Effects of Psycho-Physiological Stress on Captive Dolphins

Nick Carter
Dolphin Action and Protection Group

Follow this and additional works at: https://www.wellbeingintlstudiesrepository.org/acwp_wmm

Part of the Animal Experimentation and Research Commons, Animal Studies Commons, and the Bioethics and Medical Ethics Commons

Recommended Citation

This material is brought to you for free and open access by WellBeing International. It has been accepted for inclusion by an authorized administrator of the WBI Studies Repository. For more information, please contact wbisr-info@wellbeingintl.org.
### TABLE 1 Research Materials Used in NIH Extramural Research Projects—FY 80

<table>
<thead>
<tr>
<th>Classification</th>
<th>Dollars (%)</th>
<th>Projects and Subprojects (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Humans</td>
<td>669,235,383</td>
<td>8,960 (28.7)</td>
</tr>
<tr>
<td>Mammals</td>
<td>741,665,162</td>
<td>8,904 (28.3)</td>
</tr>
<tr>
<td>Humans and mammals</td>
<td>334,207,609</td>
<td>3,612 (11.6)</td>
</tr>
<tr>
<td>Other categories involving humans and some combination of vertebrates and invertebrates</td>
<td>34,014 (1.2)</td>
<td>378 (1.2)</td>
</tr>
<tr>
<td>Mammals and nonmammalian vertebrates</td>
<td>16,830,720</td>
<td>620 (2.1)</td>
</tr>
<tr>
<td>Mammals and invertebrates</td>
<td>23,551,005</td>
<td>297 (1.0)</td>
</tr>
<tr>
<td>Mammals, nonmammalian vertebrates and invertebrates</td>
<td>5,949,903</td>
<td>59 (2)</td>
</tr>
<tr>
<td>Nonmammalian vertebrates</td>
<td>55,404,312</td>
<td>760 (2.4)</td>
</tr>
<tr>
<td>Nonmammalian vertebrates and invertebrates</td>
<td>6,902,637</td>
<td>80 (3)</td>
</tr>
<tr>
<td>Invertebrates</td>
<td>53,863,116</td>
<td>733 (2.4)</td>
</tr>
<tr>
<td>Non-animal</td>
<td>896,667,500</td>
<td>6,831 (21.9)</td>
</tr>
<tr>
<td>TOTAL</td>
<td>2,838,694,181</td>
<td>31,264 (100.3)</td>
</tr>
</tbody>
</table>

Total: Dollars = $2,838,694,181
Projects and Subprojects = 31,264

---

**Comments**

**Effects of Psycho-physiological Stress on Captive Dolphins**

**Nick Carter**

**Introduction**

Morgane (1978) has stated that: Man sees all other creatures through the narrow focus of his own knowledge and sees the whole image in distortion. We patronize animals for their incompleteness and dependence and for their fate in having taken form so far below ourselves... a great mistake, for animals should not and cannot, be measured by man. Many are gifted with many extensions of senses we have lost or never attained... They live by voices we may never hear. Some may not be our accepted brethren, but also they are not our underlings.

If this “narrow focus on human knowledge” can be said to distort the image of the whole, it follows that an overly rigid adherence to orthodox scientific criteria, when attempting to measure the intelligence and behavior of dolphin “specimens” (particularly in the abnormal situation of confinement) will diminish, not increase, our ability to understand these creatures. An approach to studying dolphins is as harmful to our interests as it is to those of the dolphins if the procedures used involve capture and confinement for entertainment or “education.” In this process, the animal is demeaned, so that its natural character cannot be appreciated. And the educational experience that accrues is hardly a wholesome source of learning, because the knowledge of the teachers themselves is distorted, since it is based on experiences with abnormally conditioned animals.

In fact, dolphins are phenomenal beings, with complex behavior patterns and capabilities that, so far, have been recognized by very few people. Those who have begun to appreciate these animals are almost unanimously in agreeing that familiarity breeds awe at the potential abilities of dolphins. For example, Jerison (1978) comments: If being human means being receptive to new ideas, it surely requires us to recognize that, although unique in many ways, human intelligence has counterparts in other species.... If we define intelligence as encephalization, we have to consider humans as part of a set that also includes some cetacean species...

