

# Sperm Competition in Birds

Evolutionary Causes and Consequences



T. R. BIRKHEAD and A. P. MÖLLER

# Sperm Competition In Birds Evolutionary Causes And Consequences

**Linda Mealey**



## **Sperm Competition In Birds Evolutionary Causes And Consequences:**

**Sperm Competition in Birds** T. R. Birkhead, Anders Pape Møller, 1992 Sperm competition is a central part of sexual selection and will therefore be of interest to all behavioral ecologists since the topics discussed here include many that are applicable to other animal groups The text is supported by numerous photographs diagrams tables and outstanding illustrations by David Quinn Sperm Competition in Birds addresses the following topics Both functional and causal aspects of the subject The importance of sperm competition in different avian mating systems The relationship between sperm competition and male and female reproductive anatomy and physiology copulation patterns and paternity guards The costs and benefits of copulating with multiple partners for both males and females The relationship between multiple mating and paternity and the far reaching evolutionary consequences of sperm competition *Sperm Competition and Its Evolutionary Consequences in the Insects* Leigh W. Simmons, 2019-12-31 One hundred years after Darwin considered how sexual selection shapes the behavioral and morphological characteristics of males for acquiring mates Parker realized that sexual selection continues after mating through sperm competition Because females often mate with multiple males before producing offspring selection favors adaptations that allow males to preempt sperm from previous males and to prevent their own sperm from preemption by future males Since the 1970s this area of research has seen exponential growth and biologists now recognize sperm competition as an evolutionary force that drives such adaptations as mate guarding genital morphology and ejaculate chemistry across all animal taxa The insects have been critical to this research and they still offer the greatest potential to reveal fully the evolutionary consequences of sperm competition This book analyzes and extends thirty years of theoretical and empirical work on insect sperm competition It considers both male and female interests in sperm utilization and the sexual conflict that can arise when these differ It covers the mechanics of sperm transfer and utilization morphology physiology and behavior Sperm competition is shown to have dramatic effects on adaptation in the context of reproduction as well as far reaching ramifications on life history evolution and speciation Written by a top researcher in the field this comprehensive up to date review of the evolutionary causes and consequences of sperm competition in the insects will prove an invaluable reference for students and established researchers in behavioral ecology and evolutionary biology **Sperm Competition and Sexual Selection** Tim R. Birkhead, Anders Pape Møller, 1998-08-12 Sperm Competition and Sexual Selection presents the intricate ways in which sperm compete to fertilize eggs and how this has prompted reinterpretations of breeding behavior This book provides a theoretical framework for the study of sperm competition which is a central part of sexual selection It also discusses the roles of females and the relationships between paternal care in sperm competition The chapters focusing on taxonomic development are diverse and cover all the major animal groups both vertebrate and invertebrate and plants The final chapter provides an overview discussing the relationship between sperm competition and sexual selection in terms of both function and mechanism and how these translate into species fitness This book will be of

prime interest to behaviorists ecologists and evolutionary biologists suggesting new avenues of research and new ways of approaching old problems The only up to date summary of a central and popular subject Well known editors and authors Provides a theoretical framework for the study of sperm competition Covers all major animal groups Includes a chapter on plants

***Sperm Competition in Humans*** Nicholas Pound,2006 This volume presents the intricate ways in which sperm compete to fertilize eggs and how this has prompted reinterpretations of breeding behavior from a biological perspective

***Sperm Competition in Humans Classic and Contemporary Readings*** provides a theoretical framework for the study of sperm competition and also discusses the roles of females and the relationships between paternal care in sperm competition The chapters focus on everything from evolutionary biology to taxonomic development

***Sexual Selection in Primates*** Peter M. Kappeler,Carel P. van Schaik,2004-05-13 Sexual Selection in Primates provides an account of all aspects of sexual selection in primates combining theoretical insights comprehensive reviews of the primate literature and comparative perspectives from relevant work on other mammals birds and humans Topics include sex roles sexual dimorphism in weapons ornaments and armaments sex ratios sex differences in behaviour and development mate choice sexual conflict sex specific life history strategies sperm competition and infanticide The outcome of the evolutionary struggle between the sexes the flexibility of roles and the leverage of females are discussed and emphasised throughout Sexual Selection in Primates is aimed at graduates and researchers in primatology animal behaviour evolutionary biology and comparative psychology

