguish them as essential or categorically different creatures. In other words, it must be a fundamental difference, in the sense that it can explain our *unique* status (cognitive, agentive, moral): a *specific difference*, in the strictest sense of the word. This is a ontological variety of anthropocentrism.

Whether or not such a difference exists, whether it is a qualitative one, or consists of a chain of traits similar to those of other species that combined produce, at last, a qualitative leap, or whether it is only a difference of degree, remains a debatable issue. Conjectures about explaining human cognitive uniqueness have reached sophisticated formulations in recent years and the phenomenon has even been described as an "epidemic" (Shettleworth (2012). Now, the interest in establishing what the differences are between species concerning a trait, whether cognitive or not, is only a way of approaching the unobjectionable purpose of explaining biological diversity and understanding the phylogenesis of some characteristics and abilities. But then, why do similar theoretical motivations not lead specialists to wonder about the uniqueness of the jaguar, the condor, or any other species?

On the other hand, if the question of human *uniqueness* is motivated by the purpose of establishing what abilities dramatically differentiate us from all other species, that explains why many of these attempts adopt a circular format: if research reveals that a candidate trait is not ultimately unique, instead of continuing to investigate its distribution in different species, the search begins for another trait that can satisfy the claim of *uniqueness* (cf. Vasilieva, 2019). This motivation has frequently been driven by the advances in knowledge of many species to the point that they have defeated or called into question proposed demarcation lines. Furthermore, if the comparison was intended to justify human cognitive *uniqueness*, it would also have to be done with all other extant species, which is imposible. So, "theories of human uniqueness are inevitably provisional" (Shettleworth, 2012, p. 2795). On the other hand, this type of search is often guided by the assumption that a given trait is categorically present

or not, and even by adherence to the progressive view of the *Scala Naturae*, in contrast to a gradualist conceptualization. At the same time, it has not always been taken into account that a trait might not be specific to a species, that is, be present in more than one species, but only be *typical* or *habitual* in one of them, and *occasional* in others. Thus, not only the uniqueness but also the distribution of a trait in different species could shed light on the evolution of said trait (cf. Vasilieva, 2019). In other words, the evolutionary significance of a given trait can be better understood when comparative research abandons the categorical, dichotomous, and anthropocentric presuppositions that are associated with the search for "unique" human traits, that is, *anthropological difference*.

In philosophical and, in general, humanistic literature, comparative reflection between humans and animals was clearly dominated by the tendency to establish cognitive *differences* between humans and other species. Thus, the human and social sciences were constituted as "sciences of discontinuity" (Noske, 1993) by assuming a clear separation between them and the natural sciences with regard to the studies on humans and animals, respectively. This is a dimension in which anthropocentrism even adopted the rank of the constitutive norm of humanistic disciplines (cf. Suárez-Ruiz, 2021). Now, it might thought that this epistemological discontinuity reflects a stage already surpassed. However, varieties of discontinuism and anthropocentrism remain the default assumptions in the most vigorous theoretical traditions in the social and human disciplines. Next, I will make a brief reference to some of them.

It is known as the "animal turn" (Ritvo, 2007) to a new interdisciplinary field of socio-scientific and humanistic studies (linked to continental philosophy) whose focus of interest is "human-animal relations", not animals. In these approaches, "human centrism" expands the circle to encompass animals, but on condition of turning them into social constructions, more specifically, into *discursive creatures*. Thus, abundant "post" declamations that concern animals, delivered from some non-anthropocentric counter-pinnacle, do not seem to have overcome the barriers between the natural and the "uniquely human." In some versions of this "turn", they even try to subsume the natural into the human (sic). Thus, despite strongly questioning the classical anthropocentric tradition, they can hardly offer anything more than new ways of conceptualizing the different relationships of dependence of animals with the human center of reference. In other tradition, naturalized ways of philosophizing are edifying an empirically informed philosophy of animal minds. But, as will be seen below, they coexist with influential expressions of Western canonical thought.

On the other hand, natural scientific studies on animal cognition, especially in ethology and psychology, encouraged a different comparative perspective: identifying similarities and differences in psychological abilities between species on an evolutionary *continuum*. In its scope, "the default assumption is continuity" (de Waal, 2016, p. 124). The canoninal expression of the continuity thesis is due to Darwin: "…the difference in mind between man and the higher animals, great as it is, certainly is one of degree and not of kind" (1871, p. 105). However, comparative psychology has presented a more explicit battlefield in which more or less "continuist" or "discontinuist" hypotheses were debated. (Vasilieva, 2019). Comparative psychology, unlike ethology, inherited the essential unjustified distinction between humans and other animals, long assuming that the species with which any other species had to be compare was the human species. Or even that, given the goal of explaining the evolution of human cognition, only the "most intelligent" animals should be studied. (Döring & Chittka, 2011; Chittkka et al., 2015). Again, the study of animals was motivated by the interest in understanding human behavior and mind. Now, it is manifestly objectionable from an evolutionary point of view to intend to understand the cognitive similarities and differences between species by taking as paradigm human capacities and afterward by grouping animals to encourage comparison with them. In other words, what abilities to investigate in non-human animals and how to study them should not depend on human cognitive adaptations or how they are studied. On the contrary, it would be better to investigate *species-neutral* cognitive abilities (Figdor, 2021). Namely, we must compare the cognitive abilities of different species with each other, not only with those evolutionarily close or in which abilities derived from processes of convergent evolution are evident. It must explain how cognition evolves, whether it be through phylogenetic evolution, convergence, or homology (Chittka et al., 2015). In any case, "…humans are not necessarily central to every comparison" (de Waal, 2016, p. 28).

de Waal & Ferrari (2010) identified the contrast between the predominant perspective in comparative psychology, which they call *top-down*, and the inverse *bottom-up* perspective that propose in its replacement. The former focuses "on the pinnacle of cognition," asks "all-or-nothing questions," and has "an obsession with rankings and the human-animal divide." Species are distinguished by clear dividing lines and traits studied are characterized as "unified" capacities rather than "multicomponent structures." Instead, the *bottom-up* perspective focuses on "the basic building-blocks of cognition [which] might be shared across a wide range of species" (2010, p. 201). Under this evolutionary perspective it is possible to identify different combinations of traits partially shared between

some species, performing functions that may also differ. So, they propose unifying ethology with comparative psychology in the new discipline of *Evolutionary Cognition* dedicated to the "study of all cognition, human and animal, from an evolutionary perspective." This new approach recommends exploring "common denominators first before exploring species-typical specializations" (2010, p. 205). Moreover, to obtain "…a unitary theory that covers all the various cognitiom found in nature…[T]o create space for this project, I recommend placing a moratorium on human uniqueness claims" (de Waal, 2016, p. 158). This way, it would be easier to discourage the human-centered perspective. Let´s see what kind of bias anthropocentrism is.