It is therefore reasonable to postulate that the conditions of capture and confinement might be as stressful and harmful to dolphins as they would be to humans. This hypothesis is supported by the following evidence:

---

Nick Carter is Vice-Chairman of the Dolphin Action and Protection Group, P.O. Box 156, Hout Bay, South Africa 7872.
Stress from Handling in Wild Animals

Konrad Lorenz, Nobel Prize winner and the "father" of animal ethology observes:

"...Similarities and analogies in the nervous processes of animals and men are sufficiently great to justify the conclusion that higher animals do indeed have subjective experiences which are qualitatively different from but in essence akin to our own (Lorenz, 1967)."

For instance, shock is a condition of collapse that may follow severe psychological or physical pain or injury. Stress, resulting from fright, anxiety, frustration, and apprehension, as well as boredom and isolation, may result in degenerative psychological and physical changes that may lead to prolonged illness and death. Dolphins suffer shock in capture, in addition to stress during and after landing, transport, and eventual confinement.

For reasons unknown, some individual animals, like certain individual human beings, have a greater ability to endure stress than others. For example, off the North Pacific coast of the U.S. and Canada, between 1962 and 1973, 50 killer whales (Orcinus Orca) were caught and kept for oceanariums. (This total does not include 12 that died during capture operations.) The 2-year mortality in captivity was reported to be 25 percent in immatures and 87 percent in adults (Bega and Wolman, 1975). It is noteworthy that the data show that the captive females had a considerably higher mortality rate than did the males. Another intriguing finding was that the females who died showed a higher growth rate than those that survived (Ridgway, 1979).

While domestic animals, doubtless due to adaptation, suffer decreased trauma, and possibly less shock, after restraint and transport, it is well recognized that shock elicits a more violent and severe reaction among wild animals (Harthoorn, 1979; Thorpe, 1983). Often, mortality may be related to a combination of stresses that are experienced in rapid succession. Further, the possibility that death may be an emotional response to stress cannot be avoided (Kisker, 1964).

Recognition of the problem of mortality among live wildlife prompted the drafters of the Convention on International Trade in Endangered Species (CITES) to include clauses stipulating that "specimens will be so prepared and shipped as to minimize the risks of injury, damage to health or cruel treatment." Additional recognition of the stresses imposed on dolphins in traveling shows prompted the South African Minister of Economic Affairs, Chris Heunis, in 1977, to amend Section 16(j) of the Sea Fisheries Act 1973 to ban the importation of dolphins and killer whales for display purposes.

Capture Shock and Confinement Stress in Dolphins

There is no longer any question that psycho-physiological effects have been, and continue to be, prime causes of the sudden and consequent high mortality rates among captive dolphins. Many of the psycho-physiological disorders have been classified on the basis of the bodily symptoms by which they are commonly expressed among both humans and animals (Kisker, 1964). The symptoms noted in necropsy studies performed to determine the immediate physical cause of death among captive killer whales demonstrate a striking correspondence with those of psycho-physiological disorders (Ridgway, 1979).

In attempts to alleviate the trauma and subsequent effects that induce "shock" diseases, dolphins are on capture injected with cortisone and a prophylactic broad-spectrum antibiotic (Saayman and Taylor, 1973). Despite this treatment, however, mortality rates remain high, and the number of dolphins that successfully endure captivity for long periods of time is commensurately low. Of 21 dusky dolphins (Lagenorhynchus obscurus) captured for display off Hout Bay (South Africa) between 1961 and 1978, only one survives. The longevity of the dusky dolphin in its natural state is estimated to be 25 to 30 years.

In dolphinaria abroad it is, in many cases, difficult to form a true idea of mortality rates because deaths of dolphins and whales have not been announced, and replacement animals have been given the same names as the dead animals, so that the public will not become aware of the deaths (Greenpeace, 1980). However, in 12 years of operation (1966-1978), the Napier Marineland (New Zealand) admitted that their death tally for dolphins stands at 68, and this number does not include those dolphins that were dead when brought aboard or that were maimed during catching. Nor does this figure include those that died while being brought into port. In 1980 Marineland (New Zealand) decided to discontinue keeping dusky dolphins for display, because they did not adapt well to captivity (Robson, 1978).

Frank Robson (1978), a gold medalist for his scientific work on behalf of the Amsterdam Museum of Natural History, and the chief trainer at Napier Dolphinarium for 4 years, has expressed his concern at the lack of recognition that almost every disease contracted by captive dolphins has a strong causal link with psycho-physiological factors. He based his claim on 14 years' experience with both practical and scientific research on the disastrous relationship between psycho-physiological reactions and the health of dolphins in captivity.

