

IN DEFENSE OF DOLPHINS: THE NEW MORAL FRONTIER

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PROLOGUE

The Prologue describes a particularly moving episode I witnessed (and another I was told about) on the very first day I observed dolphins closely. These episodes suggest that dolphins are intelligent, aware beings. The Prologue identifies the main questions that this raises about what dolphins are like and how we treat them—the questions that the rest of the book explores.

CHAPTER 1

DOLPHINS—THE PHILOSOPHICAL QUESTIONS

Chapter 1 begins by explaining how I came to this topic and identifies the main philosophical questions involved:

- What kind of beings are dolphins?

- The fact that dolphins have such big brains, complex societies and relate to humans as they do raise the possibility that dolphins are a “who,” not a “what.” Is it possible that dolphins have such advanced intellectual and emotional abilities that they should be considered “nonhuman persons”?
- If so, does this mean that the deaths and injuries done to dolphins in connection with the tuna industry and the use of captive dolphins in the entertainment industry, for scientific research, and for therapeutic and military purposes are seriously unethical?

This chapter suggest that the proper model for understanding dolphins is, as Diana Reiss has suggested, an “alien intelligence.”

CHAPTER 2

THE ANATOMY AND PHYSIOLOGY OF LIVING IN THE WATER.

Chapter 2 lays the foundation for answering the question, “What type of beings are dolphins?,” by describing the basic scientific facts about these marine mammals. This chapter also highlights the significance of the fact that while humans evolved on land, dolphins evolved in water. (One of the points of this book is that traits like “intelligence” are going to be very different in the water than on land.)

- The basic facts about dolphin anatomy and physiology are described.

Some of the most important implications of the fact that dolphins adapted to living in the *water* are identified. The main dolphin adaptations to the water are described: conscious breathing; not sleeping; and sonar (“echolocation”) that gives dolphins 3-dimensional images. (Dolphins literally “see through” objects.)

The characteristic of dolphins that gives most humans pause is their intelligence. To establish a point of comparison, chapter 2 includes an overview of the structure of the human brain.

Our most impressive cognitive abilities result from:

- a large and complex cerebral cortex;
- well-developed temporal and frontal lobes;
- and the impressive amount of associational cortex that constitutes the prefrontal cortex.

When we look at the dolphin brain, we see both important similarities and critical differences with the human brain.

- It has a large cerebral cortex and a substantial amount of associational neocortex.
- Most anatomical ratios that assess cognitive capacity (brain weight/spinal cord, encephalization quotient) place it second only to the human brain.

However,

- The dolphin brain has a “paralimbic” lobe lacking in the human brain. Its pattern of “cortical adjacency” may produce more integrated information processing. And limbic or emotional information may play a larger role in the dolphin brain than in the human brain.
- The human and dolphin brains appear to have different specializations. The human brain may emphasize detail, while the dolphin brain may emphasize speed.

Therefore, there are enough advanced characteristics in the dolphin brain and enough significant differences between the dolphin and human brains to allow for the genuine possibility that dolphins are capable of important cognitive and affective traits.

CHAPTER 3

DO DOLPHINS THINK AND FEEL?

The practical reason that “dolphin intelligence” is such an important issue is its ethical implications. Most humans believe that only beings with “advanced intelligence” have what philosophers refer to as “moral standing.” That is, only if a being can think the way that we do can we say: it has rights; we stand under certain responsibilities about how we treat such a being; and if we violate those duties or harm such a being, our actions are “morally wrong.” In essence, we presume that a) the capacities of a species’ brain determine what constitutes “harm” to members of that species and b) whether or not an action produces “harm” determines whether it’s right or wrong and whether it violates a being’s “rights.” The key to this matter is the fact that the human brain gives us a highly sophisticated type of consciousness. This consciousness makes it possible for us to be the unusual beings that we are: special, self-conscious, unique individuals (with distinctive personalities, life-long memories and personal histories) who are vulnerable to pain and harm in unusual ways, and who have the power to reflect upon and choose our actions.

Chapter 3 begins the investigation into whether dolphins have a similar consciousness by describing scientific research into the “inner world” of dolphins. M. C. and D. K. Caldwell have discovered that dolphins have unique “signature whistles” that

appear to be used by dolphins as “names.” Experiments by Ken Marten, Diana Reiss and Lori Martino show that dolphins can recognize their image in a mirror as a reflection of themselves—a fact that suggests self-awareness. Dolphin behavior suggests the presence of emotions. The ability of dolphins to *choose* their actions is suggested both by unique events (Rachel Smolker’s report of a dolphin’s finding her tool kit that had been lost in a storm) and everyday behaviors (different fishing strategies).

