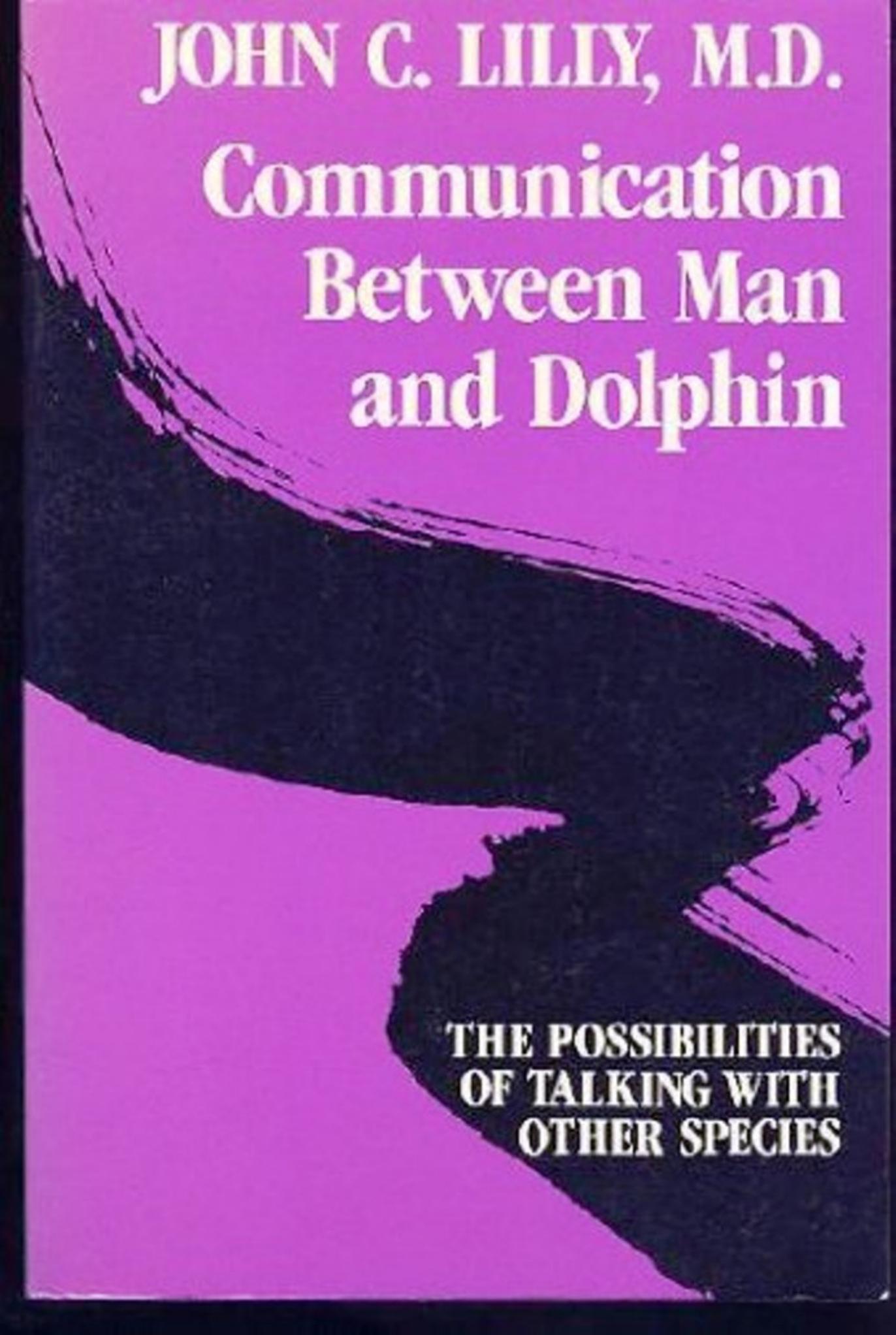


JOHN C. LILLY, M.D.

