

## EARTH'S OCEANS

**Sex in the Sea: Our Intimate Connection with Sex Changing Fish, Romantic Lobsters, Kinky Squid and Other Salty Erotica of the Deep.** By Marah J. Hardt. 2016. St. Martin's Press. (ISBN: 9781137279972). 278 pp. Hardback. \$26.99.

The oceans of Earth represent a vast frontier for exploration, and we are only beginning to grasp the level of diversity they hold. Sadly, as we are coming to these revelations, a great portion of that frontier is at risk, under attack from many angles by human demands—overfishing, industry, and even the noise of our expansive movements. One area where our impact is dramatic is on the peculiar and often highly specific mating behaviors of creatures of the sea. In her book, *Sex in the Sea*, Marah J. Hardt tells the story of those behaviors and brings into focus our neighbors in the vast oceans around us.

*It smells like sex. I couldn't shake that somewhat disturbing thought as I floated at the surface, watching the moonlight glisten off the ever-widening slick—the residue of the night's intimacy . . . That's the thing about sex in the sea. It is at once utterly foreign, yet there are hints of the familiar—but only just. (p. 1)*

*Sex in the Sea* represents a broad exploration of the unique and fantastic mating rituals of ocean dwellers and a powerful call to recognize and take action to protect the oceans and the biodiversity therein. Our understanding of ocean life is being dramatically changed as we learn more about the complex nature of its inhabitants, organisms whose survival hangs in the balance and can be easily tipped by small human actions that interfere with reproductive behaviors. Yet in the telling, *Sex in the Sea* not only champions ocean conservation but is also delightfully irreverent, comically inappropriate, and so engaging you can hardly put it down. There is truly nothing off limits, as Hardt explores everything from courting behaviors to sex change to orgies of the ocean in this book. I can honestly say that you will never find yourself more engaged and captivated by a book on the sexual habits of ocean life.

The book itself is hilariously divided into acts, literally and figuratively, with segments based on levels of engagement—dating games, sealing the deal (sexual intercourse then sexual outercourse), and post-climax. Throughout each act are chapters filled with playlists to set the mood (representing everything from traditional tunes à la Barry White and Marvin Gaye to Monty Python's *The Penis Song*); fishy (and other) artwork such as a snapshot of the magazine “Marine Claire” advertising exclusives for “One fishes’ tale—from testes to ovaries and back again,” plus a quiz to determine if you are ready to change sex (p. 69); sea sex trivia questions (did you know snails can ditch and then regrow

their penis? p. 99); poetry; and anthropomorphized vignettes about various sea creatures and the soap opera–like sex lives they lead (Mr. Johnson was completely blindsided on p. 84).

To be clear, this would not be a book appropriate in any way for the school-age classroom, but for anyone interested in oceans, fish, conservation, or even for inappropriate stories to share at your next party, this book is truly a joy. I have scarcely had this much fun learning about a topic this far outside my proverbial wheelhouse, but Hardt brings the love stories of the ocean to the reader with a perfect balance of science and hilarity that can't be beat.



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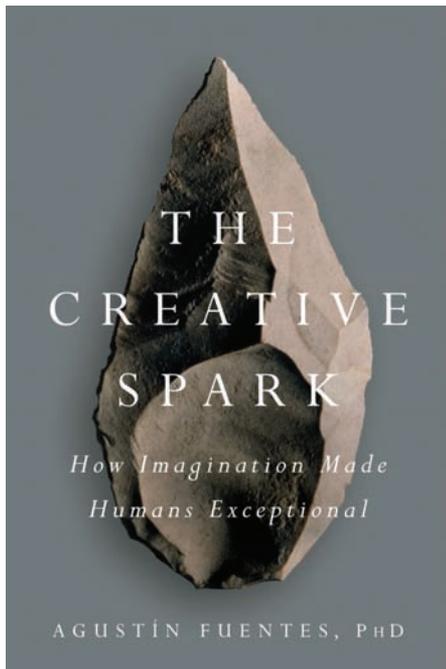
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## HUMAN EVOLUTION

**The Creative Spark: How Imagination Made Humans Exceptional.** By Agustín Fuentes. 2017. Dutton. (ISBN 9781101983942). 352 pp. Hardcover. \$28.00.

Amongst life on earth, humans are undeniably exceptional. We write symphonies and plays, paint and sculpt. We create vehicles that can transport us underground, under water, in air, or even into space. We have multiple complex, symbolic languages that allow us to communicate abstract thoughts and emotions. And we have created tools that could lead to the utter destruction of ourselves and possibly all life on Earth, or at least a significant portion of it.

In this book, Agustín Fuentes asks: What truly makes humans unique? Is it our capacity for exploitation? Or cooperation? Our biological history, or perhaps our ability to use our intelligence to overcome biological limitations? Fuentes argues



that these descriptions are all incomplete; instead, it is our creativity that sets us apart from other animals. The book is formally split into four sections that seem to divide neatly into two halves, first focusing on prehistorical human evolution, and then the past 10,000 years or so. In both sections, Fuentes provides a well-documented and detailed survey of research into human origins from ape-like ancestors to *Homo sapiens sapiens*. Whether his topic is tool use and modification, subsistence strategies, art, science, violence, or sex, Fuentes offers a thorough synthesis of historical and modern research on the topic being described.

