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Humans and Dolphins: An Exploration of Anthropocentrism in Applied Environmental Ethics¹

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This article argues that one of the reasons that the unethical character of much human–dolphin contact is not more apparent to ethicists is that discussion of central issues has been colored with unintentional species bias. This article points out weaknesses in the traditional approach to discussing topics that bear on the question of whether dolphins have moral standing. It demonstrates that discussions of the cognitive abilities of dolphins by Steven Wise and Alasdair MacIntyre are unintentionally but fundamentally anthropocentric—largely because the authors are not familiar with enough of the scientific literature about dolphins to draw the conclusions that they do.

KEY WORDS: anthropocentrism, dolphins, environmental ethics, methodology, applied ethics, animal rights

Throughout the last few decades, scientists have demonstrated an increased interest in the cognitive and affective capacities of nonhumans, and philosophers have shown a similar interest in the ethical implications of scientific findings.² If some nonhumans can think and feel, what does this say about “animal rights”? Is it wrong to use such nonhumans for food? To use them as test subjects for research and medical experiments? To hunt them for sport? To use them as creatures to entertain us? Particularly pressing is the question of the ethical acceptability of human–dolphin contact. Thousands of dolphins die each year in deliberate “drive hunts” in Japan. Despite the existence of “dolphin-safe tuna,” hundreds of thousands of cetaceans are killed globally by the fishing industry each year. Countless more are harassed by ocean noise and military exercises, with some deafened or killed. And hundreds are kept captive for entertainment, research, and therapeutic purposes and by the military. Given what we know about the sophisticated cognitive and affective abilities of these cetaceans, do they have moral standing? Is the way that we treat dolphins morally defensible?

I have argued elsewhere that the practices in question are unethical.³ In this article, I would like to extend the dimensions of discussions about the ethical character of human–dolphin contact by arguing that one of the reasons the unethical character of these actions is not more apparent to ethicists is that the discussion of central issues has been colored with unintentional species bias.

We know only too well that in the past racism and sexism have colored supposedly objective research. Science and philosophy have been used to deny men and women the treatment they deserve. With an increasing amount of data suggesting that humans are not the only beings on the planet who think and feel, our species faces the challenge of handling problems of interspecies ethics in a way that is free of anthropocentrism. However, questions about whether nonhumans have “moral standing” frequently revolve around the issue of whether these beings demonstrate sophisticated cognitive and affective abilities. A critical challenge in such investigations, then, is to avoid the trap of saying that other beings deserve moral consideration only to the extent that they are “just like us”—that is, to claim that nonhumans have higher affective and cognitive abilities only if they demonstrate them in the same way that humans do.⁴ This article argues that thinkers have regularly failed at this challenge.

This article points out weaknesses in the traditional approach used in discussing topics that bear on the question of whether dolphins have moral standing. I demonstrate that discussions of the cognitive abilities of dolphins by Steven Wise and Alasdair MacIntyre are unintentionally but fundamentally anthropocentric—largely because the authors are not familiar with enough of the scientific literature about dolphins to draw the conclusions that they do.

The significance of this issue should not be underestimated. Ethicists who discuss issues involving nonhumans typically base their positions on the metaphysical and epistemological implications of the scientific research on the species in question. The cognitive and affective abilities of gorillas, for example, speak directly to the question of the ethical defensibility of using these great apes for medical testing in the pharmaceutical industry. Any applied ethicist who fails to master the scientific foundations related to the species in question builds his or her argument on quicksand. Worse yet, he or she may very well end up justifying unethical practices.

STUDYING NONHUMANS AND THE DANGER OF ANTHROPOCENTRISM

One of the fundamental problems in discussing ethical issues related to nonhumans is avoiding anthropocentrism. How do we define the criteria for a specific trait or ability in a way that does not predetermine that only humans would ever be able to demonstrate that trait or ability? How do we approach the matter in a way that is species-neutral? The problem is aptly illustrated by a comment once made by marine scientist Louis Herman of the University of Hawaii in defending his use of certain terms to describe the linguistic abilities of dolphins.⁵ He explained, “Some feel that you should use a term

[that describes linguistic abilities] only if you can demonstrate that the animal uses it in all the ways a human does. That's obviously unduly restrictive. A dolphin might think that humans don't demonstrate swimming ability until we've demonstrated all the things a dolphin can do, like leaping fifteen feet from the water, staying underwater for fifteen minutes, swimming at twenty knots, and so forth" (Herman, 1989, p. 86).