**Communication
Between Man
and Dolphin**



**THE POSSIBILITIES
OF TALKING WITH
OTHER SPECIES**

Communication between Man and Dolphin:

The Possibilities of Talking
with Other Species

BOOKS BY THE AUTHOR

Man and Dolphin (1961)

The Dolphin in History

(with Ashley Montagu) (1963)

The Mind of the Dolphin: A Nonhuman Intelligence (1967)

**Programming and Metaprogramming in the Human
Biocomputer (1972)**

The Center of the Cyclone (1972)

Lilly on Dolphins: Humans of the Sea (1975)

Simulations of God: The Science of Belief (1976)

The Dyadic Cyclone

(with Antonietta Lilly) (1976)

**The Deep Self: Profound Relaxation and the Tank
Isolation Technique (1977)**

The Scientist: A Novel Autobiography (1978)

**Communication between Man and Dolphin: The Possibilities
of Talking with Other Species (1978)**

Communication
between Man and Dolphin:
The Possibilities of Talking
with Other Species

BY JOHN C. LILLY, M.D.

Foreword by Burgess Meredith

Prologue by Antonietta L. Lilly

CLATSOP COUNTY LIBRARY
(by Association of Portland, Ore.)

DOWN PUBLISHERS, INC. NEW YORK

This book is dedicated to the future success of interspecies relations and the jointly realized enhanced future of the shared interdependence of humans and cetaceans. There is a new hope that humans can substitute communication for depredation, and cooperation for exploitation, even as the cetaceans have for several tens of millions of years. May we, the humans, soon learn from them, the dolphins, porpoises, and whales.



599.5
L72c
c3

© 1978 Human Software, Inc.

All rights reserved. No part of this book may be reproduced or utilized in any form or by any means, electronic or mechanical, including photocopying, recording, or by any information storage and retrieval system, without permission in writing from the publisher

Inquiries should be addressed to Crown Publishers, Inc.,
One Park Avenue, New York, N.Y. 10016

Published simultaneously in Canada by General Publishing Company Limited

Printed in the United States of America

Book Design: Shari de Muskey

Library of Congress Cataloging in Publication Data

Lilly, John Cunningham, 1915
Communication between man and dolphin.

1. Dolphins—Behavior 2. Animal communication
3. Animal intelligence 4. Title.

QL737.C4321 53 599.5:1 78 16362

ISBN 0-517-53036-8

CONTENTS

	PROLOGUE BY ANTONIETTA L. LILLY	ix
	FOREWORD BY BURGESS MEREDITH	xiii
	PREFACE	xv
	CHRONOLOGICAL LIST OF DISCOVERIES ABOUT DOLPHINS	xviii
	INTRODUCTION	1
One	The Development of the New Beliefs about Dolphins	11
Two	The New Beliefs Arise in Experiments	17
Three	Sciences Necessary to Interspecies Communication with Cetacea	24
Four	Who Are the Cetaceans (Dolphins, Porpoises, and Whales)?	28
Five	Why Are There No Large Brains in Small Bodies?	44
Six	Communication by Means of Sounds: The Twin Cases of Cetaceans and Humans	54
Seven	Nonvocal Communication with the Apes: Sonic Communication with Dolphins through JANUS: Sonipulation	78
Eight	The Evolution of the Scientific Observer and of Society and Its Laws	85
Nine	Current Laws and the Basic Assumptions about Cetacea	94
Ten	The Scientific Observer as a Participant in the Ecology of the Planet Earth	98

FEB 27 1979 v

vi COMMUNICATION BETWEEN MAN AND DOLPHIN

- Eleven Proposal for New Laws for Cetaceans: Immediate Strategy
- Twelve The Problem of Oceanaria/Aquariums and the Cetacea: A New Game
- Thirteen Projections into the Future: Nonhuman Participant Observers
- Fourteen Projections into the Future: Commercial Developments
- Fifteen The Rights of Cetaceans under Human Laws
- Sixteen The Possible Existence of Nonhuman Languages

- Appendix One The Marine Mammal Protection Act of 1972*
- Appendix Two Annotated Bibliography*

INTRODUCTORY NOTE FOR THE PHOTOGRAPHS

- Appendix Three Abstract of Scientific Research Program Proposal; Scientific Origins of Interspecies Communication (Project JANUS 1977)*
- Appendix Four List of Organizations Interested in the Whales, Dolphins, and Porpoises, Friends of the Cetacea*
- Appendix Five List of Known Locations Where Tursiops Are Held in Captivity*
- Appendix Six The Cetacean Brain*
- Appendix Seven The Dolphins Revisited*

It is of great importance that the general public be given the opportunity to experience, consciously and intelligently, the efforts and results of scientific research. It is not sufficient that each result be taken up, elaborated, and applied by a few specialists in the field. Restricting the body of knowledge to a small group deadens the philosophical spirit of a people and leads to spiritual poverty.