3. Anthropocentrism as a bias

Despite what the inflection suggests, *anthropocentrism* does not always refer to an explicit and elaborate approach. It can also be conceptualized as a bias (Buckner, 2013; Andrews & Monsó, 2021; Andrews, 2020b). A bias is defined as the tendency or inclination, more or less systematic, to form prejudiced, flawed, or distorted judgments or evaluations, often implicit or unconscious, e.g. difficult to put under reflective control (Kahneman, Slovic & Tversky, 1982; Holroyd & Sweetman, 2016). This tendency or inclination affects different dimensions related to the study of a certain phenomenon: the concepts used, the questions and hypotheses that can be formulated, the admissible methods, the nature of the evidence, and the explanatory power of the models or theories to which they apply. By the way, the effects of such biased judgments or evaluations affect the most varied areas and are not only theoretical.

I call *anthropocentric bias* the tendency to consider that human characteristically ways of experiencing, conceiving, and thinking provide the criterion or "gold standard" for understanding the behavior of non-human animals. To the extent that the human standard is conceived in a biased manner, for example, as an overly intellectualized conception of human mental abilities, anthropocentrism will imply a high degree of contrast between humans and other animals. Although the expression *anthropocentric bias* has some use in the literature that analyzes the topics we are interested in, it is not clearly defined or used systematically.

Many biases take the form of "centrisms" in the sense of "human-centered": ethnocentrism, androcentrism, etc., which means that a human group with some characteristics associated with it provides the norm or

standard for evaluating others. Those who locates in the center embody "the indisputable value", around which an "expanding circle" opens (Andrews, 2020a). Therefore, anthropocentrism is a trend that leads to "a human-centered approach." About animals, it consists of "[holding] the human mind [to be] the gold standard against which other minds must be judged" (Povinelli, 2004, p. 29).

In this paper, I will understand both anthropocentrism (and its varieties) as well as its counterpart, anthropomorphism, as *comparative biases* (Buckner, 2013, 2023), as it affects comparisons between humans and animals. Regarding the latter, I will try to show that, despite the unequal attention it has received in contrast to the anthropocentric bias (Buckner, 2013), "anthropomorphism and anthropocentrism are never far apart: the first is partly a "problem" due to the second" (de Waal, 1999, p. 256). It should also be noted that the characterization of anthropomorphism as a bias is very widespread. As such, it is explicitly questioned, especially in comparative psychology. It contrasts with anthropocentrism, which rather is treated as a doctrine or a body of ideas. In summary, *anthropocentric bias*, particularly its role in studies on animal cognition, has been underexplored[4].

In a strong or substantive sense, *anthropocentrism* assumes a categorical distinction between humans and other creatures and, on that basis, holds that humans provide the standard for judging non-humans (Andrews, 2020a). As we will see later, our language is permeated by anthropocentric categorical distinctions, all of which generate a "distancing" effect on human centrality. The concept has received different labels: *inverted anthropomorphism* (Romanes, 1882), *anthropodenial* (de Waal, 1999), *anthropectomy* (Andrews & Huss, 2014). These notions include different nuances. Note that the first is formulated taking as reference its opposite: *anthropomorphism*. If this last notion refers to the (unjustified) tendency to attribute human properties or characteristics to other entities, the opposite tendency would lead to differentiating humans, and identifying their singularities. However, the concept seems to capture another idea: human differences are especially relevant.

As such, anthropocentrism is a variety of *speciesism* understood as "…a prejudice or attitude of bias in favour of the interests of members of one's own species and against those of members of other species' (Singer, 2009[1975], 6). Although this definition is species-neutral, it is

4. Andrews's (2020b) book is an exception because it is dedicated to the detailed analysis of the different biases that affect studies of animal cognition in comparative psychology, including a special treatment of anthropocentric bias.

generally used to refer to the human species and, by extension, a group within it. As is known, the term was coined by analogy with others such as *sexism* or *racism*, to refer to the comparative bias that consists of the "unjustified consideration or treatment of those who are not classified as belonging to a certain species" (Horta & Albersmeir, 2020). Figdor (2021) calls *psychological speciesism* the conception according to which the possession by humans of some "superior" cognitive abilities on a hierarchical scale is the basis of the recognition of the superior value of human life compared to that of other species, *moral speciesism*. Many humanists views adopted both conceptions. Psychological speciesism is the same phenomenon that I call anthropocentric bias as it applies to animal cognition: human cognition is the standard or criterion implicit against which it is established whether and to what degree non-human creatures possesses some capacity. As we will see in the next section, the homogenization of animals is the first step toward a restrictive approach to animal cognition.

4. Homogenization of animals

A first manifestation of the anthropocentric bias, and "…the decisive step… that seemed quite innocent to us" (Wittgenstein, 2009, IF §308), it is the generic reference to animals, trying to first *assimilate* them and then *contrast* them with humans. I am not referring to the use of one generic label or another as a shorthand, that might be justified on grounds of expository economy, but to the (usually implicit) suggestion that the same questions are appropriate concerning such a heterogeneous set of species, all except humans: Do they have concepts? Can they reason? Do they understand "other minds"? These questions, for their part, are those considered relevant for studying the human mind. Thus, this assimilation is based on the previous adoption of the anthropocentric standard on our way of conceptualizing animals. Besides, we are imposing it *a priori*, that is, to establish the preconditions for comparative research This assumption is grounded on a previous one: all non-human animals are more similar to each other than some species are to our own. Now, it is wrong to presuppose that all non-human species possess sufficient and relevant common characteristics, cognitive or otherwise, so that the use of a single label is justified. Finally, as noted, "animal" (and the like) does not refer to anything that can be studied scientifically.

A classic version of this dichotomous view assumed that all animal behaviors could be explained by basic mechanisms of the same type.

