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978-0-521-75743-0 - Dogs: Domestication and the Development of a Social Bond

Darcy F. Morey

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DOGS: DOMESTICATION AND THE DEVELOPMENT OF A SOCIAL BOND

This book traces the evolution of the dog, from its origins about 15,000 years ago up to recent times. The timing of dog domestication receives attention, with comparisons between different genetics-based models and archaeological evidence. Allometric patterns between dogs and their ancestors, wolves, shed light on the nature of the morphological changes that dogs underwent. Dog burials highlight a unifying theme of the whole book: the development of a distinctive social bond between dogs and people. The book also explores why dogs and people relate so well to each other. Though the book is cosmopolitan in overall scope, greatest emphasis is on the New World, with an entire chapter devoted to dogs of the arctic regions, mostly in the New World. Discussion of several distinctive modern roles of dogs underscores the social bond between dogs and people.

Darcy F. Morey received his Ph.D. in anthropology, with a specialization in archaeology, in 1990 from the University of Tennessee in Knoxville. Subsequently, he spent a year as a guest researcher at the University of Copenhagen Zoological Museum in Denmark. He was there for the express purpose of studying dog remains from archaeological sites in arctic Greenland. In addition to participating in archaeological fieldwork there in 1990, he has worked in Norway, France, and Denmark, as well as numerous places in the United States. He has published actively on a variety of topics, with his work on dogs being especially prominent. On that general topic, he has published as sole or senior author many articles and book reviews in journals such as *Arctic*, *Journal of Archaeological Science*, *Quarterly Review of Biology*, *Archaeozoologia*, *Current Anthropology*, and *Journal of Alabama Archaeology*. Dr. Morey has also published on the topic of dogs in popular science outlets, including the *American Scientist* and *La Recherche*. He joined the faculty at the University of Kansas in Lawrence in 1998. There, in addition to his ongoing research activities, he was selected by students as the most notable teacher of undergraduates in his department (Anthropology) in 2000. In addition, in 2002 he was elected to the Alpha Pi chapter of Phi Beta Delta, The Honor Society for International Scholars. He resigned from the University of Kansas in 2006 and began working at the University of Tennessee in Martin. He is presently a Research Associate with the Forensic Science Institute at Radford University in Radford, Virginia.

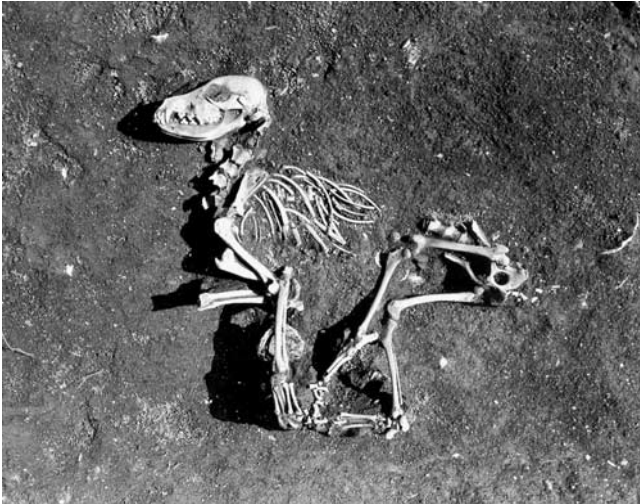
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Photograph of dog burial # 1 from the prehistoric Indian Knoll Site in Kentucky (some 5,000 years old), taken more than fifty years ago. This picture was previously published in the *Journal of Archaeological Science* (Morey 2006: 163, figure 3). The original photograph was enhanced and made available by George M. Crothers, William S. Webb Museum of Anthropology, University of Kentucky, Lexington, Kentucky. More information on the broader phenomenon of dog burials is contained in Chapter 7.

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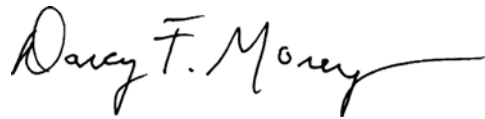
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This book is gratefully dedicated to the Emergency Medical Technicians associated with the Fire Department in Washburn, North Dakota, with special thanks to Clayton Verke and Mary Devlin. But for the crucial, competent, and caring roles they played on one fateful night, July 13, 2000, this book simply could not exist. On that night, though, they did their jobs exceptionally well, above and beyond the call of customary professional duty, making it possible for this book to exist. And so, now it does.

