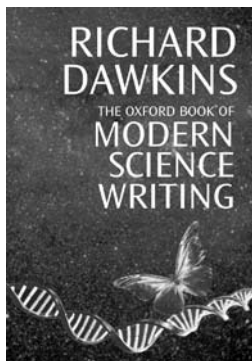


Book Reviews

The Oxford Book of Modern Science Writing. Richard Dawkins. Oxford University Press, 2008. 448 pp. £20; \$34.95. ISBN 978-0-19-921680-2.



Language, our ability to link mind to mind, and science are the greatest achievements of Homo sapiens. So says Richard Dawkins in *The Oxford Book of Modern Science Writing*. Dawkins, himself a well-known scientist and writer, has gathered a collection of extracts from, as he puts it in his introduction, “good writing by professional scientists, not excursions into science by professional writers”. All of the pieces in the collection have been written during the past 100 years. Topics cover biology, astronomy, mathematics, physics, chemistry, and psychology.

Reviewing the book was a personal adventure and a delight for me. Richard Dawkins is a professor of zoology with an intense interest in evolution. I also focused on evolution during my undergraduate years, and it seems to me that once dipped in evolution studies, you cannot help but philosophize about life itself. The questioning approach that Dawkins’ excellent selection demonstrates is therefore what I found the most appealing aspect of this book. An extract from Daniel Dennett’s *Consciousness Explained* describes how Mother Nature tries out systems in which many side effects occur. “Whereas evolution depends on history, Mother Nature is no snob, and origins cut no ice with her.” When introducing Dennett’s extract, Dawkins describes him as “the scientist’s philosopher.” He says that the excerpt makes you think, and that Dennett makes it a pleasure to do so – this could also describe the joy of this entire collection and is possibly why it was Dawkins whom Oxford Press approached to create the compilation. Every thinker who is interested in the world around us, whether a scientist or not, should enjoy this celebration of science and literature and indeed of scientists themselves.

The collection is divided into four parts: What Scientists Study; What Scientists Are; What Scientists Think; and What Scientists Delight In. Dawkins admits that some of the extracts could have fitted into more than one section, but I would go further and say it is not always clear why a particular piece falls into one or another title. The featured writers and extracts are listed after the table of contents, and the book also has an index. Dawkins introduces each extract with some background about the author and his/her work, and gives his reasons for its inclusion in the collection. A strong personal touch is conveyed through anecdotes and Dawkins’ own assessments, which set the excerpts in context and bring the characters to life. For example, Dawkins describes Richard Leakey as “‘a big man in every sense of the word’. Like other big men he is loved

by many, feared by some, and not overly-preoccupied with the judgements of any.”

Writings are from 79 scientists, including Francis Crick, Colin Blakemore, Peter Medawar, Erwin Schrödinger, Stephen Hawking, and Roger Penrose (but excluding Richard Dawkins). Sadly only three women are amongst the writers. Some consolation is a piece from Max F Perutz’s book with the wonderful title *I Wish I’d Made You Angry Earlier*, in which he portrays Dorothy Hodgkin, who won the Nobel Prize in Chemistry in 1964. The extract is particularly relevant in an era of lamentation over the absence of women from high positions in science because it depicts a leading woman with feminine rather than masculine attributes: “Some women intellectuals regard their children as distracting impediments to their careers, but Dorothy radiated motherly warmth even when doing scientific work ... She was a great chemist; a saintly, gentle, and tolerant lover of people; and a devoted protagonist of peace.” Interestingly – perhaps ironically – Margaret Thatcher worked in Hodgkin’s laboratory before abandoning chemistry for politics.

The Oxford Book of Modern Science Writing has two equal levels of appeal: the high literary quality and the fascination of the scientific content. Such a combination is rare indeed because the two disciplines are usually sharply divided; a text is either literary or science. I can do no better than give a few examples to illustrate how the writers featured in the book have achieved this combination.

Highlights

In an extract from Primo Levi’s *The Periodic Table*, any impression that chemical elements have to be a dry topic are dispelled by the description of a minute portion of the life of a carbon atom. With Levi we enter a window of this carbon atom’s lifecycle after hundreds of millions of years of monotony, “worthy of a Catholic Hell”, when it was bound in limestone to two atoms of oxygen and one of calcium. The atom becomes detached by a pickaxe, passes through a falcon, a vine leaf, a moth, a cedar, and a woodworm. At the end of the narrative, the carbon atom lodges in the writer’s brain and in a “gigantic minuscule game which nobody has yet described” guides his hand to “impress on the paper this dot, here, this dot”.