Herman's observation should be sobering. If we take the way that dolphins move in the water as the standard for "swimming," not even the performance of the best human swimmer comes close. And yet we would not say that this means that humans cannot swim. In other words, when we specify the criteria for complex abilities, it is important to recognize how differently things might look from the perspective of other species. As difficult as this may be in discussing the abilities of other primates (with whom we have so much in common), it is much more difficult when we consider cetaceans. In any investigation of the cognitive abilities of dolphins, it is important to recognize the significance of the dramatic difference in the environments in which humans and dolphins evolved—and yet this is precisely what standard discussions fail to do.

Anthropocentrism via the Centrality of "Language"

Thinkers often discuss the question of whether dolphins have moral standing and whether their treatment by the fishing and entertainment industries is morally defensible in a way that, in effect, commits the human equivalent of the very mistake about which Lou Herman warns. Where humans set the bar extremely high, however, is in terms of the cognitive traits in which our species excels—particularly language. "Intelligence" (and by implication, moral standing), for example, is defined almost exclusively in terms of whether dolphins have the equivalent of human language. However, there is good reason to believe that "intelligence" differs so much among species that it requires species-specific definitions.⁶ Moreover, the absence of the equivalent of human language in dolphins does not necessarily imply that they lack sophisticated cognitive abilities. Unfortunately, even individuals who are consciously committed to avoiding anthropocentrism have made serious errors in their assessment of the cognitive abilities of dolphins by placing so much emphasis on linguistic abilities.

Steven Wise, for example, is a pioneer in the field of animal rights law who has been trying for years to get courts to extend legal personhood to include at least some nonhuman animals.⁷ He is sensitive to the problem of speciesism, and he even recognizes that "we mustn't think human intelligence the only intelligence" (Wise, 2002, p. 45). However, Wise's discussion of dolphins focuses almost exclusively on their *linguistic* capabilities.⁸ In addition, on a "practical autonomy" scale that Wise has developed to show the extent to which some nonhumans deserve legal recognition, dolphins fall below bonobos, gorillas, and orangutans (Wise, 2002, p. 241). Wise's explanations of the higher level of "mental abilities" evidenced by the primate research subjects in the scientific literature he examined—Chantek (orangutan), Koko (gorilla), and Kanzi (bonobo)—primarily detail how well these three primates performed on *human* tasks (human intelligence tests, tests related to assessing the developmental progress of human children, tests of the ability to

use elements of human language, etc.). In other words, other primates rank higher than dolphins (and have a stronger claim to “rights”) because they are *more like us*—which, given our biological relationship, is no surprise.

A more serious example of a similar error comes from Alasdair MacIntyre, a distinguished scholar who is one of only a handful of philosophers to explore the philosophical implications of the cognitive capacities of dolphins. Like Wise, MacIntyre makes a promising start. He explicitly rejects the idea that nonhumans are incapable of having thoughts and beliefs because they lack language.⁹ However, although MacIntyre recognizes that dolphins have a variety of impressive cognitive abilities, he nonetheless makes the fact that dolphins lack human language central in his evaluation of their intelligence.¹⁰ MacIntyre (1999) then falls into the trap of anthropocentrism when he writes, “But although [Lou Herman’s research] is unquestionably an achievement of great significance for evaluating the communicative and linguistic capacities of dolphins, just what the significance is could only emerge from a detailed comparison with what is acquired by *human* children and with their mode of language acquisition” (p. 28, emphasis added).

MacIntyre (1999) concedes that dolphins share with humans a “prelinguistic” ability to distinguish between what is true and false (p. 37). But he argues that the fact that dolphins lack language means that they cannot have the advanced cognitive traits that humans do. Key here are three abilities that MacIntyre identifies as the traits of what he calls “independent practical reasoners”: the ability to have reasons for acting other than to satisfy present desires, the ability to imagine the future, and the ability to evaluate our reasons for acting (MacIntyre, 1999, chapters 6–8).