One thing I really appreciate is his dedication to a phylogenetic comparative method, especially in the earlier chapters on tool use and social grouping. For example, comparisons with chimpanzee behavior show us that our most recent common ancestor (who lived around 5 to 7 million years ago) would likely have had the ability to walk bipedally for short distances, live in complex social groups, and have at least a limited use of natural objects as tools. All of these characteristics we generally think of as important for humans, but they are not unique to us, and this book does a great job of giving a comparative outlook where many do not. However, as I mentioned earlier, Fuentes' main assertion is that the one thing that makes humans stand out is our creativity. In each chapter he describes the moments of creativity that lead to new behaviors or inventions, but in some cases they veer a little close to "just-so" stories. They are insightful and backed by evidence, but it is not made clear enough for my taste where the evidence ends and the supposition begins.

The book ends with a sort of motivational coda that, while interesting, seems a bit out of place with most of the book. Fuentes begins the section by acknowledging he is no expert life coach, but then proceeds to give bulleted lessons inspired by evolutionary history. This portion may sit better with a more general reader, but I felt that the space would have been better suited to a summary wrap-up and review of all the ways creativity played a role in human evolution to this point, without the vision-board mantras.

What this book does right, it does very right. Fuentes gives a thorough, but never dry or overwrought, overview of human evolution. He highlights the impact of creativity and the role of the hominin brain in our history, and uses our primate relatives to provide necessary and insightful contrasts. If you are looking for a personal overview of human evolution with a popular science feel, I would recommend this book. I also see its value in the classroom, and would recommend teachers already using a book like Nicholas Wade's *Before the Dawn* (2006) or Richard Wrangham's *Catching Fire: How Cooking Made Us Human* (2009) to look to this for a more current and socially conscious update. The reading level of this book is generally best suited for a postsecondary seminar course if read in full. In small sections, it would also serve as a useful supplement to high school course texts, especially if grouped with curricular materials from the Smithsonian's Human Origins website or U. C.-Berkeley's Understanding Evolution website.



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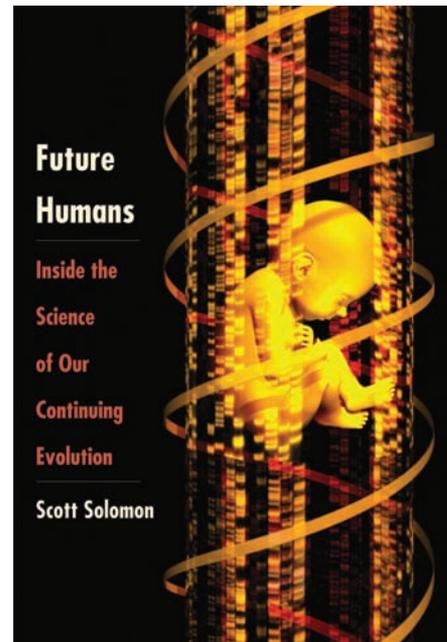
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**Future Humans: Inside the Science of Our Continuing Evolution.** By Scott Solomon. 2016. Yale University Press. (ISBN 030020871). 225 pp. Hardcover. \$27.00.

After reading Scott Solomon's *Future Humans*, we had a lot to discuss. The book resembles a chatty, accessible review article, and seems most appropriate for scholastic use as a quick read by an enterprising undergraduate to brainstorm ideas for an independent thesis. As a thought-provoking, well-referenced survey, Solomon's book could provide an invaluable boost to students searching for a topic of interest to delve into further.

Notable for a popular science book on human evolution (especially one that discusses recent evolutionary trends), Solomon resists the



impulse to speculate wildly into the social psychology underpinning gene flux. He opens his discussion of contemporary evolution with a clear criterion: "Ultimately, selection favors whatever traits result in making the most babies, grandbabies, and so on. . . . Babies born in the United States now have a 99.4 percent chance of surviving to celebrate their first birthday and can expect to celebrate about seventy-nine more. In such populations, selection becomes less about traits that promote survival and more about traits that promote making more babies than your neighbors." (p. 97).

Solomon also stresses that any evolutionary "trend" observed in a dataset spanning only a generation or two could indicate random fluctuations rather than natural selection at work—this could save an undergraduate the heartache of correcting misconceptions later on. Not all data are meaningful, nor are all datasets sufficiently large to support robust conclusions, a fact stressed by woefully few pop science publications. Thankfully, Solomon makes this point several times, in reference to both inadequate data sets and over-interpretive theories, like the idea that misshapen sperm cells must have strategic value.

One topic that Solomon presents especially well is the influence of factors outside the genome on human evolution. Solomon does not introduce game theory models that would make clear that natural selection *always* responds to extra-genomic factors—the behaviors of other organisms contribute to the environment in which any organism evolves—but his discussion of human microbes is charming. Most undergraduates