—ALBERT EINSTEIN

No bigger in the mass of the body than the thumb of a man, the Purusha, the Spirit within, is seated for ever in the heart of all creatures.

—FROM THE UPANISHADS



PROLOGUE

Invitation from a White Whale

FOR THE PAST SEVERAL YEARS I HAVE BEEN EXPOSED TO A VAST amount of information about whales and dolphins. A network of organizations such as Save the Whales, Greenpeace, Dolphin Embassy, etc., has formed across the country. People everywhere are interested in what they sense are joyful beings, and they want to know more about them. They come to my husband, John Lilly, for advice and information because he was the first person to propose that dolphins are as intelligent as men, but in a strange and watery way. His conclusions, after twenty years of original scientific work, have reached the public. We are no longer a unique and lonely species. The dolphins too are intelligent. This fact was demonstrated to me in a deeply moving experience at a research institute in San Diego.

We had recently formed the Human/Dolphin Foundation—a new organization to help in our efforts to communicate with dolphins. But I was also seeking a more personal participation in the achievement of this goal, which is, to me, the most exciting and important undertaking of our time. Consequently, when we were invited to visit a recently built research institute by its di-

rector, Bill Evans, John's colleague and friend, I felt it might afford me the opportunity I was seeking.

As we passed through the facilities, we were impressed with the youthful vitality exhibited by both humans and dolphins. Bill was excited about the possibilities of educating both, and his enthusiasm was complemented by his vast knowledge about cetaceans. We were nearing the end of our tour when Bill suggested we visit the beluga whales (*Delphinapterus leucas*), or "the canaries of the sea," as the whalers of the last century called them. He led us up a stairway through a large door and down a hallway to the top of an enormous tank. Suddenly, I was looking down at one of the most unusual beings I had ever seen in my life.

The beluga whale looked like Caspar the Friendly Ghost—pure white with a flexible neck and a mobile facial expression.

I had the feeling I was perceiving, *and being perceived by*, an immense presence. I was simultaneously speechless and trying to absorb a vast amount of information that I was unable to fit into adequate patterns of past experience. It somehow transcended the human experience, going deeply into unknown mysteries.

There were a few eternal moments of recognition ... the frequency between us was like a brightly lighted tunnel of happiness. Everything else around me dimmed in the white light that soothed and pervaded my very essence.

I vaguely remember walking through the rest of the laboratory.

Before leaving, I asked Bill if I could come back and swim with the whales.

Life went on with a very full schedule, and in the midst of it I found myself often thinking of the whales. But it wasn't until I talked to my friend, Paul Gaer, that another visit to the belugas became a reality. Paul is a writer and photographer and was intrigued with the adventure I had planned. We are old friends who have shared interests for a long time.

Before I knew it, we were on a plane and I was in a dressing room at the institute changing into a wet suit preparatory to my rendezvous with the whales. I slipped into the icy water, feeling I was entering alien territory—*their* territory. I was afraid and the adrenaline shot through me as I turned uneasily trying to keep the circling whales in my line of vision. The sheer size (about twelve feet and eight hundred pounds) and power of the animals

in the water compared to my small, fragile, and inadequate self were quite sobering. My fear seemed to be sensed and accommodated by the whales, and it soon disappeared when I realized how delicately aware of me my new friends were. I could sense their eyes scanning me. I tried making sounds under water; they immediately swam within two feet of me and made new sounds. We played for fifteen minutes, with Paul's camera clicking away, in the background. We were interrupted by a crew who came in to do an audiogram, so I had to leave the water. I got out feeling dissatisfied, unfulfilled. What it was I expected, I did not know, but I somehow could not leave just yet. I lingered by the edge of the tank.