***Biology of Breeding Poultry*** Paul M. Hocking,2009 This book reviews the biological science and background to breeding meat poultry specifically broiler turkey and duck These commercial birds have been changed by genetic selection to such an extent that they are substantially different from traditional breeds and laying hens Covering science management and husbandry systems this book is an essential reference for researchers and students in animal science as well as technical staff of breeding companies and poultry meat producers Part of the Poultry Science Symposium Series

***Advances in the Study of Behavior*** H. Jane Brockmann,Timothy J. Roper,Marc Naguib,Katherine E. Wynne-Edwards,Chris Barnard,John Mitani,2011-07-29 Advances in the Study of Behavior was initiated over 40 years ago to serve the increasing number of scientists engaged in the study of animal behavior That number is still expanding This volume makes another important contribution to the development of the field by presenting theoretical ideas and research to those studying animal behavior and to their colleagues in neighboring fields This volume reflects many of the current themes in animal behavior including the evolution of social behavior sexual selection and communication It also reflects controversial topics on which the authors provide interesting new insights Advances in the Study of Behavior is now available online at ScienceDirect full text online from volume 30 onwards

***The Archaeology of Human Ancestry*** Stephen Shennan,James Steele,2005-08-15 Human social life is constrained and defined by our cognitive and emotional dispositions which are the legacy of our foraging ancestors But how difficult is it to reconstruct the social systems and cultural traditions of those ancestors The Archaeology

of Human Ancestry provides a stimulating and provocative answer in which archaeologists and biological anthropologists set out and demonstrate their reconstructive methods Contributors use observations of primates and modern hunter gatherers to illuminate the fossil and artefactual records Thematic treatment covers the evolution of group size group composition and the emotional structure of social bonds sexual dimorphism and the sexual division of labour and the origins of human cultural traditions The Archaeology of Human Ancestry is an essential introduction to the subject for advanced undergraduates and researchers in archaeology and biological anthropology It will also be used by workers in psychology sociology and feminist studies as a resource for understanding human social origins

**Violent Offenders: Theory, Research, Policy, and Practice** Matt DeLisi, Peter Conis, 2011-07-20 Although the public interest in criminal predators is extensive the criminology of criminal predators is fragmented Violent Offenders Theory Research Policy and Practice Second Edition aims to demystify the many different types of violent offenders we hear about in the media This newly revised and updated Second Edition is a compilation of original scholarship from an international collection of applied and academic criminologists Based not only on history and academic research but also on the experiences of author Peter Conis as a 25 year veteran of law enforcement it provides students with a realistic view of why people commit violent crimes and how our criminal justice system as a whole responds to these offenders and these violent acts It contains cutting edge material on the broad category of criminal predators including homicide offenders sex offenders financial predators and conventional street criminals Unlike other texts on the subject that narrowly focus on one type of criminal e g serial killers this updated Second Edition illustrates the systemic importance of predation in antisocial behavior This book is divided into two parts part one covers the theoretical and disciplinary foundations of the study of violent behavior spanning the disciplines of sociology psychology biology and neuroscience Part two covers the policy and practice of responding to violent offenders from the insightful perspectives of people who work among them on a daily basis New and Key Features of the Second Edition Contains 10 NEW chapters 5 in theory and research and 5 in policy and practice These additions provide greater overall coverage of sociological theory evolutionary psychology theory and female offenders The section on policy and practice is organized to be consistent with the criminal justice system from law enforcement through the courts to corrections Hands on research and practitioner expertise illustrate today s study of criminal predation Provides clear explanations of how criminological theory relates to the formation of a criminal offender to help students understand the reasons behind a person s violent actions

**Parental Care: Evolution, Mechanisms, And Adaptive Significance** ,1996-11-18 Advances in the Study of Behavior presents its first thematic volume focusing on the physiological and behavioral mechanisms underlying parental care The book discusses parental care both within and across taxa with coverage of invertebrates and early vertebrates fishes amphibia reptiles mammals birds and nonhuman primates A running theme throughout the chapters shows that parental care is anchored to the ecology reproductive physiology and embryonic development of a species Coverage also includes mechanisms of parental

care including analysis of the stimuli that parents respond to and how parental care is initiated maintained and terminated Individual differences within species are also explored examining stable differences in maternal style how they arise and the consequences for both mother and infant

