

## **Intentionality and the Welfare of Minded Non-Humans**

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### RESUMEN

En este artículo discutimos las condiciones para la posesión de estados intencionales (especialmente las creencias) y agencia intencional. Exploramos a continuación las implicaciones de un análisis de la intencionalidad de los animales no humanos para el que se les confiera un tratamiento ético y revisamos las ventajas potenciales y las dificultades epistemológicas que surgen del intento de sacar conclusiones éticas a partir del estudio científico de las mentes animales. Al final, argumentamos que los debates éticos sobre el tratamiento de los animales y, en particular, las consideraciones sobre su bienestar, pueden beneficiarse considerable de la empresa de explorar hasta qué punto los animales no humanos poseen mentes.

*PALABRAS CLAVE: animales no-humanos; derechos morales, intencionalidad; bienestar, mentalidad animal.*

### ABSTRACT

In this paper we discuss the conditions for the possession of intentional states (especially beliefs) and for intentional agency. We then explore the implications of an analysis of intentionality in non-human animals for their entitlement to ethical treatment, and review the potential advantages and epistemological difficulties of relying on the scientific study of animal mindedness to draw ethical conclusions. In the end, we argue that ethical debates on the treatment of animals, and in particular considerations about welfare, can benefit considerably from the enterprise of exploring the extent to which non-human animals are minded.

*KEYWORDS: Non-Human Animals; Moral Rights; Intentionality; Welfare; Mindedness.*

### I. CRITERIA FOR MINDEDNESS

The debate on whether animals have a mind is centred on a cluster of conceptual questions concerning the criteria for mindedness, and a cluster of empirical questions emerging from the observations and experiments performed to verify whether non-human animals satisfy or fail to satisfy those

criteria. In this paper we focus on the conceptual questions, and in particular on the conditions for possessing intentional states and being capable of intentional agency. We then explore the implications of an analysis of mindedness in non-human animals for their entitlement to ethical treatment, and review the advantages and difficulties of relying on the scientific study of animal mindedness to draw ethical conclusions. An individual (whether it is the product of biological evolution or a form of artificial intelligence, and independent of its species membership or cultural affiliation) is an intentional agent if it has intentional states (such as beliefs, desires, preferences, plans, emotions, and so on) and can act on its beliefs and desires in order to satisfy its preferences. If an individual has preferences which are relevant to its well-being, then it is *prima facie* entitled to direct moral consideration with respect to those preferences.

In the first part of the paper, we argue that failure to recognise some non-human animals as intentional agents has been due to an over-idealisation of intentional agency, which resulted in imposing far too demanding conditions for the ascription of intentional states. We shall illustrate this by reference to beliefs, but similar observations can be made about the ascription of preferences or emotions. In the second part of the paper, we look at the implications of the question whether (some) non-human animals are intentional agents for debates about the entitlement non-humans might have to ethical treatment. We shall remark how methodologically appealing and, at the same time, epistemologically difficult it is to bridge the gap from animal minds to animal welfare.

Conditions for intentional agency that we find in the traditional philosophical literature on mindedness seem to rely on the possession or exercise of capacities that are at least as conceptually sophisticated as intentional agency itself. Here are some examples [Davidson (1984, 2004); Dennett (1979, 1995); Carruthers (1989)]:

- (a) One can have beliefs only if one has the concept of belief.
- (b) One can have beliefs only if one is rational.
- (c) One can have beliefs only if one is self-conscious.
- (d) One can have beliefs only if one has a language.

Although each of these statements is motivated by some theory of what intentional states are, it is worth noticing how strong these conditions are [MacIntyre (1999); Bortolotti (2008)]. We don't normally think that in order to have something we need to possess *the concept of* that something (condition a), as we don't normally think that it is necessary to do something *well* in order to do it at all (condition b).