Robson noted the sudden deaths of perfectly healthy dolphins, who had their blowholes tightly closed while out of the water. This indicated to him that death was due to psycho-physiological shock reaction incurred while enduring "stress" that had advanced to severe shock. When this stage is reached, processes that control the dolphin's natural breathing function of "blowing" are blocked by the effects of its disturbed emotional state.

The opportunity to test this assumption came when Robson investigated the reason why hundreds of dolphins were accidentally captured in trawl nets in waters near New Zealand during 1970-1974. The examination of these unfortunate victims revealed that they were physically healthy; few had died as a result of drowning. Only 5 percent were found to have water in the lungs; 92 percent had died from the ravages of psycho-physiological shock reaction, and the remaining 3 percent had died from internal hemorrhage of the heart—another type of shock reaction, since no water was found in the lungs.

Robson divided deaths in dolphins caused by psycho-physiological reactions into three categories.

Category 1: Sudden death, such as described above.

Category 2: Death of dolphins that survived the catching and transportation to pools, but died within a month of being caught.

Category 3: Dolphins that died, usually from respiratory problems, after being held captive for varying lengths of time—many were found to be suffering from pneumonia.

Robson considers that the inability of dolphins to deal with mental-emotional disorders, usually attributable to captivity, was responsible in many cases for the pneumonia or other respiratory problems.

He states that the first symptoms of the presence of these psycho-physiological states is a gradual or spasmodic decline in appetite. The effect of this is a reduction in blubber thickness, thereby
Stress from Handling in Wild Animals

Konrad Lorenz, Nobel Prize winner and the "father" of animal ethology observes:

...Similarities and analogies in the nervous processes of animals and men are sufficiently great to justify the conclusion that higher animals do indeed have subjective experiences which are qualitatively different from but in essence akin to our own (Lorenz, 1967).

For instance, shock is a condition of collapse that may follow severe psychological or physical pain or injury. Stress resulting from fright, anxiety, frustration, and apprehension, as well as boredom and isolation, may result in degenerative psychological and physical changes that may lead to prolonged illness and death. Dolphins suffer shock in capture, in addition to stress during and after landing, transport, and eventual confinement.

For reasons unknown, some individual animals, like certain individual human beings, have a greater ability to endure stress than others. For example, off the North Pacific coast of the U.S. and Canada, between 1962 and 1973, 50 killer whales (Orcinus Orca) were caught and kept for oceanaria. (This total does not include 12 that died during capture operations.) The 2-year mortality in captivity was reported to be 25 percent in immature whales and 87 percent in adults (Biga and Wolman, 1975). It is noteworthy that the data show that the captive females had a considerably higher mortality rate than did the males. Another intriguing finding was that the females who died showed a higher growth rate than those that survived (Ridgway, 1979).

While domestic animals, doubtless due to adaptation, suffer decreased trauma, and possibly less shock, after restraint and transport, it is well recognized that shock elicits a more violent and severe reaction among wild animals (Harthoom, 1979; Thorpe, 1983). Often, mortality may be related to a combination of stresses that are experienced in rapid succession. Further, the possibility that death may be an emotional response to stress cannot be avoided (Kisker, 1964).

Recognition of the problem of mortality among live wildlife prompted the drafters of the Convention on International Trade in Endangered Species (CITES) to include clauses stipulating that "specimens will be so prepared and shipped as to minimize the risks of injury, damage to health or cruel treatment." Additional recognition of the stresses imposed on dolphins in traveling shows prompted the South African Minister of Economic Affairs, Chris Heurns, in 1977, to amend Section 16(j) of the Sea Fisheries Act 1973 to ban the importation of dolphins and killer whales for display purposes.

