

Doing the right things

Mariusz Jaskolski

Department of Crystallography, Faculty of Chemistry, A. Mickiewicz University and Center for Biocrystallographic Research, Institute of Bioorganic Chemistry, Polish Academy of Sciences, Poznan, Poland

Correspondence e-mail: mariuszj@amu.edu.pl

Received 13 August 2013

Accepted 13 September 2013

This letter identifies recent examples of misrepresentation of biological helical structures and expresses concern about the continuing indulgent attitude towards distortion of scientific facts. It also teaches a simple trick to distinguish right- from left-handedness.

The front cover of a recent issue of *Nature Methods* (Vol. 10, No. 7, 2013) was decorated with a puzzling illustration of what, one could guess, was supposed to be canonical (B-form) DNA. The trouble is that the double-helical structure on that cover is left-handed. Left-handed chirality is assumed only by Z-DNA but the context and the smooth helical line, certainly do not agree with the zigzag structure of Z-DNA. Confusion about the handedness of biological structures is not infrequent in popular media but on the cover of a *Nature* journal, which published the correct structure of DNA 60 years ago (Watson & Crick, 1953), this doubtful ornament is indeed shocking.

I sent a letter to the Editor of *Nature Methods* pointing out the lapse and suggesting that an honest reaction to this mistake could actually have a didactic benefit, by sensitizing the general audience to the importance of and distinction between what is right (and what is left) in biology and chemistry. Sadly, there has been no reaction to my letter, not even an acknowledgment.

By sheer coincidence, a month later I spotted a similar error in the logo of Entangled Bank Events, a UK charity promoting science (<http://www.entangled-bank.co.uk/>). In this case the reaction was instantaneous and the mistake was corrected in no time.

A note (Eisen, 2010) about a similar slip on the cover of *Nature* (Vol. 467, No. 7312, 2010) was rebuked as a frivolous 'groan' that neglects the existence of left-handed Z-DNA (Erives, 2010). As noted above, there is a big difference between the conformation of Z-DNA and canonical B-DNA. There is also a difference between depicting left-handed DNA deliberately and by mistake.

All this might seem to be a trivial matter blown out of proportion, but unfortunately it is not. By imprinting in the eyes, and minds, of the viewers, especially the younger ones, the false image of reality that contradicts the established scientific facts, we in fact, perhaps unwillingly, subscribe to the agenda that, in the end, what science does, does not matter; it can be either right or left, who cares? Well, I do care. And therefore I will continue my crusade (and groaning) to eradicate the incorrect representation of scientific facts from popular media and with even more determination, from the forums of respectable science.

Some people have a natural perception of right- and left-handedness, while for others the distinction is almost beyond imagination. There is a simple trick to tell a right-handed helix from a left-handed one. Imagine that the helix is a winding staircase in a tower and we are climbing the stairs up. The hand with which one has to hold to the *outer* railing determines the handedness of the stairs, and thus of the helix. Simple, isn't it?

References

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