Consequently, any animal could serve to establish the desired contrast with humans: experiments with pigeons or rats could be sufficient to provide valid evidence for all species. As de Waal points out, Skinner's theory outlined in *The Behavior of Organisms* exemplified this idea in an extreme way (de Waal, 2016, p. 27). On the other hand, in the post-behaviorist era, it is often assumed that the very concept of cognition (or mind) is instantiated by human cognition or, in other words, that there is "a paradigmatic cognition": human cognition (Allen, 2017; Vasilieva 2019; Bräuer et al., 2020). As part of the same bias, especially in the philosophical literature, it is common to distinguish between cognition *strictu sensu* and other not fully cognitive capacities (e.g., associative, perceptual, non-representational, non-intentional, "non-genuine", etc.) (cf. Allen, 2017). These contrasts assume that *all animals* differs from humans. But, just as there is a diversity of species, we should speak in plural of "cognitions" or "intelligences", and even more so, of abilities and performances, with different characteristics in different species (de Waal, 2016, p. 12).

If, otherwise, only a single shared negative characteristic is presupposed – that is, all animal species would not possess some human cognitive capacity, or would not possess it to the same degree and/or in the same way, how can we avoid the objection that it is, once again, a capricious assimilation of all of them? After all, we could group some animal species according to different criteria, choosing any negative characteristic (or a group of them) to justify different classifications, e.g., one could include some animal species and the human species. Furthermore, if the characteristic we are interested in identifying is not present in some species but is present in the human species, what comparative conclusions can we expect to draw? Could they not also be obtained from similar comparisons between other species, identifying other unique traits in some of them? As for the cognitive differences that could be found, don't they have the same relevance as the distinctive characteristics of some animal species, for example, echolocation in bats, that are not part of the human repertoire? In short, we know that "[T]here are lots of wonderful cognitive adaptations out there that we don't have or need. This is why ranking cognition on a single dimension is a pointless exercise" (de Waal, 2016, p. 12).

The homogenization of animals is not avoided by sharing the term *animals* to refer differently to *human animals* and *non-human animals*. Because, beyond the double use of the term (that is, we are *all animals*), these denominations not only function like the classic distinction "humans versus animals" as a dichotomy but, in addition, they explicitly attribute to all *non-humans* animals a negative property defined in reference to

humans. This term "…groups millions of species by an absence, as if they were missing something. Poor things, they are not human!" (de Waal, 2016, pp. 27-28). The anthropocentric bias of this label is evident. de Waal suggests, sarcastically, that to be consistent with this terminological choice, whenever we want to refer to a particular species, we should also specify that it is also not all the others: nonpigeon, nonpenguin, nonelephant, and so on (2016, p. 28).

This terminology, furthermore, induce us to characterize animals as creatures that lack something: homogenization based on a negative property also means attributing to them a certain inability. Wittgenstein highlighted this meaning of *deprivation* of the anthropocentric bias in relation to linguistic ability, and outlined a critique:

> It is sometimes said: animals do not talk because they lack the mental abilities. And this means: "They do not think, and that is why they do not talk". But they simply do not talk. Or better: they do not use language -if we disregard the most primitive forms of language. (PI §25) (I underline).

That is, although certain "forms of language" are present in some species but not in others, what sense would it make to say that the latter are missing something? It makes as little sense as claiming that humans lack, for example, the ability to communicate through the amazing vocal and visual displays that many birds use. We simply do not dance or sing like them.

Different labels have been chosen in philosophical literature to express explicitly this meaning of *deprivation*, that is, to define animals as lacking some capacity. Some of them add a derogatory connotation: "thoughtless brutes" (Malcolm, 1972-73), "languageless creatures or "dumb creatures" (Davidson, 1985), "speechless brutes" (Heil, 1982), "mere animals", (Mc Dowell, 1996), "non-rational animals" (Mc Dowell, 2009), and "non-discursive creatures" (Brandom, 2000), among many others. As can be seen, these categories oscillate between characterizing animals as *mindless* or, in more recent versions, *mentally limited*, or *lacking one or another capacity* considered critical or unique, mainly language. Now, these labels can only make sense in the Aristotelian conception of the *Scala Naturae*, which places all non-human species in the same negative place in the hierarchy of beings, rather than in a darwinian gradualist but not progressionist view of evolutionary continuity.

In particular, the terms "brutes" and "beasts", frequently used by philosophers of different eras, although they would have had a more or less neutral meaning in the classical philosophical literature, gradually began to acquire a more derogatory meaning (cf. Preece, 2005). Surprisingly, so

many learned philosophers have continued employing this terminology even in this century. The concept of "dumb beasts," which attempts to capture the classical conceptualizations of animals by many ancient philosophers (cf. Osborne, 2007), would be appropriate to cover the positions of many conspicuous representatives of recent analytical philosophy, such as the authors already mentioned.[5] This is because they assume not only a hierarchical and exceptionalist perspective but also one imbued with another particular bias: they give language critical importance in their arguments in favor of human uniqueness (which, curiously, is proportional to what they give to the object primary of its disciplinary métier). Among the most prominent contemporary philosophers, Davidson developed a canonical formulation of the constitutive link between cognition and language:

> One belief demands many beliefs, and beliefs demand other basic attitudes such as intentions, desires, and if I am right, the gift of tongues … To make the distinction so strong, and to make it depend on language, invites an accusation of anthropocentrism. The complaint is just, but it ought not to be leveled against me. I merely describe a feature of certain concepts. … We connive with our language to make it, and us, seem special (1985, pp. 318-319).

In any case, Davidson makes it clear that he is not interested in examining whether this or that species has certain capacities or not, but only in addressing the question of the nature of (human) thought by adopting this comparative approach "*as just as a colorful…way of thinking…*" of it. (1985, p. 319). (I underline). But if anthropocentrism is a characteristic of "our concepts," Davidson is suggesting that "our concepts", that is, "our language", could not be anything else and, consequently, anthropocentrism is simply unquestionable. Similarly, Brandom justifies the contrast between discursive and non-discursive creatures by appealing to his own theoretical interests: "I am more interested in what separates concept users from non–concept users than in what unites them" (2000, p. 3). He simply "makes explicit" that his project prioritizes the "distinctive" or even the "exceptional," vgr., "discontinuities" instead of "continuities." But that "priority" is not innocent because produces a distorting view on the magnitude of the contrast: two types of creatures. Mc Dowell, for his part, distinguishes categorically between rational and non-rational animals or "the

5. Malcolm epitomizes this position: "…the relationship between language and thought must be so close that it is really senseless to conjecture that people may not have thoughts, and also senseless to conjecture that animals may have thoughts" (1973, p. 17).

rest of the animal kingdom", assuming the traditional distinction between rational abilities or "responsiveness to reasons *as such*" and behavior "determined by nature", respectively (Mc Dowell, 2009, p. 128).