Let us concentrate on (b). The rationality constraint (RC) on belief ascription has dominated the philosophy of mind and the philosophy of psychology for decades, this being the thought that I cannot ascribe beliefs to you unless you behave in such a way that conforms to the standards of rationality (whatever these may be). Only rational behaviour supports the ascription of intentional states. RC has been at the core of interpretationism, which is the view according to which we can investigate the nature of beliefs not by opening skulls and looking inside the brain, but by examining the everyday practice of belief ascription. Given that interpretationism is a very attractive view, in that it demystifies the mental without reducing it to something else altogether, we hope that it is possible to promote the project of investigating beliefs on the basis of their surface features without having to rely on RC. Even without imposing rationality, there are interesting things that we can say about the difference between beliefs and other intentional states and about the assumptions an interpreter relies on when she is out there, trying to make sense of what other individuals, such as human infants and non-human animals, are doing.

Some core features of belief states guide everyday interpretation, together with other folk-psychological generalisations, the interpreter's background knowledge and information about the environment and the subject. But are these 'core features' really different from rationality constraints? The way in which interpreters ascribe beliefs changes depending on the shared environment, on the individual whose behaviour is under observation, and on the context of interpretation. We know from our own daily practice of interpretation that there are no golden rules. It is to be expected, then, that some of the principles guiding the ascription of perceptual beliefs may not apply to the ascription of religious beliefs or metaphysical commitments; and that the assumptions at work when we attempt to interpret a baby's first words or a dog barking ferociously at an old oak tree (Stich 1979) are different from those guiding the interpretation of an old friend talking about his problems at work. But there are some basic features which provide an elucidation of the folk-psychological notion of belief.

A. *Beliefs have some inferential relations with the individual's other intentional states.*

It is too demanding to expect an individual's beliefs to be all perfectly consistent with one another and mutually supportive, but there are procedural aspects that are an important part of the notion of belief. Although badly integrated intentional states can be ascribed as beliefs, a belief-like state needs to have *some* inferential relations with other things the same individual believes, wishes, desires, and so on, in order to be usefully ascribed as a belief. If a belief did not have *any* connection *whatsoever* with *any* other intentional state, it would not be useful for the interpreter to ascribe it as a belief. Natu-

rally, this does not rule out that some beliefs can be heavily compartmentalised and have sparse inferential relations to other intentional states. The proposed feature, that an individual's beliefs have *some* inferential relations with other intentional states by the same subject, is not a rationality constraint. A belief can have some inferential relations with other intentional states without being procedurally rational, where procedural rationality is concerned with *good* integration of a belief with other beliefs (e.g. attitude/attitude consistency) and the observance of *good* inferential principles within a system of beliefs and other relevant intentional states.

*B. Beliefs are sensitive to the evidence available to the individual.*

Responsiveness to evidence is too demanding as a necessary condition for belief ascription, because we know that there are beliefs (e.g., motivated, prejudiced, superstitious, religious or metaphysical beliefs) which are not likely to be doubted or updated in the face of new evidence. However, there is a sense in which considerations about evidence play a special role in the ascription of beliefs. Instead of demanding that beliefs be necessarily responsive to the available evidence, we can expect at least some beliefs to be at least *sensitive* to evidence. Sensitivity to evidence is obviously a core feature of perceptual beliefs, and beliefs about the explanation and prediction of observable events, but might not be a core feature of other types of beliefs, such as beliefs in the supernatural which are not likely to be challenged in the light of evidence. Notice that, although sensitivity to evidence has far better chances than responsiveness to evidence to work as a constraint on the ascription of beliefs, it is not a rationality constraint. A belief can be sensitive to evidence without being epistemically rational, where epistemic rationality is concerned with beliefs having *good* empirical support and being *responsive* to the available evidence.

*C. Beliefs can be and usually are manifested in the individual's behaviour.*

Action guidance requires that beliefs lead to a specific action in the appropriate circumstances, so that the action performed can be seen as consistent with and explicable by the subject having that belief. Very few beliefs are action guiding in this sense. Some beliefs have contents that are not specific enough to be action guiding, as they cannot be seen to be the reason why the agent did something, in isolation from other beliefs or other intentional states (e.g., 'The grass is green'). Moreover, attitude/behaviour consistency is a regulative ideal for real-life agents: expecting them to systematically act in a way that is consistent with their reported beliefs would lead to disappointment (e.g., 'I should go to the gym more often'). Behavioural manifestability is a much looser notion than action guidance, but it is useful in the context of elucidating the folk-psychological notion of belief, as all beliefs have the potential to be manifested in behaviour. As behavioural manifestability neither

requires consistency nor does it rely on the belief being part of a *good* explanation for the observed behaviour, it is not a rationality constraint.