MacIntyre (1999) summarizes his position as follows:

I first of all noted that part of what is distinctive about human reasons for action, as compared with dolphin or gorilla reasons, is that we are able to evaluate our reasons as better or worse, and I then catalogued some characteristics that are necessary for those who, by exercising this ability, become sound practical reasoners, their ability to detach themselves from the immediacy of their own desires, their capacity to imagine alternative realistic futures, and their disposition to recognize and to make true practical judgments concerning a variety of kinds of good. (96)

In other words, MacIntyre is referring to three abilities that we find in normal adult humans but do not observe in, for example, cats and dogs: We do things for reasons other than satisfying physical pleasure; we consciously realize that some reasons for doing things are better than others, and we choose our actions accordingly; and we project the consequences of our actions into the future. So, for example, we might choose to donate money to a worthy cause because it will help other people have better lives in the future (not because it will make us look good to other people or simply make us feel better about ourselves).

MacIntyre makes a series of mistakes, however, when he argues that dolphins lack these abilities. First, MacIntyre’s argument seems to proceed on the questionable (and, it might be argued, anthropocentric) belief that if we cannot observe dolphins perform-

ing these activities in the same way that is recognizable when humans demonstrate the abilities with language, then dolphins lack those abilities.

Second, MacIntyre offers his conclusions with insufficient knowledge about dolphin capabilities. Whether dolphins possess language or not, there is reason to believe that they do have the three abilities to which MacIntyre refers. The following are just a few brief examples.

- Since the 1980s, a community of Atlantic spotted dolphins has sought out human contact in the Bahamas. Their motivation is apparently curiosity about another intelligent species, which strongly suggests that they are capable of acting for reasons that have nothing to do with the normal physical or social life of their species (Herzing, 2011). More prosaically, Bernd Würsig's (1983) description of a particular feeding practice documents the ability of a group of dolphins to postpone immediate gratification in favor of a strategy that rewards patience and cooperation.¹¹
- Research by John Gory, Stan Kuczaj, and Rachel Thames has demonstrated that dolphins can imagine the future (Gory & Kuczaj, 1999; Kuczaj & Thames, 2006). That is, the dolphins being studied were able to “create a novel and appropriate solution in advance of executing a solution” (Gory & Kuczaj, 1999).
- It is obviously impossible to know the reasons behind dolphins' actions, but it seems that dolphins have the capacity to choose to act for different types of reasons. They can act out of self-interest (when they eat). They can act to advance the interest of their coalition or community (when they engage in certain cooperative behavior). They can act to help not only other dolphins but humans as well (when they perform caregiving behaviors). They even appear to be able to act out of curiosity (when they seek out human interaction). Given what seems reasonable to speculate on the basis of dolphin behavior, dolphins appear to have the abilities MacIntyre is referring to. MacIntyre appears to be referring simply to an ability more advanced than what we see in human children. He writes,

The first step in this transition [to rationality] takes place when a child becomes able to consider the suggestion that the good to the achievement of which it is presently directed by its animal nature is inferior to some other alternative good and that this latter good therefore provides a better reason for action than does the good at which the child has been aiming. (MacIntyre, 1999, p. 56)

A simple example that seems to qualify is when we realize that there are better reasons for treating other people decently than that they may punish us if we do not. I believe that caregiving behavior with no apparent reward to the dolphins giving it suggests that dolphins act for reasons that are better than the self-interest characteristic of human children.

Third, MacIntyre complicates matters by making a series of assertions about dolphins that are either unlikely or, very probably, false—a fact that further undermines his argument. For example, MacIntyre (1999) claims, “[Dolphins] do not have to go through a stage in which they separate themselves from their desires, as humans do, a separation which involves a recognition of goods other than the pleasures of satisfied bodily wants” (p.