**Alternative Reproductive Tactics** Rui F. Oliveira, Michael Taborsky, H. Jane Brockmann, 2008-03-13 The study of alternative reproductive tactics the behavioural strategies used by individuals to increase their reproductive success is an evolutionary puzzle and one of great interest to researchers For instance why do some males guard both nest and eggs while others sneak into nests while pairs are spawning and fertilise those eggs The field offers a special opportunity to study the evolution and functional causes of phenotypic variation which is a general problem in the field of evolutionary biology By integrating both mechanistic psychological and evolutionary behavioural ecology perspectives and by covering a great diversity of species Alternative Reproductive Tactics addresses this integrated topic of longstanding interest bringing together a multitude of otherwise scattered information in an accessible form that is ideal for graduate students and researchers

**Cuckoos, Cowbirds and Other Cheats** Nick Davies, 2010-09-30 This fascinating study describes the natural histories of these brood parasites and examines many of the exciting questions they raise about the evolution of cheating and the arms race between parasites and their prey Brood parasites fill their armoury with adaptations including exquisite egg mimicry rapid laying ejection of host eggs murder of host young chick mimicry and manipulative begging behaviour ploys shown by recent research to have evolved in response to host defence behaviour or through competition among the parasites themselves While many host species appear defenceless accepting parasite eggs quite unlike their own many are more discriminating against odd looking eggs and some have evolved the ability to discriminate against odd looking chicks as well How is this arms race conducted Will defenceless hosts develop defences in time or are there constraints which limit the evolution and perfection of host defences And why are so few species obliged only to lay eggs in host nests Have host defences limited the success of brood parasitism or is it in fact much more common than we suspect but occurring mainly when birds parasitize the nest of their own kind All of these puzzles are examined in descriptions of the natural history of each of the groups of parasites in turn Here is a book with wide appeal both to amateur naturalists fascinated by this most singular and macabre of behaviours and by ornithologists and ecologists interested in the evolution of ecology and behaviour The story takes us from the classic field work by pioneer ornithologists such as Edgar Chance Stuart Baker Herbert Friedmann and others through to the experimental field work and molecular techniques of today's leading scientists We visit brood parasites in Europe Asia Japan Africa Australasia and North and South America to look at some of the world's most interesting birds and some of biology's most interesting questions many of which still beg answers from ornithologists in the future Brilliant illustrations by David Quinn illuminate the species discussed showing many behaviours never before illustrated and conveying the thrill of watching these astonishing birds in the wild

Biological Exuberance Bruce Bagemihl, 2025-09-23 A Publishers Weekly Best Book One of the New York Public Library's

25 Books to Remember for 1999 Lavishly illustrated and meticulously researched filled with fascinating facts and astonishing descriptions of animal behavior Bruce Bagemihl's *Biological Exuberance* is a landmark book that will change forever how we look at nature Homosexuality in its myriad forms has been scientifically documented in more than 450 species of mammals birds reptiles insects and other animals worldwide *Biological Exuberance* is the first comprehensive account of the subject bringing together accurate accessible and nonsensationalized information Drawing upon a rich body of zoological research spanning more than two centuries Bagemihl shows that animals engage in all types of nonreproductive sexual behavior Sexual and gender expression in the animal world displays exuberant variety including same sex courtship pair bonding sex and co parenting even instances of lifelong homosexual bonding in species that do not have lifelong heterosexual bonding Part 1 A Polysexual Polygendered World begins with a survey of homosexuality transgender and nonreproductive heterosexuality in animals and then delves into the broader implications of these findings including a valuable perspective on human diversity Bagemihl also examines the hidden assumptions behind the way biologists look at natural systems and suggests a fresh perspective based on the synthesis of contemporary scientific insights with traditional knowledge from indigenous cultures Part 2 A Wondrous Bestiary profiles more than 190 species in which scientific observers have noted homosexual or transgender behavior Each profile is a verbal and visual snapshot of one or more closely related bird or mammal species containing all the documentation required to support the author's often controversial conclusions

