



Bad science and good writing or good science and bad writing?

by Richard Clark

Most of us, I hope, would prefer good science badly presented to bad science written expertly—or would we? Given the recent celebrations surrounding the joint anniversaries of Charles Darwin's birth (1809) and the publication of *On the Origin of Species* (1859) (Figure 1), imagine he could be transported to the present day and agreed to give a short lecture. Would it matter that he had no knowledge of projectors, computers and PowerPoint? Would that put you off listening to him? Imagine you had the alternative of listening to someone else instead, such as the present-day geneticist Steve Jones, who (I hope) would freely admit to not being in the same league as Darwin, but is well known for his erudite, amusing and informative lectures. Anyone for Steve Jones? (The reader should note here that I hold Professor Jones in the highest esteem, and can actually remember many things he said 20 years ago when I attended his lectures at University College London. Despite this, I would still opt for listening to Darwin. Steve Jones is now what one might call a 'media personality' as he is one of the very few scientists who seems to talk in language that most people can understand and appreciate.)

The point I am trying to make with this example is that we, as medical writers, are in danger of regarding the quality of medical communications as more important than the facts they should be communicating. An example of this corrosive mindset is that, when giving my talk on slide presentations *not one* professional medical writer thought that the slide content (i.e. the scientific evidence or data) was more important than the way it was presented (preferred options picked from a list were generally 'the look of the presentation' or making presentations 'clear, simple and easy to understand'). You might disagree with me, but a rationale for this view has been published in a previous issue of *TWS* [1]. However, I will write here that without good content, what is the point of communicating, however excellently?

You might say as a writer that you cannot control your subject

We are in danger of regarding the quality of medical communications as more important than the facts

The client wants you to 'miss out the bad bits'

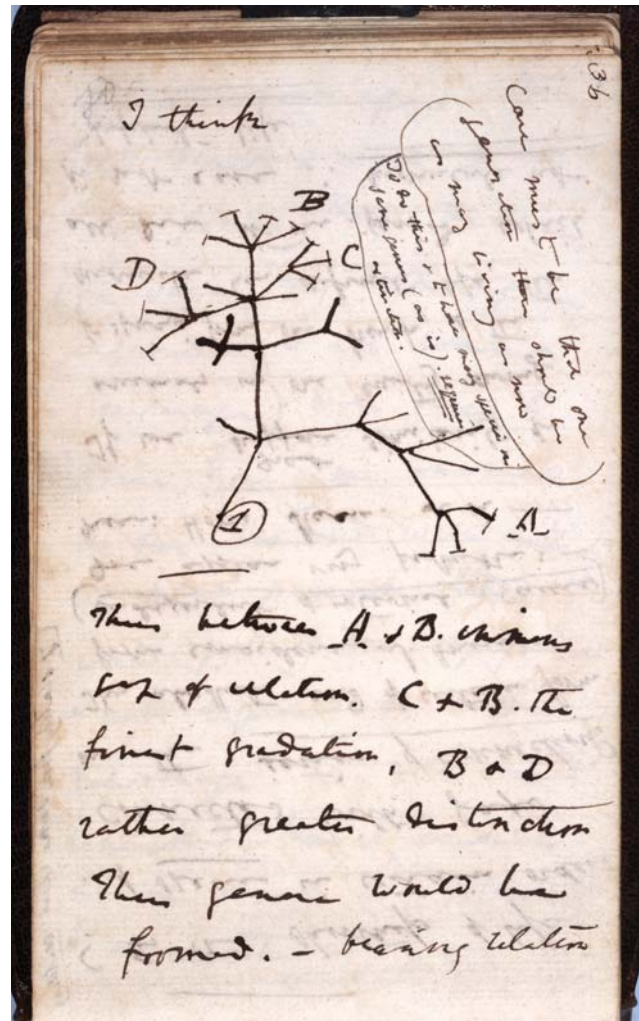


Figure 1 Darwin's first known sketch of an evolutionary tree, above which he wrote "I think" (Tree of life sketch from Darwin, C. R. Notebook B: Transmutation of species [1837–1838]). Reproduced by kind permission of the Syndics of Cambridge University Library

matter to a great extent anyway, and you have to do your best with what you have been given. To some extent this is true. Nevertheless, there is often scope for improving the content of a primary manuscript, review, poster, slide presentation or other materials, as we usually 'pick and choose' our sources and which data to include. Here comes the dangerous bit: the client wants you to 'miss out the bad bits' (as I was asked only this week), or to skew or 'spin' the article substantially by the use of specific language and sourcing of references. You are asked to mention all the drug 'key messages' with their supporting references, as supplied by the marketing department. No studies should

Bad science and good writing or good science and bad writing?

be mentioned that are not favourable to the drug in question! However, an overtly biased approach is counterproductive: it fools few people and makes the rest who are aware of the deception wary of the pharmaceutical company and their drug. In this situation I would advise the client of any misgivings (in writing) and attempt to steer them in the right direction. It is particularly important in these situations to save all early drafts—if you don't do this already—just in case later drafts are produced without your knowledge that are substantially biased or inaccurate, and there is always the 'nuclear' option of withdrawing your labour if you feel very strongly that what you are being asked to do is wrong.