68). However, dolphins regularly appear to pursue satisfactions other than “bodily wants” (e.g., curiosity), so they presumably have gone through such a stage. (MacIntyre also assumes—without any reason for doing so—that human and dolphin brains go through the same developmental stages. Yet as research on the cetacean brain has demonstrated, land-based primate brains and water-based dolphin brains developed along significantly different evolutionary paths.¹²)

MacIntyre (1999) also writes,

The care for others that dolphins exhibit plays a crucial part in sustaining their shared lives. Yet this part is one that they themselves cannot survey, lacking as they do, any capacity to look back to infancy or forward to aging and death as humans do. . . . But, unlike dolphins, [humans] also have the possibility of understanding their animal identity through time from conception to death and with it their need at different past and present stages of life for the care of others, that is, as those who, having received care, will be from time to time called upon to give care, and who, having given, will from time to time themselves once more be in need of care by and from others. (pp. 82–83)

Not only is it impossible to assert that dolphins lack this awareness, but the combination of the following facts suggests that they possess it: Dolphins have significant memories; they engage in long-term relationships; and they occasionally appear to grieve after a death.¹³ Following a comment to the effect that humans cannot always depend on others to protect us from harm or even to refrain from hurting us, MacIntyre (1999) writes, “Dolphins do not have reason to fear dolphins, as humans have reason to fear humans” (p. 97). The occasional aggression by members of a community of bottlenoses against the Atlantic spotted dolphins in the Bahamas is one example that certainly suggests otherwise (Herzing, 2011, pp. 124ff.).

It appears as though MacIntyre gives us a classic example of unintended anthropocentrism. He is so thoroughly steeped in the fact that humans show we have certain cognitive abilities through use of language that he takes the absence of analogous, recognizable linguistic behavior in dolphins as conclusive proof that these cetaceans lack the abilities in question.¹⁴ He also compounds this error by basing his claims on insufficient familiarity with the scientific literature on dolphins.

The Problem with Language

My criticism of thinkers like Wise and MacIntyre may seem unfair. Is it not reasonable to think of “language” as simply the tool that any being with thoughts and beliefs would use when the being reflects on his or her own thoughts, manipulates his or her own ideas, and tries to communicate those thoughts and beliefs to other intelligent beings? And if we do not see any evidence of this kind of tool, would it not be reasonable to conclude that such a being lacks the kind of sophisticated inner world that most humans would insist on before accepting the idea that such beings have moral standing?

A rudimentary definition of “intelligence” can apply across species.¹⁵ Why not think of language as just a particular facet of higher intelligence—the basic tool that is used in

processing and working with information? Why am I claiming that it is anthropocentric to insist that dolphins (or any nonhuman species) demonstrate at least elementary linguistic abilities before they are candidates for moral standing?

The fundamental problem with making language so central is that “intelligence” is probably best understood as a *species-specific* trait. That is, there is good reason to accept the possibility that large-brained species who evolved in dramatically different environments adapted to these conditions in very different ways—both externally and internally.

Language is not some magic, ethereal gift of the gods. Language (in the form that we use it) is a biological adaptation by humans. It arose and evolved because language was useful to our ancestors in dealing with the challenges in their environment. However, language—at least in the form that it has developed in humans—may not be useful in every set of evolutionary conditions. If dolphins lack language, it may very well be because it is not a particularly helpful tool in the oceans, not because dolphins lacked the intellectual capacity for developing it had it been useful.

The Adaptive Character of Language in Humans

Part of the problem here is that humans generally do not fully understand what we use language for. A popular view is that language is a tool designed to let humans use our rationality in solving the problems that our environment has thrown at us over the centuries. Language allowed us to develop science, medicine, law, and other achievements that are part of human civilization. Language lets us uncover the mysteries of the universe—to discover truth. This view essentially assigns a primarily “designative” function to language, viewing it, as Charles Taylor (1985a) puts it, “as an instrument of control in gaining knowledge of the world as objective process” (p. 226).

Although there is no denying what language has let us accomplish through designation and representation, there are also some alternative perspectives about language that deserve consideration. For example, Taylor (1985a) identifies an “expressive” function of language that locates language in the social context in which it is used. Echoing Humboldt, Taylor (1985a) refers to this as “understanding language as *energeia*, not just *ergon*” (p. 256). In this view, as Taylor (1985b) explores in “Theories of Meaning,” language constitutes not only dimensions of the self but social relations as well.

In fact, primatologist Robin Dunbar (1996) offers an interpretation of language consistent with Taylor’s view. Dunbar has argued that language evolved primarily as a way for us to handle living in groups. He has advanced the controversial thesis that language evolved in humans “as a kind of vocal grooming to allow us to bond larger groups than was possible using the conventional primate mechanism of physical grooming” (Dunbar, 1996, p. 78). In short, Dunbar (1996) says, “language evolved to allow us to gossip”—something that, according to Dunbar, amounts to about 60% of how we use language (p. 79).