Another remarkable piece is that by Carl Sagan, a palaeontologist, from *Pale Blue Dot*. The dot this time is Earth, “a very small stage in a vast cosmic arena where every human glory and tragedy has been played out”. In his introduction to this piece, Dawkins advises the reader to read Sagan’s words again and again for “that special kind of humility which only science can give”.

Emotion and humanness are, however, mostly conspicuous by their absence in the writings of today’s

scientists. Perhaps there is no time to be human any more, although Niko Tinbergen, who received the Nobel Prize in Physiology or Medicine in 1973, found the time – albeit in 1958, when describing his experiments and observations of solitary wasps: “It was remarkable how this simple trick of marking wasps changed my whole attitude to them ... they were transformed into personal acquaintances, whose lives ... became affairs of the most personal interest and concern to me.” He also says that it is worth observing oneself, disparaging “those who relish the satisfaction of their desire for power ... those who enjoyed seeing the wasps being misled without caring much for the question whether they used landmarks or not”.

Niko Tinbergen’s extract is allocated to the What Scientists Study section. An example from *Who Scientists Are* is a piece by Albert Einstein, in which he explains his concept of cosmic religion as the realization of the futility of human desires and aims and of the sublime and marvellous order of nature and the world of thought. He claims that “the religious geniuses of all ages have been distinguished by this kind of feeling”. As this precludes “dogma and a God conceived in man’s image”, no church teaching can be based on it. People with this highest kind of religion have been considered atheists or saints, epitomized by Democritus, Francis of Assisi, and Spinoza. Einstein quotes a contemporary as saying that in this materialistic age the serious scientific workers are the only profoundly religious people.

Jonathan Kingdon, writing on human origins in *Self-Made Man*, is another noteworthy inclusion in the Who Scientists Are section. He writes: “Fossil bones and footsteps and ruined homes are the solid facts of history, but the surest hints, the most enduring signs, lie in those minuscule genes. For a moment we protect them with our lives, then like relay runners with a baton, we pass them on to be carried by our

descendants. There is a poetry in genetics which is more difficult to discern in broken bones, and genes are the only unbroken living thread that weaves back and forth through all those boneyards.” As someone wrote on a listserve recently, metaphors have no place in scientific writing.

The width of Dawkins’ collection makes it inevitable that readers will encounter topics in the book that they might not have sought out, but the quality of the writing in the selected pieces draws readers to explore where they might otherwise not have ventured. Examples for me were Lewis Wolpert’s account of the physics of motion, the most natural state for an object being movement at a constant speed—not being stationary; and the writing of John Tyler Bonner, “who devoted his life to slime molds”.

The final section, What Scientists Delight In, sums up their *raison d’être* in a nutshell as beauty. The beauty of science is described as simplicity and inevitability and the elation of coming upon a law of mathematics, physics, astronomy, or biology that answers a question, that reveals the truth.

If there is any message in the book as a whole, it is probably to be found in Carl Sagan’s extract from *The Demon-Haunted World*, in which he refers to a kind of celebration of ignorance prevalent in modern society. He talks about how we have arranged things so that almost nobody understands the science and technology on which our global civilization depends: “There is a prescription for disaster ... sooner or later this combustible mixture of ignorance and power is going to blow up in our faces.” This perhaps sums up best why the combination of good science and of good science writing is so important.

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ALPSP Survey of Librarians on Factors in Journal Cancellation. Mark Ware. Association of Learned and Professional Society Publishers, 2006. 64 pp. £90; \$160. ISBN 978-0-907341-31-4.

The continuing debate on open access, self-archiving, and the role of publishers is dominated more by opinions and anecdotes and less by hard data. The report under review is a refreshing change in that it provides data collected from questionnaires completed by 340 librarians. Traditional libraries are increasingly threatened not only by rising costs of journals but also by such practices as bundling of journals on one hand and sale of single articles from journals in PDF on the other. A generation that takes reading on-screen for granted, treats the riches of the world wide web as given, and trusts printed matter about as much as electronic sources is sure to view bound volumes of journals as an anachronism. Against this backdrop, the report addresses the crucial issue of discontinuing subscriptions to some journals: caught between shrinking budgets and rising subscriptions, cancellations are inevitable; it is just a question of who gets the chop and why.