Capture Shock and Confinement Stress in Dolphins

There is no longer any question that psycho-physiological effects have been, and continue to be, prime causes of the sudden and consequent high mortality rates among captive dolphins. Many of the psycho-physiological disorders have been classified on the basis of the bodily symptoms by which they are commonly expressed among both humans and animals (Kisker, 1964). The symptoms noted in necropsy studies performed to determine the immediate physical cause of death among captive killer whales demonstrates a striking correspondence with those of psycho-physiological disorders (Ridgway, 1979). In attempts to alleviate the trauma and subsequent effects that induce "shock" diseases, dolphins are often treated with cortisone and a prophylactic, broad-spectrum antibiotic (Sayman and Taylor, 1973). Despite this treatment, however, mortality rates remain high, and the number of dolphins that successfully endure captivity for long periods of time is commensurately low. Of 21 dusky dolphins (Lagenorynchus obscurus) captured for display during "Deep Blue," 12 (Hout Bay, South Africa) between 1961 and 1978, one only survives. The longevity of the dusky dolphin in its natural state is estimated to be 25 to 30 years. In dolphinarium abroad it is, in many cases, difficult to form a true idea of mortality rates because deaths of dolphins and whales have not been announced, and replacement animals have been given the same names as the dead animals, so that the public will not become aware of the deaths (Greenpeace, 1980). However, in 12 years of operation (1966-1978), the Napier Marineland's (New Zealand) admitted that their death tally for dolphins stands at 68, and this number does not include those dolphins that were dead when brought aboard or that were maimed during catching. Nor does this figure include those that died while being brought into port. In 1980 Marine-lands in New Zealand decided to discontinue keeping dusky dolphins for display, because they did not adapt well to captivity (Robson, 1978).

Frank Robson (1978), a gold medalist for his scientific work on behalf of the Amsterdam Museum of Natural History and the chief trainer at Napier Dolphinarium for 4 years, has expressed his concern at the lack of recognition that almost every disease contracted by captive dolphins has a strong causal link with psycho-physiological factors. He based his claim on 14 years' experience with both practical and scientific research on the disastrous relationship between psycho-physiological reactions and the health of dolphins in captivity.

Robson noted the sudden deaths of perfectly healthy dolphins, who had their blowholes tightly closed while out of the water. This indicated to him that death was due to psycho-physiological shock reaction incurred while enduring "stress" that had advanced to severe shock. When this stage is reached, processes that control the dolphin's natural breathing function of "blowing" are blocked by the effects of its disturbed emotional state.

The opportunity to test this assumption came when Robson investigated the reason why hundreds of dolphins were accidentally captured in trawl nets in waters near New Zealand during 1970-1974. The examination of these unfortunate victims revealed that they were physically healthy; few had died as a result of drowning. Only 5 percent were found to have water in the lungs; 92 percent had died from the ravages of psycho-physiological shock reaction, and the remaining 3 percent had died from internal hemorrhage of the heart—another type of shock reaction, since no water was found in the lungs.

Robson divided death in dolphins caused by psycho-physiological reactions into three categories.

Category 1: Sudden death, such as described above.

Category 2: Death of dolphins that survived the catching and transportation to pools, but died within a month of being caught.

Category 3: Dolphins that died, usually from respiratory problems, after being held captive for varying lengths of time—many were found to be suffering from pneumonia.

Robson considers that the inability of dolphins to deal with mental-emotional disorders, usually attributable to captivity, was responsible in many cases for the pneumonia or other respiratory problems.

He states that the first symptoms of the presence of these psycho-physiological states is a gradual or spasmodic decline in appetite. The effect of this is a reduction in blubber thickness, thereby...
decreasing the dolphins’ natural insula-
tion. This, in turn, causes a lowering in
death temperature and is responsible for
the dwindling ability of dolphins to re-
tain body heat in the chilly water. This
phenomenon is a critical factor in the
promotion of pulmonary affliction and
pneumonia. Based on observations of
the ante-death behavior of afflicted dol-
phins, we can conclude that little doubt
remains that, while pneumonia may have
been the direct cause of death, this condi-
tion was induced by stress. Death there-
fore resulted from the psycho-physiolo-
gical inability of the dolphin to maintain
sufficient control over respiration due to
inhibitory emotional disturbances.

The foregoing observations tend to be
supported by those of K.S. Norris,
Professor of Natural History, University
of California, an internationally recog-
nized authority on freeing dolphins.
Writing in 1976, he states:

Confinement compresses natural activity so tightly that it may be dis-
torted beyond recognition. The cap-
tive proffers forms unnatural life patterns, like the antelope in a zoo,
used naturally to ranging many miles a day which comes to promenade in
a stereotyped figure of eight around
his cage until the single track is
rudded a foot below the surrounding
soil...Rigid daily regimes such as
dolphin show routines are especial-
ly stressful.