A handwritten signature in black ink that reads "Darcy F. Morey". The signature is written in a cursive style with a long horizontal flourish extending to the right.

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FOREWORD

It was headline news for the BBC not long ago: “If you want to live a healthier life, get a dog.” Those who own dogs would not have been surprised to read this, and those who study the relationships between dogs and their owners have known this particular bottom line for quite some time. As dog scientist Deborah Wells has observed, dogs can prevent us from becoming ill, can help us recover from being ill, and can even alert us that we may be about to become ill. Dog owners who suffer heart attacks are nearly nine times more likely to survive the following year than those who do not own dogs (cats do not help at all here). Therapy dogs decrease the stress levels, and increase the social interactions, of people lucky enough to be visited by them. The list goes on and on.

It is not just dog owners who benefit from interactions with their canine companions. Quite obviously, the dogs themselves benefit. In fact, the mutual benefits are so great that the phrase “dog owner” is not really an appropriate one because dogs own us as much as we own them. As Darcy Morey points out in the book you are about to read, the process of dog domestication was one in which members of different wolf societies adapted themselves to living in the environments that people created. At the same time as this was happening, members of different human societies adapted themselves to being in close presence of the offspring of wolves. The result was something we call dog domestication, but the situation is far richer than that since in a very real way dogs and people were domesticating each other for very mutual benefits.

We have no way of knowing what the human benefits were when this process was first happening. But as Morey points out, there are many,

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many possibilities: dogs to guard, dogs to help hunt, dogs to transport goods, dogs as food, perhaps dogs as symbols of relationships and beliefs that we cannot even imagine. There are so many possibilities, and so many possible ancestral wolf groups, that there is every reason to believe that the process happened multiple times. What we can be sure of, though, is that the ancestors of dogs were wolves, and that wolves had begun the process of converting themselves into dogs, and of people into dog consorts, by at least 14,000 years ago. The results of that process are all around us today, from Chihuahuas and Pomeranians to Saint Bernards and Great Danes. That all dogs were ultimately sired by wolves is made clear by multiple studies of the genetics of the group of mammals to which both dogs and wolves belong.

The U.S. Humane Society tells us that there are some 75 million dogs in the United States today and that about 40 percent of U.S. households have at least one of them. I do not know of any estimates of the number of free-ranging dogs in the United States, but numbers provided by Margaret Slater and her colleagues show that roughly 10 percent of the dogs in Italy are free-ranging. If the same proportions apply to the United States, that means that 90 percent of the dogs in this country have their very own human households. That is what domestication has done for these descendants of wolves, and I have already mentioned a few of the things they can do for us.

I have no idea how many people in those households know anything about the deeper history of their canine coresidents, but I would be surprised if many of them have thought about the ultimate origins of dogs and of the ways in which the complex interrelationships we have with them have developed through time. For those who are interested, this book will be of enormous value.

In his acknowledgments, Morey credits me with suggesting that he should write a book on dogs. It is true that I made this suggestion, but my motivation was selfish. Darcy Morey is one of the world's great experts on the history of dogs. When I want to check my facts on the earliest known dogs of any given part of the world, it is to his work that I turn. When I want to consult a critical evaluation of new claims for an ancient domesticated dog, it is to his work that I turn. When I want my students to read a balanced evaluation of dog prehistory, it is to his work that I turn.

What makes his work so valuable is not simply that he knows so much about dog skeletons and appropriate ways to analyze them. Others know such things as well. What makes it so valuable is that

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he adds to these technical skills knowledge about dog sociology and biology that is broad and deep, including an understanding of the relationships between dogs and people on a global scale.