Dolphins are also highly social, and as I argue elsewhere, they probably use their large brains mainly for social intelligence—that is, to manage their relationships. However, from the perspective of Dunbar’s theory, if dolphins found nonlinguistic ways to build social cohesion, there would have been less evolutionary pressure to develop something

analogous to human language. And dolphins unquestionably have ways of reinforcing relationships and building social cohesion (White, 2007, chapter 5).

Language and the Hand

The idea that dolphins lack language because their ancestors did not experience pressures to develop such an adaptation leads us to one other reason that it is anthropocentric to make the equivalent of human language a necessary condition of higher intelligence (and moral standing)—the relationship between human language and the human hand.

One of the most intriguing sources of support for the idea that “intelligence” does not mean precisely the same thing when we talk about humans and dolphins comes from an unlikely source—the unintended implications of a physician’s speculations about the relationship between the brain and the hand. Frank Wilson, a neurologist who has specialized in the rehabilitation of hand injuries, became interested in paleoanthropology—the study of ancient human origins—and he has put forth a fascinating theory about the relationship between the human hand and the brain. In his *The Hand: How Its Use Shapes the Brain, Language and Human Culture*, Wilson (1998) argues that the character of human intelligence—and particularly the character of human language—is largely a function of what Wilson calls “the logic of the hand.” Wilson argues that the hand and the brain “co-evolved,” with the development of the former driving the development of the latter.¹⁶ He argues that “any theory of human intelligence which ignores the interdependence of hand and brain function, the historic origins of that relationship, or the impact of that history on developmental dynamics in modern humans, is grossly misleading and sterile” (Wilson, 1998, p. 7).

If Wilson is correct, another reason that dolphins lack some analogue to human language is that *they lack hands*. And this gives us still more reason to refrain from thinking about language (in the way that humans construct, use, and understand it) as a trait that we can assume is universally a feature of higher intelligence.

The significance of this perspective cannot be overstated. In essence, Wilson claims that the hand, the brain, and language are intimately connected—with the hand enjoying logical primacy. In other words, the brain’s abilities were determined by the hand’s need. Human “intelligence,” then, refers to a set of cognitive abilities that developed in response to a combination of (a) the specific conditions that early humans were living in, (b) their successful response to the challenges in this environment, and (c) specifically the manual abilities that humans developed (the capacity to make and use increasingly complex tools) that increased the likelihood of their survival. From this point of view, all sophisticated human cognitive operations are driven by the “logic of the hand.” Consequently, all of the products of human intelligence—technology, culture, art, and so on—are colored by the “logic of the hand.”

For the purposes of our investigation, Wilson’s thesis has two powerful implications. First, it explains why discussions about “intelligence” in nonhumans put so much emphasis on language. That is, Wilson’s theory gives us a paleontological explanation for

the fact that philosophical discussions of the possibility of intelligence in nonhumans are dominated by a preoccupation with language and the linguistic abilities of nonhumans. (This is precisely what we saw previously in the discussions of Steven Wise and Alasdair MacIntyre.) Wilson (1998) argues, “The partnership of language and culture is so deeply woven into human history, and so compelling a force in our own personal development and acculturation, that we quite naturally come to *regard language as the trait that both explains and defines our intelligence*” (p. 37, emphasis added).

Brain expert Robert Ornstein (1991) reinforces this general perspective when he claims, “The mind is the way it is because the world is the way it is. The evolved systems organize the mind to mesh with the world” (p. 11). Wilson stresses the central role of the biological instrument through which this response is mediated. The *human mind* developed in response to specific environmental conditions and survival imperatives. Our brains responded as they did because of our nature as handed, land mammals. The *dolphin mind*, however, developed in response to the dramatically different evolutionary pressures of the ocean. Their response was mediated by a different sort of biological instrument—a body that evolved to be as hydrodynamic as possible. Their brains responded as they did, then, because of their nature as aquatic mammals.

