

Life History Evolution And Sociology The Biological Backstory Of Coming Apart The State Of White America 196

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Does Aging Stop? Laurence D. Mueller
2011-07-29 Does Aging Stop? shatters the conventional beliefs on which aging research has been based for the last fifty years.

Human Senescence Douglas E. Crews
2003-12-11 Much research on the biology of senescence is on cell-lines, nematodes or fruit flies, that are only of peripheral relevance to the problems encountered in humans. Human Senescence is a text which reviews the evolutionary biology of human senescence and life span, and the evolutionarily recent development of late-life survival. It examines how human patterns of and variability in growth and development have altered later life survival probabilities and competencies, and how survival during mid-life contributes to senescent dysfunction and alteration. Discussing possibilities of further extending

human life span, it gives a better understanding of how humans came to senesce as slowly as we do over our lifespan. Bringing together gerontological, anthropological and biocultural research, it explores human variation in chronic disease, senescence and life span as outcomes of early life adaptation and the success of humankind's sociocultural evolution. It is a benchmark publication for all interested in how and why we age.

Life Histories Gary A. Wellborn 2018
Crustaceans are increasingly used as model organisms in all fields of biology, as few other taxa exhibit such a variety of body shapes and adaptations to particular habitats and environmental conditions. Life Histories is the fifth volume in The Natural History of the Crustacea series. An understanding of life histories is crucial to understanding the biology of this fascinating invertebrate group. Written by

internationally recognized experts studying a wide range of crustacean taxa and topics, this volume synthesizes current research in a format that is accessible to a wide scientific audience.

A Primer of Life Histories Jeffrey A.

Hutchings 2021-09-15 Life histories can be defined as the means by which individuals (or more precisely genotypes) vary their age- or stage-specific expenditures of reproductive effort in response to genetic, phenotypic, and environmental correlates of survival and fecundity. Life histories reflect the expression of traits most closely related to individual fitness, such as age and size at maturity, number and size of offspring, and the timing of the expression of those traits throughout an individual's life. In addition to addressing questions of fundamental importance to ecology and evolution, life-history research plays an integral role in species conservation and management. This

accessible primer encompasses the basic concepts, theories, and applied elements of life history evolution, including patterns of trait variability, underlying mechanisms of plastic/evolutionary change, and the practical utility of life-history traits as metrics of species/population recovery, sustainable exploitation, and risk of extinction. Empirical examples are drawn from the entire spectrum of life. A Primer of Life Histories is designed for readers from a broad range of academic backgrounds and experience including graduate students and researchers of ecology and evolutionary biology. It will also be useful to a more applied audience of academic/government researchers in fields such as wildlife biology, conservation biology, fisheries science, and the environmental sciences.

Oxford Bibliographies

Behaviour and Evolution Marion Hall

1998-11-25 This volume examines a variety

of aspects of animal behavior and analyzes the underlying relationship between behavior and evolution. Studying behavior draws upon the work of scientists from a number of disciplines, all seeking to answer the question of why an animal behaves in the way it does. The possible answers to this question development, survival value, evolutionary history, and cause-and-effect are explored in this easy-to-read introduction to behavior and evolution.

Rereading the Fossil Record David Sepkoski 2015-03-05 *Rereading the Fossil Record* presents the first-ever historical account of the origin, rise, and importance of paleobiology, from the mid-nineteenth century to the late 1980s. Drawing on a wealth of archival material, David Sepkoski shows how the movement was conceived and promoted by a small but influential group of paleontologists and examines the intellectual, disciplinary, and political

dynamics involved in the ascendancy of paleobiology. By tracing the role of computer technology, large databases, and quantitative analytical methods in the emergence of paleobiology, this book also offers insight into the growing prominence and centrality of data-driven approaches in recent science.

Evolutionary Ecology Charles W. Fox 2001-10-19 *Evolutionary Ecology* simultaneously unifies conceptual and empirical advances in evolutionary ecology and provides a volume that can be used as either a primary textbook or a supplemental reading in an advanced undergraduate or graduate course. The focus of the book is on current concepts in evolutionary ecology, and the empirical study of these concepts. The editors have assembled a group of prominent biologists who have made significant contributions to this field. They both synthesize the current state of

knowledge and identity areas for future investigation. Evolutionary Ecology will be of general interest to researchers and students in both ecology and evolutionary biology. Researchers in evolutionary ecology that want an overview of the current state of the field, and graduate students that want an introduction the field, will find this book very valuable. This volume can also be used as a primary textbook or supplemental reading in both upper division and graduate courses/seminars in Evolutionary Ecology. *Principles of Social Evolution* Andrew F.G. Bourke 2011-01-06 Investigates and sets out the common principles of social evolution operating across all taxa and levels of biological organisation.