In short, I suggested to Darcy that he write this book because I wanted to read it. Now that he has done so, and I have read it, I am thankful for the rare stroke of lucidity that led me to the suggestion. Before I read it, I thought I knew a lot about dogs. Now, I know a lot more and so will you. So, sit down with this book in hand, your dog next to you, and enjoy the rich pages that follow. This book is so interesting that you may not want a break from it. But if you need one, take your dog for a walk. The exercise will do you good, you will enjoy the social interactions you have along the way, and you will live longer. And remember that just as our ancestors domesticated the dog, so did your dog's ancestors domesticate us.

Donald K. Grayson
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PREFACE AND ACKNOWLEDGMENTS

This work is about what I have come to think of as the journey of the dog. That is, a major goal is to clarify just when and how the dog came into being, and what steps it took along the way to arrive at its modern destination. In a curious way, though, this is also a story about my own journey through the world of dog-related research for more than two decades. To a certain extent, the progression of topics covered here roughly parallels the course of developments in my dog-related research work.

In an ultimate sense, work on this book began more than twenty years ago, though I was not aware of it then. At that time I published my first paper on dogs (Morey 1986), as a graduate student at the University of Tennessee in Knoxville, a study concerning matters of taxonomic resolution from archaeological bones in the North American plains. Those as well as other taxonomic issues receive attention in Chapter 3. Subsequently, I was awarded a doctoral degree from the University of Tennessee, with a dissertation devoted to the evolution of the domestic dog as revealed especially from archaeological cranial remains (Morey 1990). That was my first synthetic effort devoted to the dog, and though it has its weaknesses, some of which bear noting, I also draw from it at several junctures during the course of this book. Those two early works presaged what became the regular production of published dog-related research, ranging from local and regional levels, all the way to the genuinely international level. Much of that work is addressed in this book, sometimes extensively. Prior to this book, my most recent study concerned the phenomenon of dog burials (Morey 2006). Chapter 7 in this volume elaborates and expands upon this topic. It is also the point at which the focus expands beyond archaeological considerations, and into the domains of biology and physiological psychology, including

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neuroscience. The objective in branching out is to address meaningfully the question of just why people and dogs related to each other so remarkably well, a circumstance leading to the routine burial of dogs when they die.

So many people have contributed to this effort that it is really not possible to do justice to them all. But rather than completely leave out anyone, I have chosen to divide them into two basic groups. The first group consists of those people who have either provided or steered me toward one or two sources that I have consulted and utilized, or they contributed in some other specific way. Those people I merely list alphabetically, in order to conserve space. This tactic should not be taken as a sign that expressing gratitude is merely a formality, for I am genuinely grateful for their help. I trust they understand that, as I thanked them warmly at the time. In any case, those people are Dan Amick, Mark Beech, Cliff and Donna Boyd, Susan Crockford, Chris Curcio, Chris Darwent, Jason Flay, Holger Funk, Elizabeth Garrett, Erika Hill, Jack Hofman, John Hoopes, Libby Huber, Dimitry Ivanoff, Noel Lanci, Karen Lange, Sophia Maines, Barbara Matt, Ann-Janine Morey, Donald and Martha Morey, Jennifer Myer, Ray Pierotti, Anthony Podberscek, Ivana Radovanović, Randy Ramer, Carolyn Rebbert, Gerald Schroedl, Mary Sorrick, Don Stull, Lyudmila Trut, Renee Walker, Diane Warren, Dixie West, and Elizabeth Wing. Beyond these individuals, the interlibrary services at the University of Tennessee in Martin and University of Kansas libraries have been instrumental in obtaining some sources that were not in their holdings. I am genuinely grateful to all of these individuals and library services, and now wish to acknowledge a second group of individuals who made especially major contributions. I indicate these individuals alphabetically as well.

