Logophobia

I wish to introduce readers of EMBO reports to a term that is wonderfully useful for the scientific community: logophobia. Its Greek roots are obvious: 'logos' means 'thought', particularly rational thought, and 'phobos' means 'fear of'. Logophobia is defined as, "a sceptical doctrine about rationality ... [where] rationality cannot be an objective constraint on us but is just whatever we make it, and what we make it depends on what we value" (Shackel, 2005). Moreover, "[o]pponents are held to disguise their self-interested construction of rationality behind a metaphysically inflated view of rationality in which Reason with a capital R is supposed to transcend the merely empirical selves of rational beings." In other words, they claim that reason cannot possibly solve every problem, so you can proceed with dismissing reason altogether. I am sure you know logophobics among your acquaintances.

The term was introduced—obviously in jest—by philosopher Nicholas Shackel in a delightful paper entitled *The vacuity of post-modernist methodology* (Shackel, 2005). Shackel's paper is actually a serious, and at times rather technical, critique of the modus operandi of postmodernist (and deconstructionist, anti-rationalist feminist) authors such as Michel Foucault, Jacques Derrida, Jean-Francois Lyotard, David Bloor, Richard Rorty and Stanley Fish, to mention just a few of the major offenders. But the list might as well include the names of pseudoscientists such as the Intelligent Design proponents Bill Dembski and Michael Behe, alternative medicine "gurus" such as Deepak Chopra, or vaccination-deniers such as Jenny McCarthy.

According to Shackel, logophobics have developed an arsenal of strategies to obfuscate clear thinking, which they deploy whenever pressed by a skeptic. For instance, consider Foucault's classic thesis that there is no such thing as scientific truth, because truth is a reflection of local socio-economic and political power: "The essential political problem for the intellectual is not to criticise the ideological contents supposedly linked to science, or to ensure

that his own scientific practice is accompanied by a correct ideology, but that of ascertaining the possibility of constituting a new politics of truth" (Shackel, 2005). This is apparently strong stuff, but it becomes a much milder statement when Foucault later tells us what he means by "truth": "'Truth' is to be understood as a system of ordered procedures for the production, regulation, distribution, circulation and operation of statements." Really? And here was I thinking that truth means an accurate description of an observer-independent reality. Silly me.

Shackel calls this sort of move a "troll truism", which he defines as, "a mildly ambiguous statement by which an exciting falsehood may trade on a trivial truth." It is a particular form of so-called Humpty-Dumptying, named after the character in Lewis Carroll's *Through the Looking Glass*. Humpty Dumpty famously tells Alice, after she points out that he is arbitrarily switching word meanings in the course of their discussion: "When I use a word, it means just what I choose it to mean—neither more nor less."

Examples of Humpty-Dumptying litter the pseudoscientific landscape; for instance, in discussions of the ever more vacuous concept of "irreducible complexity", a supposedly intellectual cornerstone of the modern Intelligent Design movement and alleged proof that evolution cannot occur by natural processes. Michael Behe's original definition went something like this: "A single system composed of several well-matched, interacting parts that contribute to the basic function of the system, wherein the removal of any one of the parts causes the system to effectively cease functioning" (Behe, 1996). The problem with this definition, as philosopher Niall Shanks and biologist Karl Joplin immediately pointed out, is that a currently 'irreducible' structure can easily result from a natural and gradual historical process, the alleged irreducibility appearing later on as a by-product of said historical process.

Not to worry, Behe simply changed his definition to overcome the problem: "An irreducibly complex evolutionary pathway is one that contains one or more unselected steps (that is, one or more necessary-but-unselected mutations)" (Behe, 2002). Notice

that Behe switched from defining a property applicable to currently existing biological systems, to a property of a historical pathway, that is, of a chain of events that has already occurred. This moves the target into rather unassailable territory, because it turns irreducible complexity into an argument from ignorance, Behe's in particular.

Logophobia, I maintain, is a broad condition that can strike adult humans of all ages, genders and cultural backgrounds, especially when they have never been seriously exposed to the basics of critical thinking, or when they have grown up in the thralls of a powerful ideological system. The disease is preventable by early education, although it requires painful effort on the part of teachers and students alike. Once the subject is past middle school, it becomes increasingly difficult, and in most cases essentially impossible, to provide a cure; huge amounts of financial resources and time are wasted as a result. Occasionally, lives are lost as a direct outcome of logophobia, especially when the logophobic is a politician with the power to start a war, or a celebrity pushing an anti-medical health agenda.

Needless to say, fighting the spread of logophobia is a primary responsibility of every critically thinking person and practicing scientist, despite the highly unfavourable odds against defeating it—which is why a thorough knowledge of the disease and of its symptoms is so crucial. Spread the word, and watch out for logophobics near you!

REFERENCES

- Behe M (1996) *Darwin's Black Box*. New York, NY, USA: Free
- Behe M (2002) A Response to Critics of Darwin's Black Box. *Progress in Complexity, Information and Design* [online] 1.1 www.iscid.org/pcid
- Shackel N (2005) *Metaphilosophy* 36: 295–320

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