The observations of Norris have
been endorsed by many former workers
at dolphinaria, as well as others who have studied these animals closely. In
mid-1979, the former dolphin trainer and
curator of the Port Elizabeth Oceanari-
um, Colin Tayler—who was employed
at the oceanarium for 10 years, during
which time he was responsible for build-
ing up the famous dolphin shows—said
he believed stress was the main cause of
three recent dolphin deaths (Cape Argus,
August 14, 1979).

Case Histories

A popular attraction at the Californi-
nia Academy of Sciences is the dolphin
tank. Officials, noticing that one of the
dolphins occasionally died in the test-
inte, conducted tests and found that
the animal had developed a duodenal
ulcer. He was treated on the anthropo-
 morphic premise that the cause was an-
xiety. At length, it was found that this an-
imal alone, of the entire group, had
become nervous because of the crowds
that peered at him through a glass wall.
When the glass wall was covered up, the
condition cleared up (Cousteau, 1979).

Bimbo, a pilot whale of Marineland
of the Pacific, was less fortunate. When
his female, and a Pacific white-sided dol-
phin, which were his only companions,
died he swam round his tank for days,
clasping each of his dead companions
with a flipper. He refused food and lost
20 percent of his 4,500-lb weight. Dr.
M.E. Webber, a physician, suggested he
had become psychoneurotic: in human
terms, a manic-depressive. One day, as
the usual crowd watched him through
the glass of his tank, he swam with all his
power against a glass port, shattering it.
A few months later, because of his deter-
iorating mental state, he was released
near a pod of other pilot whales. An
“emotional convict” returned to free-
dom, he was not seen again (Cousteau,
1975).

Dan, a male bottlenose dolphin (Tur-
pios aduncus) became so aggressive after
8 years of captivity in Port Elizabeth
Oceanarium, that he had to be released
in August 1976. Not only did he threaten
human beings, but he prevented the oth-
er dolphins in the oceanarium from per-
forming their circus acts. It has now
been alleged, though not confirmed,
that Gambit, the Atlantic bottlenose dol-
phin caught off Walvis Bay in Novem-
ber 1976 is showing similar traits. His
female companion, Purdy, died early in
March 1979 of Klebsiella pneumoniae in-
fection.

Malia, an Indian Ocean bottlenose
dolphin (Tursiops aduncus) was captured
by the Port Elizabeth Oceanarium in
April 1977. Later, she was confined in
the tank. Officials, noticing that one of the
dolphins occasionally died in the test-
inte, conducted tests and found that the
animal had developed a duodenal
ulcer. He was treated on the anthropo-
morphic premise that the cause was an-
xiety. At length, it was found that this an-
imal alone, of the entire group, had
become nervous because of the crowds
that peered at him through a glass wall.
When the glass wall was covered up, the
condition cleared up (Cousteau, 1979).

About mid-1980, because repairs
were being made to the main pool, she
was transferred again to a small retain-
ing pool. A few weeks later she went off
her food and, despite feeding every 5
hours plus the application of a range of
antibiotics, she became progressively
thinner; she died in early September.
The symptoms prior to death, which
was believed to be due to respiratory dis-
grace, conformed very well with Frank
Robson’s description of disease induced
through psycho-physiological disturbance.

Conclusion

The author’s 25 years’ experience
with the consequences of the stress
caused by the capture, holding, and
transport of wildlife amply confirm that
these procedures result in a tragic wast-
age of life. Some extremes are accurate-
ly described by the former dealer Jacques
Yves Domalain in his well-known book
The Animal Connection. Through visits
to captive animal facilities in many parts
of the world, the author endorses the
views of K.S. Norris concerning the deleterious effects of captivity, as
shown in the abnormal behavior of cap-
tive animals. Despite the difficulties, field work with garlics, chimpanzees,
orangutans, and wolves demonstrates
that the most realistic observations and
assessments on wild animals are those
made in the natural environment.

Notwithstanding the useful captive
breeding work done by a number of re-
spected zoological establishments, stud-
ies by IUCN/SSC/TRAFFIC 1980 and
others (Burton and Barzdo, 1980) show
that, overall, zoos continue to be con-
sumers rather than conservors of wildlife,
and that husbandry of captive animals
for breeding for ultimate re-introduction
into the wild is of minimal, if any, signifi-
cance. Possibly, the maintenance of cap-
tive wild animal populations for educa-
tional and research purposes may alleviate
continued pressure on wild populations.
But the evidence shows that the profit-
motivated use of animals in circus-type displays merely consumes animals; it
does not assist in their conservation.