A whale raised her head above the water to peer at me. I looked directly into her eyes. Suddenly, she shot a stream of water from her mouth that splashed over my face and shoulders and slowly down over my body. It was a loving touch—an invitation to a more intimate communication—as sensual an approach as I have ever experienced from my own species. Without thinking, I cupped some water in my hand, brought it into my mouth, and shot it back at the beluga. The joy of the next few minutes can only be described as absurd. I was able to hug and kiss her soft white skin. This was what I had hoped to experience—I had crossed a boundary, a new space opened, I was fulfilled. This whale's invitation to share her world gave me a glimpse through a cosmic crack between species . . . a oneness of all living beings as we will know them someday in the future . . . a place we have been before and will return to again . . . a peaceful paradise . . . *the peaceable kingdom.*"

The process of contraction and expansion . . . emerging from a dense pattern of loneliness (interspecies deprivation) to overlap with the whales in a startling new way. I thought of something John had written about his work in the Virgin Islands:

This opening of our minds was a subtle and yet a painful process. We began to have feelings which I believe are best described by the word "weirdness." The feeling was that we were up against the edge of a vast uncharted region in which we were about to embark with a good deal of mistrust in the appropriateness of our own equipment. The feeling of weirdness came on us as

XII COMMUNICATION BETWEEN MAN AND DOLPHIN

the sounds of this small whale seemed more and more to be forming words in our own language. We felt we were in the presence of Something, or Someone, who was on the other side of a transparent barrier which up to this point we hadn't even seen. The dim outlines of a Someone began to appear. We began to look at this whale's body with newly opened eyes and began to think in terms of its possible "mental processes," rather than in terms of the classical view of a conditionable, instinctually functioning "animal." We began to apologize to one another for slips of the tongue in which we would call dolphins "persons" and in which we began to use their names as if they *were* persons. This seemed to be as much of a way of grasping at straws of security in a rough sea of the unknown, as of committing the sin of Science of anthropomorphizing. If these "animals" have "higher mental processes," then they in turn must be thinking of us as very peculiar (even stupid) beings indeed.

The white ghosts had a sense of curious loving selves, careful of my vulnerability in their watery environment. They are my self living in the ancient, cold sea in which I swam in the dim, distant past before my cells organized and climbed out onto the land. That day with them I rejoined my archaic self in the water.

I will go back, I hope, and talk with them with new understanding of my origins and share the breaking of the long separation of human and cetacean.

ANTONIETTA L. LILLY

FOREWORD

MANY YEARS AGO I FOUND OUT WHERE JOHN LILLY LIVED AND, uninvited, went to see him. He is a very private man, still he received me and we became friends. In fact, almost as a member of his family, I followed the events described in his books *Center of the Cyclone*, *Deep Self*, and, more recently, *The Scientist*. Presently I am trying, as best I can, to be of practical assistance to him through the Human/Dolphin Foundation, which a few of us established three years ago. This foundation is located in a high canyon above the Malibu Hills in southern California. It is near the residence of John Lilly and his wife, Toni.

From time to time Toni and John take off to give a lecture and/or workshop or for a social visit; but mostly, for seven days out of the week, they attend the data that is being accumulated and the blueprints that are being drawn for Project Janus (Interspecies Communication with Cetaceans).

Adjacent to the Lilly house is a small one-and-a-half-room laboratory. Here, five days a week, a handful of young scientists, who have come from different parts of the United States and Canada, work, without pay, under Lilly's supervision. Their job is to coordinate the software and the hardware, or, more simply, to

work on the various computers, hydrophones, and calculating paraphernalia that the foundation has purchased (which you will read about in this book), and to prepare the results for scientific testing.

One feels privileged to be in the vicinity of this activity. The word is out that important steps are being taken, and, indeed, important people come and go. The implications of a possible breakthrough in establishing communication with an alien species whose brain size is larger than our own (whether on this planet or another) are enormous, and the consequences of finally ending what has been called the "long loneliness of man" on this earth, in our time, would, of course, be epic.

What it amounts to is that we are in a race to speak to the whales and dolphins before they are destroyed. Like a Greek drama the tension is great and the outcome is uncertain.

This book is a description of certain strategies being formed and specific steps being taken to bring about an affirmative ending to the drama.

Communication between Man and Dolphin is a book only John could write. We who, with admiration and love have followed the man's extraordinary search, have been waiting for its publication for a long time.

The late John Steinbeck wrote in *The Sea of Cortez*: "It is a good thing for a man to look down at the tide-pools, then up to the stars, then back to the tide-pools again."

John Lilly has put it another way, and it was this statement that drew many of us to him: "In the province of the mind, what one believes to be true either is true or becomes true within certain limits. These limits are found to be beliefs to be transcended."

