

Ethology and Behavioral Ecology of Marine Mammals
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Giuseppe Notarbartolo di Sciara
Bernd Würsig *Editors*

Marine Mammals: the Evolving Human Factor

Chapter 12

Cetacean Personhood, Rights, and Flourishing



Lori Marino and Thomas I. White

Abstract Cetaceans are large-brained intelligent mammals with long-term bonds, social associations across multiple levels, and learned cultural traditions who possess characteristics that define personhood. In this chapter we discuss these characteristics in terms of species-specific capacities and how they are related to both harm and flourishing. We argue that our treatment of cetaceans, both those in captivity and in the oceans, causes them harm and violates their inherent rights as nonhuman persons and, is, therefore, unacceptable. We propose ways in which we can and should respond by recognizing the rights of cetaceans in the law through legal personhood. Legal rights would, in essence, go far to eliminate many of the harms, e.g., captivity, slaughter, use as a means to an end, currently still perpetrated by humans on cetaceans.

Keywords Cetacean · Ethics · Person · Personhood · Rights · Flourishing · Self-awareness · Thriving · Welfare

12.1 Introduction

Over the past fifty years, research on cetaceans has shown that they are considerably more complex—in cognitive, emotional and social realms we will discuss later—than was originally believed (Marino, this volume). This has led to several controversies about ways humans treat them. Hunting whales, fishing for tuna “on dolphins,” and keeping cetaceans captive for entertainment, education, and research, are the most public. Less visible in the popular press, but no less important for the well-being of cetaceans, are problems such as ship strikes, acoustic and chemical pollution that degrade their environment, and the military use of dolphins (see below).

L. Marino (✉)
Whale Sanctuary Project, Kanab, USA
e-mail: Lorim@whalesanctuary.org

T. I. White
Loyola Marymount University, Los Angeles, USA

From the perspective of marine mammal science, the most important implication of the kinds of cognitive, emotional, and social capacities found in most cetaceans is that the criteria traditionally used for evaluating the welfare of cetaceans must now be replaced by a fuller, more intellectually sophisticated, and more up-to-date standard. Criteria such as the absence of any obvious injury or illness, the lifespan of any single cetacean in captivity, and whether the reproductive potential of a *population* of cetaceans in their natural habitat is compromised must be augmented with a wider and richer range of criteria. Cetaceans' highly developed cognitive, emotional, and social capacities call for a redefinition of what constitutes acceptable versus unacceptable treatment at the hands of humans (White 2007) In this chapter we argue that viewing what we have learned about cetaceans through the lenses of the concepts of *personhood* and *flourishing* puts us in the best position to answer such questions as:

- Given what we now know about cetaceans, should they be characterized as nonhuman *persons*?
- What conditions do cetaceans need to *flourish*? And, by implication, what conditions constitute *harm*? What *rights* should they be accorded?
- Is our current treatment of cetaceans ethical? If not, what are the ways we can move into the future that includes better treatment of cetaceans?

12.2 Who Are Cetaceans?

12.2.1 Cetacean Phylogeny and Evolution

Cetacea are a modern order of fully aquatic mammals who evolved from ungulate-like terrestrial ancestors ~50 million years ago (mya). There are two modern suborders *Odontoceti* and *Mysticeti*. Odontoceti comprise ~75 species across six families of toothed whales, dolphins, and porpoises. Mysticeti include ~14 species spanning three families of large baleen-bearing whales.

Our accumulated scientific knowledge about cetaceans derives from studies of a few species, namely, common bottlenose dolphins (*Tursiops truncatus*), beluga whales (*Delphinapterus leucas*), killer whales or orcas (*Orcinus orca*), sperm whales (*Physeter macrocephalus*), humpback whales (*Megaptera novaeangliae*), and a few others to lesser degree. Although all cetaceans share characteristics that define them as cetaceans, species-specific and individual differences must be acknowledged to exist even under the general term “cetaceans”.

12.2.2 *Cetacean Brains and Cognition*

Almost all odontocetes possess brains larger than expected for their body size, i.e., high Encephalization Quotients (EQ) (Jerison 1973). EQ is a metric representing how large or small the average brain of an adult member of a given species is compared with other species of the same body weight. Species with EQs of one have average brain sizes, greater than one, larger brains than expected, and less than one, smaller brains than expected. The superfamily Delphinoidea (which includes the families Delphinidae, Monodontidae, and Phocoenidae) is the most highly encephalized modern nonhuman taxon. Their EQs range from 1.8 to 5.0, i.e., brains up to five times larger than expected for their average body weight. (By comparison, the EQ of modern humans is 7.0) (Marino 2009). Mysticete brains are highly elaborated and share a number of features with odontocete brains, but, as a group they seem to have de-coupled body mass increase from brain mass; thus, the metric of EQ may not be meaningful when applied to mysticetes (Oelschlager and Oelschlager 2009).