The more important implication of Wilson’s line of thought, however, is what it has to say about nonhumans, such as dolphins, who have big brains but no hands. If the picture that Wilson and Ornstein paint about the dynamics that drive the evolution of a large brain is correct, it is not merely possible that “dolphin intelligence” and “human intelligence” are dramatically different; it is probable. Indeed, given the vast differences in the conditions in which the two species were evolving and in the challenges they were facing, it is hard to believe that the intelligences would be the same. To believe so would involve a naïve denial of the fundamental forces that drive the world of nature and, particularly, the evolution of the brain. The question is not “Could human and dolphin intelligence be different?” but “How could they possibly be the same?”

The bodies of ancient dolphins adapted to their environment, acquiring traits that would increase the likelihood of survival. Presumably, the dolphin brain responded in concert with these adaptations. If there is a “neurological grammar” imprinted by the coevolution of the dolphin brain and central aspects of the dolphin body, it clearly is not based on “the logic of the hand.” At this point, we can only speculate on the logic of dolphin brain evolution, but it seems virtually certain that this would lead to intelligence that is very different from what we find in humans.

Anthropocentric Consequences of a Weak Grasp of Science

What we have seen then is that traditional discussions about the cognitive capacities of dolphins—as represented by Stephen Wise and Alasdair MacIntyre—are unintentionally anthropocentric and therefore inaccurate in the conclusions they draw. Regrettably, but understandably, the ethical implication of these scholars’ findings is that dolphins are less deserving of moral consideration than an unbiased examination of the facts would

reveal.¹⁷ As a result, Wise and MacIntyre become unwitting defenders of human practices (the deaths, injuries, harassment, and captivity of dolphins in connection with the human fishing and entertainment industries) that are, in fact, seriously unethical.

FINAL THOUGHTS ON THE ROOT CAUSES OF ANTHROPOCENTRISM IN DISCUSSIONS ABOUT DOLPHINS

This article has tried to show that two important discussions of the cognitive abilities of dolphins have been unintentionally anthropocentric. Such flawed discussions have ethical implications in that they provide grounds for justifying certain practices that an unbiased approach would show to be unethical. Sadly, the reason for the weakness of Wise's and MacIntyre's discussions is lack of familiarity with the relevant scientific research. Both men base their arguments on a relatively small amount of the scientific literature on dolphins. By MacIntyre's (1999) own admission, his primary source for information on dolphins was a single anthology of 20 scientific writings (p. 21). Wise (2002) consults a wider range of writings (pp. 278–286) but still less than required to offer judgments about the cognitive abilities of dolphins. Wise also focuses almost exclusively on Louis Herman's work with two captive bottlenose dolphins. More broadly, neither writer shows any fluency in the philosophical (and especially, ethical) implications of the process of evolution and the mechanism of adaptation. In addition, neither has any experience with fieldwork.¹⁸

By contrast, my own investigation of the ethical issues connected with human–dolphin interaction began in 1988 and has been characterized by intense study of most available research on dolphin anatomy and physiology, brain structure, cognitive and affective capacities, social intelligence, and social behavior. In addition, since 1990, I have observed and participated in fieldwork connected with Denise Herzing's research on a community of Atlantic spotted dolphins in the Bahamas.¹⁹

On the basis of my own experience, I believe that basing philosophical conclusions about any nonhuman species (1) on only a small percentage of the relevant scientific literature and (2) on no field experience is no more acceptable than basing judgments about Plato on the reading of only summaries of a few dialogues or the reading of dialogues in translation. Indeed, fieldwork is so critical to applied environmental ethics that it should be considered as important a requirement for this inquiry as knowledge of Greek is to studying ancient philosophy.²⁰

As I have suggested, the weak scientific foundation of Wise's and MacIntyre's discussions leads not simply to incomplete or unpersuasive arguments; it leads to flatly incorrect positions that are unintentionally anthropocentric. It is my hope that this article can act as a small corrective to such faulty discussions by encouraging applied ethicists who work on issues related to environmental ethics in general—and nonhumans in particular—to base their philosophical inquiries on stronger scientific footing than has traditionally been the case.

Notes

1. An earlier version of this article was published in 2004 as “Menschen und Delfine: Ein Versuch über Anthropozentrismus in der angewandten Umweltethik,” *Deutsche Zeitschrift fuer Philosophie*, 52(4), 603–616.

