



Story-telling: an essential part of science

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A recent paper by Lindenmayer and Fischer [1] attempts to refine definitions within the ‘panchreston’ of habitat fragmentation research. Ironically, in their pursuit of one panchreston they open another, that of ‘story-telling’ in science.

In the scientific literature the term ‘story-telling’ was originally used as a critique of a purely adaptationist approach to the study of evolution. In their ‘Spandrels paper’, Gould and Lewontin [2] criticized those evolutionary biologists who assumed the operation of natural selection rather than demonstrated it. As a consequence, ‘story-telling’ has become more or less synonymous with bad science. This emotive connotation persists today with the debate over approaches to the study of natural selection as relevant as ever [3,4].

Despite the negative connotations of the term ‘story-telling’, we suggest that the story-telling step in scientific investigation (in the colloquial sense of being creative) is in fact ubiquitous but too often taken for granted. Although the process of using ideas to generate an hypothesis is less structured than the rule-based methodological testing of that hypothesis it is nonetheless integral to the scientific process. Darwin spent decades assembling careful and detailed observations that led to the formulation of his hypothesis of natural selection, though he was never in a position to test it. The generation of an hypothesis is analogous to the search for ‘truth’ in history. Historians examine and compare narratives to synthesize an accepted version of truth, and after scrutiny such stories might become accepted as fact.

The bad science criticized by Gould and Lewontin lies not in the generation of an hypothesis or the story-telling step, but in acceptance of the untested, or indeed untestable, hypothesis as fact, such that it becomes dogma. Lindenmayer and Fischer [1], who highlight ‘story-telling’ as a problem that ‘contributes to unproductive debates’ in the habitat fragmentation literature, fail to distinguish between the studies that generate hypotheses [5] and those that test them [6].

We suggest the emotive connotations that have become associated with the term ‘story-telling’ be saved for the bad science itself and that the creative story-telling step in the scientific process is a necessary part of embracing complexity. Furthermore, any use of the term in the literature must be properly referenced to avoid ambiguity.

References

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