The cetacean neocortex is a highly elaborated five layered structure with more surface area (convolutions) than the human neocortex (Ridgway and Brownson 1984) and with a different topographical map of primary and secondary sensory-motor regions than in primate brains. For instance, primary auditory and visual regions are adjacent to each other, facilitating the kind of rapid intermodal sensory integration used in echolocation (Ladygina et al. 1978). Recently, another primary ascending auditory region was found in dolphin brains in the temporal lobe (Berns et al. 2015).

The limbic system, a highly conserved set of structures that supports a variety of functions, including memory and emotion, is well developed in many ways. It is connected to an extremely elaborated cortical limbic lobe and entorhinal region above the corpus callosum, creating an extensive paralimbic region (Marino et al. 2004). There are dense connections between paralimbic structures, limbic structures, and neocortical structures.

Many cetacean species are cognitively, emotionally, and socially complex and share several mental capacities with human and nonhuman primates and other highly encephalized mammals. Although not all cetaceans are highly social, many are. They develop slowly over long juvenile periods in which they learn the social and material skills needed in adulthood. Many species live in complex social networks with individual social roles and learned cultural traditions passed on from one generation to the next (Whitehead 2011; Whitehead and Rendell 2014). They are sophisticated problem solvers with high-level capacities for intra- and interspecies cooperation (King et al. 2019, 2021) while possessing complex communicative features such as identity whistles and group-specific dialects (Janik 2014, see Marino et al. 2007 for a review). Observations of many cetacean species include reports of long-range contact calling when separated from others, grieving behaviors, and epileptic behaviors (Bearzi et al. 2017) suggesting deep emotional attachments and strong capacities for empathy.

In captivity, dolphins and whales have demonstrated exceptional working memory capacities, abstract problem solving, and understanding of numerical concepts

(Abramson et al. 2013b; Herman 2006). Dolphins and belugas have demonstrated prodigious comprehension of an artificial symbolic language with syntax and understand the bidirectional relationship between symbols and the objects they represent (Herman et al. 1993; Herman 2009; Murayama et al. 2014). Studies of dolphin whistle repertoires indicate that there is internal structure in the sequencing of their whistles, not unlike a kind of simple syntax (McCowan et al. 2002).

Self-awareness is highly relevant to issues of how cetaceans think about themselves and their own lives. Bottlenose dolphins have demonstrated clearly that they recognize themselves in mirrors (Reiss and Marino 2001) and orcas have shown contingency-checking behavior at mirrors (which is often indicative of self-recognition but not definitive) (Delfour and Marten 2001). Bottlenose dolphins, beluga whales, and orcas have also demonstrated self-awareness, a sophisticated knowledge of themselves and how their body and behaviors relate to others', through behavioral and vocal imitation (Abramson 2013a; Hooper et al. 2006; Murayama et al. 2014; Reiss and McCowan 1993), and, in the case of bottlenose dolphins, metacognition (Smith et al. 1995), foreplanning (McCowan et al. 2001) comprehension of pointing (Pack and Herman 2007; Xitco et al. 2004) sensitivity to attentional stance (Pack and Herman 2007) and behavioral innovation (Herman 2006, review).

12.2.3 Summary

Cetaceans are highly encephalized with an elaborated neocortex and a limbic system consisting of an evolutionarily conserved set of structures. Many cetaceans are cognitively, emotionally, and socially complex and share a series of highly developed intellectual abilities with human and other highly encephalized mammals in such areas as self-awareness, metacognition, foreplanning, perspective-taking, and possessing cultural traditions, to name a few.

12.3 Self-Awareness, the Ability to Choose, Emotional Vulnerability, and Personhood

The implications of self-awareness are central to the issue of how whales and dolphins are entitled to be treated because this is one of the most important ways in which they are like *Homo sapiens*, whose treatment is respected. In humans, self-awareness is the foundation of our sense of individuality and personal identity over time. It is the basis of our sense of uniqueness, intrinsic worth, and our belief that we are categorically different from the objects around us in such a way that our well-being depends on being treated in a way that respects these traits. The capacity for self-awareness means that when we speak of respecting and protecting the well-being of humans, we mean the well-being of *individual* humans (Talbot 2005, 2010).

Self-awareness is also responsible for our ability to determine our actions by conscious choice. The “mental space” that self-awareness provides allows us to evaluate our situation, weigh options, gather data, reflect on the past, project into the future, resist or accede to physical or emotional impulses or motivations, and decide which actions to take. Humans believe that being allowed to make decisions about our actions is so central to our experience as humans that any limitation on our personal autonomy and freedom—even if being prevented in acting in certain ways would be in our interest—is seriously problematic.

