Everyone hates a know-all

The Last Man Who Knew Everything: Thomas Young, the Anonymous Polymath Who Proved Newton Wrong, Explained How We See, Cured the Sick, and Deciphered the Rosetta Stone, Among Other Feats of Genius
by Andrew Robinson
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David Philip Miller

Know-alls can be maddening. Polymathy, however fascinating, may be a vice as much as a virtue in this age of specialization. In his book *The Last Man Who Knew Everything*, Andrew Robinson attempts only an introduction to the life of the polymath Thomas Young (1773–1829) — a full biography of 'Phenomenon Young', as he became known, would have required a team of specialists.

Robinson aims to introduce Young's life and achievements to a broad audience, and his readability quotient is high. The book is a superior example of the recent flood of popular works on the history of science and technology no doubt inspired by the success of Dava Sobel's *Longitude* (Walker, 1995). Robinson frequently tells us how remarkable Young's achievements were and defends him from Young's contemporaries who found him obscure, difficult and, yes, maddening. Robinson's parting shot is to compare Young to Leonardo Da Vinci. However, the hyperbole is balanced by Robinson's genuine interest in why Young was not universally admired, and why he has received a mixed press from specialist historians. The meditations on specialization this induces are interesting but, in my view, fall short of explaining the negative reactions to Young.

Young came from a Quaker family who recognized his precocity early. Tutors and schoolmasters fed his hunger for languages — by his teens he spoke Greek and Latin, and had a working knowledge of Hebrew, Chaldee, Syriac, Samaritan and Persian. He taught himself mathematics and natural philosophy before attending medical lectures in London and studying at the universities of Edinburgh, Göttingen and Cambridge. He became a fellow of the Royal Society at the age of just 21.

Best known for his work on the interference of light and the development of a wave theory in opposition to the prevailing newtonian corpuscular ideas, Young also made crucial contributions to understanding the physiology of the eye and vision. In 1814 he began to decipher the demotic and hieroglyphic inscriptions of the Rosetta Stone, but his important contributions were overshadowed by Jean-François Champollion's subsequent efforts. Beyond this, Young's versatility knew few bounds, as shown by his numerous contributions to the *Encyclopaedia Britannica* and his published lectures on natural philosophy and the mechanical arts. Young's profession was medicine but his practice was not very successful; an inheritance and other sources of income meant that this was not a problem, however. Having abandoned Quakerism, he moved in high social circles in London. He died at the age of 56 from pulmonary troubles and, Robinson speculates, intellectual exhaustion.

So why the lack of universal admiration? Personality was an issue: Young comes across as self-contained but self-confident and unlikely to suffer fools. Robinson is right, also, in arguing that Young was a victim of a specializing age, of a mixture of envy and disbelief that he could successfully traverse so many fields. However, Robinson fails to consider sufficiently the social and intellectual context of the learned world of the metropolis in which Young grew to maturity. In the 1820s, new cultural patterns were pitched against the old. In the old pattern, Young's range of activities was not unusual, except in the success that he enjoyed. He was one of a type — a medical doctor, versed in classics and natural philosophy, and interested in antiquities. In fact these were the very people that specializing (but hardly specialist) young Turks fought against in the 1820s as they challenged the existing power structures of science in the Royal Society and elsewhere. This can explain much of the hostility towards Young when he was foreign secretary of the Royal Society, secretary of the Board of Longitude, and editor of *The Nautical Almanac*. Pushy young Cambridge scholars welcomed Young's advocacy of wave theory but were exasperated by his mathematical obscurity. Along with their astronomical allies in London, they sought to reform (not abolish, as Robinson has it) the key astronomical institutions in which Young represented, culturally and temperamentally, the old guard.

Greater awareness of this institutional and cultural context would have lifted the narrative above being an encomium to Young, insightfully placed as it is against the backdrop of the generic problem of specialization. Discerning exactly what specialization meant in early nineteenth-century Britain is important to understanding why this particular know-all was so maddening as well as an object of justified admiration. Young was truly remarkable, but was also a creature of his times, not a Colossus astride them. ■

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Life, the Universe and entropy

Decoding the Universe: How the New Science of Information is Explaining Everything in the Cosmos, From our Brains to Black Holes
by Charles Seife
Viking: 2006. 288 pp. $24.95

Robert J. McEliece

Near the end of his new book *Decoding the Universe*, Charles Seife argues with a straight face that there exists a universe parallel to ours that is populated by a race of superintelligent octopuses. The funny thing is, I believed him.

If Douglas Adams had not already used it, a more appropriate title would have been *Life, the Universe and Everything*, for that is in fact just what this book is about. Seife tells us that the modern science of 'information theory' (I'll explain the quotation marks below) implies that everything in the Universe, including life, is part of a vast cosmic war between the forces of good (information) and evil (entropy), with entropy the predestined winner. To support this disturbing hypothesis, he weaves a wide-angled interdisciplinary narrative with chapters on cryptography, thermodynamics, classical information theory, genetics, relativity, quantum mechanics, quantum information theory and cosmology (puzzlingly, string theory is absent). Each of these topics is a major scientific discipline, and Seife seems to have mastered them all.

Taking centre stage throughout the book is Claude Elwood Shannon (1916–2001). Shannon was a brilliant US mathematician–engineer who worked at Bell Labs and in 1948 invented a set of mathematical tools to solve what he called the fundamental problem of communication: "that of reproducing at one point either exactly or approximately a message selected at another point". Seife omits any

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Star wars? The battle between 'good' and 'evil' in the Universe is really between information and entropy.

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