At least a *prima facie* case, then, can be made for the idea that dolphins are a “who,” not a “what”—that is, for the idea that they experience life in a way that approximates ours. In particular, the combination of self-awareness, thoughts and feelings means that they probably experience themselves as individual beings who feel pain as we do. That is, they know who they are, they suffer both physically and emotionally, and they may even experience pain associated with unhappy events remembered from the past or feared in the future.

As beings of this sort, dolphins would therefore seem to be entitled to “moral standing” for the same reasons that humans are. (We claim that because each of us is a unique, self-aware individual, humans have “intrinsic worth.” We also claim that the advanced intellectual and emotional capacities of our consciousness make us far more vulnerable to pain and harm than beings who lack these abilities, but also give us the power of choice.) Dolphins appear to have self-awareness and intellectual and emotional abilities strong enough to let them control their actions. Therefore, from an ethical perspective, they would seem to share with us the right to some kind of special status and protections.

CHAPTER 4

CAN DOLPHINS SOLVE PROBLEMS AND UNDERSTAND LANGUAGE?

Chapter 4 continues the exploration into dolphin intelligence by describing both scientific research and anecdotal evidence about advanced cognitive abilities—problem solving and language comprehension.

Problem solving

Dolphins’ abilities to solve problems through the use of abstract thought have been demonstrated by the research of John Gory and Stan Kuczaj at Disney’s Living Seas. These two scientists believe that a variety of experiments strongly suggest that the dolphins involved were able to “create a novel and appropriate solution in advance of executing the solution.” This research suggests that dolphins have particularly sophisticated cognitive abilities. Creating novel solutions requires the ability “to represent the causal structure of its environment.” And the fact that the dolphins in these experiments were not being asked to perform behaviors that dolphins commonly do in the wild or that they’d previously learned in other experiments shows that they had the intellectual flexibility to operate in a “foreign cognitive environment.”

This chapter also describes additional evidence for the claim that dolphins can think abstractly and creatively: Karen Pryor’s pioneering work in showing that dolphins can learn the abstract command “innovate”; Pryor’s story of a show dolphin who performed the routine of another dolphin without ever having been taught it; scuba diver Wayne Grover’s story of being asked by two adult dolphins to remove a fishing hook from a baby dolphin; and a story from Florida’s Dolphin Research Center about how two captive dolphins saved the life of a dolphin who was new to the facility.

All of these tasks require sophisticated cognitive abilities. The dolphins involved needed to be able:

- to reflect on the contents of their consciousness;
- to handle abstract notions well enough to grasp the causal structure of their environment;
- to understand a problem and then to create something novel—either an original behavior or a new strategy—as a solution.

In addition, these dolphins had to have enough curiosity, interest or self-motivation to discover the solutions to the problems they were presented with. That is, the behaviors described above show that these dolphins had not only the appropriate cognitive capacities, but the inclination to use them when presented with novel problems. In brief, these experiments and stories imply that these dolphins not only can think, but do think on a regular basis.

Language comprehension

Evidence for dolphins’ ability to understand human language is found in more than 20 years of experiments that Lou Herman has done into the ability of two bottlenose dolphins to understand artificial human languages. Herman’s work strongly suggests that dolphins can understand and work with the basic elements of language:

- a vocabulary,
- grammatical rules and grammatical categories that assemble symbols into meaningful sentences,
- sentences as complex as 5-word commands that include modifiers and both direct and indirect objects,
- questions as well as commands.

While each of the research studies or anecdotes surveyed in this chapter suggests the presence of some sort of cognitive ability in various dolphins, the picture that arises from the combination of all of them is striking. We see dolphins using their brains to create novel solutions to problems, invent innovative behaviors, respond imaginatively to life-threatening situations and understand artificial languages. These tasks require a

range of sophisticated cognitive abilities: abstract thinking, creativity, understanding symbolic systems, representing the causal structure of their environment, the flexibility to adapt to a foreign cognitive environment, and the ability to reflect on the contents of one's consciousness. Humans have traditionally claimed that only members of our species have such intellectual capacities. Clearly, the dolphin brain possesses abilities far more sophisticated than had originally been thought.