Arguments based on human linguistic or discursive competencies received a variety of idealized formulations, creating an articulated and expanding circle or "space of reasons" inhabited only by human minds: concepts require concepts that combine in propositions, propositions give their content to mental states, basically beliefs, first-order beliefs require second-order beliefs, all these states are expressed paradigmatically through statements linked together by inferential links, etc. Finally, one comes to the conclusion that "…the distinction between human and non-human depends on whether or not the difference between a subject and a predicate is known" (Coetzee, 1999, p. 66). But doesn't this way of understanding "mentality" lead to the conclusion that animals do not speak and then do not think because they could not become philosophers of mind, language, etc.? I am here paraphrasing Flack and de Waal (2000) when they state that, although they are moral creatures, "animals are not moral philosophers." (p. 23).

Under the imprint of Davidson's style arguments, many other philosophers developed refined varieties of epistemic skepticism about the *dumb minds of animals*: for example, presupposing that linguistic evidence is necessary for the attribution of mental states to others, i.e., not admitting that, in the human case, it can only be sufficient and only under certain conditions. (Andrews, 2020b); by assuming that the standard of "propositional precision" is provided by human thought and language (under a homogenizing characterization of both)[6]. In any case, there is not much distance between these and Cartesian ideas:

> …the reason why animals do not speak as we do is not that they lack the organs but that they have no thoughts. It cannot be said that they speak to each other but we cannot understand." (Descartes, 1991, p. 303).

6. Dennett (1998) synthetically formulates the problems that lead to what he calls "the misguided goal of propositional precision". It applies to humans and animals when *expression* and *description* of mental contents are confused. Human language, even each particular language, imposes a format that makes it difficult to *express* what speakers of different languages think and virtually impossible what animals think. But *describing* those contents is perfectly possible, although it may be difficult. The kind of precision made possible by the linguistic format is not always appropriate to the discriminatory power of the animal contents. But human language is not a "universal measurement system" of mental contents. In short, we can... exhaustively describe what we cannot express, without leaving any mysterious residue at all". (p. 42)

> But "All human beings use [it] (language) however stupid and insane they may be, even though they may have no tongue and organs of voice; but no animals do. Consequently this can be taken as a real specific difference between humans and animals." (Descartes, 1991, p. 366)

Thus, *brutes* have no (our) language because they have no (our) reason. ¿How should we interpret such kind of "conclusions"?

5. "Higher" and "lower"?

One might believe that evolutionary thought managed to propagate the conceptualization and language appropriate to the approach to species differentiation ("common descent with modification"). Or what is the same, that the idea of a *Scala Naturae* or *Great Chain of Being* (Lovejoy, 1936), understood as a scale of progress, is currently only a pre-scientific concept in disuse. This idea is structurally linked to anthropocentrism because that *Scala* has the human species at the top as the most evolved or "highest" and not just another branch of the tree of life. It is, therefore, a central component of the anthropocentric bias. Darwin himself reminded himself that he should avoid this terminology: "Never use the words higher and lower".[7] On another occasion, he seems to admit both their power of persuasion and the error to which these concepts lead:

> With respect to 'highness' and 'lowness'… It appears to me that an unavoidable wish to compare all animals with men, as supreme, causes some confusion; and I think that nothing besides some such vague comparison is intended, or perhaps is even possible, when the question is whether two kingdoms such as the articulata or mollusca are the highest. (I underline)[8]

The notable fact is that this conceptualization is not absent in recent specialized literature. de Waal points out that in comparative psychology, the "habit of dividing animals into "higher" and "lower" forms has persisted for a long time…" viewing animals "…as mere stand-ins for humans: a monkey is a simplified human, a rat a simplified monkey, and so on" (2016, p. 27). A study conducted on articles published in prestigious academic journals in evolutionary biology over the past decade shows that

7. Darwin (1845), note written on the margin of his copy of Robert Chambers' *Vestiges of The Natural History of Creation* (1844). Cited by Mayr (1988), p. 251.
8. Charles Darwin (1854), "Letter to Joseph Hooker".

"progressionist language" or a "pre-evolutionary language" is still very common.[9] Authors conclude that "…the great chain of being is still with us, 153 years after Darwin (1859) published *The Origin of Species*, eventually paving the way to modern tree-thinking…" (Rigato & Minelli, 2013, p. 5). A similar research by Ullrich, Mittelbach & Liebal (2017) proposed to identify both explicit and implicit indicators of "norms of progress" or vestiges of them, a bias that assumes linear progress of evolution from primitive to improved traits or organisms and which adopts progressionist categories. The research was based on a corpus of scientific publications on "language" and "communication", and shows a range of "higher" and "lower" categories associated with humans and non-human primates and other species, respectively.[10]

The terminology "higher" and "lower" (which is currently usually used in quotation marks to suggest a meaning that is not strictly literal but is nevertheless desired to be preserved) survives in other notions, also graded and with equivalent meanings, concerning to cognitive abilities: "more simple", "primitive" versus "more sophisticated", "advanced", "complex", often conceived as "more evolved" or "superior" in the sense of a "ladder of progress." It would be interesting to explore the connotations of all these concepts. I can only point out here that their use is associated, in many cases, with anthropocentric standards: they presuppose the presence or absence, respectively, of agency, that is, autonomy, rational deliberation, flexibility, and self-awareness characteristically human.

Now, once the idea of the *Scala Naturae* has been questioned and beyond the debate between continuists and discontinuists, and even admitting that the human species could be cognitively unique (as all species are, on the other hand), whether in kind or degree (this point is also not relevant here), the hierarchical perspective on species and their abilities is unjustifiable. But then, how could we consider that one of them, the human, can provide the standard or criterion for evaluating others? Besides, the links of continuity between related species do not go in a single direction (Andrews, 2020b). Thus,

> Any human-like capacity in a non-human species is also a non-human-like capacity in humans, but the symmetry of similarity is broken by this criterial status. It follows that cognitive capacities must be defined in

9. The study covers 16 prestigious specialized journals on more than 67,000 papers published between 2005 and 2010. The results yielded 1,287 expressions that fit into the language of the *Scala Naturae* ("lower X" or "higher X" applied to organisms and species), including general journals such as *Science* and *Nature*.