Where does this leave us? What overall approach should we take to medical writing? I feel we should concentrate on the *content* that makes bad writing bad rather than the method of presentation of good or bad science. The one guiding principle for me is *would I be unhappy for this poster, review or slide presentation to appear with my name on it as a co-author?* If any of us think we would feel wary or ashamed to see our name on something we've written, then we haven't done our job properly. This is why people feel that 'ghostwriting' is somehow unethical; that the real, professional author who has been paid for using their writing and scientific skills is hiding. I'm not, however, suggesting that we should be authors on everything we produce, rather that we use authorship as a state of mind with which to approach our work. As the Nobel prize-winning scientist Joshua Lederberg recounted "Above all, the act of publication is an inscription under oath, a testimony"[2,3], and I'll go along with that.

Impact factors (IFs) vs objective language

Adjectives that attribute status or significance to an otherwise neutral claim were counted in 12 journals using a bias score, e.g. 'crucial' was given a high score of 3 and 'important' a lower score of 1. The research raised the question "Does a reward-seeking-model of publication—as reflected in the current desire to publish in high impact journals—influence the use of language in scientific manuscripts? The adjectives' use increased statistically significantly from 1985-2005 in biomedical research journals with high IFs but not in clinical journals. The authors argue that subjective stances on the relevance and implications of results should be tempered with discretion. 25 years ago scientists selected journals for their publications primarily based on the audiences they reached but IFs have increasingly swayed their choice as the emphasis on IFs in assessing researchers and their departments has increased. The authors thought that the potential to influence clinical practice might be the reason for language being more likely to be tempered in clinical journals.

Source: Fraser VJ and Martin JG: Marketing data: Has the rise of impact factor led to the fall of objective language in the scientific article? *Respiratory Research* 2009;10:35-39. <http://respiratory-research.com/content/10/1/35>

Richard Clark

Freelance Medical Writer
Vitruvian Medical Writing Ltd
Warwickshire, UK
rac.clark@zen.co.uk
<http://www.vitruvianmedical.co.uk/>

Reference:

1. Clark, R. Some thoughts on writing slide presentations: Avoiding 'death by PowerPoint'. *TWS* 2008;17(2):78–81.
2. Weissmann, G. Science as oath and testimony: Joshua Lederberg (1925–2008). *FASEB J* 2008;22:3411–14.
3. Lederberg, J. (1991) Communication as the Root Of Scientific Progress (presentation at 1991 Woods Hole Conference of International Scientific Editors). In: Stefik, M. (1993) *Internet Dreams: Archetypes, Myths and Metaphors*. MIT Press, Cambridge. p. 41.

Expression of emotion: A comparison of extracts from medical papers written in the 1800s and late 1900s

The following are examples of the emotion expressed in medical prose in the 1800s:

- a. I was alarmed by the *great* apathy and *great* prostration. I found the fever and pulse *very much* moderate (1826)
- b. I do not recollect having *ever seen such excrescences of such a length* as are here (1836)
- c. I do not know any operation in surgery where *so great an amount of relief* is given with *so little* trouble (1855).

The following examples are of how conflicts were tackled in the 1800s compared with the second half of the 1900s. The characteristic personal attacks and emotion in the extracts from the 1800s is absent from the 1900s' extracts, which are characterised by detachment.

1800s

- a. Mr. Bloch and Mr. Dumeril obtained the same results. It is easy, however, to perceive that both these respectful gentlemen were profoundly mistaken. (1832)
- b. Dr Lawrie is disposed, incorrectly I think, to consider the amputation of the leg more fatal than that of the thigh. (1840)
- c. The mortality is considerably greater in the Glasgow Infirmary, which Dr. Guthrie, a highly respectable man, attributes with no reason at all to the pseudo-improvements of the late years in surgery. (1840)

Late 1900s

- a. We have carried out both the test of Akerfeldt and Gibbs and have been unable to confirm the findings of either investigator. (1960)
- b. The randomized controlled cross-over trial of Engleman et al. has important weaknesses. (1995)
- c. Our data are statistically different and conflict with the information previously reported. (1990)

With thanks to **Françoise Salager-Meyer** (francoise.sm@gmail.com) for providing these examples