Becoming a science writer

Professional writing is one way to share your passion for biological sciences, but how does a biology graduate take to a career in writing? Palaeontologist and author Darren Naish explains.

The world will always need writers to disseminate information. Writers are needed for the production of books and magazines, and for the creation of content for websites, advertising, retail and industry. Being a writer involves skill, passion and expertise in one or more subjects. People with scientific training are well-placed to be science writers. They understand the science better than most and a scientific background makes a person adept at both observation and description. This, in theory, gives a scientist the potential to transform science into a story.

Careers in science writing exist most obviously in the world of online news and opinion-piece journalism. This sort of writing emerges from the publication of detailed research papers. Many writers who have produced such short articles then consider, or are invited, to write a book, and can thus make important contributions to our understanding of a subject. However, even successful writers may struggle financially, and writing (science writing in particular) is rarely considered a reliable career on its own. The jobs do not pay well enough, or come in frequently enough, to cover living expenses. Many people famous for their science writing – Rachel Carson, E. O. Wilson, Stephen Gould, Richard Dawkins and Bill Bryson among them – combined it with an academic or broadcasting career.

Being a writer

A writer must want to write and enjoy the craft of writing. They must feel confident about their command of language, spelling and punctuation. Writers must understand the subjects they want to write about sufficiently well to serve as an ‘explainer’, mostly through a combination of their education and their own study of those subjects. They should also work as a collector of the ideas and data they find inspirational, keeping a record of their thoughts and opinions on a subject. A great deal of writing is self-referential and describes the author’s journey towards and through a subject. To a degree, writing is also – like artistry of any sort – a gift that some have, and some do not. However, every writer benefits by reading the work of others, by learning what works, and by practising.

My own writing has improved following ruthless and sometimes blunt criticism from editors, colleagues and peers. My advice is to find a conversational style that works when spoken aloud and to know that writing rules we are taught – including those in word-processing software – ruin or derail things that work. Don’t be afraid of complex sentence structure, provided you have broken the sentence into appropriate sections. Aim, however, to keep sentences and paragraphs short, and excise redundancy. Learn words and word combinations that are memorable, perhaps unique to you, and which successfully communicate a complex point or idea. And avoid late positioning of the subject within a sentence: critics will accuse you of using ‘the passive voice’.

Some of the magazines that have published the author’s articles
Becoming a salaried science writer

How do you break into the world of salaried science writing? This is tricky to answer, as everyone’s experience is unique. Having always enjoyed writing in school and college, I spent much of my teenage years producing articles (unpaid) for publications that are now extinct (small circulation, natural history magazines and newsletters, among them Exotic Zoology, Animals & Men, Mainly About Animals, DinoNews and Dinosaur Discoveries). These provided contacts allowing me to publish in magazines (e.g. Fete De Times, Quest and DinoPress) and be paid for it. While studying for my PhD and deliberately looking for distraction, I jumped on the blogging bandwagon and, by 2007, had released a large quantity of science writing online. This was mostly dedicated to obscure animals, quirky aspects of natural history and new developments in vertebrate palaeontology.

These articles allowed me to pitch myself (via email correspondence and fortuitous meetings) to publishing companies in search of science writers for encyclopaedias and similar works. Maintaining good relations with these companies subsequently led to opportunities with others.

Based on this experience, fledgling science writers need examples (preferably published) to demonstrate their capabilities, but this raises the thorny issue of work produced for free. It is common to be told that ‘all publicity is good publicity’ and that ‘getting your name out there’ is key. Consequently, science writers looking for payment are encouraged to release work for free, and to take any opportunity. While I of course wish that I had been paid for the many articles published early in my career, the fact is that their production was crucial for developing my skill, producing a portfolio and establishing me as a writer.

Once you have a portfolio, approach editors in charge of internet news sites and magazines. They may be able to give you a break but keep trying if they don’t. Breaking into the world of book writing is more difficult, but less difficult today than it was just 10 years ago since many science-friendly publishers and editors are easier to find, contact and correspond with than they ever were, thanks to Twitter in particular. I have pitched numerous science book ideas and most have failed, either because the company did not think that the book would be sufficiently successful, or because the pitch happened at a time when the company was downsizing and unable to take on more work. In these cases, I was approaching the wrong companies, and

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Box 1 Things a writer needs to know about

Wordcounts Authors are virtually always writing to fit a limited space. They must keep to wordcount or their work will not be accepted.