10. The study included 915 journal articles published between 2005-2015.

> ways that do not take human cognitive capacities or features of them as criterial in comparative research. (Figdor, 2021)

Moreover, this same hierarchical idea is what allowed for many centuries to adopt extreme positions or attitudes of "dementalization", that is, "depsychologize" animals. These attitudes are currently manifested more covertly, in different contexts. For example, denying mental abilities to animals facilitates many practices about them, such as protecting the cultural practice of eating meat by minimizing its negative effect on the animals involved (see Bastian et al., 2012). *Epistemic speciesism* is another expression of the same dementalization operation. It is expressed in efforts to purge the sciences of animal cognition of anthropomorphic "risk," as we will see in the next section.

6. Behaviorism for animals, intellectualism for humans[11]

A feature indicative of the presence of an *anthropocentric bias* reflected in the widespread adoption of the Morgan Canon (MC) as a presupposition guiding standard practice in comparative psychology. As we know, MC was proposed as a corrective to *anthropomorphic bias*, but its justification and effects deepened *anthropocentric bias*. As we have said before both biases are closely linked: "anthropomorphism and anthropocentrism are never far apart: the first is partly a "problem" due to the second" (de Waal, 1999, p. 256). The latter reflects in the tendency to the selective application of MC only to animals. It is combined with the assumption of idealized mental capacities as typical of the human case or the *anthropofabulation bias* (Buckner, 2013). I will briefly refer to each of these phenomena. Let us first remember that the MC recommends that:

> In no case may we interpret an action as the outcome of the exercise of a higher psychical faculty, if it can be interpreted as the outcome of the exercise of one which stands lower in the psychological scale." (Morgan, 1903, p. 292)

It is not my intention to discuss this epistemic principle here. There are excellent assessments in the literature about its possible interpretations, from more prohibitive to merely precautionary versions (see Fitzpatrick,

11. This formula inherits Nozick's scheme about the moral status of human and nonhuman animals: *utilitarianism for animals, Kantianism for people*, and it is an alternative version of *behaviorism for animals, representationalism for people* (cf. Borchert & Dewey, 2023).

2018); about its proper understanding in the context of Morgan's work; and about its positive and negative impact on comparative psychology (de Waal, 1999; Sober, 2005; Fitzpatrick, 2008; 2018; Buckner, 2013; Andrews and Huss, 2014; Andrews, 2020). To my objectives, I will limit myself to pointing out under what interpretations it became, directly or indirectly, a tool of *anthropocentric bias*. As part of the orthodoxy of the discipline, there is no doubt that he favored epistemic speciesism: either animals lack minds or have fewer or "lower" mental capacities than humans. This is because it stimulated not merely skepticism or agnosticism, but denialism about them.

We leave aside the distinction between "higher" and "lower" in the formulation of the MC because it considered in the previous section. However, alternative conceptualizations are equally objectionable since they presuppose a categorical and hierarchical distinction between "higher" and "lower" cognitive mechanisms. These are problematic distinctions, even according to their ecumenical interpretations (see Buckner, 2017), at least when these mechanisms are considered at different levels of abstraction (Andrews, 2020b). Indeed, not only would it be assumed that there are no in-between cognitive abilities and mechanisms (Buckner, 2013), but it would also be denying that different types of processes (associative and cognitive) may be necessary to explain the varied behaviors of species, including *Homo Sapiens* (Andrews, 2009; Buckner, 2017).

MC as an epistemic and methodological principle is also presented as the standard of scientific rigor in animal psychology, since it would allow us to avoid the effects of anthropomorphic bias: the unjustified attribution of human capabilities to other creatures (Wynne, 2004). However, the anti-anthropomorphic concern is revealing the same assumption already noted: the existence of a hierarchical scale from lowest to highest cognitive complexity, whose pinnacle is the human mind. On the other hand, MC has served to justify an "a priori resistance" to admitting mentalistic explanations of animal behavior. So it justifies conceiving as the expression of a bias, that is to say, "a persistent impediment to progress" (Fitzpatrick, 2008, p. 225) or "a pre-empirical obstacle" to research (Andrews, 2009, p. 52). De Waal calls *anthropodenial* "the a priori rejection of characteristics shared between humans and animals when in reality they may exist" (1999, p. 258). With this name he seeks to highlight the biased character of anti-anthropomorphism, thus discrediting its supposed status as an epistemic principle that seeks to ensure scientific rigor and objectivity. Similarly, *anthropectomy* refers to "the error of denying that an animal has a certain characteristically human capacity when in fact it does have that capacity" (Andrews & Monsó, 2021; see also Andrews & Huss, 2014). Both

are anthropocentric biases because they inadvertently encourage underattribution.

However, inasmuch anthropomorphism might promote false positives (i.e., ascribing a psychological property to an animal when it lacks that property, the "anthropomorphic error"), anthropodenial and anthropectomy might promote false negatives (i.e., denying a psychological state to an animal who actually has that mental state) (see Andrews & Huss, 2014 for a fine discussion of the asymmetry of both kinds of errors in favor of anthropomorphist ones). Finally, rather than gauging the degree to which MC might benefit our understanding of animal minds, Andrews, among others, proposes that it would be more useful "…ignore it as prejudice, and instead work on developing methods for testing the applicability of specific properties" (2009, p. 52). In the same sense, it has been objected that MC is redundant or superfluous: strict adherence to facts (*empiricism*) (Sober, 2005) or to evidence (*evidentialism*) (Fitzpatrick, 2008) is all that is required to choose between alternative interpretations, avoiding anthropomorphic errors. On the other hand, there is a fertile avenue for an anthropomorphic approach. de Waal (1999) refers to *animalcentric anthropomorphism* as the attempt to understand animals "on their own terms," that is, to understand their behaviors "within the broader context of the specie´s habits and natural history". In this sense, anthropomorphism has a positive heuristic value.