Where does this brief elucidation of the folk-psychological notion of belief leave the question whether non-human animals can have beliefs? Whether the behaviour of the observed individual is rational does not affect the possibility of ascribing beliefs to that individual, and this should count for non-human animals, as well as for human infants, so called ‘marginal humans’ (who should really be called ‘human non-persons’), and humans with impaired cognitive function. Dretske makes this point by introducing the notion of ‘minimal rationality’ to indicate the set of conditions required by thought, but not sufficient for rationality *proper*.

Minimal rationality requires that what is done be done for reasons, but it doesn’t require that it be done for *good* reasons. [...] Although the behaviour must be explained by a thought in order to qualify as minimally rational, it needn’t be rationalised or rationally justified by the thought that explains it [Dretske (2006), p. 108].

When is it legitimate, then, to ascribe beliefs and other intentional states to non-humans? An enlightened interpretationist who renounces the rationality constraint should answer that it is legitimate to ascribe intentional states to an individual when the ascription of beliefs is useful for the purposes of the explanation and prediction of the behaviour of that individual; and when our understanding of the individual’s cognitive apparatus is compatible with its forming and operating on representations. But how do we know whether the cognitive apparatus of non-human animals supports belief ascription?

Because of the way in which our capacity for belief ascription has been designed by evolutionary processes to deal with fellow humans, and because of the way in which belief ascription happens to work, our unaided intuitions are not a very reliable guide to understanding non-human animals [for more details, see Mameli and Bortolotti (2006)]. We can often end up ascribing to them beliefs that they are very unlikely to have, because too conceptually sophisticated, or fail to ascribe to them beliefs that they can have, because we underestimate their conceptual discriminatory capacities. But the message is not that we should give up, rather, that we should consider the possibility that, when we attempt to understand the behaviour of individuals very different from us, intuition is not to be trusted and science can help fill the gaps. The accuracy of attributions of intentional states to non-human animals can be improved by trusting scientific animal psychology, which relies not only on behavioural studies, but also on neuroanatomy, brain imaging, physiology, and so on.

Why should we care about whether non-human animals are intentional agents? First, it is an interesting theoretical project to get a better grasp on the

conditions for mindedness, as it may help us understand which capacities are unique to humans and which are shared with other individuals. Second, in many ethical theories, intentional agency features powerfully among the conditions that are necessary for an entitlement to direct moral consideration (that is, depending on the preferred terminology, entitlement to moral status, or to basic moral rights). If ethical behaviour includes (among other things) refraining from unnecessarily frustrating an individual's preference [Singer (1989)], when the satisfaction of such preference contributes significantly to the individual's well-being, then determining whether an individual has preferences and can act on them is paramount to the enterprise of populating the relevant moral community [Bortolotti (2006)]. Even if we believe that intentional agency is not enough, and being the subject of a life [Regan (1983)] or being a person [Harris (1990)] is necessary for direct moral consideration, intentional agency is certainly a necessary condition for being either the subject of a life or a person, and thus it still plays an important role.

## II. THE WELFARE OF MINDED NON-HUMANS

In this section we will illustrate the difficulties and the advantages that the ethical debate on the moral status of animals could expect from a closer collaboration with the disciplines that study animal mindedness.

Comparative cognitive psychology over the last two or three decades has stressed the continuity between human and non-human mind. This tendency is a heritage of Darwin's intuitions about the difference between human and non-human mind being "one of degree and not of kind" [Darwin (1871)]. It can thus be said that the mainstream trend in this field is to corroborate what we can call the quantitative difference thesis (QNT) about animal minds. Nevertheless, a non-negligible number of scholars maintains a qualitative difference thesis (QLT), stating that human mind cannot be meaningfully assimilated to the mind of animals as if they only differed in their degree of cognitive ability. Let us now try to specify the content of these theses more precisely.

