

# Yes, but what's it for?

The current state of language can make it difficult to discuss evolution in an accurate way.

Steve Blinkhorn

"These boots were made for walking," sang Nancy Sinatra, and it's not too dangerous a metaphysical commitment to accept that that's just what they'll do. "These feet were made for walking," though, is of an entirely different order, and is the sort of statement that brings palaeontologists and evolutionary biologists out in an uncomfortable rash. Evolution is not purposive — there is no teleology in phylogeny, only processes whereby the apparent order of living nature, although stable in the short term, is impermanent and without a certain future.

But wait. Henry Gee, in his account of cladistics, *Deep Time*, espousing precisely the view that we seek in vain for purpose in evolution, still writes: "In short, *Acanthostega* tells us that whatever limbs with digits evolved for, they did not evolve for walking on land" (p. 57). Is this Homer nodding, or is Gee just using a familiar form of language to draw out its own inapplicability? Notice the attribution of purpose in the last sentence. We accept purposive accounts of human behaviour in — perhaps especially in — the conduct of scientific controversy concerning the role or absence of purpose in evolution.

The truth is that language serves science very poorly in providing few clear, concise and cogent ways of indicating that randomness in a process does not necessarily lead to random results, so you do not always need purpose to account for order. We all know that, but communicating it is the very devil of a job. And, in English at least, it can take a good deal of effort to distinguish clearly between fitness for function and purpose intended, between what things are good for and what they were made for. Axes are good

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for chopping wood, but was the first flint hand-axe made for the purpose, or was it just found to be fit for that use (if that's what hand axes were used for at all — itself a matter of some debate)?

Days after I wrote the first draft of this essay, a Letter to *Nature* described 'feather homologues' across the whole body surface of a fossil dinosaur that was clearly incapable of flight, raising more pointedly than ever the question: "What did feathers evolve for?" In point of fact, feathers are good for many different things, including flight, insulation (whether on their original owners or in a quilt, but no one supposes that feathers evolved to provide us with bedding), sexual display, writing, and burning beneath the noses of the putatively dead to check that they have indeed departed this life.

A little later, in a medical feature in a daily newspaper, a particularly slippery usage turned up: "Red blood cells have no DNA so they can transport more oxygen." Intent, mere consequence, or what?

As every schoolboy used to have to learn, and some of us still remember, there is a very common construction in Latin involving a subordinate clause introduced by the conjunction 'ut' where the verb is in the subjunctive mood. "Crevunt pedes ut in terra ambulante animalia" translates both as "feet developed so that animals might walk on land" and as "feet developed, with the result that animals could walk on land". It's as much hard work in Latin as in English to find everyday ways of describing processes leading to results without purposive intent being readily implied. And since Latin was the universal medium of scholarly communication in Europe for nearly two millennia, one may wonder just how much influence this one construction had.

Are there languages that have rigorously distinct ways of expressing purposive and non-purposive accounts of change processes? If so, do their speakers less readily accept purposive accounts in those areas where they are most tendentious? Are German speakers less prone to attribute purpose to evolution, for instance, or at least clearer as to whether they do or not, with the distinctive adjectives *bestimmt* and *geeignet* available to express the difference between 'destined for' and 'fit for'?

There is a proposed link between the emergence of language and theory of mind, the propensity of people to act as though they believe others to share the same style of men-



Made for walking? Language often implies that the blind process of evolution has a purpose.

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tal experience as themselves, and to attribute motives, intentions and expectations to them. One hypothesis concerning autism is that sufferers lack the ability to do this effectively or at all; autism is generally also marked by poor language skills.

If theory of mind and language really did develop in parallel in the course of human evolution, it would not be surprising to discover a bias towards explanatory forms deriving from mentalistic concepts such as intention, purpose and motive embedded so deep that it pervades all language and all languages. The kind of religious thinking that purports to discern divine intention in natural catastrophes can be seen as over-enthusiastic application of theory of mind to the physical world.

There is still some mileage in modelling molecules as billiard balls and atoms as planetary systems, however far cutting-edge physics has left these models behind. Modelling process as purpose may just be too deeply engrained in our forms of language for us to be able to relinquish it altogether. ■

Steve Blinkhorn is at Psychometric Research and Development Ltd, Brewmaster House, The Maltings, St Albans AL1 3HT, UK.