CHAPTER 5

DOLPHIN SOCIAL INTELLIGENCE

Chapters 3 and 4 explore the question of “dolphin intelligence” by examining dolphin cognitive abilities and noting where they're similar to our own. However, by focusing too much on the similarities between our species, we risk suggesting the anthropocentric idea that the extent to which dolphins (or any other nonhuman) have “moral standing” depends on how much they are “just like us.” Accordingly, it's important at this point to pay attention to some of the critical differences in what it takes to live on the land versus surviving in the ocean. We need to seriously consider the possibility that “intelligence” is probably best understood as a species-specific trait. There is good reason to think that large-brained species who evolved in dramatically different environments adapted to these conditions in very different ways—both externally and internally. Therefore, in some important ways, “intelligence” probably manifests itself differently in the water than it does on land. Chapter 6 addresses this issue by arguing that the most important evidence for dolphin intelligence is found in their “social intelligence”—that is, in how they operate with other dolphins.

This chapter begins with an exercise that asks the reader to imagine what would happen over millions of years if humans had to readapt to life in the water. The question is: “What cognitive and affective adaptations would take place?” Most likely, the logic of surviving in the ocean would encourage us to use our brains to develop a highly social and cooperative strategy of dealing with each other. At the same time, the personality traits of people who work especially well in groups—cooperative, diplomatic, perceptive of other people's feelings, self-effacing, etc.—would, over time, probably become the dominant qualities of human beings. Natural selection would favor cooperation and punish rugged individualism. In other words, humans would probably emphasize traits which seem characteristic of dolphins.

This chapter then directly addresses the question of whether we see signs of “intelligence” in the lives of dolphins in the wild. While evidence for tool use is described, most of the relevant evidence is in dolphin social behavior: cooperative fishing, helping behavior, division of labor, political alliances, aggression, communication and sexual behavior. The fact that managing relationships is so central to dolphin social intelligence strongly suggests that they have sophisticated affective capacities.

The idea that dolphin intelligence is primarily social intelligence is also supported by features of the dolphin brain. That is, evolutionary pressures may have created a brain designed primarily to process information relevant to managing the large number and varied character of relationships they have in a community.

Dolphins have effectively used the cognitive and affective capacities of their large brains to deal with the problems of survival. Their societies appear to be organized. They can handle the most important tasks of survival—finding food and protecting themselves against predators. They cooperate with each other—even forming second-order alliances in some communities. They keep aggression from getting out of hand. They appear to have both acoustic and non-acoustic ways to communicate vital information to members of their school. And they devote a good deal of time and energy to developing and maintaining strong relationships with other members of the group. Indeed, the centrality of relationships in their lives probably means that on a daily basis they process more emotional information and are called on to use emotional skills more than humans do. It is difficult to look at all of this and not conclude that there is an impressive level of intelligence behind it.

CHAPTER 6

WHAT KIND OF BEINGS ARE DOLPHINS?

This book is ultimately about only two questions: “What kind of beings are dolphins?” and, “What does our answer to the first question tell us about the ethical character of human behavior towards dolphins?” Chapters 2 through 6 survey the major scientific research—particularly the research on dolphin intelligence—that we need to answer these questions. Chapter 7 handles the first. Chapter 8 tackles the second.

The fascinating array of data that has been presented to this point in the book now lets us approach a fundamental philosophical questions. What kind of beings are dolphins? Are dolphins so advanced and such similar beings to humans that they should be seen as nonhuman “persons”? This question is important to ask for two reasons. To be a “person” normally means that one has an extensive set of rights and is therefore entitled to special treatment. Also, humans have historically claimed that we are the only persons on the planet. If dolphins are persons, humans are no longer alone at the top of the biological hierarchy, and we must reevaluate how we treat these cetaceans.

“Personhood” is a philosophical concept that thinkers employ in order to avoid the possibility of species-bias in an investigation of this sort. Persons are traditionally regarded as beings who: are alive and aware of their environment, have the capacity for pleasure and pain, have emotions and a sense of self, control their actions, recognize other persons and treat them appropriately, and have a variety of higher order intellectual skills (including abilities to learn, to communicate, to solve complex problems, and to engage in abstract thought). Scientific research on dolphins shows

that they have all of these traits. That is, dolphins are unquestionably a “who,” not a “what” and are entitled to “moral standing.”

However, even though philosophers use the concept of “personhood” to avoid anthropocentrism, the way that the concept gets defined still amounts to saying that other beings deserve special consideration only if they’re “just like us.” This is apparent, first, in the way that the issue of whether nonhumans have “language” takes a central place in discussions of “animal rights.” Like “intelligence,” however, “language” is best understood as a species-specific trait related to the survival imperatives of the particular environment in which a species evolved. (In this regard, the claim that language is a function of the “co-evolution” of the human brain and the human hand is particularly important.) The second problem with the traditional definition of personhood is that they fail to recognize some of the key cognitive and affective features that may arise from evolving in the water, e.g., a fundamentally “social self” and the suppression of individuality. All of this suggests fundamental differences in the inner worlds of our different species. In short, in many ways, dolphins are beings who are in many ways truly “alien” to us—a fact that is particularly relevant to the question of what counts as ethically acceptable treatment of dolphins.

