research and education are conducted and that collaboration at many levels and in many directions is imperative (McIntyre et al. 2009, NRC 2009). This will require honing skills such as interdisciplinary understanding, respect, empathy, and a readiness to analyze one's own ideas and values. Responding to the challenges we face will require more than perfecting strategies that have spelled success for a department or industry in the past but that are flawed in terms of their larger consequences. We need a fresh approach to working together. In fields such as psychology, neuroscience, and behavioral economics, we are now learning that empathy and cooperation are important and evolutionarily adaptive (Manner and Gowdy 2010); that a sense of equity may be just as innate as one of competition (Dawes et al. 2007); that transparency and a clear disincentive for greed effectively enforce prosocial behaviors (O'Gorman et al. 2009); that there are fundamental biophysical benefits to helping others (Fredrickson et al. 2013); and that all of us, including Nobel laureates, need to consciously, consistently push to keep our analytical minds engaged in order to avoid habitual, less-than-optimal solutions to problems (Kahneman 2011).

A focus in current leadership research is the importance of *followers* (Kellerman 2013), a term unfortunately given pejorative connotations but describing a group in which all of us are members at multiple levels. Followers are far more numerous than leaders are, and different types of followers' behaviors are seen as defining much of the form and direction of leadership. Information accessibility and social media can mean that engagement takes different forms and may increasingly be influenced by the experiences of followers. This will facilitate greater fluidity as some leadership roles change over time and as they vary by region. In agriculture and in other sciences, this shift is visible in the rise of participatory research, including participatory plant breeding and citizen science, or PPSR (public participation in scientific research), both of which have experienced resistance from some in leadership roles.

Leadership in Agriculture's authors—who are all male—state that they have backgrounds in the military, which explains the quotations of and referrals to various generals. I do not doubt their intent in using the military as examples of leadership, but agriculture is not battle. Given the scope and nature of the challenges we face, and the imperative that we must join together in new, collaborative ways to effectively face them, I am more inclined to believe that we need leaders who demonstrate the wisdom of bodhisattvas rather than the wisdom of generals.

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AN EVOLUTIONARY PRIMER ON PREGNANCY

Evolutionary Perspectives on Pregnancy. John C. Avise. Columbia University Press, 2013. 346 pp., illus. $75.00 (ISBN 9780231160605 cloth).

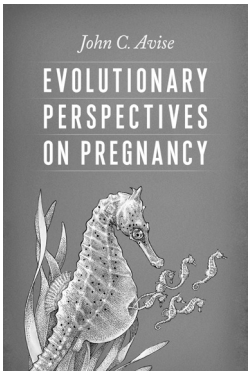
Imagine scooping up your newly fertilized eggs with your mouth and swallowing them but only after shutting down your digestive system so that your stomach provides a safe and nurturing environment for the eggs to develop. Eight weeks later, you regurgitate your brood of tiny froglets, which can now simply hop away. Such is the story of reproduction in the Australian gastric-brooding frog *Rheobatrachus silus*. But is it an example of pregnancy?

In the book *Evolutionary Perspectives on Pregnancy*, author John C. Avise does a wonderful job of examining the diversity of reproductive modes across many taxa, including mammals, fishes, reptiles, amphibians, and even Anthozoa (the corals). However, perhaps ironically, he is not explicit about what is and what is not *pregnancy*. Indeed, among some 400 terms in the glossary, *pregnancy* is not listed. In fairness, Avise does detail several defining features of

true pregnancy in the opening chapter. Regardless of this point, I found the book to be an engaging general-interest treatment of how parents invest in their offspring.

This volume is most likely to appeal to students with an interest in biology, teachers, scientists in fields outside of biology, natural historians, and lay persons with a penchant for learning about peculiar forms of life on Earth. The book's treatment of pregnancy (or pregnancy-like modes of reproduction) may be too introductory for scientists in the field to find useful, although as a researcher in the field of evolutionary ecology, I still found the prose engaging, easy to read, and thought provoking. The book is thoroughly illustrated; the animal drawings are credited to Trudy Nicholson. These drawings help make the text flow, and the "factoids" that accompany some of the drawings are fascinating and will enthrall the trivia buff.

Avise is a distinguished professor at the University of California, Irvine, and a member of the National Academy of Sciences. He is, without a doubt, one of the most influential authors in the field of evolutionary ecology and is perhaps best known for his pioneering applications of molecular DNA techniques to systematics, phylogeography, and mating systems. *Evolutionary Perspectives on Pregnancy* is the last of a trilogy written by the author, in which he explores the diversity of reproductive systems in nature. The preceding two volumes were focused on clonal reproduction and hermaphroditism.



This final book is divided into two sections—the first is a narrative detailing the diversity of the natural history of pregnancy. Avise's coverage is by no means exhaustive, and the examples perhaps err on the side of the most bizarre mating systems found in nature, but it is engaging and fascinating. The second section is focused on the scientific thinking around the evolution of the diversity within reproductive modes. It covers some of the fundamental developments in the field of evolutionary ecology, including Hamilton's rule and, more broadly, cooperation and kin selection, parent–offspring conflict, sibling conflict, anisogamy and Bateman's principle, and sex-role reversal with an emphasis on the pipefishes (a system that Avise has studied).

In this second section, I can appreciate the simplicity and accessibility with which Avise presents what are sometimes complicated concepts. This mastery underlies his immense impact in the formal scientific literature—a literature that, otherwise, far too often seems bent on making ideas and concepts as complicated and as inaccessible as is possible. The book concludes with an appendix that provides a short primer on molecular genetic parentage analysis—a technique seemingly so simple that it is easy to forget how it has revolutionized our understanding of mating systems.

A shortcoming of the book is that it provides few details on the many unanswered or controversial concepts and ideas in evolutionary biology. It also lacks a historical perspective on the proverbial battles that were fought over the decades, such as those between the ethologists and behaviorists, which helped define the field. The book does close with the enigma of multiple mating, which is a controversial topic in the scientific literature today. Why, in so many species, do females (or males) mate with more than one partner? The general adaptation hypothesis is that by mating with multiple individuals, females (or males) increase their Darwinian fitness. In contrast, Avise points out that the Poisson (or random) distribution does a pretty good job of explaining the distribution of mate numbers. All other things being equal, Ockham's razor dictates that simpler explanations—those with fewer assumptions—are more likely to be true. Indeed, I have suggested that Avise's impact stems from such simplicity in explanation. Although it is a somewhat unsatisfying conclusion to a researcher such as myself who is working to address this very question, no further explanation beyond chance may be needed to answer the enigma of multiple mating.

Overall, I found the scope of the book to be broader than just perspectives on pregnancy and might, instead, have titled it *Evolutionary Perspectives on Sexual Reproduction*.

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