The survey chose seven factors and asked librarians to rate each as very important, important, a minor factor, or

not relevant. The seven factors were price, usage, availability of content in aggregated databases, free availability at the journal’s website after an embargo period, free availability in an open access archive, redundancy (faculty no longer requires it), and impact factor. The respondents could also add ‘Other’ and specify the factor. The questionnaire then probed some of the factors in greater detail.

The results were not surprising, but not clear-cut either. The two most important factors turned out to be redundancy and usage – after all, if the journals are no longer required, or are not used, why subscribe to them? The third factor was price, and it is here that the issue begins to be interesting. Is high price by itself the reason? Is it the extent of increase in the subscription? Or is it usage that is not commensurate with price – value for money, as it were? Many years ago, I analysed journal subscriptions in a government-funded research institute in an attempt to relate them to three measures: the proportion of different disciplines in the total research staff, the journals cited by

the staff in the papers they published, and the journals that published these papers. None of the three could be correlated with the subscriptions. In another institute, I suggested that each department be given a specific chunk of the overall budget for journals and come up with a list of journals to be subscribed – a suggestion that was welcomed neither by the administration nor by library staff.

Measuring and justifying the cost of library services is a broad issue, and this report does not claim to address it. Its brief was clearly defined: to assess the extent to which self-archiving is responsible for cancelled subscriptions. Overall, the conclusion is “not appreciably, at least at present, but may become more important in the years ahead”.

The report is clearly laid out and successfully distils the responses, both quantitative and free-text, to give readers a sense of what librarians think about the issue, and it captures the variety of ways in which different libraries confront the problem of reconciling budgets and demands. By itself, £90 (for non-members; ALPSP members pay only half of that) may seem a high price to pay, but as a proportion of the budget of even a small library, the document is good value for money – at least for members of ALPSP.

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Write Effectively: A Quick Course for Busy Health Workers. Tim Albert. Radcliffe Publishing, 2008. 140pp. £21.95; \$45.00. ISBN 9781846191350



Tim Albert worked as a journalist on health publications for years; then he dedicated himself to running courses on writing and editing skills for health professionals. Indeed, he states: “The ideas in this workbook have been tested over many courses, and many people have found them useful in demystifying the writing process” and “this book is on writing as a craft not an art”.

So, the starting point of this workbook is that many workers in the health services feel uneasy about writing, or they even avoid it: almost always their main problem is to write anything at all. In the telling prologue the author encourages the reader, and potential writer, “to stop messing about writing and to get on with it”.

A beginner can simply start to write through the informal short course provided in this book. It consists of 10 easy sessions (Part 1), so that at the end of the workbook, he/she not only should be able to write effectively, but also should have really done it. As a participant stated during a course run by Albert: “knowing the principles of writing takes the fear out of writing”.

The principal sessions of the book concern the process of writing: to reflect on writing generally; what the real problems of your writing are; and a model to measure whether writing is effective. The next three sessions give suggestions on how to prepare for writing, suggesting different planning techniques. Particularly interesting

is the Spidergram technique, which helps one to sort information. Session 7 regards writing the first draft; clear suggestions on what has gone wrong and how to identify it are given in session 8 (the “macro-editing process”); session 9 is on micro-editing tasks required to check details, and to revise whether what has been written is accurate enough; session 10 concerns receiving comments and improving the manuscript.

In this workbook you progress step by step, compiling schemes, short questionnaires, or parts in which you can freely write, with advice such as “Write down what you think your main writing problems are” and “Write down up to three things you want to achieve by the end of this workbook”. This is a useful support technique for potential writers, who can then better focus on their own major difficulties in writing and get rid of their blocks.

The author shows a confidential and informal style that is psychologically effective, sometimes even ironic, making learning easier and more pleasant. At the end of each session, a short paragraph entitled “What you have achieved so far” is a practical tool for monitoring every step you have taken in each specific session.

The book ends with a practical part about grammar and style, providing “Lists for the very keen”: parts of speech, grammatical terms, wasteful words, clichés, useful quotes, and exercises for the “committed writer”.

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We invite you to visit Wikipedia and comment and/or edit these entries, created by EASE webmaster, Emma Campbell.

Visit <http://www.wikipedia.org> and enter either of the above terms (in full) into the search facility.