First on this list is my Danish colleague Kim Aaris-Sørensen, a coauthor on a published paper that plays a conspicuous role in Chapter 6. But one of Kim's other notable contributions to this book is contained in Chapter 5. First, Kim sent to me a 1977 edited publication in Danish, with a piece by him. For a relevant passage in that piece, I roughed out a translation into English, and Kim substantially refined it. The translated passage is directly quoted in Chapter 5. Had Kim not assisted, the English translation would have been crude, at best, and inaccurate on a specific point. Kim also plays a notable role in Chapter 6, but in that case his distinctive contributions involve more than providing a source, or assisting with translation. For one thing, he retrieved from storage in Copenhagen a pair of distinctively modified archaeological

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dog mandibles that I had not seen in many years and rendered his judgment as to their significance, by that helping me avoid an unfortunate interpretive error. As for his other role in Chapter 6, I identify that contribution only at the appropriate juncture in that chapter. Elsewhere in the world, Claus Andreasen is deputy at the Greenland National Museum and Archives, in Nuuk. His relevance is that I was hoping to obtain a recent photograph of a distinctive set of bones representing a simulated dog sled and team from a particular archaeological site in Greenland. A picture of that set had been published earlier, but in an obscure 1933 report. I originally approached Bjarne Grønnow at the National Museum of Denmark, in Copenhagen, about this matter. Grønnow informed me that the entire collection from that particular site was no longer stored in Copenhagen, but had been transferred in recent years back to Greenland. Consequently, he provided the contact information for Andreasen, who located this distinctive set of old bones and arranged for the curator at that museum, Mikkel Myrup, to produce the desired new photograph, arranged much like the original. This excellent photograph appears in Chapter 6, and its special relevance becomes quite clear during the course of that chapter.

From Germany, Norbert Benecke provided some key assistance concerning an archaeological specimen known as the Bonn-Oberkassel dog, an important case that receives attention at different points in this volume. In fact, in summarizing Benecke's role, I can do little better than repeat my own words from the acknowledgments section of my most recently published dog paper: "I am especially grateful to Norbert Benecke, who generously shared important information with me, and in doing so, patiently accommodated my extraordinarily rudimentary capabilities in the German language" (Morey 2006: 171). In this instance he identified an important source in German (Street 2002), and kindly summarized its content in English. The importance of this knowledge becomes clear at different points, beginning with Chapter 2.

Linda Carnes-McNaughton was instrumental in facilitating my capacity to obtain a series of photographic images of prehistoric dog burials from the recently excavated Broad Reach site in North Carolina. One such dog burial appears in Chapter 7. It is one that I chose among several alternatives provided by Heather Millis. George Crothers, director of the William S. Webb Museum of Anthropology at the University of Kentucky, in Lexington, has been especially helpful. First, there appears in Chapter 7 a photographic image of a dog burial from the prehistoric Ward site in Kentucky. An image of this burial originally appeared in

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a report from long ago (Webb & Haag 1940: 82, figure 9). From the original negative of that photograph, curated at the Webb Museum, George arranged for the production of an enhanced image that appears in Chapter 7. In addition, George provided me with one of the last known copies of the original report, to clarify the context. Beyond that image, the front of this book is graced with an image of dog burial No. 1 from Indian Knoll, also in Kentucky, as previously provided by George for a publication in the *Journal of Archaeological Science* (Morey 2006: 163, figure 3). Like the Ward dog burial, this image was made from one of William Webb's original negatives that he enhanced. At a broader level, George saw to it that the Webb Museum's dog burial holdings were inventoried carefully, revealing some discrepancies between the originally reported numbers and the museum's holdings. I address those circumstances more fully in Chapter 7, and needless to say, I am grateful to be able to report the information as accurately as possible. Doing so has been possible only because of George.

Mark Derr, a professional writer and longtime devotee of dog-related work, has played an instrumental role. Derr has written entire books on dogs for the general reader (e.g., Derr 2004a, 2004b), the first of those initially appearing in the 1990s. Moreover, in his capacity as a writer, he regularly comments on ongoing scientific research, in magazine columns and newspapers. In conjunction with this aspect of his work, he has access to recent primary publications in the scientific literature, and he has provided me with several examples. Beyond Derr, I would be genuinely remiss not to thank Carl Falk. Though Carl provided only one specific piece of literature, he was, first of all, directly behind my very first foray into dog-related research (Morey 1986), the study that prompted the comment near the beginning of this preface, that in an ultimate sense, this book got started more than twenty years ago. Beyond that important role, Carl has shown almost unbelievable support and kindness in the aftermath of a genuinely horrific event in 2000 that nearly cost me my life (Morey et al. 2004; Maines 2006). Without such support and kindness, I doubt that this book would have happened.