2. The scientific pioneer in this area is unquestionably Donald Griffin (1976, 1984, 1992). For more recent work see, for example, F. B. Wall and Peter L. Tyack (2003) and Edward A. Wasserman and Thomas R. Zentall (2009). There is an extensive philosophical literature on animal rights that began with Peter Singer (1975) and Tom Regan (1983). More recent contributions include Paola Cavalieri (2001), Peter Singer (2006), Martha C. Nussbaum (2006), Mark Rowlands (2009), and Tom L. Beauchamp and R. G. Frey (2011).

3. See White (2007).

4. Some degree of anthropocentrism is probably inevitable, in the sense that the mechanisms by which we take in and process information are human. The human body has, we might say, specific technical specifications that affect the character of our perceptions and thought processes. To borrow a Kantian perspective, we will never have access to the “thing in itself,” only the “thing as it appears.” However, there is a kind of anthropocentrism grounded in irrational bias that can be overcome, and that is the topic of this article. I am referring to something analogous to racism and sexism (prejudicial outlooks that interpret facts through the lens of a belief in the innate superiority of one group over all others) that is grounded in the preconceived idea that only humans can have advanced cognitive and affective capacities.

5. Herman did extensive research on the abilities of two captive bottlenose dolphins to understand artificial human languages. See, for example, Herman, Richards, and Wolz (1984); Herman (1984); Herman, Pack, and Morrel-Samuels (1993); Herman, Kuczaj II, and Holder (1993); Kato (1999); and Herman and Uyeyama (1999).

6. Marine scientist Diana Reiss (1990) refers to dolphins as “an alien intelligence” and observes that “the dolphin is a superb model for helping us formulate ways of describing and understanding intelligence in nonhuman species” (p. 32). See also “Cognitive Cousins” (Reiss, 2011, pp.168–189).

7. See Wise (2000, 2002).

8. See Wise (2002), “Phoenix and Ake” (pp. 131–158).

9. The following is his characterization of that position:

Commonly the arguments run something like this. Some particular human capacity is made the object of enquiry: the capacity for having thoughts, or beliefs, or the ability to act for reasons, or the power to frame and use concepts. And it is then shown how, contrary to the views of some philosophical predecessor, the human exercise of this particular capacity involves the possession and use of language. It is finally further concluded that, because nonhuman animals do not possess language, or at least the requisite kind of language, they must also lack the capacity or ability or power in question. So it has been argued variously that nonhuman animals cannot have thoughts, must lack beliefs, cannot act for reasons and in their encounters with the objects of their experience must be innocent of concepts. (MacIntyre, 1999, p. 13)

See also “Can Animals Without Language Have Beliefs?” (MacIntyre, 1999, pp. 29–41).

10. MacIntyre writes,

Consider now the full range of powers that have been ascribed to dolphins by some of those with most opportunity to interact with them: not only powers of perception, perceptual atten-

tion, recognition, identification and reidentification, but also of having and exhibiting desire and emotion, of making judgments, of intending this and that, of directing their actions towards ends that constitute their specific goods and so having reasons for acting as they do. But if we are justified in making all these ascriptions, we are presumably also justified in ascribing thoughts and beliefs to dolphins. It would be difficult then to avoid the further conclusion that dolphins possess certain concepts and know how to apply them. And at this point therefore the whole range of philosophical arguments whose conclusion is a denial that animals without language can have thoughts, beliefs, reasons for actions or concepts confront us. Yet before we can consider what the bearing of each of the particular arguments is on the interpretation of dolphins and other animal behavior we need first to ask what their authors have meant or mean by "language." (MacIntyre, 1999, p. 27)

11. Bernd Würsig (1983) describes a striking example of complex, cooperative feeding by dusky dolphins in an area of 10 to 20 square kilometers (ca. 6–12 square miles) of the South Atlantic. Up to 30 small groups of 6 to 15 dolphins live in this area. When a group finds a school of anchovies, it herds the fishes into a ball against the surface and apparently signals other groups of dolphins. More than 300 dolphins may ultimately get involved and behave cooperatively. Würsig (1983) writes,

Dolphin cooperation appears to extend throughout the herding and feeding episode. Dolphins apparently take turns going through the fish school to feed, while others keep the fish school tightly packed. I can argue that the prey is never truly secured, for if all dolphins rushed in to take a bite, surely the school would scatter and each individual dolphin would obtain less food than by cooperating. Such cooperation must require a highly refined communication, so that particular individuals do not unduly, either unwittingly or purposefully, take advantage of the situation and try to grab more fish and spend less time herding the fish than others. It is likely that dolphins know each other well enough to control the situation.