The combination of self-awareness with our complex emotional capacities, however, is a two-edged sword. It allows us to have a rich inner world as one of the features of our individual uniqueness. A first-person subjective view of the world is enabled by such emotional experiences as happiness, love, joy, and hope. Our ability to remember events and feelings lets us relive and appreciate positive experiences. And our capacity to imagine our future lets us anticipate positive events to come. However, these same capacities also make us vulnerable to the pain and suffering connected with sadness, failure, grief, fear, and terror. We can re-experience trauma from the past, suffer in the present, and dread the future.

The practical consequence of humans having this combination of highly developed capacities is that we place limits—both formal and informal—on how we expect to be treated. We claim certain *rights* about how we should be treated. We expect to be treated with *respect* for our *dignity* and our vulnerabilities. We are not *objects* that can be used as *property*. We are *persons*. We are a “who,” not a “what.”

Self-awareness in cetaceans, then (as well as in all the other animal species for which there is evidence: see DeGrazia 2009), should have at least the same broad implications it has in humans. First, as unique self-aware individuals with complex cognitive and emotional capacities, cetaceans meet the criteria for *persons*. That is, they are beings who are aware; possess the ability to experience positive and negative sensations (pleasure and pain); have emotions, self-consciousness, and a personality; control their behavior; and possess the capacity to understand and think about themselves and the physical and social world in which they are situated (White 2007; Olson 2020). As a result, they are beings who are entitled to be treated with appropriate *respect* for their *dignity* (Gruen 2017).

Second, cetaceans experience life as self-reflective individuals (e.g., Reiss and Marino 2001; Smith et al. 1995). If human self-awareness implies a uniqueness worthy of respect for each individual human, it follows that the well-being of *individual* cetaceans should also be respected (Bekoff and Pierce 2017).

Third, if human self-awareness implies the ability to determine our actions by choice and makes this ability central to the human experience, the same should be true for cetaceans. Preventing them from exercising meaningful choices is problematic.

Fourth, the combination of self-awareness and highly developed emotional capacities implies a significant vulnerability to pain and suffering from which cetaceans are entitled to be protected.

12.3.1 Summary

The extensive evidence for cognitive, emotional, and social complexity in cetaceans in the marine mammal science literature over the past fifty years makes a strong case for recognizing cetaceans as nonhuman persons. It, accordingly, also argues for a fundamental shift in how these beings should be treated by humans.

12.4 Flourishing, Rights, and Harm

We argue that viewing what we have learned about cetaceans through the lenses of the concepts of *personhood* and *flourishing* suggests important inferences about how cetaceans should be regarded and treated.¹ The highly developed capacities of cetaceans imply that cetaceans should be recognized as nonhuman *persons*. This means, at the very least that their well-being as *individuals* should be respected and that they should not be regarded as property.

Discussions of personhood invariably proceed to questions about *rights*. To achieve clarity on this issue, however, Martha Nussbaum's understanding of the concept of *flourishing* is most useful—especially in determining what constitutes *harm* (Nussbaum 2006, 2011a).

The simplest way to define *flourishing* is the full, healthy growth and development of an individual's capacities. Flourishing refers not only to how *physically healthy* someone is or how *long* they live, but how *well* that individual lives—their *well-being*. The central question becomes, then, what are the criteria for determining this?

Flourishing is an essentially biological concept that underscores the importance of evolution and adaptation. Animals and plants now alive possess the traits and capacities they do because of how their ancestors adapted to the conditions they faced in the past. The well-being of the members of any species is, therefore, made possible by the development and use of these capacities—capacities that turned out to be the key for successfully dealing with their environment. To say that animals can *flourish*, then, is to say that they can grow in a full and healthy fashion, and can develop the traits, skills, and dispositions that evolution and adaptation have determined give a member of that species a reasonable opportunity to have a satisfying and successful life. Modern humans, for example, possess their defining traits and capacities because of their role in human evolution. Developing and using these traits—that is, human *flourishing*—is responsible for our success as members of our species and for our experience of individual satisfaction with our lives.

For each species, then, it is possible to identify the conditions necessary to flourish—that is, for members of a species not simply to remain alive and physically healthy, but to grow and develop in a way that gives them the possibility for success in their environment and a sense of well-being. However, different species need

¹ Some authors use the term “thriving,” not “flourishing.” This chapter uses the latter term, as it is more frequently used in ethics literature.

different conditions to grow and fully develop. Therefore, the conditions needed to make flourishing possible are *species-specific* (Nussbaum 2006, 2011a, 2021; White 2015, 2017).