**Encyclopedia of Animal Behavior**, 2009-04-01 The Encyclopedia of Animal Behavior Three Volume Set has engaged with great success the efforts of many of the best behavioral biologists of the 21st century Section editors drawn from the most accomplished behavioral scientists of their generation have enrolled an international cast of highly respected thinkers and writers all of whom have taken great care and joy in illuminating every imaginable corner of animal behavior This comprehensive work covers not only the usual topics such as communication learning sexual selection navigation and the history of the field but also emerging topics in cognition animal welfare conservation and applications of animal behavior The large section on animal cognition brings together many of the world's experts on the subject to provide a comprehensive overview of this rapidly developing area Chapters relating to animal welfare give a full view of behavioral interactions of humans with companion animals farm animals and animals in the wild The key role of animal behavior in conservation biology receives broad attention including chapters on topics such as the effects of noise pollution captive breeding and how the behavioral effects of parasites interacts with conservation issues Animal behavior in environmental biology is highlighted in chapters on the effects of endocrine disruptors on behavior and a large number of chapters on key species such as wolves chimpanzees hyenas and sharks Clear accessible writing complements a wealth of information for undergraduate college students about the essential concepts of animal behavior and the application of those concepts across the field In depth coverage of concepts methods and exemplar organisms serves the needs of graduate students and professionals in the field

From the use of behavior in assessing the welfare of pigs to the social behavior of insects from animal empathy to bat brains this authoritative reference with its in depth introductory articles rich array of illustrations interactive cross referenced links and numerous suggested readings can guide the student or the professional to an expanded appreciation of the far flung world of animal behavior An invaluable tool for teaching and a source of enrichment and detail for any topic covered in an animal behavior course the Encyclopedia of Animal Behavior is the definitive reference work in its field and will be for years to come Comprehensive work which covers the usual topics along with emerging areas of animal behavior This encyclopedia contains clear accessible writing and is well illustrated including an online video complimenting a wealth of information As an online reference this work will be subject to period updating This ensures that the work always remains current Contains in depth introductions to the material that make each well illustrated section come alive with the best the new content the discipline has to offer Glossary includes a compendium of behavioral terms that form a succinct mosaic of virtually every concept and phenomenon related to animal behavior Section editors drawn from around the world represent the best and the brightest among today s behavioral biologists and have recruited a broad range of internationally recognized experts Editors in Chief are experienced scientists and writers who between them have authored or edited eight books and teach courses in animal behavior at their respective universities

**Competition** P.A. Keddy, 2012-12-06 Competition is one of the most important factors controlling the distribution and abundance of living creatures Sperm cells racing up reproductive tracts beetle larvae battling inside single seeds birds defending territories and trees interfering with the light available to neighbours are all engaged in competition for limited resources Along with predation and mutualism competition is one of the three major biological forces that assemble living communities Recent experimental work much of it only from the last few decades has enhanced human knowledge of the prevalence of competition in nature There are acacia trees that use ants to damage vines beetles that compete in arenas for access to dung balls tadpoles that apparently poison their neighbours birds that smash the eggs of potential competitors and plants that associate with fungi in order to increase access to soil resources While intended as an up to date reference work on the state of this branch of ecology the many non technical examples will make interesting reading for those with a general interest in nature Greatly expanded from the first prize winning edition there are entirely new chapters including one on resources and another on competition gradients in nature The author freely ranges across all major taxonomic groups in search of evidence The question of whether competition occurs is no longer useful the author maintains rather the challenge is to determine when and where each kind of competition is important in natural systems For this reason variants of competition such as intensity asymmetry and hierarchies are singled out for particular attention The book concludes with the difficulties of finding general principles in complex ecological communities and illustrates the limitations on knowledge that arise out of the biased conduct of scientists themselves Competition can be found elsewhere in living systems other than ecological communities at sub microscopic



scales in the interactions of enzymes and neural pathways and over large geographic areas in the spread of human populations and contrasting ideas about the world Human societies are therefore also examined for evidence of the kinds of competition found among other living organisms Using an array of historical examples including Biblical conflicts the use of noblemen's sons in the Crusades the Viking raids in Europe strategic bombing campaigns in the Second World War and ethnic battles of the Balkans the book illustrates how most of the aspects of competition illustrated with plants and animals can be extended to the interactions of human beings and their societies