Theoretical Approaches in Bioarchaeology Colleen M. Cheverko 2020-08-21 Theoretical Approaches in Bioarchaeology emphasizes how several

different theoretical perspectives can be used to reconstruct the biocultural experiences of humans in the past. Over the past few decades, bioarchaeology has been transformed through methodological revisions, technological advances, and the inclusion of external theoretical frameworks from the social and natural sciences. These interdisciplinary perspectives became the backbone of bioarchaeology and strengthened the discipline's ability to address questions about past biological and social dynamics. Consequently, how, why, and when to apply external theory to studies of past populations are central and timely questions tied to future developments of the discipline. This book facilitates ongoing dialogues about theoretical applications within the field and interdisciplinary connections between bioarchaeology, biological anthropology, and other disciplines. Each chapter

highlights how a theoretical framework originating from a social or natural science connects to past and future bioarchaeological research. For scholars and archaeologists interested in the theoretical applications of bioarchaeology, this book will be an excellent resource.

The Evolution of Parental Care Nick J. Royle 2012-08-09 Parental care based on contributions from some of the top researchers in the field. It provides evidence that the dynamic nature of family interactions, and particularly the potential for co-evolution among family members, has contributed to the great diversity of forms of parental care and life-histories across as well as within taxa. *The Evolution of Parental Care* aims to stimulate students and researchers alike to pursue exciting new directions in this fascinating and important area of behavioural and evolutionary biology. It will be of relevance

and use to those working in the fields of animal behaviour, ecology, evolution, and genetics, as well as related disciplines such as psychology and sociology. Readership: Suitable for researchers and students working in the fields of animal behaviour, ecology, evolution, and genetics, as well as related disciplines such as psychology and sociology.

Specialization, Speciation, and Radiation Kelley Jean Tilmon 2008 This volume captures the state-of-the-art in the study of insect-plant interactions, and marks the transformation of the field into evolutionary biology. The contributors present integrative reviews of uniformly high quality that will inform and inspire generations of academic and applied biologists. Their presentation together provides an invaluable synthesis of perspectives that is rare in any discipline.-- Brian D. Farrell, Professor of Organismic

and Evolutionary Biology, Harvard University Tilmon has assembled a truly wonderful and rich volume, with contributions from the lion's share of fine minds in evolution and ecology of herbivorous insects. The topics comprise a fascinating and deep coverage of what has been discovered in the prolific recent decades of research with insects on plants. Fascinating chapters provide deep analyses of some of the most interesting research on these interactions. From insect plant chemistry, behavior, and host shifting to phylogenetics, co-evolution, life-history evolution, and invasive plant-insect interaction, one is hard pressed to name a substantial topic not included. This volume will launch a hundred graduate seminars and find itself on the shelf of everyone who is anyone working in this rich landscape of disciplines.--Donald R. Strong, Professor of Evolution and Ecology, University of

California, Davis Seldom have so many excellent authors been brought together to write so many good chapters on so many important topics in organismic evolutionary biology. Tom Wood, always unassuming and inspired by living nature, would have been amazed and pleased by this tribute.--Mary Jane West-Eberhard, Smithsonian Tropical Research Institute
The New Evolutionary Sociology Jonathan H. Turner 2018-03-09 For decades, evolutionary analysis was overlooked or altogether ignored by sociologists. Fears and biases persisted nearly a century after Auguste Comte gave the discipline its name, as did concerns that its effect would only reduce sociology to another discipline - whether biology, psychology, or economics. Worse, apprehension that the application of evolutionary theory would encourage heightened perceptions of racism, sexism, ethnocentrism and

reductionism pervaded. Turner and Machalek argue instead for a new embrace of biology and evolutionary analysis. Sociology, from its very beginnings in the early 19th century, has always been concerned with the study of evolution, particularly the transformation of societies from simple to ever-more complex forms. By comprehensively reviewing the original ways that sociologists applied evolutionary theory and examining the recent renewal and expansion of these early approaches, the authors confront the challenges posed by biology, neuroscience, and psychology to distinct evolutionary approaches within sociology. They emerge with key theoretical and methodological discoveries that demonstrate the critical - and compelling - case for a dramatically enriched sociology that incorporates all forms of comparative evolutionary analysis to its canon and study of sociocultural phenomena.