12.4.1 Human Flourishing, Harm, and Rights

To illustrate this with the species we're most familiar with, consider humans (*Homo sapiens*). For humans to flourish, we require physical and emotional health and safety; years of care and education as we mature; a variety of skills (cognitive, emotional, physical, social) and the opportunity to apply them; various relationships; certain social and economic conditions; etc. When these conditions are met, we can flourish, that is, to realize our potential, and to experience a basic sense of satisfaction or well-being. When these conditions are *not* met, we are unable to develop skills critical to our success, and we face serious, practical disadvantages in making our way in the world. To the extent that being unable to flourish compromises our ability to have a reasonable opportunity for a satisfying and successful life, we have been *harmed* (Nussbaum 2011b).

The conditions required for human flourishing can be broken down into two different categories. The first set of conditions are largely tangible: physical and emotional health and safety; social relationships; education; the ability and opportunity to meet any physical needs; and the like. The second set—which proceeds essentially from the fact that humans have such highly developed cognitive and emotional capacities—are more or less “intangible”: freedom to choose our actions, our beliefs, our purpose in life; privacy; having trustworthy relationships; fairness; justice; equality; being treated with appropriate respect; and the like. The importance of these intangible needs is obvious if we imagine a group of humans who are physically safe and healthy but lack freedom and fairness. They would surely *not* experience a sense of well-being and feel that their life was satisfying.

Indeed, as a species, we have underscored the importance of both sets of conditions necessary for flourishing by giving them a special status. That is, we claim that we have a *right* to them. In short, we claim that we have a *right* to be treated in certain ways or to enjoy certain conditions because they are necessary if we are to have the opportunity for achieving a satisfying and successful life.

The broadest recognition of how essential these conditions are is captured in documents such as the United Nations' Universal Declaration of Human Rights that articulate “basic human rights”—conditions that we are entitled to enjoy simply by virtue of being members of *Homo sapiens* (<https://www.un.org/en/universal-declaration-human-rights/>). We can regard these as *moral rights* that may or may not be recognized legally by different jurisdictions.

Broadly speaking, we assert that the pleasures and pains associated with whether or not we are able to flourish have an evolutionary basis. That is, they serve to encourage and discourage behavior that is adaptive or maladaptive. When other animals experience conditions that make flourishing difficult or impossible, there

is every reason to think that they experience an array of feelings that range from frustration to emotional pain. As human animals, we know first-hand that this is the case.

The degree of discomfort humans experience when an intangible need is frustrated speaks to how central these needs are for the welfare of members of the species. This is an especially important perspective to keep in mind when we consider the pain associated with the frustration of such basic needs as freedom and fairness. Countless examples throughout thousands of years of human history testify to the fact that humans are fiercely averse to domination, unfairness, and disrespectful treatment. The pain felt from having certain “intangible” needs go unmet can get to a point where we will literally risk our lives to secure them. That is, the tangible pleasures associated with being alive can be outweighed by the intangible pains of subjugation and unfairness.

This discussion, then, leads to a series of claims. First, the concept of flourishing is an appropriate, species-based standard for evaluating the well-being of individual members of a species. Second, when we apply the concept of flourishing to members of humans, we see that the notion of *human rights* is simply a shorthand way of referring to the conditions necessary for human flourishing. Third, we also see that in addition to the clearly *tangible harm* we experience if we are prevented from developing critical skills and traits, our highly developed mental and emotional capacities make humans vulnerable to *intangible harm*. That is, what humans feel as painful extends beyond physical harm to include the frustrations of being blocked from satisfying a variety of intangible needs. Precisely because of our highly developed mental and emotional capacities, pains associated with the frustration of such intangible needs can be greater than the pains associated with tangible needs.

12.4.2 Cetacean Flourishing, Rights, and Harm

It was noted early in the discussion of *flourishing* that the conditions that promote flourishing are *species-specific*. This was then illustrated using humans, and we saw that humans underscore the importance of the conditions necessary for flourishing by referring to them as *rights*. The fact that humans are so complex—cognitively, emotionally, and socially—means that it is more difficult to meet those needs than if our needs were simple. Therefore, we are particularly vulnerable to a wide range of *harms*. The practical implication of this approach is that it establishes firm limits on how humans should be treated if we are to be allowed to grow in a full and healthy fashion and develop the traits, skills and dispositions needed to have a reasonable opportunity to have a satisfying and successful life.

If we now apply this same approach to cetaceans, it is clear why *flourishing* is an appropriate standard for evaluating cetacean well-being, and, by consequence, human behavior toward whales and dolphins. Like humans, cetaceans are highly developed—cognitively, emotionally, and socially. As is the case with every animal, the conditions that allow for cetacean flourishing have been determined by their

evolutionary history. The past few decades of marine mammal science make clear that these conditions include: a large, natural habitat; membership in cultural communities; relationships with conspecifics; the opportunity to develop and apply such characteristic skills as echolocation, navigation, diving, and hunting; the opportunity to make choices (e.g., engaging in or avoiding conflict, seeking stimulation, exploring objects, etc.). Given how important these needs are for cetacean flourishing, it is reasonable to regard them as *cetacean rights*.