The quantitative difference thesis affirms that the distinctive abilities of the human cognitive apparatus (such as use of a grammatical language, ability to use symbols, intentionality, capacity to recognise causal patterns, capacity to reason inductively and deductively, behavioural manifestability, conceptual abilities, mindreading, self-consciousness, etc.) are not exclusively human traits, but rather they are shared, although at a lower degree, by other non-human species. The only human peculiarity, in this respect, is that we can use those abilities at a higher level of precision and efficiency, but apart from that, there is nothing unique in the human possession of a cognitive system [see for instance Bekoff et al (2002); deWaal & Tyack (2003);

Pepperberg (2002); Smith (2003); Tomasello et al. (2003)]. “[...] The capacities of nonhuman animals to solve complex problems form a continuum with those of humans” [Pepperberg (2005), p. 469].

The qualitative difference thesis affirms that the distinctive abilities of the human cognitive apparatus (such as the ones listed above) are exclusively human traits, and that non-human species do not possess them at all. Our higher cognitive capacity is not due to a difference in degree, but to a difference in kind, since non-human animals, when confronted with cognitive tasks, use entirely different strategies and cognitive tools from humans [see, e.g. Bermudez (2003); Carruthers (2002)]. Animal minds, whatever they are, are not simplified versions of human minds, but thoroughly different cognitive systems. “The profound biological continuity between human and non-human animals masks an equally profound discontinuity between human and nonhuman minds” [Penn et al. (2008), p. 110]. Defenders of the QLT often stress the specificity of human language as a constitutive element of human cognition, thus maintaining that non-human animals fall short of the cognitive capacities associated with language [see, e.g. Chomsky (1980); Jakendoff (2002); Pinker (1994)].

Few scholars, if any, would deny that at least some non-human species possess cognitive abilities of some sort. Likewise, there is substantial agreement on the idea that human and non-human subjects exhibit mental properties that vary sensibly, from species to species as well as among single individuals of the same species but with distinct characteristics. With respect to this last point, it seems plain that species membership is not a sufficient criterion for the ascription of intentional states, for juvenile individuals, or subjects with congenital or acquired conditions of nervous system degeneration are unlikely to possess the same mental abilities of their adult or normally functional conspecifics. But a wide array of problems in this area still awaits conceptual and empirical elucidation. One of these problems is whether non-human animals can be regarded as intentional agents, and this is of particular interest for the ethical debate about the treatment of non-human animals. More specifically, if we want to know more about the conditions that impair or foster animal welfare, we must pay special attention to the conditions that affect animal minds in welfare-related ways. The welfare of non-human animals has a special relation to the welfare of non-human minds: breeding, transportation, husbandry and the specific uses of animals for human purposes, affect animal minds in ways that might be – although they do not necessarily have to be – morally relevant. This is a particularly challenging task with respect to the capacity to have mental states that would make non-human animals good candidates for intentional agency. Here we shall focus on how our (human) assessing of other animals’ cognitive capacities can influence the way in which we attribute moral value to non-human animals.

We are likely to encounter some sticking points when we attempt to gain valuable insights from behavioural sciences, including epistemological problems in identifying criteria for mental ascriptions that would be relevant to bioethics (section II.1), and possible biases in the formulation of scientific hypothesis (namely, the recapitulative bias in behavioural sciences, section II.2.). In section II.3 we will instead illustrate the possible advantages that bioethics could expect from scientific research on non-human animals' mind.

### II.1. *The Anthropomorphic Bias*

The first issue is epistemological: Will we ever get fully empirically testable attribution criteria when dealing with animal mindedness? Or otherwise stated: what can be the role of empirically testable criteria of mental ascription to animals for the moral consideration of animal welfare? The attribution of beliefs, intentional states and cognitive capacities to non-human animals is not a trivial business, and scholars have elaborated many alternative strategies to deal with the issue. Let us first look at the possible ways in which mental ascription is thought to be possible. Apparently clear insights from common sense and empathy seem reliable enough for cognitive attributions. One option is thus to directly apply to non-human animals the same tools that that we use for human-to-human attributions: interpretation of facial expressions and bodily postures and gestures, empathy-driven mental simulation of the observed human's mental states [see, e.g. Gordon (1986, 2004); Goldman (1989); Davis (1995), use of folk-psychological theories [Baron-Cohen (1992); Fodor (1992); Leslie (1995); Gopnik et al. (1997)]. The attempt to apply these tools for animal mindreading has been criticised as naïve anthropomorphism: it uncritically relies on empathy or intuition, while failing to take into due consideration the accumulating scientific knowledge about animal mindedness and the evolutionary origins of human mindreading [Mameli and Bortolotti (2006)].