Urban Evolutionary Biology Marta Szulkin 2020-05-05 Urban Evolutionary Biology fills an important knowledge gap on wild organismal evolution in the urban environment, whilst offering a novel exploration of the fast-growing new field of evolutionary research. The growing rate of urbanization and the maturation of urban study systems worldwide means interest in the urban environment as an agent of evolutionary change is rapidly increasing. We are presently witnessing the emergence of a new field of research in evolutionary biology. Despite its rapid global expansion, the urban environment has until now been a largely neglected study site among evolutionary biologists. With its conspicuously altered ecological dynamics, it stands in stark contrast to the natural environments traditionally used as cornerstones for evolutionary ecology research. Urbanization can offer a great

range of new opportunities to test for rapid evolutionary processes as a consequence of human activity, both because of replicate contexts for hypothesis testing, but also because cities are characterized by an array of easily quantifiable environmental axes of variation and thus testable agents of selection. Thanks to a wide possible breadth of inference (in terms of taxa) that may be studied, and a great variety of analytical methods, urban evolution has the potential to stand at a fascinating multi-disciplinary crossroad, enriching the field of evolutionary biology with emergent yet incredibly potent new research themes where the urban habitat is key. Urban Evolutionary Biology is an advanced textbook suitable for graduate level students as well as professional researchers studying the genetics, evolutionary biology, and ecology of urban environments. It is also highly relevant to urban ecologists and

urban wildlife practitioners.

Evolutionary Aesthetics of Human Ethics in Hardy's Tragic Narratives Rıza Öztürk 2011-05-25 Treatment of Hardy's tragic narratives under the objective lens of evolutionary literary theory has led to three basic findings: First, within the scope of the analysis of the five major tragic narratives, representation of Hardy's evolutionary aesthetics of human ethics, in terms of altruistic sympathy and compassion, shows that adapted parental investment in children indicates the reason why women submit to pain and suffering more than the men do. The costly investment of women in maternal behaviour leads to submission in many cases, but in return they gain better fitness for survival and reproduction than men. This is implicitly highlighted as a force of superiority in the tragedies studied, as the male characters often invest in heroic deeds over their children. Second, that

which has for many years been identified as pessimism in Hardy's tragic narratives is in fact a surface cognitive layer, under which is an implicit teaching of evolutionary aesthetics of human ethics, which guides to a true fitness of human life. Third, sympathy and particularly compassion are not only human emotions but also adapted cognitive virtues that centre on ethical teaching. Thus, an integrated model of science and humanities for art and literary analysis is required to address not only those of English language and literature departments, but also those aligned to the idea of integrating the two methods. A scientific and objective view of human life is in opposition to postmodern and structuralist approaches, which have generally been considered as the centre of interest during the latter half of the 20th century.

Sewall Wright and Evolutionary Biology

William B. Provine 1986 "Provine's thorough and thoroughly admirable examination of Wright's life and influence, which is accompanied by a very useful collection of Wright's papers on evolution, is the best we have for any recent figure in evolutionary biology."—Joe Felsenstein, *Nature* "In *Sewall Wright and Evolutionary Biology* . . . Provine has produced an intellectual biography which serves to chart in considerable detail both the life and work of one man and the history of evolutionary theory in the middle half of this century. Provine is admirably suited to his task. . . . The resulting book is clearly a labour of love which will be of great interest to those who have a mature interest in the history of evolutionary theory."—John Durant, *ITimes Higher Education Supplement*;

Life History Evolution Steven C. Hertler
2018-07-04 The social sciences share a mission to shed light on human nature and

society. However, there is no widely accepted meta-theory; no foundation from which variables can be linked, causally sequenced, or ultimately explained. This book advances “life history evolution” as the missing meta-theory for the social sciences. Originally a biological theory for the variation between species, research on life history evolution now encompasses psychological and sociological variation within the human species that has long been the stock and trade of social scientific study. The eighteen chapters of this book review six disciplines, eighteen authors, and eighty-two volumes published between 1734 and 2015—re-reading the texts in the light of life history evolution.