References

Bigg, M.A. and Wolman, A.A. (1975)
Live-capture killer whale (Oncinus
oralis) fishery, British Columbia and
Board Can 32:7.
Burton, J. and Barzdo, J. (1980) I
UCN/SSC/ TRAFFIC. World Wildlife Fund,
London.
Cousteau, J. (1975) The Ocean World of
Jacques Cousteau. Argus and Robert-
on, London.
Greenpeace, San Francisco, CA.
Harshbroom, A.M. (1979) Comparison of
two methods of capture of wild ani-
Jerison, H.J. (1978) Brain and intelligence
in whales. In Whales and Whaling,
vol 2, Australian Government Print-
ing Service, Canberra, Australia.
Kisker, G.W. (1964) The Disorganized Per-
sontality, McGraw-Hill, New York,
NY.
Lorenz, K. (1967) On Aggression, Univer-
sity Paperbacks.
decreasing the dolphins' natural insu­
lation. This, in turn, causes a lowering in
body temperature and is responsible for
pneumonia. Based on observations of
the ante-death behavior of afflicted dol-
phins, we can conclude that little doubt
remains that, while pneumonia may have
been the direct cause of death, this condi-
tion was induced by stress. Death there-
fore resulted from the psycho-physiologi-
cal inability of the dolphin to main-
tain sufficient control over respiration due to
inhibitory emotional disturbances.

The foregoing observations tend to
be supported by those of K.S. Norris, Pro-
nessor of Natural History, University of
California, an internationally recog-
nized authority on free-ranging dol-
phins. Writing in 1976, he states:

"Confinement compromises natural
activity so tightly that it may be dis-
torted beyond recognition. The cap-
tive propel shows unnatural life
patterns, like the antelope in a zoo,
used naturally to ranging many miles
a day which comes to promenade in
a stereotyped figure of eight around
his cage until the single track is
rushed a foot below the surrounding
soil.... Rigid daily regimes such as
patterns, like the antelope in a
zoological park, shattering it.
A few months later, because of his deter-
vation, he was released
from his confinement. After the capture of three new
bottlenose dolphins in 1979, she was re-
turned to Port Elizabeth.
A popular attraction at the
Port Elizabeth Oceanarium, that he had to be released
up to the main pool, she
died she swam round his tank for days,
clasping each of his dead companions
with a flipper. He refused food and lost
weight 20 percent of his 4,500-lb weight. Dr.
M.E. Webber, a physician, suggested he
had become psychoneurotic: in human
terms, a manic-depressive.

Bonnie, a pilot whale of Marineland
of the Pacific, was less fortunate. When
her female, and a Pacific white-sided dol-
phin, which were his only companions,
died he swam round his tank for days,
clasp each of his dead companions
with a flipper. He refused food and lost
weight 20 percent of his 4,500-lb weight. Dr.
M.E. Webber, a physician, suggested he
had become psychoneurotic: in human
terms, a manic-depressive.

The symptoms prior to death, which was
believed to be due to respiratory dis-
ing, conformed very well with Frank
Roberts's description of disease induced
through psycho-physiological disturbance.

Conclusion

The author's 25 years' experience with the consequences of the stress caused by the capture, holding, and
transport of wildlife amply confirm that
these procedures result in a tragic wast-
age of life. Some extremes are accurate-
ly described by the former dealer Jacques
Yves Domaion in his well-known book
"The Animal Connection." Through visits to
captive animal facilities in many parts of
the world, the author endorses the views of K.S. Norris concerning the deleterious effects of captivity, as
shown in the abnormal behavior of cap-
tive animals. Despite the difficulties, field
work with gorillas, chimpanzees,
orangutans, and wolves demonstrates
that the most realistic observations and
assessments on wild animals are those
made in the natural environment.

Notwithstanding the useful captive
breeding work done by a number of re-
putable zoological establishments, stud-
ies by IUCN/SSC/TRAFFIC 1980 and others (Burton and Barzdo, 1980) show that, overall, zoos continue to be con-
sumers rather than conservors of wildlife,
and that husbandry of captive animals for
breeding ultimate re-introduction
into the wild is of minimal, if any, signifi-
cance. Possibly, the maintenance of cap-
tive wild animal populations for educa-
tional and research purposes may alleviate
continued pressure on wild populations.
But the evidence shows that the profit-
ally utilized forms of animals in circus-type displays merely consumes animals, it does not assist in their conservation.

