

Preface to the second edition

This revision does not abandon the format of the first edition, and the objective of presenting a logical, meaningful and practical approach to the study of animal behavior remains. However, its contents have been expanded, enriched and I hope improved. The book is still a compilation of procedures, techniques and tools, and with the continued use of personal and borrowed philosophy it offers ways of thinking as well as doing. The chapters progress through the steps in ethology, proceeding from research questions through data collection and analysis to interpretation of results. This provides beginning students with a stepwise introduction while allowing experienced researchers to delve selectively into topics of special or timely interest.

Although the book has been updated, I have attempted to retain contact with the roots of ethology. For example, the data analysis sections have been updated and expanded, but I have emphasized that careful description of behavior is the mandatory precursor to rigorous experimentation and analysis. I retained some of the classic examples and figures that remain clearly illustrative of concepts and techniques. While I am confident that beginning researchers will encounter more recent examples, I fear that many of the time-honored examples which laid the foundations of ethology, and remain valid today, might too soon be forgotten.

Some areas have changed little since the first edition and others have shown ballistic morphogenesis, especially the advancements in electronic technology and computer software that can be applied to data collection and analysis. Although some of the electronic equipment described will be technologically outdated by the time of publication, it will not be outdated in terms of usefulness to most ethologists. With both technology and techniques, I have described 'modern sophisticated' approaches without abandoning the discussion of traditional methods; much can still be accomplished by ethologists with the motivation to develop the observational and data recording skills necessary to better utilize their binoculars, notebooks and pencils.

Two topics have been greatly amplified in this edition. First, I expanded the statistics chapter in response to requests by students and other colleagues. They expressed a continuing need for a more complete, yet simple and straightforward,

presentation of experimental design and nonparametric statistics that is illustrated with ethological examples. To that end, I have unabashedly described the selection and use of experimental designs and nonparametric statistical tests in a 'cookbook' format; for advanced researchers, there is an abundance of textbooks with more complex and theoretical treatments.

Secondly, I took the model of animal behavior introduced in the first edition and expanded the discussion of its development and application into an entire chapter. With continued thought and application, the prototype evolved into the conceptual Model for a Behavioral Act. Over several years, the model has helped students in my introductory animal behavior class better understand 'how behavior works', and assisted graduate students and colleagues in conceptualizing, designing and conducting ethological research. I acknowledge that I have merely reassembled 'bits-and-pieces' from various sources in constructing the model. I cannot count myself among those very few individuals who are blessed with a handful of unique ideas in their lifetime – ideas that change the course of inquiry and understanding or move them ahead in leapfrog fashion. Most of us are destined to rediscover, reformulate and build on our ideas one brick at a time; but as Goethe said, we can still be part of the game:

All truly wise thoughts have been thought already thousands of times;
but to make them truly ours, we must think them over again honestly,
until they take root in our personal experience.

I started gathering material for this revision several years ago, but the enormous growth in literature describing the use of various methods and new equipment seemed destined to outpace my ability to select, sort, compile, distill and discuss that information. I probably would have stumbled to a halt without the encouragement of numerous novice and experienced ethologists, many of whom I know only through correspondence. I thank all of you.

In the final stages, I received valuable criticism and comments on various topics and chapters from the following: Marc Bekoff, Ivan Chase, Vic DeGhett, Jim Ha, Jack Hailman, Dennis Henry, Suzanne Johnson, Dale Lott, Barb Maynard, Ray Sterner, and Bill Wright. A special thanks goes to my 1994 Ethological Methods class for their valuable advice on clarification and presentation. As always, the responsibility for all errors of omission and commission is mine. I am also indebted to my editor Tracey Sanderson who has guided me throughout in ways too numerous to relate. Special thanks to Christy Kimpo for the indexing.

Throughout the book I have occasionally injected snippets of levity which are not only illustrative (in the manner of a Gary Larson cartoon), but also provided oases of frivolity for me as I was writing. When you encounter these passages, underscore the message, not the mirth, for in no case is the amusement meant to

devalue the topic. With that in mind, a final acknowledgement goes to my special friends, George and Jack from Tennessee and Jim from Kentucky, who never failed to comfort me after an arduous day in the field and who added an inner glow to the warmth of the many campfires we shared whenever there was a 'nip' in the air.

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