As is the case with humans, it is reasonable to think that cetaceans who are prevented from flourishing experience various degrees of *harm* (White 2021). Similarly, as is the case with humans (and any other animal with highly developed cognitive, emotional, and social capacities), it is reasonable to think that cetaceans are also vulnerable to what we referred to above as “intangible” harm. While we can never be certain about the inner, subjective experience of cetaceans first-hand, it is reasonable to think that when key conditions for flourishing are frustrated, precisely because of their highly developed capacities, the pain associated with the frustration of their intangible needs can often be greater than the pain associated with tangible needs.

12.4.3 Summary

The concepts of flourishing and harm are species-specific. In the case of cetaceans, they refer to the opportunity to have tangible and intangible experiences necessary for flourishing. When those opportunities are thwarted there is harm. Efforts, to date, to articulate the natural rights of cetaceans based on these concepts are aspirational and need to be incorporated into law.

12.5 Human Treatment of Cetaceans

To update the standard for determining what counts as ethically or morally appropriate treatment of cetaceans by humans, the concepts of personhood and flourishing are helpful lenses through which to view current behavior. Unfortunately, what these concepts reveal is that almost every kind of human treatment of cetaceans is ethically problematic in considering cetaceans as objects, not persons, violating their natural rights, and preventing them from having the opportunity to flourish.

12.5.1 *Captivity*

12.5.1.1 *Entertainment*

There are currently about 3,000 cetaceans held in aquariums and marine parks around the world (*Creating sanctuaries for whales and dolphins—Whale and Dolphin Conservation USA*). In North America there are approximately 480 captive bottlenose dolphins, 75 beluga whales, 22 orcas, and others (Cetabase.org). Live captures of free-ranging whales and dolphins have not occurred in the United States in over twenty-five years but continue in over twenty other countries. And although many captive cetaceans were born into captivity, they are not domesticated nor enjoy better well-being or longer lives than those captured in the wild as juveniles.

Most public display facilities keep whales and dolphins in barren, chemically treated concrete tanks a tiny fraction of their normal habitat size. Artificial environmental enrichment, in the form of toys and objects, e.g., balls, hoops, are inadequate replacements for the stimulation of living in the ocean (Clegg et al. 2017). Often there is over-crowding or, on the other hand, inadequate species-specific company or even solitude.

Dolphins and whales in entertainment facilities are trained to perform for food, often executing several shows a day, several days a week. Examples of typical behaviors carried out in shows are pectoral waving, splashing the audience with tail flukes, sliding out onto ramps, coordinated leaps, and pushing trainers through the water. These performances are often accompanied by videos, loud music and, in some cases, fireworks. And while there are differences in the content of the performances across display facilities, all of them present dolphin and whale behavior in an unnatural human-controlled setting and do not reflect the behavioral choices of the dolphins and whales (Rose and Parsons 2019).

12.5.1.2 *Human-Dolphin Interaction Programs*

Captive dolphins and whales are often compelled to participate in swim programs, petting pools, and dolphin assisted therapy (DAT) sessions. In these set-ups the public can pay to pet, feed, be towed around, or swim with dolphins or whales. Only some facilities offer “retreat space” for the dolphins, who are coerced into repetitious physical contact with visitors, leading to frustration and aggression (Stewart and Marino 2009)

Cetaceans in petting pools can be subjected to human contact for up to twelve hours a day every day, with visitors shouting and slapping the sides of the tank to get their attention. Moreover, there is often insufficient regulation and supervision of human-cetacean contact or interaction programs; visitors not infrequently throw potentially harmful items, e.g., sodas, coins, toys, even cigarettes, in the water, sometimes to be ingested by the dolphins and whales. Visitors who touch or feed the dolphins

or whales are not required to sanitize their hands, leaving the cetaceans at risk for infectious disease transmission (Rose et al. 2017).

A notable worldwide popular form of human-dolphin interaction is dolphin assisted therapy (DAT) in which visitors with various conditions (e.g., autism, cerebral palsy, etc.) interact, touch, or swim with captive dolphins under the guise that the dolphin has therapeutic value. There is no substantive evidence that DAT is effective for treating any disorders—physical or psychological (Marino and Lilienfeld 1998, 2007, 2019, 2021). Yet this global industry without regulations or accreditation continues to proliferate around the world.