CHAPTER 7

ETHICS AND HUMAN/DOLPHIN CONTACT

The conclusion that dolphins are nonhuman persons with sophisticated intellectual and emotional abilities raises the troubling question of whether the various ways that our species treats them are ethically defensible.

- Dolphins are harassed, injured and even die in connection with the human fishing industry.
- Captive dolphins are used to entertain us and to satisfy our curiosity through research.
- Dolphins are also used for therapy and by the military.

The fact that some (if not all) of these practices would be considered seriously unethical if they involved humans should indicate the gravity of the situation. In light of the fact that dolphins are intelligent, self-aware beings—and have the same grounds for moral consideration as humans do—are we doing anything wrong in any of this? Should we as a species feel that there are objective, scientific and philosophical grounds for thinking that practices that humans do every day with a clear conscience are actually seriously wrong? Are there solid reasons for thinking that we need to change the way we act towards dolphins?

The book concludes by arguing that the practices in question are indefensible.

Chapter 7 begins by presenting an overview of philosophical ethics, and, then, applies this approach to the practices in question.

- Purse-sein fishing for tuna in the eastern tropical Pacific kills and injures thousands of dolphins each year (although the mortality rates are far lower than they were). Particularly since there are other (and possibly more profitable) ways to catch tuna, it's hard to imagine how fishing "on dolphin" (and other fishing practices that harm dolphins, e. g, drift nets and the Japanese "drive hunts") cannot be defended.
- More than 1500 dolphins are used in captive facilities in different parts of the world. (These are mainly entertainment facilities, but generally support scientific research.) These dolphins typically live with a small number of other dolphins in small concrete tanks. Defenders of captivity cite benefits to humans (entertainment) and dolphins. Humans are entertained and our curiosity about dolphins is satisfied through scientific research. Captive dolphins receive food and medical attention; wild dolphins may benefit from the increased appreciation that humans may develop for dolphins after seeing them; captive and wild dolphins alike can benefit in various ways from what we learn through research; successful captive breeding programs have virtually ended the practice of capturing wild dolphins for use in entertainment facilities. However, even the best facilities are not ethically defensible. Dolphins do not consent to their situation, and the barren social conditions in which they live make it unlikely that their personalities can develop in a full and healthy fashion. The benefits do not outweigh the harms; the benefits flow mainly in one direction (to humans); and the dolphins involved are not being treated in a way consistent with their advanced traits and needs. Moreover, the idea of treating a species of self-aware beings with a sophisticated consciousness as "property" not "persons," and breeding them with an eye toward the traits that will make them most useful commercially has chilling similarities with the practice of human slavery. Again, the similarities between humans and dolphins on this score are central, because they raise the question of whether capturing, selling, buying and/or breeding is consistent with the dignity due a self-aware being.
- The same critique can be made of dolphins being used for therapeutic or military purposes.

In view of the unacceptability of these practices, what do we do?

- Humanity's most pressing obligation is to find ways to discontinue fishing practices that harm individual dolphins.
- Captive facilities should cease all of the current captive breeding programs. (Given the entertainment potential and cost effectiveness of video technologies like IMAX movies that portray dolphins in the wild, theme parks

that begin integrating such technologies into their operation should be able to remain profitable.)

- There is no perfect solution for the hundreds of dolphins who currently live in captivity. There is little likelihood that many (if any) could be trained to live in the wild. So, realistically, they should probably remain where they are for the rest of their lives. The current captive generations will then die out over the next 40 to 50 years.
- In view of the predictable end of a pool of captive dolphins for research, new dolphin researchers should be steered by their mentors into research in the wild.

Chapter 7 closes with two final thoughts about: the place of a religious outlook in a discussion of this sort, and dolphin obligations to humans.

EPILOGUE

The epilogue concludes the book with a realistic statement that despite the overwhelming scientific and philosophical evidence in this matter, it is unlikely that my argument will have any practical impact in the short term. Humans do not treat members of our own species terribly well, so I have no illusions that humans are suddenly going to treat members of another species appropriately. Perhaps in a couple hundred years, our species will do better in how we treat one another, and we may also make some small progress in how we treat members of other intelligent species. In the meantime, the problem that all of us need to reflect on is how to help our species get to that point—that is, how to behave in a way that truly “intelligent” beings would.