I am also grateful to my Danish colleague, Anne Birgitte (Gitte) Gotfredsen, for her important help on more than one front. First, she directly provided copies of several relevant publications for this work. Because two of these are in Danish, quoting passages from them, which I have done, required translation into English. Like the work by Aaris-Sørensen

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noted earlier, I initially did the translation work, and Gotfredsen herself fine-tuned my work. As well, Gitte provided some organizational information that has been quite important in Chapter 6. Next, it was Don Grayson who initially put the idea in my head to accomplish such a book. Our association stems from late 1980s work in France, and although that work does not figure into this book, other work of Grayson's does, especially in Chapter 5. Tim Griffith also provided some indispensable help, calling attention to some important sources and directly providing one concerning the Ashkelon site, prominently featured in Chapter 7. As part of the presentation on the Ashkelon site, Chapter 7 also includes several original photographic images from there, taken during field work. Though Tim did not take the pictures, he directly facilitated my acquisition of them through his own work at Ashkelon and his association with Brian Hesse and Paula Wapnish, who kindly provided the photos.

Walter Klippel, my doctoral supervisor in the Department of Anthropology at the University of Tennessee, accessed an unpublished M.A. thesis in that department's holdings. From that document, he provided firsthand information that I call attention to in Chapter 7. My sister, Noralane (Laney) Lindor, has been especially helpful in a particular area. Laney is a medical doctor at the Mayo Clinic in Minnesota and has regular access to electronic search engines tailored to biomedical literature. By using different combinations of search terms, she was able to produce lengthy lists of references to potential sources. I identified many, tracked some down, and have used quite a few of them. Though several of these sources crop up at different points, by far the majority of them figure into a substantial section of Chapter 10. Quite simply, I am indebted to her.

Mike Logan, with the Department of Anthropology at the University of Tennessee, steered me to several sources that figure into Chapters 7 and 10. Mike also put me in contact with the right person, Phil Snow, whereby I obtained a photograph of the War Dog Memorial in Knoxville, Tennessee, that appears in Chapter 10. Additionally, he directly facilitated my capacity to acquire the image of a prehistoric anthropomorphized ceramic dog effigy from Mexico that appears in Chapter 5. The actual image resulted from the combined efforts of Randy Ramer, Shane Culpepper, and Jeremy Planteen, at the Gilcrease Museum in Tulsa, Oklahoma. In short, Mike Logan's role has been substantial on more than one front. I also received some valuable help from Georg Nyegaard

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at the Greenland National Museum and Archives in Nuuk. Georg provided some useful points of information as well as translation help on a newspaper piece in Danish that is featured near the end of Chapter 6. Additionally, he provided some useful information about a dog burial in Denmark that he helped to excavate some years ago. Bill Turner is also responsible for an important contribution. Working in Montgomery, Alabama, Bill was able to make complete photocopies of several 1940s vintage reports by William Webb and David DeJarnette that I almost certainly would not have obtained otherwise. I have drawn from all of these reports, and am truly grateful to him.

Finally, though they are certainly out of alphabetical order, I wish to express genuine gratitude to some other people. First, I thank Chris Darwent for her helpful input on an entire draft of this volume, input that has strengthened the presentation in several places. I am also grateful to the editor of this volume at Cambridge University Press, Chris Curcio. From the initial proposal to the final production, Chris has been a source of routine encouragement and advice, especially during a particularly vexing and unexpected complication that threatened to derail this project before it could be completed. I really don't have words that can adequately convey my gratitude. So I offer a simple thanks and trust he understands that I really mean that. Likewise, his editorial assistant, Glendaliz Camacho, has been genuinely helpful in certain stages of the process. Similarly, Shelby Peak, Ernie Haim, and Sara Black have been genuinely helpful in the later stages of production. Finally, a word to my wife, Beth McClellan, who has stuck with me through the worst of times and provided seemingly endless assistance with the development of this entire project. Thank you, Beth.

And now, it's time to stop talking about people and start talking about dogs. I hope you enjoy this effort.