**The Avian Migrant** John H. Rappole, 2013-06-11  
The purpose of migration regardless of the distance involved is to exploit two or more environments suitable for survival or reproduction over time usually on a seasonal basis Yet individual organisms can practice the phenomenon differently and birds deploy unique patterns of movement over particular segments of time Incorporating the latest research on bird migration this concise critical assessment offers contemporary readers a firm grasp of what defines an avian migrant how the organism came to be what is known about its behavior and how we can resolve its enduring mysteries John H Rappole's sophisticated survey of field data clarifies key ecological biological physiological navigational and evolutionary concerns He begins with the very first migrants who traded a home environment of greater stability for one of greater seasonality and uses the structure of the annual cycle to examine the difference between migratory birds and their resident counterparts He ultimately connects these differences to evolutionary milestones that have shaped a migrant lifestyle through natural selection Rather than catalogue and describe various aspects of bird migration Rappole considers how the avian migrant fits within a larger ecological frame enabling a richer understanding of the phenomenon and its critical role in sustaining a hospitable and productive environment Rappole concludes with a focus on population biology and conservation across time periods considering the link between bird migration and the spread of disease among birds and humans and the effects of global warming on migrant breeding ranges reaction norms and macroecology

*Sex Differences* Linda Mealey, 2000-04-13  
*Sex Differences* serves as an advanced text for courses in evolutionary and human biology psychology and sexuality and gender studies It also serves as a reference source for academic professionals in these disciplines The book covers the evolution of sex and sex differences and sex differences and sexual strategies in non human and human animals The final chapter addresses issues of sex and gender in interpersonal relationships organizations and politics Diagrams graphs charts and tables illustrate key concepts cartoons and photos provide visual breaks and an element of humor Examines sexual differences from a multi level comparative approach Contains a thorough coverage of literature through 1998 and into 1999 Illustrates pages with a generous use of cartoons photos figures and diagrams Invites bonus learning with special interest boxes interspersed throughout text Presents a critical analysis Includes a combination of feminist and evolutionary thinking

Sexual Selection Malte Andersson, 2019-12-31 Bright colors enlarged fins feather plumes song horns antlers and tusks are often highly sex dimorphic Why have males in many animals evolved more conspicuous ornaments signals and weapons

than females How can such traits evolve although they may reduce male survival Such questions prompted Darwin's perhaps most scientifically controversial idea the theory of sexual selection It still challenges researchers today as they try to understand how competition for mates can favor the variety of sex dimorphic traits Reviewing theoretical and empirical work in this very active field Malte Andersson a leading contributor himself provides a major up to date synthesis of sexual selection The author describes the theory and its recent development examines models methods and empirical tests and identifies many unsolved problems Among the topics discussed are the selection and evolution of mating preferences relations between sexual selection and speciation constraints on sexual selection and sex differences in signals body size and weapons The rapidly growing study of sexual selection in plants is also reviewed This volume will interest students teachers and researchers in behavioral ecology and evolutionary biology *Advances in the Study of Behavior* Marc Naguib, John C. Mitani, H. Jane Brockmann, Leigh W. Simmons, Timothy J. Roper, 2011-05-24 Annotation *Advances in the Study of Behavior* was initiated over 40 years ago to serve the increasing number of scientists engaged in the study of animal behavior That number is still expanding This thematic volume makes another important contribution to the development of the field by bringing together material that aggregates studies conducted on the behavior of tropical animals *Advances in the Study of Behavior* is now available online at ScienceDirect full text online from volume 30 onward **Cephalopod Research Across Scales - Molecules to Ecosystems, 2nd edition** Erica A. G. Vidal, Rui Rosa, Graziano Fiorito, 2021-12-01 Publisher's note In this 2nd edition the following article has been added Vidal EAG Rosa R and Fiorito G 2021 Editorial Cephalopod Research Across Scales Molecules to Ecosystems *Front Physiol* 12 752075 doi 10.3389/fphys.2021.752075

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