The MC has also been interpreted as equivalent to a principle of epistemological simplicity that is adopted by default: but a strictly behaviorist (non-mentalistic) explanation could have even greater complexity. On the other hand, as de Waal warns: "The word *simple* is not as simple as it seems. It means different things in relation to different species" (2016, p. 55). MC has often been interpreted as recommending adopting parsimonious ontological assumptions, but positing *fewer* entities should not be confused with positing *less complex* entities or *fewer cognitive processing costs*. These are different kinds of *cognitive parsimony* (see de Waal, 1999). But, when dealing with related species, it might be evolutionarily parsimonious to attribute similar cognitive processes to explain similar behaviors (de Waal, 2016, p. 269). This would be a kind of parsimony based on evolutionary foundations, or *evolutionary parsimony* (de Waal, 1999). Both types of parsimony, *cognitive* and *evolutionary*, try to avoid the errors typical of each type of bias: the first, anthropomorphic, the second, anthropocentric. Now then, in the case we should choose between the risks of overestimating or underestimating the psychological capacities of animals, we must take into account that new evidence can discredit an anthropomorphic error, while denying the presence of one or another

ability is not an invitation to skepticism or agnosticism, still less to continue investigating.

MC was also associated with the standard of objectivity in the context of animal studies. In this sense, it is interpreted that it promotes the search for a dispassionate, de-subjectified approach, without affection, without contact or personalized bond with the study subjects (e.g., the type of objections that Jane Goodall's methodology and her lexicon received, in the sections following). This way of understanding scientific objectivity as a "critical distance" as well as the methodological styles it encourages, could also explain "excessive concerns about anthropomorphism" (de Waal, 2016, p. 61). But naïve anthropomorphism should not be confused with justified psychological attribution: "It is anthropomorphic to call the lion the King of Beasts, but not to talk of him as moved, now by fear, now by curiosity, now by territorial anger" (Midgley, 1978, p. 74). On the other hand, in this context, objectivity should be understood as "simply *fair, unbaised, and impartial*" (Midgley, 2001, p. 753).

Finally, Buckner (2013) points out that the precautions encouraged by MC must be symmetrical, that is, applied equally to humans. As we know, not all human actions presuppose sophisticated cognitive mechanisms. Furthermore, simple mechanisms also operate at the basis of some complex human behaviors (Shettleworth, 2010). Morgan himself warned that

> [T]o interpret animal behavior one must learn also to see one's own mentality at levels of development much lower than one's top-level of reflective self-consciousness. It is not easy, and savors somewhat of paradox" (Morgan 1930, 250).

This variety of anthropocentric bias is *anthropofabulation*: the "tendency to link competency criteria for cognitive abilities to an exaggerated sense of typical human performance" (Buckner, 2013, p. 853). This bias is the result of the combination of *semantic anthropocentrism* with *confabulation*, which consists of "overestimating our cognitive sophistication" (p. 860)[12]. This specific semantic bias, as we will see in section 7, consists of refining psychological concepts in such a way that they refer only to "genuine" cases of each psychological capacity. This first step, usually unnoticed in many debates between optimists and skeptics about animal cognition, generates "anthropofabulous taxonomies" about the key terms

12. This bias not only influences animal cognition: applied all the time to our own auto-attributions is *confabulation*. So, *anthropofabulation* combines *semantic anthropomorphism* with *confabulation*.

of the debate. The philosophy of the human mind is plagued by such taxonomies. Their comparative effects on animal cognition should not be surprising.

As Buckner points out, Hume identified both anthropofabulation and its appropriate corrective (1739):

> When any hypothesis… is advanced to explain a mental operation, which is common to men and beasts, we must apply the same hypothesis to both; and as every true hypothesis will abide this trial, so I may venture to affirm, that no false one will ever be able to endure it. The common defect of those systems, which philosophers have employed to account for the actions of the mind, is, that they suppose such a subtility and refinement of thought, as not only exceeds the capacity of mere animals but even of children and the common people in our own species." (T1.3.16.3; SBN 177).

I will identify other expressions of semantic bias in animal cognition research in the section 7.

7. Antropocentric methodologies

The bias we are examining also manifests itself in the methodologies chosen for studying animal cognition. Firstly, the contrast between so-called "romantics" and "killjoys" corresponds more or less directly to field versus laboratory research and with different base disciplines from those who carry them out (Andrews, 2020b). They are also reflected in the experimental design in comparative studies: what abilities we want to study, in what species, and through what types of strategies and tasks (cf. Boesch, 2007). It has been usual to choose skills that humans are notoriously skilled at (e.g., "the magical wells of our species, like language" (de Waal, 2016, p. 22), or that are well identified by human psychology (Buckner, 2013). But why not also study those in which animals are specialists?

The same bias is observed in the performance of arbitrary laboratory tasks, not linked to the problems that animals face in their natural environments (Waal, 2009). Another clear example is the comparative studies on the theory of mind in chimpanzees and children: while children must deal with humans, known individuals of their species, apes face members of another species, unknown humans. As de Waal points out, that way: "All we are testing is the ape's theory of the *human* mind." (2016, p. 146). For their part, dramatically different conditions could lead to incomparable conclusions. Thus, by both its design and its motivations, research in

comparative cognition often ended "turning the study of cognition into a contest" (de Waal, 2016, p. 248).

The cognitive tests should not be identical when they take into account the behavioral ecology of each species: the animals should be tested in less artificial environments and through a "co-specific approach", vgr. anthropoids with anthropoids, or testing their abilities with the participation of a human environment with which they were familiar and comfortable, ensuring *a priori* interaction with the researcher (Vitale & Branchi, 2023). As has been noted, primates distinguish caregivers from researchers, and researchers, by their greater or lesser previous relationship with them. In this way, the degree of habituation and trust in the researcher makes a big difference in the results of the tests (Boesch, 2007). Also it must be compare species taking into account developmental trajectories (Shettleworth, 2012).

For its part, experimental evidence must be complemented by what can be obtained through observation of behaviors in natural habitats. In such scenarios, social behavior can be better studied, which is very revealing in certain species, in contrast to the case of animals that have grown in captivity. On the other hand, anecdotal reports, so insistently questioned for their limitations, offer interesting information for investigating animal cognition: they can provide an accurate description of rare or difficult-to-observe behaviors and generate new hypotheses and even novel areas of research[13]. Indeed, the observation and recording of a "disconcerting" or strange behavior can serve as a starting point for an investigation as long as it comes from expert observers and guide a rigorous investigation that rules out a casual phenomenon. That is, anecdotes should serve as a basis for data collection and not more anecdotes (Andrews, 2020b). These could generate hypotheses to be investigated (Bates & Byrne, 2007).