The Origins of Evolutionary Innovations

Andreas Wagner 2011-07-14 The history of life is a nearly four billion year old story of transformative change. This change ranges from dramatic macroscopic innovations

such as the evolution of wings or eyes, to a myriad of molecular changes that form the basis of macroscopic innovations. We are familiar with many examples of innovations (qualitatively new phenotypes that provide a critical benefit) but have no systematic understanding of the principles that allow organisms to innovate. This book proposes several such principles as the basis of a theory of innovation, integrating recent knowledge about complex molecular phenotypes with more traditional Darwinian thinking. Central to the book are genotype networks: vast sets of connected genotypes that exist in metabolism and regulatory circuitry, as well as in protein and RNA molecules. The theory can successfully unify innovations that occur at different levels of organization. It captures known features of biological innovation, including the fact that many innovations occur multiple times independently, and that they

combine existing parts of a system to new purposes. It also argues that environmental change is important to create biological systems that are both complex and robust, and shows how such robustness can facilitate innovation. Beyond that, the theory can reconcile neutralism and selectionism, as well as explain the role of phenotypic plasticity, gene duplication, recombination, and cryptic variation in innovation. Finally, its principles can be applied to technological innovation, and thus open to human engineering endeavours the powerful principles that have allowed life's spectacular success.

Play Among Books Miro Roman 2021-12-06
How does coding change the way we think about architecture? This question opens up an important research perspective. In this book, Miro Roman and his AI Alice_ch3n81 develop a playful scenario in which they propose coding as the new literacy of

information. They convey knowledge in the form of a project model that links the fields of architecture and information through two interwoven narrative strands in an "infinite flow" of real books. Focusing on the intersection of information technology and architectural formulation, the authors create an evolving intellectual reflection on digital architecture and computer science.

Game Theory in Biology John M.

McNamara 2020-09-24 The principles of game theory apply to a wide range of topics in biology. This book presents the central concepts in evolutionary game theory and provides an authoritative and up-to-date account. The focus is on concepts that are important for biologists in their attempts to explain observations. This strong connection between concepts and applications is a recurrent theme throughout the book which incorporates recent and traditional ideas from animal

psychology, neuroscience, and machine learning that provide a mechanistic basis for behaviours shown by players of a game. The approaches taken to modelling games often rest on idealized and unrealistic assumptions whose limitations and consequences are not always appreciated. The authors provide a novel reassessment of the field, highlighting how to overcome limitations and identifying future directions. *Game Theory in Biology* is an advanced textbook suitable for graduate level students as well as professional researchers (both empiricists and theoreticians) in the fields of behavioural ecology and evolutionary biology. It will also be of relevance to a broader interdisciplinary audience including psychologists and neuroscientists.

Intergenerational Family Relations Antti O. Tanskanen 2018-08-06 This book offers a synthesis of social science and evolutionary

approaches to the study of intergenerational relations, using biological, psychological and sociological factors to develop a single framework for understanding why kin help one another across generations. With attention to both biological family relations as well as in-law and step-relations, it provides an overview of existing studies centred on intergenerational relations – particularly grandparenting – that incorporate social science and evolutionary family theories. This evolutionary social science approach to intergenerational family relations goes well beyond the traditional nature versus nurture distinction. As such, it will appeal to scholars across a range of disciplines with interests in relations of kinship, the lifecourse and the sociology of the family. *Life History Evolution* Derek A. Roff 2002 *Life History Evolution* represents a synthetic approach to the understanding of

the evolution of life history variation using the three types of environment (constant, stochastic, predictable) as the focus under which the theory is developed and tested. First, the author outlines a general framework for the study and analysis of life history variation, bringing together the approaches of quantitative genetic modeling and optimality analysis. Using this framework, he then discusses how life histories evolve in the three different types of environments, each of which presents unique characteristics. The theme of the book is that an understanding of evolutionary change requires analysis at both the genetic and phenotypic levels, and that the environment plays a central role in such analyses. Intended for graduate students and researchers, the book's emphasis is on assumptions and testing of models. Mathematical processes are described, but mathematical derivations are

kept to a minimum. Each chapter includes a summary, and boxes provide supplementary material.