12.5.1.3 Research and Conservation

Most marine parks do not conduct publishable research; some engage in both basic and applied research with captive cetaceans. There has been a large body of research on cetacean cognition, hearing, and dive physiology which has informed our understanding of their intelligence, sensory processing, and biology (Miller and Stacey 2018; Pack 2015) but most of this knowledge is not heavily cited in the literature on wild cetacean conservation (Vancouver Humane Society and Zoocheck 2016). Moreover, many lines of evidence for cognitive and social capacities come from long-term field studies, such as those on cultural transmission, tool use, and communication (e.g., Herzing et al. 2012; Mann and Patterson 2013; Whitehead and Rendell 2014) and studies of free-ranging cetaceans and their cultures may have more relevance to conservation than studies with captive animals (Brakes et al. 2019). And while there has been recent discussion about it (*Ex situ options for cetacean conservation|IUCN Library System*), no entertainment parks engage in captive breeding to restore depleted cetacean populations. Until 2018, only one public display facility had attempted a captive breeding program for an endangered cetacean, the baiji, or Yangtze river dolphin (*Lipotes vexillifer*) but no calf was born, let alone released to the wild. This species became the first cetacean to be declared extinct in the modern era (Turvey et al. 2007). Moreover, little attention is paid to maintaining strict genetic lines in marine parks, as hybrids and inbred individuals with no conservation value are produced (Cetabase 2021; West 1986; Zorrnetzer and Duffield 2003). Most studies in marine parks are focused upon husbandry and replenishing the captive population and have little relevance to free-ranging cetaceans (Rees 2005). Therefore, captive breeding has yet to demonstrate its utility for conservation (Corkeron 2018).

12.5.1.4 Military Uses

Several nations use cetaceans in military exercises and research. Since 1960 the U.S. Navy's *Marine Mammal Program*, headquartered at the Space and Naval Warfare Systems Center in San Diego, has held dolphins and other marine mammals in captivity for military maneuvers, harbor surveillance, mine detection, object

recovery, research to improve sonar capabilities, and other uses. There are an estimated 70 dolphins and 30 pinnipeds currently held at the facility (Aratani 2019). The dolphins are confined to small sea pens and regularly deployed to various locations around the world, including combat zones. (The dolphins can leave their sea pens when deployed and for “supervised swims” in the open ocean.) The program engages in several questionable practices with little to no transparency, including muzzling the dolphins to prevent foraging when they are on a mission, exposing them to potential risks of mine detonation, deployment in areas not well-suited to their physiology, and invasive research on their tolerance for conditions that push them to their physiological limits, e.g., temperature, salinity levels, etc., (McClain et al. 2020; Zeldovich 2019).

12.5.2 Free-Ranging Cetaceans

12.5.2.1 Slaughter

Legal and illegal forms of whaling have occurred throughout time around the globe and continue to this day. Most of the large baleen whales are hunted for human consumption and other products. In modern times methods have become mechanized, allowing for more kills (Gerrodette 2018). The International Whaling Commission (IWC) was created in 1946 to monitor and control whaling globally; however, the organization’s statutory goal is not to stop whaling but to make it sustainable. Whaling continues in Greenland, Iceland, Japan, Norway, Canada and in the United States, through loopholes and some nations simply refusing to participate in global agreements to restrict whaling (Clapham and Baker 2018; Parsons and Rose, this volume).

Many nations, such as Japan, the Faroe Islands, the Solomon Islands, and elsewhere, engage in the mass killing of dolphins and smaller whales. One of the bloodiest methods of dolphin slaughter (and collection) is drive-hunting (practiced in Japan and the Danish Faroe Islands north of the United Kingdom), a procedure involving the driving of dolphins and small whales into a bay or onto a beach where they are killed with knives, harpoons, and various other deadly instruments. The panicked animals watch as family members are killed. Many of the victims die from acute stress reactions or drowning before they are dispatched. Many are set aside for sale to entertainment parks in Asia and other countries (Vail et al. 2020).

12.5.2.2 Bycatch

Bycatch is the term used to describe animals who are caught in the process of collecting other animals. Global estimates suggest that over 300,000 marine mammals are killed in fishing operations per year (Read et al. 2006). Most of these deaths are in gill-net fisheries but also include trawling and other fishing methods

(Read et al. 2006). Harbor porpoises (*Phocoena phocoena*) comprise a significant portion of cetacean bycatch deaths (Read et al. 2006). And although bycatch of cetaceans is a serious conservation concern there are also important animal welfare issues associated with this practice (Northridge 2018).

12.5.2.3 Capture in Purse Seine Nets

A purse seine is a large wall of netting deployed around an entire group of animals (fish or dolphins). It has floats along the top with a lead line threaded through rings along the bottom. In the case of capturing dolphins, once a group is located they are encircled by the net. The lead line is then pulled in, “pursing” the net closed on the bottom, preventing the dolphins from escaping through the bottom. This method often causes panic and death.

