

And detail and depth are sorely needed. As I talk to researchers, science administrators and leaders, I hear frustration ('We tried getting faculty members to collaborate across boundaries, but it didn't work'). I also hear resistance to changing rewards and incentives ('Language about team science in our policies would lower our bar for promotion') and confusion about how to support team science ('Why fund large centres, instead of having lots of small grants?'). Leaders often want to maintain tradition ('We value team scientists, they just shouldn't get tenure,' or 'It's unethical to encourage junior investigators to do interdisciplinary research'). Researchers may have difficulty adjusting to multidisciplinary ('The more transdisciplinary I become, the less I seem to fit in at my institution').

Bozeman and Youtie present SciTS as one of several revolutionary trends in science, alongside commercialization of research, the drive for gender diversity and multiculturalism, and the rise of multidisciplinary. To propel SciTS forward, Bozeman and Youtie acknowledge the need for multilevel and systems approaches — yet state that the analytical and data requirements "are prohibitive".

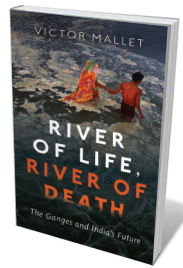
Probably the biggest barrier to conducting more systematic and complex SciTS research is the lack of established support for SciTS scholarship from designated federal funding programmes. With adequate funding, SciTS experts will be able to build cross-disciplinary teams of researchers and put their scholarship into practice.

The great mission of science is, directly or indirectly, bettering the world. Yet its structures and cultures are misaligned with key approaches, such as team science, that are crucial to advancing its mission. What changes should happen? Do we scale up bold ones, such as restructuring our universities, as Arizona State University in Tempe is doing? Do we continue to foster new roles, such as those of interdisciplinary executive scientists who broker knowledge connections across large initiatives? And will modest moves, such as creating new promotion policies for team scientists, make a difference?

Evidence generated by SciTS can inform such decisions. The 2015 US National Academies of Sciences, Engineering, and Medicine report *Enhancing the Effectiveness of Team Science* was the organization's third most downloaded publication that year. The report lays out the opportunity and promise of SciTS: to use science to transform the ways researchers do science. ■

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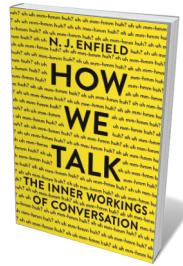
## Books in brief



### River of Life, River of Death: The Ganges and India's Future

Victor Mallet OXFORD UNIVERSITY PRESS (2017)

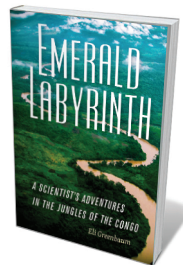
How has India's mighty Ganges river become a conduit for "the industrial effluents of Kanpur, the sewage of Varanasi, and the garbage of Patna and Calcutta"? Victor Mallet explores some ferociously muddied waters through lenses geographical, political and religious. He finds vast challenges, from the prevalence of the bacterial enzyme NDM-1, implicated in antibiotic resistance, to wild bureaucratic promises. But with many Indian policymakers concerned about the state of a waterway supporting 450 million people, Mallet is cautiously hopeful for more-synchronized political will.



### How We Talk: The Inner Workings of Conversation

N. J. Enfield BASIC (2017)

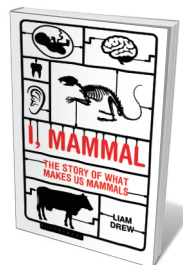
Out of every 60 words we speak, one will be 'um' or 'uh'. Such patterns of behaviour, argues linguist N. J. Enfield in this assured study on the science of dialogue, are predictable and cross-cultural — a "conversation machine" that drives verbal communication worldwide. Each exchange, he argues, is a demonstration of distributed cognition, a process of give, take and observation in which 'meaningless' words may regulate conversational traffic. From the universality of 'huh?' to the imperative of time, Enfield opens a window on linguistic dimensions far beyond grammar.



### Emerald Labyrinth

Eli Greenbaum FOREEDGE (2017)

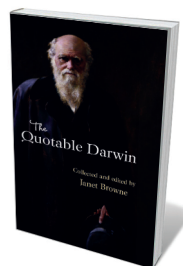
Over the past decade, herpetologist Eli Greenbaum has tracked shifts in biodiversity in the Democratic Republic of the Congo — a country haunted by Belgian colonial atrocities and riven by a recent war that claimed 5 million lives. Thus, Greenbaum's account of a 2008 expedition with Congolese colleague Chifundera Kusamba and a crack team of local rangers is much more than derring-do among prodigious natural riches: it is also a meditation on how colonial power seeds violence. A valuable record of conflict and conservation at a time of climate change and population pressures.



### I, Mammal: The Story of What Makes Us Mammals

Liam Drew BLOOMSBURY SIGMA (2017)

As former neurobiologist Liam Drew reminds us in this splendid evolutionary study, humans belong to an exclusive club, along with aardvarks and bumblebee bats. Mammalia, a vertebrate class 210 million years old, boasts more than 5,000 species with intriguing traits such as mammary glands. Drew is a wry guide to wonders such as the evolution of the scrotum and the epic journey of marsupial newborns. But, at heart, his is an erudite analysis of organisms as "Russian dolls of biological identity", whose ancient, intricate lineages make any extinction all the grimmer.



### The Quotable Darwin

Edited by Janet Browne PRINCETON UNIVERSITY PRESS (2017)

"At last gleams of light have come... I think I have found out (here's presumption!) the simple way by which species become exquisitely adapted to various ends." Thus, Charles Darwin to botanist Joseph Dalton Hooker in an 1844 letter — just one gem from Janet Browne's selected excerpts. Darwin vividly emerges as a crack shot with a tin ear for music, a loving father, a would-be anthropologist struggling to understand indigenous peoples and the consummate scientist, working "from a sort of instinct to try to make out truth". **Barbara Kiser**