Biosociology Anthony Walsh 2017-09-08

Anthony Walsh bridges the divide separating sociology from biology—a divide created in the late nineteenth century when sociology emerged from the fields of social theory and philosophy. Walsh focuses on the viewpoint held by former American Sociological Association president Douglas Massey: sociologists have allowed the fact that we are social beings to obscure the biological foundations upon which our behaviour ultimately rests. Walsh argues that sociology has nothing to fear and a wealth of riches to gain if it pays attention to the theories, concepts, and methodologies of the biological sciences. Both study the same phenomena. Beginning with an examination of the reasons why we need a biosocial approach, Walsh explores

sociology's traditional "taboo" concepts (reductionism, essentialism, etc.) and how those concepts are viewed in the natural sciences. Throughout the work, the author introduces relevant concepts from genetics and the neurosciences, using examples that will appeal to all sociologists. Later chapters apply his introductory arguments to traditional substantive sociological issues such as culture, crime, gender, socialization, social class, and the family. This book will be essential to all sociologists, evolutionary biologists, and scholars interested in the history of this important divide between the fields and where it currently stands.

In the Light of Evolution National Academy of Sciences 2017-01-01
Biodiversity-the genetic variety of life-is an exuberant product of the evolutionary past, a vast human-supportive resource (aesthetic, intellectual, and material) of the

present, and a rich legacy to cherish and preserve for the future. Two urgent challenges, and opportunities, for 21st-century science are to gain deeper insights into the evolutionary processes that foster biotic diversity, and to translate that understanding into workable solutions for the regional and global crises that biodiversity currently faces. A grasp of evolutionary principles and processes is important in other societal arenas as well, such as education, medicine, sociology, and other applied fields including agriculture, pharmacology, and biotechnology. The ramifications of evolutionary thought also extend into learned realms traditionally reserved for philosophy and religion. The central goal of the In the Light of Evolution (ILE) series is to promote the evolutionary sciences through state-of-the-art colloquia in the series of Arthur M. Sackler colloquia sponsored by the National Academy of

Sciences-and their published proceedings. Each installment explores evolutionary perspectives on a particular biological topic that is scientifically intriguing but also has special relevance to contemporary societal issues or challenges. This tenth and final edition of the In the Light of Evolution series focuses on recent developments in phylogeographic research and their relevance to past accomplishments and future research directions.

Toward a Biosocial Science Alexander Riley
2021-05-03 Sociology is in crisis. While other disciplines have taken on board the revolutionary discoveries driven by evolutionary biology and psychology, genomics and behavioral genetics, and the neurosciences, sociology has ignored these advances and embraced a biophobia that threatens to drive the discipline into marginality. This book takes its place in a rich tradition of efforts to integrate

sociological thinking into the world of the biological sciences that can be traced to the origins of the discipline, and that took on modern form beginning a generation ago in the works of thinkers such as E.O. Wilson, Richard Alexander, Joseph Lopreato, and Richard Machalek. It offers an accessible introduction to rethinking sociological science in consonance with these contemporary biological revolutions. From the standpoint of a biosociology rooted in the single most important scientific theory touching on human life, the Darwinian theory of natural selection, the book sketches an evolutionary social science that would enable us to properly attend to basic questions of human nature, human behavior, and human social organization. Individual chapters take on such topics as: The roots and nature of human sociality; the origins of morality in human social life and an evolutionary perspective on human

interests, reciprocity, and altruism; the sex difference in our species and what it contributes to an explanation of sociological facts; the nature of stratification, status, and inequality in human evolutionary history; the question of race in our species; and the contribution evolutionary theory makes to explaining the origins and the importance of culture in human societies. *Life History Evolution and Sociology* Steven C. Hertler 2017-01-23 This book supplies the evolutionary and genetic framework that Charles Murray, towards the end of *Coming Apart: The State of White America 1960-2010*, predicts will one day explain revolutionary change in American society. Murray's *Coming Apart* documents 50 years of changed college admissions, government incentives, mating and migration patterns that have wrought national divisions across indexes of marriage, industriousness, honesty, and religiosity. The framework

discussed is life history evolution, a sub-discipline within evolutionary biology singly capable of explaining why violent crime, property crime, low marriage rates, father absence, early birth, low educational achievement, low income, poverty, lack of religiosity and reduced achievement striving will reliably co-occur as part of a complex. This complex augments facultatively, developmentally and evolutionarily in response to unpredictable and uncontrollable sources of mortality. The uncertain tenure of life wrought by unpredictable and uncontrollable mortality selects for a present-oriented use of bioenergetics resources recognizable as the social ills of Fishtown, Murray's archetypal working class community. In turn, the thirty years of life history literature herein reviewed confirms the biological logic of elite intermarriage and sequestration. The source of life history variation, policy

implications, and demography are discussed.