Purse seine netting may be used in a variety of circumstances. First, it may be employed to capture dolphins for research. In such situations the dolphins are typically brought on board a boat, examined, and released. However, there is usually no way (unless the dolphins are tagged) to determine whether they survived the extremely stressful experience; it is expected that some are at risk of perishing later (Edwards 2007). A possible exception are communities of dolphins who are habituated to the capture/release sequence on a regular basis (Barratclough et al. 2019).

Second, many marine parks rely on purse seine net captures of dolphins and whales for their “collections”. Mortality rates of bottlenose dolphins captured from the wild shoot up six-fold in the first five days of confinement and take weeks to return to baseline if they do (Altherr and Hodgins 2018; Read and Murray 2000).

Third, a particularly egregious use of purse seine nets is in the tuna industry’s practice of fishing for tuna “on dolphin”. Dolphins often travel with tuna, and for many years’ tuna fishers in the Pacific Ocean chased and caught dolphins in nets as a means of catching the tuna below. Dolphins and countless other marine animals end up as “bycatch” and die during or after the procedure. Over the years hundreds of thousands of dolphins have been killed by the tuna industry. Methods have been developed to allow dolphins to escape the nets and for catching tuna on long lines (which does not involve dolphins) (Gerrodette 2018). Yet there remains much controversy about tuna labeled as “dolphin safe” as this typically means that the number of dolphins killed has stabilized and not that dolphin mortality is zero and estimates of how the dolphins are impacted on a population level are wanting (Gerrodette 2018). Moreover, purse seine captures often increase the risk of mothers and calves being separated, leading to calf mortality (Cramer et al. 2008; Noren 2013). Therefore, it may be safe to assume that this form of fishing involves considerable cetacean mortality despite efforts to mitigate these risks.

12.5.2.4 NAVY Sonar and “takes”

Naval fleets around world, including the U.S. Navy, undertake sonar testing, training, and military exercises in various areas around the globe. The use of naval sonar and underwater explosions has long been identified as a major risk to whales around the world, resulting in several mass stranding events, which are classified as “incidental takes”. A “take” as defined under the U.S. Endangered Species Act means “to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to engage in any such conduct”. Incidental “take” is unintentional, but not unexpected. The Navy regularly receives permission from the U.S. government to harass even endangered cetacean populations, causing stress to an already at risk group of animals (Parsons 2017; Shull 2020).

12.5.2.5 Environmental Degradation

Anthropogenic pollution comes in many forms, including chemical, acoustic, and litter. Some of the chemical pollutants known to negatively impact cetaceans are sewage, industrial wastewater, air pollutants, farm run off, and offshore oil. DDT, phenols, heavy metals, PCBs, and other toxins accumulate in body fat and are passed to calves through nursing, often causing high mortality events (Hall et al. 2018). It has been estimated that the effects of PCBs on reproduction and immune system function in orcas impacts over half of orca populations globally (Desforges et al. 2018). Litter, including plastic fishing nets, is an increasing cause of mortality in cetaceans and other ocean animals (Fossi et al. 2018). And microplastics are a major factor in both environmental degradation and physical health in marine mammals (Fossi et al. 2016). Noise pollution from large boats and numerous commercial shipping lanes are putting increased pressure on the acoustically sensitive cetaceans who change their communication frequencies, amplitudes, and behaviors to cope with the increased noise interference (Holt et al. 2011; Viers et al. 2016). There is likely to be a significant energetic cost to these behavioral adjustments (Isojunno et al. 2016; Miller et al. 2000).

12.5.3 Summary

That there are ethical problems with the practices just described should be plain. First, humans treat cetaceans not as persons but as objects. We treat them as commodities to be used to advance a variety of human interests: curiosity, entertainment, profit, health, food, defense. Personhood requires respect for the rights and interests of *individuals*; that is, the right of individual cetaceans not to be killed or harmed in any manner. It is inadmissible to label the death or serious injury of any individual cetacean as “negligible” or “acceptable.” Second, in stark contrast to what we have

learned about cetaceans' highly developed cognitive, emotional, and social capacities, virtually every example of human treatment of cetaceans systematically prevents the satisfaction of some crucial need that promotes cetacean *flourishing*. The relationship between humans and dolphins is unacceptably one-sided. We benefit from harming them.

12.6 Toward the Future

There should be little doubt that current treatment of cetaceans by humans is unacceptable. Not only do we ignore their rights and treat whales and dolphins as property, not persons, we subject them to significant harm at our hands. What can be done to change the situation?