A more tempered version of the anthropomorphic strategy has been advanced by Morton, who argues for "critical anthropomorphism", one that would pay attention to scientific studies along with common intuitions about animal minds [Morton (1990)]. Supplementing commonsensical intuitions with the best available empirical knowledge in order to arrive at mental states attributions, seems to be the best strategy for the time being. Thanks to critical anthropomorphism we might come to have reasonably good degrees of knowledge to drive our attribution of beliefs, intentionality and cognitive capacities to animals, at least in those cases where the guidance provided by empathic intuitions has the support of rigorous scientific research. It can be argued, though, that empathy does not provide any kind of valuable support whatsoever and that scientific research should be the only source of our attributions of mental states to non-human animals [see Mameli and Bortolotti (2006)].



Behavioural sciences work by constructing experimental systems that can test non-human animals' ability to cope with the constitutive elements of a mental state. The choice of the tasks is made according to the basic operations we think a mental capacity amounts to. These are theoretical choices that are quite difficult to ultimately justify. The reference to human minds is inevitably present, at least at a heuristic level, in the initial choice of what to go looking for in animal minds. The tests are then performed in a scientifically controlled way, and they include behavioural tasks, brain imaging techniques and examination of physiological parameters (heart rate, blood pressure, hormonal levels, etc.). Quite obviously, these tests are not able to confirm that the task was devised in an objective and unbiased way. Who can tell us if the human-centred heuristic choices adopted at the beginning are theoretically fair to the species or to the individual animal under investigation? Certainly not the experiments that are based on those choices. Even less, scientific inquiry alone is able to tell anything about the moral relevance of the mental traits it investigates.

From this brief review of the alternatives that are present in the field, we get the impression that mental ascription to non-human animals is currently far from accurate. Theoretical and experimental difficulties seem to be persistent and make it problematic to extrapolate from behavioural sciences to bioethics.

## II.2. *The Recapitulative Bias in Behavioural Sciences*

A characteristic of comparative psychology, often ignored in the debate, is the tacit endorsement of a quite old biological idea, the biogenetic rule, usually associated with the names of Étienne Serres (1786-1868) and Ernst Haeckel (1834-1919). According to this idea the morphology, but more interestingly for us, the behaviour of children recapitulates the phyletic past of our species. In a simplified version, the biogenetic idea could be taken as stating that the child exhibits behaviours that resemble those of adult members belonging to species with whom they share an evolutionary past. Referring to comparative anatomy and evolutionary biology Gould wrote:

Over and over again, we find an explicit appeal to biological recapitulation: since a human embryo repeats the physical stages of remote ancestors, the child must replay the mental history of more recent forebears [Gould (1977), p. 136].

And then he offered a quote from Freiderich Engels to testify how widespread the idea was, well beyond the biology community:

Just as the developmental history of the human embryo in his mother's womb is only an abbreviated repetition of the history extending over millions of years, of the bodily evolution of our animal ancestors, beginning from the worm, so the

mental development of the human child is only a still more abbreviated repetition of the intellectual development of these same ancestors, at least of the later ones [Engels (1876), in 1954, p. 241].

As a matter of fact, the interpretation of experimental evidence in behavioural sciences often relies on the comparison between, for example, children and primates. This idea is communal to both QNT and QLT, since both parties use this kind of comparison to respectively stress the continuity or the discontinuity in human and animal mental capacities [see Penn (2008)].

Despite the initial enthusiasm it raised, and although it shows an intuitive heuristic attractiveness, recapitulation has been widely refuted as illusory [see, e.g. Raff and Wray (1989) in anatomy; Lerner (1976) in psychology; Medicus (1992)], but it has nevertheless attracted, and still attracts, many respected scientists [see, e.g. Gould (1977), Osche (1982), Charlesworth (1986)]. The controversies that surround this idea constitute another example of the kind of epistemological biases that could compromise the project of drawing moral conclusions with the aid of scientific ones.