References

Bigg, M.A. and Wolman, A.A. (1975)
Live-capture killer whale (Orcinus
orca) fishery, British Columbia and
Board Can 32:7.
Burton, J. and Barzdo, J. (1980) IUCN/SSC
Cousteau, J. (1975) "The Ocean World of
Jacques Cousteau, Argus and Robert-
on, London.
Greenpeace (1980) "Outlaw Whaler, Green-
peace, San Francisco, CA.
Harshbroom, A.M. (1979)'Comparison of two
methods of capture of wild ani-
Jerron, H.J. (1978) Brain and intelligence
in whales. In "Whales and Whaling, vol. 2, Australian Government Print-
ing Service, Canberra, Australia.
Kisker, G.W. (1964) The Disorganized Per-
Lorenz, K. (1967) On Aggression, Univer-
sity Paperbacks.
The Judeo-Christian Tradition and the Human/Animal Bond

James A. Rimbach

This paper surveys the role of animal imagery in the literature of the Old Testament and in post-biblical Jewish literature, discusses biblical materials that speak to the relation of humankind to animals, and assesses the subsequent use of these traditions to support or negate specific attitudes toward the natural environment.

A righteous man has regard for the life of his beast, but the wicked is cruel (Proverbs 12:10).

It is always perilous to some degree to ask a modern question of an ancient text or tradition. The obvious danger is that the investigator will shape the tradition to suit his or her own predetermined purposes and ignore or explain away that which does not fit those aims. The Judeo-Christian tradition has had that sort of treatment on the very question that we will investigate here. Interpretations based on self-interest have been all the more easy to arrive at because the human/animal companion bond is a particularly rich source of simile and metaphor in the hands of poets and sages. What follows is a very brief survey of such allusions.

The smaller forms of animal life consistently form a picture of plague and infestation. The sacred text is abundant in references to the natural environment that are used as pigments to add color to the poet's painting and make it more vivid. For instance, references could be added referring to the camel, the ass, and their treasures on the backs of asses, and their treasures on the humps of camels (Isaiah 30:6).

In a culture where animals had a more direct role in the general economy than in our own day, reference to them served as indication of wealth and power, and military prowess.

They carry their riches on the backs of asses, and their treasures on the humps of camels (Isaiah 30:6).

The scouring of their horses is heard from Dan, at the sound of the neighing of their stallions the whole land quakes (Jeremiah 8:16).

At the same time, this situation holds promise for an even-handed treatment. Historians agree that we get a more genuine answer to our questions when we derive our answers from allusions and reflections in texts that are not tendentious. We are attempting here to follow the advice of Goethe: "Wer dem Dichter will verstehen, muss im Land des Dichters gehen" ("To understand the poet, one must go to the poet's land," i.e., meet him on his own turf).

A Survey of Biblical Imagery

Not surprisingly, we find that the human/animal bond, because it enriches the life and culture of a people, is reflected in that people's literature. This is precisely the case with the Old Testament, the primary literature of the Judeo-Christian tradition and the literary legacy of some 1,000 years of Hebrew culture. We notice in the first place that the human/animal bond is a particularly rich source of simile and metaphor in the hands of poets and sages. What follows is a very brief survey of such allusions.

The smaller forms of animal life consistently form a picture of plague and infestation. The sacred text is abundant in references to the natural environment that are used as pigments to add color to the poet's painting and make it more vivid. For instance, references could be added referring to the camel, the ass, and their treasures on the backs of asses, and their treasures on the humps of camels (Isaiah 30:6).

In a culture where animals had a more direct role in the general economy than in our own day, reference to them served as indication of wealth and power, and military prowess.

They carry their riches on the backs of asses, and their treasures on the humps of camels (Isaiah 30:6).

The scouring of their horses is heard from Dan, at the sound of the neighing of their stallions the whole land quakes (Jeremiah 8:16).

I have plundered their treasures: like a bull I have brought down those who sat on thrones (Isaiah 10:13).

Other examples could be added referring to the camel, the ass, and the lion, and various kinds of cattle.

...through the wilderness, with its fiery serpents, and scorpions and...