BURGESS MEREDITH

IN 1955 I BEGAN SCIENTIFIC RESEARCH WITH THE BOTTLE-NOSED dolphin, *Tursiops truncatus*. In 1968 this research program was terminated. In the intervening years, several major discoveries about dolphins were made.

From 1968 to 1976 my efforts were put into research on myself and other humans. This work was subsequently published in depth in a book.* During the completion of this work I reviewed the dolphin research literature from 1968 to 1976. I found that practically no research based on the 1955-1968 work had been done along the lines of communication between dolphins and humans and among dolphins themselves.

I constructed a bibliography of the work from 1968 to 1976 done by others. Eventually I hope to publish this bibliography.

This review of the literature convinced me that it was timely for me to resume my research with the dolphins. In preparation for this, I reviewed all the papers and books that I had written on

* John C. Lilly, M.D., *The Deep Self: Profound Relaxation and the Tank Isolation Technique* (New York: Simon & Schuster, 1977).

the subject. This review appears in the Annotated Bibliography of this book.

With my wife, Toni, and our friends, Burgess Meredith and Victor Di Suvero, we established the Human/Dolphin Foundation in Malibu, California. The aims of the foundation are to support research and education leading to communication between man and the cetaceans by new electronic and computer methods. The basic considerations leading to this proposal are given in this book.

Insofar as is possible this book should be self-supporting, i.e., for those interested in the field of interspecies sonic communication; for anyone interested in more detailed information about the origins and development of this project, I have provided an Annotated Bibliography.

Since the research program terminated in 1968 I have not ceased thinking about the dolphins and the problems of interspecies communication. In recent years I have written several papers that are included in this book ("The Rights of Cetaceans under Human Laws," "The Cetacean Brain," "Languages Alternative to Those of the Human," "The Dolphins Revisited"). In this book there is a special chapter of projections into the future, and I call attention to a special chapter at the end of another book, *The Scientist*,* including two scenarios describing future relationships between cetaceans and humans. One of these scenarios is a pessimistic account of the demise of all of the cetaceans and probably the humans as well. The other scenario is frankly optimistic, postulating a breakthrough in interspecies communication research leading to complete communication between man and the cetaceans by means of computer aids.

I have incorporated the proposal for support of the interspecies communication program in the Appendix to this book. This proposal summarizes the present position of communication research and the scientific bases for assuming that there will be success with the program. In the Addendum (also included in the Appendix) there is a summary of progress to date including the raising of funds sufficient to furnish a computer and the peripheral apparatus for the computer.

* John C. Lilly, M.D., *The Scientist: A Novel Autobiography* (Philadelphia: Lippincott, 1978).

In 1977 Ms. Georgia Tanner joined the board of the Human/Dolphin Foundation and has furnished the financial wherewithal for the completion of the apparatus needed to initiate this program.

In July 1977 Dennis Kastner joined the Human/Dolphin Foundation. He is an expert in the hardware and software for microcomputers and minicomputers. He has had extensive background in human communication and human communication systems in Canada. Gratitude is expressed to him, Paule Jean, Brad Weigle, and Linda Dias for continued help in the Foundation work.

I wish to express my appreciation for the selfless help provided by my wife, Toni Lilly, Burgess Meredith, Ms. Georgia Tanner, Tom Wilkes, Victor Di Suvero, Alexandra Hubbard, Louis Marx, H. Arthur and Prue Ceppos, John Brockman, Dr. William Evans, Gregory Bateson, Dr. Kenneth Norris, Dr. Peter J. Morgane, Dr. Willard F. McFarland, Dr. Eugene Nagel, Dr. Paul Yakovlev, Dr. Sidney Galler, Dr. Orr Reynolds, Dr. Hudson Hoagland, Dr. and Mrs. Frederick Worden, Milton Shedd, Frank Powell, Jr., Dr. Henry Truby, Ms. Alice M. Miller, Dr. Robert Livingston, Christopher Wells, Dr. Harvey Savely, Dr. David Tyler, Ms. Margaret Howe Lovatt, Scott McVay, Dr. Helen McFarland, Ms. Jane Sullivan, the late Dr. William McLean and the late Dr. Wayne Batteau, and Jean Knights and John and Denise Perry.

A chronological list of discoveries about dolphins by the author and his co-workers from 1955 to 1976 follows; the literature referred to is in the Annotated Bibliography in the Appendix.