Herding and holding prey are not a stereotyped series of actions. At times, the fish school may fragment into smaller balls. When that occurs, a few of the dolphins break off from the group and herd the fish back into the central fish school. It is a dynamic, ever-changing system, which may require organization by these large-brained and communicative social animals. Differential role-playing and premeditation (such as a decision that certain members do particular things in order to meet various contingencies) may be important in this kind of cooperation. The degree of behavioral flexibility to encompass novel situations appears well developed. (pp. 5–6)

It is also worth noting that in order to keep the anchovies from scattering and escaping, the dusky dolphins must restrain any desire to swim through the ball and feed until it is tight enough, and they must also take turns managing the ball while their companions feed.

12. See, for example, Lori Marino (2002).

13. On long-term relationships and grieving behavior, see, for example, Denise Herzing (2000, 2011).

14. MacIntyre's discussion ultimately proves nothing about dolphins' cognitive abilities. I take MacIntyre's argument essentially to be, "A being has the traits of an 'independent practical reasoner' only if it has language (If L, then T)." MacIntyre asserts that dolphins lack these traits (*not-T*), and he concludes that dolphins must then lack language (*not-L*). However, I believe I have shown that MacIntyre is incorrect in asserting that dolphins lack these traits. Hence, his conclusion is not warranted. And given the structure of MacIntyre's argument, the presence of these traits (T) lets us draw no conclusion about linguistic abilities (L).

15. For example, Howard Garner (1999) defines intelligence as “a biopsychological potential to process information that can be activated in a cultural setting to solve problems or create products that are of value in a culture” (pp. 33–34), and this could serve as at least a reasonable point of departure in discussing dolphins’ cognitive capabilities.

16. Wilson (1998) writes,

Co-evolution . . . implies more than what we recognize as the multilevel interrelatedness of complex ecological systems. On their own evolutionary time scale, biologic systems can and will modify each other and themselves, and they can do so at any anatomical, functional, or hierarchical level. It is this open-ended, sometimes rapid, sometimes glacially protracted, experience-driven process of recursive molding and remodeling of organs, organisms, and organic processes that is meant by the term “co-evolution.” (p. 169)

17. I have attempted to provide such an objective analysis in my *In Defense of Dolphins* (2007).

18. The most recent example of the kind of mistake that comes from insufficient familiarity with the scientific research is in a remark about dolphins Martha Nussbaum makes in her contribution to *The Oxford Handbook of Animal Ethics*. Discussing mirror self-recognition in nonhuman animals (an important indicator of self-awareness), Nussbaum (2011) writes that “until now, this level of complexity has been found only in apes and humans, though there is one ambiguous experiment with dolphins” (p. 229). However, the work of Ken Marten, Lori Marino, and Diana Reiss has conclusively demonstrated mirror self-recognition. See Marten and Psarakos (1995a, 1995b); Marino, Reiss, and Gallup (1995); and Reiss and Marino (2001).

19. Herzing’s research organization, based in Jupiter, Florida, is the Wild Dolphin Project. In 1995, I was invited to serve as a scientific adviser to the project. For Herzing’s reflection on the first 25 years of her study of this community of dolphins, see her *Dolphin Diaries* (2011).

20. It is beyond the scope of this article to detail all of the weaknesses to which a partial understanding of the scientific literature on dolphins or a lack of field experience could lead. In this article, I have tried to suggest that a weak grasp of the significance of adaptation can lead to a faulty belief that intelligence will manifest itself the same way in all species and to an overemphasis on the importance of human language as the standard to determine higher intelligence and moral standing. Other problems include the fact that it is impossible to understand the nature of dolphin social intelligence without observing dolphin social behavior in their natural state. Similarly, failure to understand the differences in the structures of human and dolphin brains can lead one to misrepresent the philosophical significance of certain scientific measures (such as the encephalization quotients of the human and dolphin brains).

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