



Private prescription:

A thought-provoking tonic on the lighter side

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Please note that these are the personal opinions of the author and do not necessarily represent those of AstraZeneca.

Science fiction – fictional science?

While recently researching a book of quotations for scientists, I came across some interesting advice given in 1979 by the American humorist, P.J. O'Rourke¹:

Don't read science fiction books. It'll look bad if you die in bed with one on the night stand. Always read the stuff that will make you look good if you die in the middle of it.

I am sure many readers of this journal can appreciate the sentiments expressed by the author. The often sensational and lurid cover illustrations of many science fiction books and magazines are enough to give the perception of melodramatic rubbish unbecoming of a professional scientist. I have to admit that one of my favourite past-times is reading science fiction and consequently I have to take a different view of this genre, to which I was introduced by a fellow Pharmacy undergraduate nearly forty years ago.

Science fiction defined

There are many definitions of what is meant by science fiction. Many use words such as 'fanciful fiction' or 'imaginative use of scientific knowledge or

conjecture', but the one I prefer is that given in the *Encyclopaedia Britannica*²:

A literary genre...dealing with scientific discovery or development that, whether set in the future, in the fictitious present, or in the putative past, is superior to or simply other than that known to exist. Thus the word fiction in the term not only signifies, as in common usage, a work of the imagination but also applies directly to the word science. Depending on the author's purpose, the degree to which the scientific element is fictionalised may range from a careful and informed extrapolation from known facts and principles to the most farfetched and even flatly contradictory of speculations. What remains constant throughout the imaginative spectrum is the appearance of plausibility, stemming from at least surface allegiance to the attitudes, methods, and terminology of science.

This definition has recently been expanded by Mark Brake, Chair of Earth and Space Sciences in the School of

Applied Sciences at the University of Glamorgan, (Pontypridd, UK), and course tutor of the world's first degree course in science and science fiction³:

Science fiction is identifiable by the fact that it eases 'the willing suspension of disbelief' on the part of its audience by using an atmosphere of scientific credibility for imaginative speculations on physical science, space, time, social science and philosophy. It can be regarded as a device for conducting a type of theoretical science – the exploration of imagined worlds.

Implicit in these definitions is that fantasy is not science fiction (many book shops would have it otherwise) and that the genre can, and has, been enhanced by authors with a scientific background. In fact, all of my favourite authors in the genre, for example, Isaac Asimov, Gregory Benford, David Brin, Sir Arthur C. Clarke and Robert Heinlein to name a few, have degrees in either chemistry, engineering, mathematics or physics and several hold doctorates. The late Isaac Asimov (1920–1992) graduated in chemistry at Columbia University in 1936, completed his PhD in 1949 before becoming an Associate Professor in Biochemistry at Boston University (Boston, MA, USA). Gregory Benford, born in 1949 is a Professor of Physics at the University of California and has published >100 papers on astrophysics and plasma turbulence theory and experiment.

'Science fiction writers foresee the inevitable'

All of these authors have been provided with an imaginative insight into the future of science and technology. Many would argue that this is not overtly difficult in the light of the spectacular advances in modern science and

technology (space travel, computers, genetics) that have taken place over the past half century. However, where these authors differ from the bench scientist is that they have the ability to extrapolate, speculate and anticipate events that few would attempt. This is because they do not necessarily propose solutions, because as Isaac Asimov once remarked in 1975⁴:

Science fiction writers foresee the inevitable and although problems and catastrophes may be inevitable, solutions are not.

This is not to say that solutions will never be found but the more plausible the science, the more likely a solution will be found. A good example of this is the Early Bird Synchronous satellites that relay radio and television signals around the earth. This was predicted in detail by Sir Arthur C. Clarke in a story entitled *Extra-Terrestrial Relays* published in 1945, but did not come to fruition until some twenty years later. Gregory Benford and others have even helped NASA to draw up ideas on imaginative ways of piercing

the ice to access the sub-structure of Europa, one of Jupiter's moons. Members of the Innovative Technologies from Science Fiction for Space Applications project at the European Space Agency are currently studying science fiction novels and short stories for ideas and technologies that could be used for future missions. NASA is currently conducting research into ideas such as 'warp drives' – massless engines that would be able to reach almost light-speeds – a possibility first proposed by science fiction writers.

Surely then, open-minded scientists should have no compunction about admitting to reading science fiction, especially that written by fellow scientists who just happen to have a more fertile imagination.

Final remarks

There are two further points: first, science fiction is written primarily for the general population and not for fellow scientists, or as so aptly put by Brian Aldiss, an English science fiction writer in his *Introduction to Penguin Science Fiction* in 1962⁵:

Science fiction is no more written for scientists than ghost stories are written for ghosts.

Second, science fiction is there primarily for enjoyment and, if it stimulates scientific thought and criticism, then these are 'added extras'. Mark Brake³ even argues that a passion for science fiction might even encourage students to take up careers in science. In my case, the more plausible the science, the more I enjoy the novel. I will never have a problem of having a science fiction novel on my night stand!

References

- 1 Jarman, C., ed. (1991) *The Guinness Dictionary of Poisonous Quotations* Guinness Publishing Ltd, Enfield, England, p. 46
- 2 Anon (1974) Micropaedia. In *Encyclopaedia Britannica* (Vol. 8), p. 984, Encyclopaedia Britannica Inc., Chicago
- 3 Brake, M. (2001) Science fiction in the classroom. *Physics World* 14, 16–18
- 4 Knowles, E., ed. (1999) *The Oxford Dictionary of 20th Century Quotations* p. 14, Oxford University Press
- 5 Cohen, J.M. and Cohen, M.J., eds (1980) *The Penguin Dictionary of Modern Quotations* (2nd edn), p. 12, Penguin Books

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