CHRONOLOGICAL LIST OF DISCOVERIES ABOUT DOLPHINS

Date	Discovery	1st published account, reference *
1955	Voluntary respiration	1961:4
1955	Anesthesia lethal without respiratory aides	1961:4
1955	First respirator and first demonstration of successful anesthesia	1961:4
1955	Brain size established	1961:3
1957	Ability to control reactions to negative reinforcement	1962:5
1957	Ability to demand positive reinforcement through voicing control	1962:5
1957	Distress call	1963:11
1957	Voluntary erection of penis in male dolphin	1966:19
1957	Dolphin voices to demand start/stop reinforcement	1962:5
1957	Dolphin matches human voice	1962:5
1960	Ability to learn human speech sounds: counting	1962:9; 1968:33
1960	Close wet contact man/dolphin leads to learning	1961:4
1960	Critical brain size for control of voice for symbolic use	1961:4; 1963:10
1960	Reprogramming abilities in sonic mode: burst count matching	1965:18
1961	Sonic exchanges of dolphins	1961:3
(1957) 1963	Silent areas all parietal and larger than man's	1971:36
1964	First automatic respirator	1964:14
1964	Biocomputer theory and practice (extensions of learning theory)	1966:22; 1968:30, 37, 38
1964	LSD-25 abolishes avoidance behavior and increases vocalization index	1967:24
1965	Stereophonation	1967:27
1965	Sonic sources: three: 2 nasal, 1 laryngeal	1967:27, 28
1976	Newtonian rotatory limits determine body/head size for large brains evolution and survival	1977: Intro. and Chap. 5

* Note: The reference numbers refer to the Annotated Bibliography in this book.

INTRODUCTION

IN THIS BOOK I INVITE YOU TO ENTERTAIN SOME NEW BELIEFS about dolphins. Many of the young new generation believe as I do, many do not so believe. Here we give the basis for these beliefs—experience, experiment, and deductions therefrom.

As the accumulated facts about the structure of the brains and of the behavior of the Cetacea have become integrated, beliefs about them have been constructed and realized quite counter to those held by many biologists and many keepers of dolphins and whales in oceanaria. In brief, this new belief claims: *these Cetacea with huge brains are more intelligent than any man or woman.* The old beliefs have been based upon ignorance and lack of direct personal experience with dolphins and whales.

In the past mankind's beliefs led to clashes about politics, about territory, about religion, about the law, about relationships between man and woman. The new beliefs about the Cetacea lead to problems—personal, political, and social in addition to scientific.

Man is changing the planet. He has a history of killing off all of the large mammals of the land. The large mammals of North

America were extinguished by man. The African species are being decimated by the encroachment of man upon their territories. In the seas the pelagic mammals are being critically depleted as man invades their territories and hauls their bodies ashore for his purposes.

In the past (before 1965) I felt that the scientific viewpoint of total objectivity, of the noninvolved scientific observer, was the be-all and end-all for one's life. I am no longer convinced that such a dispassionate noninvolved view of ecology will ever work. A scientist who fails to assume social responsibility, the feedback from all other members of his species, is not taking the responsibility of being a human being beyond a limited self-serving role in society. Involvement and participation are absolutely essential for understanding and for survival of self and of one's own species.

We need a new ethic, new laws based on those ethics which punish human beings for encroachment on the life-styles and the territory of other species with brains comparable to and larger than ours. We need modifications of our laws so that the Cetacea can no longer become the property of individuals, corporations, or governments. Even as the respect for human individuals is growing in our law, so must the respect for individual whales, dolphins, and porpoises.

The explosive-propelled and exploding harpoon, entering the flesh of the whale and causing it to emit great quantities of blood from his blowhole, is a recurrent nightmare for more and more humans. The death cries of whales are heard around the world under water and are ignored by those who cause them. Those who believe that they are killing to provide huge reservoirs of flesh for industrial use rather than killing the largest, most sophisticated brains on the planet, somehow must change their beliefs; their killing must be prevented by giving the cetaceans the same legal protections as humans.

Those who catch and imprison dolphins must modify what they are doing to allow more communication between the imprisoned dolphins and their families and friends in the sea. If any dolphins and whales are to be kept captive, their captivity should be for only an agreed-upon, limited time, after which they should be released to their natural habitat to communicate