### II.3. *Advantages of the Scientific Study of Animal Minds for Bioethics*

The expected positive outcome of the collaboration between bioethics and disciplines that study animal mindedness is the possibility to gain insight into the morally relevant welfare conditions for animal minds, especially in the case of animals capable of intentional states. Therefore we maintain that a fairer moral consideration of non-human animals could not do without a more precise knowledge of non-human minds. In our view, there are indeed advantages that the ethical debate could expect from close collaboration with empirical and theoretical behavioural disciplines. If one assumes that only higher-order cognitive features confer moral status, then endorsing QLT, which affirms the exclusively human possession of those features, is sufficient to deny moral status to all non-human animals. With the aid of science one might in effect be able to build a definitive ladder of moral status that excludes some species while including others according to the possession of cognitive capacities. This strategy would provide clear-cut answers to the issue of the limits of animal use in human activities (such as scientific research, food production, entertainment industry and so on). On the other hand though, QNT allows room for at least some non-human species being acknowledged some degree of those higher-order features. Therefore those species could be granted degrees of moral value according to the proportion in which they possess those features. Hence, to both proponents of QLT and defenders of QNT can science offer a way to articulate moral views.

Moreover, scientific studies can help map the capacity of animals to experience pain (not just feel it) onto their cognitive abilities – thus making it possible to assess animal welfare. Our models and theories can always be

improved as new scientific knowledge becomes available. This mapping needs neither be exhaustive, nor definitive. Idealising the promises of scientific research and expecting it to provide conclusive answers about the minds of animals seem to equivocate the very nature of scientific practices and the way in which knowledge is produced. Therefore objections that point at the non-definitive character of scientific research can be dismissed.

Unfortunately “no agreement exists about how to map scientifically accessible mental status, and [...] about how to evaluate proposal in the area either” [Mameli and Bortolotti (2006), p. 88]. Is this enough to say that science is useless in illuminating the ethical debate? We do not think so. So far non-scientific alternatives to understanding animal minds seem to be strongly affected by an exclusive reliance on commonsense and by anthropomorphic biases. We do not seem to have good reason to believe that untutored intuitions or anthropomorphism will necessarily be a better starting point for our discussion. Science offers a vantage point that is, at least in principle, capable of expanding our understanding of animal minds beyond the restricted boundaries of ordinary thought.

We therefore propose that bioethics should pay close attention to the debate in comparative psychology and in philosophy of psychology in order to gain insights into how non-human animals should be treated. Moreover, the ethical debate should remain open for evidence-based revision. To attain that goal, ethical positions should be formulated in an empirically falsifiable way, so that when more compelling new evidence about how animal minds work becomes available, ethical criteria can be fruitfully refined. This means that the moral inclusion of animals might depend on the recognition of certain features that science has good enough tools to investigate (and philosophy has good tools to elucidate).

Although the disciplines that study animal behaviour keep on giving rise to harsh controversy, bioethics can be confident that at least in some relevant sense the welfare of non-human animals overlaps with the welfare of non-human minds. Welfare is commonly understood as physiological and psychological well-being. This notion lends itself to a dramatic degree of species-specific as well as subjective variability. Nevertheless bodily and mental interaction with the environment require the mediation of both the physical and the mental apparatus of an animal: perceiving an external stimulus or condition as good or bad is not independent of the way in which the information gathered from the outer environment is processed by the nervous system of the perceiver. According to this view, an animal can not only attach a negative connotation (typically pain and stress) to the conditions in which it is placed, but can also potentially develop intentional states leading to suffering and distress. In other words, non-human minds could be capable of forming specific, non-human needs and interests that, for the reasons described above, could be extremely difficult for humans to detect. Nonethe-

less, if we have reasons to believe that such mental states could be present at least to some degree, and at least in some non-human animals, then we have (theoretical and practical) reasons to go looking for them, and try to bridge the gap from non-human minds to non-human welfare.

The effort of clarifying continuities and discontinuities between humans and non-humans with respect to their mental abilities can thus be useful to illuminate the moral dimension of the human-non-human relationship.

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