The Oxford Handbook of Evolution, Biology, and Society Dr. Rosemary Hopcroft 2018-03-09 Evolution, biology, and society is a catch-all phrase encompassing any scholarly work that utilizes evolutionary theory and/or biological or behavioral genetic methods in the study of the human social group, and The Oxford Handbook of Evolution, Biology, and Society contains an much needed overview of research in the area by sociologists and other social scientists. The examined topics cover a wide variety of issues, including the origins of social solidarity; religious beliefs; sex differences; gender inequality; determinants of human happiness; the nature of social stratification and inequality and its effects; identity, status, and other group processes; race, ethnicity, and race discrimination; fertility

and family processes; crime and deviance; and cultural and social change. The scholars whose work is presented in this volume come from a variety of disciplines in addition to sociology, including psychology, political science, and criminology. Yet, as the essays in this volume demonstrate, the potential of theory and methods from biology for illuminating social phenomena is clear, and sociologists stand to gain from learning more about them and using them in their own work. The theory focuses on evolution by natural selection, the primary paradigm of the biological sciences, while the methods include the statistical analyses sociologists are familiar with, as well as other methods that they may not be familiar with, such as behavioral genetic methods, methods for including genetic factors in statistical analyses, gene-wide association studies, candidate gene studies, and methods for testing levels of hormones and

other biochemicals in blood and saliva and including these factors in analyses. This work will be of interest to any sociologist with an interest in exploring the interaction of biological and sociological processes. As an introduction to the field it is useful for teaching upper-level or graduate students in sociology or a related social science.

The Oxford Handbook of Evolution, Biology, and Society Rosemary Hopcroft 2018 Evolution, biology, and society is a catch-all phrase encompassing any scholarly work that utilizes evolutionary theory and/or biological or behavioral genetic methods in the study of the human social group, and *The Oxford Handbook of Evolution, Biology, and Society* contains an much needed overview of research in the area by sociologists and other social scientists. The examined topics cover a wide variety of issues, including the origins of social solidarity; religious beliefs; sex

differences; gender inequality; determinants of human happiness; the nature of social stratification and inequality and its effects; identity, status, and other group processes; race, ethnicity, and race discrimination; fertility and family processes; crime and deviance; and cultural and social change. The scholars whose work is presented in this volume come from a variety of disciplines in addition to sociology, including psychology, political science, and criminology. Yet, as the essays in this volume demonstrate, the potential of theory and methods from biology for illuminating social phenomena is clear, and sociologists stand to gain from learning more about them and using them in their own work. The theory focuses on evolution by natural selection, the primary paradigm of the biological sciences, while the methods include the statistical analyses sociologists are familiar with, as well as

other methods that they may not be familiar with, such as behavioral genetic methods, methods for including genetic factors in statistical analyses, gene-wide association studies, candidate gene studies, and methods for testing levels of hormones and other biochemicals in blood and saliva and including these factors in analyses. This work will be of interest to any sociologist with an interest in exploring the interaction of biological and sociological processes. As an introduction to the field it is useful for teaching upper-level or graduate students in sociology or a related social science.

Evolution: a Very Short Introduction

Brian Charlesworth 2017-06-22 Less than 450 years ago, all European scholars believed that the Earth was at the centre of a Universe that was at most a few million miles in extent, and that the planets, sun, and stars all rotated around this centre. Less than 250 years ago, they believed that

the Universe was created essentially in its present state about 6000 years ago. Even less than 150 years ago, the view that living species were the result of special creation by God was still dominant. The recognition by Charles Darwin and Alfred Russel Wallace of the mechanism of evolution by natural selection has completely transformed our understanding of the living world, including our own origins. In this Very Short Introduction Brian and Deborah Charlesworth provide a clear and concise summary of the process of evolution by natural selection, and how natural selection gives rise to adaptations and eventually, over many generations, to new species. They introduce the central concepts of the field of evolutionary biology, as they have developed since Darwin and Wallace on the subject, over 140 years ago, and discuss some of the remaining questions regarding processes. They highlight the

wide range of evidence for evolution, and the importance of an evolutionary understanding for instance in combating the rapid evolution of resistance by bacteria to antibiotics and of HIV to antiviral drugs. This reissue includes some key updates to the main text and a completely updated Further Reading section.

ABOUT THE SERIES: The Very Short Introductions series from Oxford University Press contains hundreds of titles in almost every subject area. These pocket-sized books are the perfect way to get ahead in a new subject quickly. Our expert authors combine facts, analysis, perspective, new ideas, and enthusiasm to make interesting and challenging topics highly readable.