The "Goodall case" summarizes the impact of the anthropocentric standard on her investigative strategies: observational methodology, anecdotal records, the personal knowledge of the individuals studied, and "personalized" treatment of animals yielded lasting results in primatology. However, she was criticized for these same practices:

> Godall´s apes had personalities, emotiones, and social agendas. She did not unduly humanize them, but she related what they did in unpretentious prose that would have been perfectly normal for a day at the office

13. These authors examined publications between 2000 and 2016 in four high-impact journals in Primatology. They revealed the discredit that anecdotal reports still suffer compared to studies based on experimental designs and quantitative methods.

> but was unorthodox with regard to animals. It was a huge improvement over the tendency at the time to drown behavioral descriptions in quotation marks and dense Jargon in order to avoid mentalistic implications. Even animal names and genders were often avoided. (Every individual was an "it.") Goodall's apes, in contrast, were social agents with names and faces. (de Waal, 2016, p. 170).

Imanishi, the founder of Japanese Primatology, also gave names to his animals. This fact precisely reflected a degree of interaction, and at the same time, special attention was paid to the personality characteristics, behaviors, and social ties of each individual studied. The "combat" of paradigms that occurred between Western and Japanese primatology in the middle of the last century that de Waal reconstructs, reflects how anthropocentric bias was affected by positive cultural factors: "The study of animal behavior in Japan has never been contaminated by feelings of superiority or an aversion to acknowledging humanlike characteristics in animals" (2003, p. 294).[14] This allowed him to discover many characteristics in primates that were largely unexplored and then resisted by Western primatology: for example, identifying each individual, studying the complex social relationships of primate communities, and describing the patterns of learning and cultural transmission.[15] As we will see below, personalized treatment and the use of proper names are part of a non-anthropocentric way of using language towards animals that reflects, in turn, a different way of trying to understand their point of view (Andrews, 2020b). Referring to similar approaches and strategies, de Waal offers a revealing first-person testimony: "I can't count the number of times I have been called na'ive, romantic, soft, unscientific, anthropomorphic, anecdotal, or just a sloppy thinker" (2016, p. 265). Such kind of dissaprovals originates in the bundle of anthropocentric biases we are analyzing here.

On the other hand, it is notable that studies on animal cognition focused largely on primates, another reflection of our obsession with identifying the traits that make us (or seem to make us) unique. In that sense,

14. de Waal also highliths the existence of significant imbalances (a lot of them are varieties of "human-centrism") that contaminates the dialogue between cultures in the respective scientific communities (e.g., the privileges and prejudices that derive from speaking the dominant language, the neglect of the contributions from other traditions once assimilated into the Western mainstream, the tendency of the intellectual canon to understimate other research traditions, etc.).

15. de Waal (2006) makes another interesting point related to anthropocentric inheritance in studies of animal cognition: identifying cognition with individual rather than "interindividual" capacities. The latter, such as empathy, helping behaviors, compassion, reconciliation, etc., have not been seen for a long time as "a sign of intelligence."

"chimpocentrism" should be seen as "a mere extension of anthropocentrism" (de Waal, 2016, p. 162), that is, as another manifestation of a restrictive program in studies on animal cognition.

8. Semantic Anthropocentism

In comparative studies on cognition in different species, it is not possible to avoid the discussion about which concepts serve to guide research (Andrews, 2009; Buckner, 2013; Figdor, 2018). It is clear that in our ordinary dealings with some animal species, we spontaneously employ the concepts of folk psychology. It is a well-described phenomenon and partly captured by the literature on anthropomorphism in its folk variety or naïve anthropomorphism. Now, in comparative psychology and biology in general, even at different explanatory levels, the capacities that one wishes to investigate are also conceptualized through the usual predicates of human psychology (cf. Figdor, 2017).

The debate about the usefulness and risks of using anthropomorphic language in animal studies oscillates between the most varied extremes: justified versus biased; useful versus harmful; literally appropriate versus simply a stopgap heuristic, etc. From the perspective we are interested in, the use of psychological predicates beyond the human case divides "sensibilities", as we saw above, between anti-exceptionalists or continuists, who defend such predicates maintain their literal meanings beyond the human mind (see Figdor, 2018) and exceptionalists who maintain that such predicates cannot be applied strictly sense beyond the human case. From this last perspective arises the anthropocentric semantics of psychological concepts, which distinguishes between literal meanings for the human case and different non-literal interpretations (deflated or "minimal", instrumental, analogical, metaphorical, etc.) when applied to non-human animals.

It is clear that to avoid both anthropomorphism and anthropocentrism, the use of psychological concepts towards animals requires specifying or partially modifying their meaning, to apply them appropriately, that is, taking into account the particular characteristics of each species. Now, as Andrews (2009) points out, the concepts of the everyday psychological repertoire should not be interpreted as establishing necessary and sufficient conditions for their application, even when we apply them to ourselves. That is, it would not be correct to assign them a meaning that can be precisely displayed because they do not express a univocal or homogeneous concept. Rather, they are used as "general terms." Thus, when

we talk about emotions, intentions, purposes, empathy, or friendship, the phenomenon denoted admits varieties, characteristic forms, and degrees.

On the other hand, it is curious that when considering "authorizing" its use to refer to abilities in animals, its over-intellectualized version is frequently used, as we have already seen in the previous section: that is, a belief is characterized as an epistemic attitude with propositional content, verbalizable by the being that possesses it, and inserted in a network of other beliefs articulated among themselves inferentially, that the subject knows that he possesses and of which he can give an explicit account, etc. One version of this approach is exemplified by Davidson´s arguments for whom we should not attribute a psychological state or capacity to a creature if it does not itself possess the concept that could allow it to self-attribute that state or capacity to itself or another, i.e., if said concept is not part of its conceptual framework. Now, this could be a case of attribution quite similar to that presented to the ethnographer and ethnologist. The first records the behaviors of a human group through the conceptual repertoire of that human group, that is, through its "native categories." The ethnologist, on the other hand, does so using his categories, because he seeks to identify cultural similarities and differences, and needs a conceptual framework that makes comparison possible. Now, the speculative philosopher, when dealing with animal minds, usually applies a variety of "auto-anthropology" that is doubly naïve, because not only does he not take into account the scientific knowledge available about them, but only the refinement of beliefs or intuitions from our popular cognitive ethology, usually a personal selection of them. Philosophers of this style tend to "declare that various propositions are true for the sole reason that they seem tremendously obvious *to them*" (Dennett, 2013, p. 99). But there are other alternatives.

