Of Word and Image

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“Our modern pattern of anatomical disparity is thrown into the lap of contingency. The modern order was not guaranteed by the basic laws (natural selection, mechanical superiority in anatomical design) or even by lower-level generalities of ecology or evolutionary theory. The modern order is largely a product of contingency.”
Stephen Jay Gould, Wonderful Life (1990)

“I returned, and saw under the sun, that the race is not to the swift, nor battle to the strong, neither yet bread to the wise, nor yet riches to men of understanding, nor yet favour to men of skill, but time and chance happeneth to them all.”
Ecclesiastes Chapter 9, verse 1 King James Version, 1611

“Transcriptome analysis in alleles displaying mutant mRNA decay reveals the upregulation of a substantial proportion of the genes that exhibit sequence similarity with the mutated gene’s mRNA, suggesting a sequence-dependent mechanism. These findings have implications for our understanding of disease-causing mutations…”
Random sentences from an abstract in Nature 11 April 2019, by 14 authors.

“A soap opera is a kind of sandwich, whose recipe is simple enough, although it took years to compound. Between thick slices of advertising, spread twelve minutes of dialogue, add predicament, villainy, and female suffering in equal measure, throw in a dash of nobility, sprinkle with tears, season with organ music, cover with a rich announcer sauce, and serve five times a week.”
James Thurber in Soapland, from The Beast in Me, and Other Animals (1949)

Of the four quotations above, the first is an illustration of polysyllabic or Latinate academic argument, by a writer of distinction. The second is a well-known and often instanced example of clarity from the 17th century. They are paired because they make the same point. The third example is a reminder that science now necessarily speaks a different tongue. I am grateful to a casual reference in a Nature book review for my favourite number: biology, according to a former editor of the Oxford English Dictionary, has contributed 60,000 words to the English language. This would of course be many more now – Robert Burchfield retired from the OED in 1986 and must have said such a thing long before genomics, epigenetics or bioinformatics began to emerge as separate disciplines, but the point is that he had counted 60,000 words. Shakespeare employed 31,000 words for the entire Avon catalogue and many of those he used only once.

So people who want to write about science for people who may not wish to know about science face a challenge: they must present dazzling and often counter-intuitive thinking, phrased in words that are being coined at a rate far faster than lay vocabulary can absorb, into compelling English. Even the routine words of familiar science – isostasy, phenotype, Mesozoic, alpha-particle, allele, albedo, transcriptome – are rarely heard in pub or football stadium conversation. In a democracy, scientists have an obligation to explain the research they do, so often at public expense.

Unfortunately, in a democracy, there is no counter-obligation to listen. So to convert specialist jargon into senior common room polysyllables is not enough. Simple, clear, muscular and brief English words deliver meaning more helpfully. Put simply, if you must write a sentence using the word mitochondrion, it’s a very bad idea to be effulgent and felicitous as well. It is better just to be bright and happy.

But science communicators still face the challenge of big, new and genuinely mysterious ideas. Words deliver information, but not understanding. Explanation of the very new all too often employs the language of imagery, of analogy and metaphor, if possible without the hand-me-down cliché. So that rules out the missing link, the Holy Grail, the magic bullet, the cutting edge, the Faustian bargain and Pandora's Box for a start. Metaphor can be – all too often probably is – in some way misleading, but it can also be helpful. Science uses metaphors so often we forget that they are metaphors: black hole, big bang, dark matter, knockout mouse, selfish gene and so on. Metaphors are a great help, used carefully and one at a time. The term soap opera now seems a simple classification: actually, it was coined as metaphor, so my fourth example is one from far beyond science, of a new metaphor fashioned and sustained to describe an old one.