A Companion to Dental Anthropology
Joel D. Irish 2020-12-22 Companion to Dental Anthropology presents a collection of original readings addressing all aspects and sub-disciplines of the field of dental

anthropology—from its origins and evolution through to the latest scientific research. Represents the most comprehensive coverage of all sub-disciplines of dental anthropology available today Features individual chapters written by experts in their specific area of dental research Includes authors who also present results from their research through case studies or voiced opinions about their work Offers extensive coverage of topics relating to dental evolution, morphometric variation, and pathology

Migration Hugh Dingle 2014-07-17
Migration, broadly defined as directional movement to take advantage of spatially distributed resources, is a dramatic behaviour and an important component of many life histories that can contribute to the fundamental structuring of ecosystems. In recent years, our understanding of migration has advanced radically with

respect to both new data and conceptual understanding. It is now almost twenty years since publication of the first edition, and an authoritative and up-to-date sequel that provides a taxonomically comprehensive overview of the latest research is therefore timely. The emphasis throughout this advanced textbook is on the definition and description of migratory behaviour, its ecological outcomes for individuals, populations, and communities, and how these outcomes lead to natural selection acting on the behaviour to cause its evolution. It takes a truly integrative approach, showing how comparisons across a diversity of organisms and biological disciplines can illuminate migratory life cycles, their evolution, and the relation of migration to other movements. Migration: The Biology of Life on the Move focuses on migration as a behavioural phenomenon with important ecological consequences for

organisms as diverse as aphids, butterflies, birds and whales. It is suitable for senior undergraduate and graduate level students taking courses in behaviour, spatial ecology, 'movement ecology', and conservation. It will also be of interest and use to a broader audience of professional ecologists and behaviourists seeking an authoritative overview of this rapidly expanding field.

Mechanisms of Life History Evolution

Thomas Flatt 2011-05-12 Life history theory seeks to explain the evolution of the major features of life cycles by analyzing the ecological factors that shape age-specific schedules of growth, reproduction, and survival and by investigating the trade-offs that constrain the evolution of these traits. Although life history theory has made enormous progress in explaining the diversity of life history strategies among species, it traditionally ignores the

underlying proximate mechanisms. This novel book argues that many fundamental problems in life history evolution, including the nature of trade-offs, can only be fully resolved if we begin to integrate information on developmental, physiological, and genetic mechanisms into the classical life history framework. Each chapter is written by an established or up-and-coming leader in their respective field; they not only represent the state of the art but also offer fresh perspectives for future research. The text is divided into 7 sections that cover basic concepts (Part 1), the mechanisms that affect different parts of the life cycle (growth, development, and maturation; reproduction; and aging and somatic maintenance) (Parts 2-4), life history plasticity (Part 5), life history integration and trade-offs (Part 6), and concludes with a synthesis chapter written by a prominent leader in the field and an

editorial postscript (Part 7).

Handbook of the Life Course Jeylan T. Mortimer 2007-12-14 This comprehensive handbook provides an overview of key theoretical perspectives, concepts, and methodological approaches that, while applied to diverse phenomena, are united in their general approach to the study of lives across age phases. In surveying the wide terrain of life course studies with dual emphases on theory and empirical research, this important reference work presents probative concepts and methods and identifies promising avenues for future research.

Principles of Evolutionary Medicine Alan Beedle 2016-03-17 Evolutionary science is critical to an understanding of integrated human biology and is increasingly recognised as a core discipline by medical and public health professionals. Advances in the field of genomics, epigenetics,

developmental biology, and epidemiology have led to the growing realisation that incorporating evolutionary thinking is essential for medicine to achieve its full potential. This revised and updated second edition of the first comprehensive textbook of evolutionary medicine explains the principles of evolutionary biology from a medical perspective and focuses on how medicine and public health might utilise evolutionary thinking. It is written to be accessible to a broad range of readers, whether or not they have had formal exposure to evolutionary science. The general structure of the second edition remains unchanged, with the initial six chapters providing a summary of the evolutionary theory relevant to understanding human health and disease, using examples specifically relevant to medicine. The second part of the book describes the application of evolutionary

principles to understanding particular aspects of human medicine: in addition to updated chapters on reproduction, metabolism, and behaviour, there is an expanded chapter on our coexistence with micro-organisms and an entirely new chapter on cancer. The two parts are bridged by a chapter that details pathways by which evolutionary processes affect disease risk and symptoms, and how hypotheses in evolutionary medicine can be tested. The final two chapters of the volume are considerably expanded; they illustrate the application of evolutionary biology to medicine and public health, and consider the ethical and societal issues of an evolutionary perspective. A number of new clinical examples and historical illustrations are included. This second edition of a novel and popular textbook provides an updated resource for doctors and other health professionals, medical students and

biomedical scientists, as well as anthropologists interested in human health, to gain a better understanding of the evolutionary processes underlying human health and disease.