Now, as Figdor (2018) points out, the relevant psychological concepts, whatever their roots in folk psychology, are those that, lastly, establish scientific disciplines. According to his diagnosis, after overcoming a century dominated by behaviorist restrictions and the survival of exceptionalist metaphysics, a massive process of conceptual change would finally be occurring, guided by changes in scientific discoveries about the animal mind. This process should lead to the end of anthropocentrism, both psychological and semantic. Conceptual change requires specifying and diversifying psychological terms, but it could also consist of associating pre-existing terminology with entirely new meanings, allowing that "... emerge from patterns observed in the data themselves. In short: first the data, then the words." (Döring & Chittka, 2011, p. 94). That is, "If findings do not fit under the umbrella of a particular and established cognitive

construct they may still be close by and deserve a novel term. This is certainly better than repeatedly (and more or less forcefully) adjusting the size of the umbrella." (Döring & Chittka, 2011, p. 93).

Semantic anthropocentrism also expresses varying degrees of skepticism about animal minds. One of its manifestations is the recourse to "as if" rhetoric that accompanies the use of mental predicates on animals. With the same purpose, some characteristic epithets, which are the fruit of successive redefinitions of pre-existing notions, are also used. "Genuine", truly, or "plain", i.e., "genuine imitation", or "plain theory-of-maind" (de Waal, 2016, p. 126) distinguishes of "quasi" or "proto" or "not-plain" abilities. Another common strategy is to apply the same psychological terms to animals but in quotation marks, whether explicit or implicit, or using asterisks (to distinguish, for example, our "genuine beliefs" from animal beliefs*, which share a common element, for example, "reliable differential response dispositions," but differ in other critical elements (see Figdor, 2018). In these cases, only the human variety of the cognitive phenomenon at issue it assumes to be genuine. In contrast, one can admit a shared concept with differences relative to each species without assuming a canonical definition as a standard or criterion. That is, without adopting the "imperialist pretensions" of exceptionalism (Figdor, 2018, p. 81).

According to de Waal, all these resources reflect an "obsession with semantics, definitions, and redefinitions, and… the movement of goalposts" (de Waal, 2016, p. 157). Although seemingly motivated by a search for greater precision in the meaning of the terms, sometimes they only cover the desire to differentiate the human version from any other. Philosophical literature is rife with these redefinition exercises to distinguish a given capacity as long as it is realized voluntarily, with greater sophistication, flexibility, insight, purpose, and/or capacity for refinement, from that same capacity when it lacks some or all of those properties. In terms of Buckner: "…reliance on such honorifics (genuine, real, full-bown, etc.) has a way of leading to constantly shifting goalposts; every time an animal or artificial system satisfies a previously specified benchmark, the critic can simply endorse a yet more restrictive interpretation of 'real' or 'genuine' and push the borderline ever-closer to the uppermost limits of human performance—and possibly even beyond." (2023).

An even more skeptical conception of animal cognition is reflected in the tendency to avoid some words from the psychological lexicon, introducing a frankly depsychologized jargon in their replacement. As Andrews states: "Instead of describing two individuals as "friends", many prefer to speak of their "affiliative relationship". And rather than using emotional

state descriptions such as "happy" or "sad" or "depressed" to describe an animal, jargon may be introduced." (2009, p. 51). When it comes to chimpanzees, instead of characterizing their behavior similar to ours as a "kiss," "mouth-to-mouth contact" is recommended (de Waal, 2016, p. 26). This caution occurs especially with psychological terms because, it is argued, they could carry anthropomorphizing attributions. To that extent, the attribution to animals of fear, anger, stress, and the like can be admitted, but not thoughts, intentions, purposes, moods, or personality traits. This type of strategy has a negative effect to the extent that it imposes "unjustified linguistic barriers that fragment the unity with which nature presents us" (de Waal, 2016, p. 26). As a result, the predictive power of the statements that can be made using these terms is limited.

In scientific publications, the recommendation to refer to animals using non-agential neutral pronouns, available in English, when the sex of the animal is known, reflects a treatment of them as if they were objects or things (see Andrews, 2020b). A frequent manifestation of this linguistic speciesism shows in the use of possessive pronouns to assimilate our relationship with animals to an object bonds, more specifically, to an owner: e.g., my dog. These linguistic practices, rather than ensuring a standard of objectivity, reflect "a robotic view of animals" (de Waal, 2016).

9. Conclusions

de Waal calls "neo-creationism" the conception that half-accepts evolution in the sense that "evolution stops in the head." There would be a "magical" leap, which means that between our mind and other types of minds there is a "spreader, gap or abyss" (2016, p. 122). According to de Waal, although the predominant assumption in the natural sciences is continuity, the discontinuist view still prevails in the social sciences and humanities. I agree with this diagnosis.

When de Waal (2016) asks: "Are we smart enough to know how smart animals are?" suggests that our highly overestimated intelligence went through extended periods of self-affirmation that had as a direct correlate a severe inability (not just intellectual) to understand animal cognition. This inability, to the extent that it derives from a persistent bias, the *anthropocentric bias*, continues to influence our approach to the topic. Although biases are part of science, the best way to minimize their impact is to identify how they influence our understanding (Andrews, 2020b). Devoting reflective efforts to anthropocentrism, a supposedly vestigial concept, reveals its interest when it notes its different dimensions and

metamorphoses in the humanistic and natural disciplines. That task is not yet completed in all its refinement. It is worth keeping in mind that, until very recently, the attribution of mental abilities to animals was illegitimate. As de Waal (2016) states, it is mainly due to Cognitive Ethology founded in the 80´s of the last century that the concept of animal cognition stopped being interpreted as a contradiction in terms.

Critical reflection on the history and evolution of studies on animal cognition contributes to understanding the effects of this bias. That is the enormous value of books like de Waal´s (2016). A direct remedy against them will come from the convergence between the perspectives, methods, and languages of the different disciplines that address the phenomenon, as proposed by Andrews (2020b). The imprint of the anthropocentric canon over all disciplinary studies on animal cognition gives additional foundations to the cooperative effort between natural, social, and human sciences. That effort, relatively incipient, has begun to bear fruit. This review attempts to contribute to a critical reflection that both facilitates and stimulate that interdisciplinary confluence.

Meanwhile, a phenomenon as marvelous to human research curiosity as the diversity of species and the diversity of their capacities, for different causes and in different ways, risks becoming more and more a bookish concept rather than a real phenomenon. It would be a sign of intelligence on our part to dispel prejudices that allow us to understand them better. Are we smart enough to do it? Are we smart enough to stop being anthropocentric?

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