12.6.1 *Declarations and Proclamations*

There have been attempts to organize thinking about cetacean rights and personhood in the past. One notable effort to identify a list of basic rights for cetaceans is the “Declaration of Rights for Cetaceans: Whales and Dolphins” (Brakes et al. 2010). The rights proposed are:

- Every individual cetacean has the right to life.
- No cetacean should be held in captivity or servitude; be subject to cruel treatment; or be removed from their natural environment.
- All cetaceans have the right to freedom of movement and residence within their natural environment.
- No cetacean is the property of any State, corporation, human group or individual.
- Cetaceans have the right to the protection of their natural environment.
- Cetaceans have the right not to be subject to the disruption of their cultures.
- The rights, freedoms and norms set forth in this Declaration should be protected under international and domestic law.
- Cetaceans are entitled to an international order in which these rights, freedoms and norms can be fully realized.

Unfortunately, the Declaration is aspirational and is not codified into law or policy.

In 2013 the government of India's Ministry of the Environment and Forests declared dolphins were “nonhuman persons” and proclaimed that they “should” have rights, including the right not to be held for entertainment. But while this is a progressive move and India has banned captive cetacean shows the proclamation has no legal power to enforce rights for cetaceans (Dvorsky 2013).

12.6.2 Legal Personhood

While a universal acceptance of personhood and natural moral rights for cetaceans is an ideal goal, it is difficult to see how it would be achieved. And being *seen* as “nonhuman persons” is far different than actually *having* the rights and protections of a ‘nonhuman person’. Nonhuman animals, including cetaceans, are currently objects under the law and enjoy no actual legal standing. Legal rights are the only kind of protections that ensure any member of any species is shielded from the human penchant for self-serving bias inherent in standard welfarism. This amounts to recognizing legal personhood for cetaceans and other species. Animal rights attorney Steven Wise has led this initiative through the “Nonhuman Rights Project”. Wise bases his argument for legal personhood on the cetacean capacity to make choices, which he refers to as having “practical autonomy.” He regards this capacity as sufficient for recognizing those animals who have it as “legal persons.” He writes, “‘Practical autonomy’ is not just what most humans have but what most judges think is *sufficient* for basic liberty rights, and it boils down to this: a being has practical autonomy and is entitled to personhood and basic liberty rights if she: (1) can desire; (2) can intentionally try to fulfill her desires; and (3) possesses a sense of self sufficiency to allow her to understand, even dimly, that it is she who wants something and it is she who is trying to get it” (Wise 2002, 2005).

Legal personhood for cetaceans would allow them to be eligible for basic rights, such as the right to bodily liberty and the right to bodily integrity (Wise 2013). These two basic rights alone would prohibit most forms of mistreatment permitted under the current laws and welfare regulations. Wise’s arguments are somewhat different but not incompatible with that of Nussbaum’s capacities approach, as they both acknowledge the importance of being able to make species-specific choices about how one behaves and engages in the world.

12.6.3 Humans and Cetaceans: The Larger Challenge

In this chapter we make a series of essentially simple empirically based claims. Marine mammal science over the last 50 years has shown that cetaceans possess the highly developed cognitive and emotional capacities characteristic of individual *persons*. These capacities also reveal a vulnerability to harm equivalent to that of humans which is best understood through the concept of *flourishing*. Therefore, virtually all current human treatment of cetaceans is ethically indefensible either because it violates cetaceans’ rights as persons or inflicts the kind of serious harm that prevents cetacean flourishing.

The simplicity of these claims, of course, stands in obvious contrast with the complexity involved in undoing the harm done by current practices and redirecting the forces that influence human treatment of cetaceans (scientific curiosity, economic opportunity, etc.) in a more ethically appropriate direction. First in difficulty, however,

is the matter of having the findings of marine mammal science overturn humans' longstanding, self-serving view of nature (Marino 2021).

It has been an unquestioned "fact" for centuries that the difference between the *human* animal and all *nonhuman* animals is, as philosophers would describe it, a difference of kind, not of degree. Humans claim to be unique in intelligence, emotional complexity, and social sophistication. Our privileged place among living things has been so affirmed by certain religious traditions that we even say humans were created in the image of a divinity. Our top spot is protected by laws that consider nonhuman animals to be "property." Our uniqueness is even reflected in common parlance. "Animal" is automatically understood to mean "nonhuman animal." "Person" and "people" are assumed to refer only to humans. "Rights" mean "human rights."

Certainly, cetacean and human rights come into conflict in a number of domains. While it is not immediately clear how to navigate these issues, it is critical to cetacean personhood that they are negotiated in a way that does not place human desires above cetacean needs.

The challenge humans now face, then, is whether the qualitatively different treatment between human and nonhuman animals is defensible. Humans enjoy numerous formal and informal protections in how we are treated by each other. In contrast, nonhuman animals are regarded as nothing more than commodities whose sole protection is that they should not suffer too much as they are being used in whatever way we please. The defense for our current treatment of them is more akin to racism and sexism than science. That is, it is the product of a species-based prejudice—speciesism.

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