The Adaptive Landscape in Evolutionary Biology

Erik Svensson 2012-05-17 The 'Adaptive Landscape' has been a central concept in population genetics and evolutionary biology since this powerful metaphor was first formulated in 1932. This volume brings together historians of science, philosophers, ecologists, and evolutionary biologists, to discuss the state of the art from several different perspectives.

Evolution Of Life Histories Derek Roff 1993-04-30 There are many different types of organisms in the world: they differ in size, physiology, appearance, and life history. The challenge for evolutionary biology is to explain how such diversity

arises. The Evolution of Life Histories does this by showing that natural selection is the principal underlying force molding life history variation. The book describes in particular the ways in which variation can be analyzed and predicted. It covers both the genetic and optimization approaches to life history analysis and gives an overview of the general framework of life history theory and the mathematical tools by which predictions can be made and tested.

Factors affecting the age schedule of birth and death and the costs of reproduction are discussed. The Evolution of Life Histories concentrates on those theoretical developments that have been tested experimentally. It will interest both students and professionals in evolution, evolutionary ecology, mathematical and theoretical biology, and zoology and entomology.

Dispersal Ecology and Evolution Jean

Clobert 2012-09-27 Now that so many ecosystems face rapid and major environmental change, the ability of species to respond to these changes by dispersing or moving between different patches of habitat can be crucial to ensuring their survival. Understanding dispersal has become key to understanding how populations may persist. *Dispersal Ecology and Evolution* provides a timely and wide-ranging overview of the fast expanding field of dispersal ecology, incorporating the very latest research. The causes, mechanisms, and consequences of dispersal at the individual, population, species, and community levels are considered. Perspectives and insights are offered from the fields of evolution, behavioural ecology, conservation biology, and genetics. Throughout the book theoretical approaches are combined with empirical data, and care has been taken to include

examples from as wide a range of species as possible - both plant and animal. **Political Biology** M. Meloni 2016-05-25 This book explores the socio-political implications of human heredity from the second half of the nineteenth century to the present postgenomic moment. It addresses three main phases in the politicization of heredity: the peak of radical eugenics (1900-1945), characterized by an aggressive ethos of supporting the transformation of human society via biological knowledge; the repositioning, after 1945, of biological thinking into a liberal-democratic, human rights framework; and the present postgenomic crisis in which the genome can no longer be understood as insulated from environmental signals. In *Political Biology*, Maurizio Meloni argues that thanks to the ascendancy of epigenetics we may be witnessing a return to soft heredity - the

idea that these signals can cause changes in biology that are themselves transferable to succeeding generations. This book will be of great interest to scholars across science and technology studies, the philosophy and history of science, and political and social theory.

Synthetic Philosophy ... Herbert Spencer
1921

Genesis Jan Sapp 2003-09-11 Genesis: The Evolution of Biology presents a history of the past two centuries of biology, suitable for use in courses, but of interest more broadly to evolutionary biologists, geneticists, and biomedical scientists, as well as general readers interested in the history of science. The book covers the early evolutionary biologists-Lamarck, Cuvier, Darwin and Wallace through Mayr and the neodarwinian synthesis, in much the same way as other histories of evolution have done, bringing in also the social

implications, the struggles with our religious understanding, and the interweaving of genetics into evolutionary theory. What is novel about Sapp's account is a real integration of the cytological tradition, from Schwann, Boveri, and the other early cell biologists and embryologists, and the coverage of symbiosis, microbial evolutionary phylogenies, and the new understanding of the diversification of life coming from comparative analyses of complete microbial genomes. The book is a history of theories about evolution, genes and organisms from Lamarck and Darwin to the present day. This is the first book on the general history of evolutionary biology to include the history of research and theories about symbiosis in evolution, and first to include research on microbial evolution which were excluded from the classical neo-Darwinian synthesis. Bacterial evolution, and

symbiosis in evolution are also excluded

from virtually every book on the history of biology.