Editors Writers pass their work to editors, who are in charge of preparing the work for publication. However, editors are not to blame for a writer’s mistakes and a writer must work hard to ensure that their work meets the highest standards before the editor receives it.

Invoicing and accounting Writers are almost never paid up front. They submit an invoice and are paid after submission of the work. This means that writers have to develop an invoicing and accounting system.

ALCS The Author’s Licensing and Copyright Society is a body that allows writers to claim for payments owed by companies and libraries for the photocopying of the writings. ALCS obtains and passes on payments of which writers would ordinarily be unaware.

Self-employment and self-assessment Most writers are self-employed. As a self-employed person you need to keep records of your finances, and, in the UK, learn how to negotiate the Government’s self-assessment website.

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FURTHER READING

Numerous articles online – some written by famous science writers like Carl Zimmer – discuss a career in science writing. Science magazine has produced this useful Introduction, ‘Starting a career in science writing’: https://tinyurl.com/yy75zucv
Box 2: Dos and don'ts of writing

Plagiarism (directly copying the work of others without reference to them) is a crime and never excusable.

Self-plagiarism - the recycling of your own content in a new context - is to be avoided in scientific writing. It is less problematic when writing about your explorations of a subject but a good writer should be able to rephrase a story in a new way.

Check your work again and again, and don't be afraid to pass a piece of writing to trusted friends, colleagues and family members to see how it is received. They do not have to be experts in the subject, since they will catch issues that might not otherwise be obvious. Having your scientific writing checked by a trusted friend or colleague with relevant expertise is also a good idea.

Grow a thick skin Writing is shaped by your own personality. Consequently, but unfortunately, some people will dislike your work. Take their comments on board, but not to heart. Don't let them get you down.

part of succeeding in science book writing is finding and working with a company that matches your vision. To do this, you need to find and approach those companies with a track record of publishing books relevant to your specialist subject or genre.

Avoid vanity- and predatory-publishers. The former require you to pay them for publishing, the latter invite you to contribute but then require money for publication. Be flexible. There might always be requirements for articles on particular subjects, but there will also be times when interest wanes in some areas. The higher the number of subjects you can write about, the more work you can take on. The more trusted and reliable you are considered, the more work you will get. Providing advice on how to become trusted and reliable is difficult, however. As someone interested in the biological sciences, you will have discovered certain areas of the field that interest you in particular, and these should be your focus. In theory, anything can be written about successfully, and editors will usually listen if you disagree with their suggestions. Because an editor has final control over a piece of text it is, alas, common for details of a writer’s text to be distorted or incorrectly conveyed.

What about the finances of being a science writer? There is not much money in writing of any sort, and least of all in science writing. Typically, a writer must take on a high number of commissions in order to survive. I could not have persevered without the support of a partner who was able to function as the primary wage-earner. Even today, as an author of more than ten science-themed books and with many published articles to my name, I do not and cannot make a living from science writing alone, but can only survive by combining my earnings from writing with those I receive from consultancy and editorial work. However, these things are tightly connected. Becoming a published author made me known as someone available for work as a consultant in my areas of speciality.

If any of this sounds gloomy, the good news is that most writers enjoy writing, so no part of the process is a chore. Writing can be compelling, even an extension of your personality, and seeing your work in print is one of the most rewarding experiences a person can have. I enjoy the reader interaction and control I have at my blog Tetrapod Zoology (tetzoo.com) where I write about all manner of zoology-themed topics of special interest to me. I am also proud of my various books, in particular the 2016 Dinosaurs: How They Lived and Evolved (co-authored with Paul Barrett), the 2017 Hunting Monsters: Cryptozoology and the Reality Behind the Myths and the 2017 Evolution in Minutes.

Dr Darren Naish is a dinosaur expert, author, illustrator and scientific consultant who has published numerous technical papers, popular articles and books. He received his PhD at the University of Portsmouth in 2006 following his work on Early Cretaceous predatory dinosaurs.