Long tails, tall tales

A review of
The Ancestor's Tale: A Pilgrimage to the Dawn of Evolution
by Richard Dawkins
Houghton Mifflin, New York, 2004

Lael Weinberger

Richard Dawkins is a wonderful wordsmith. I couldn't help but chuckle at the title of this book, *The Ancestor's Tale*, with its clever wordplay ('tale' and 'tail').[1] It only gets better with the subtitle, *A Pilgrimage to the Dawn of Evolution*. 'Pilgrimage' seems curiously religious terminology for the world's most famous atheistic scientist.[2] But this is not at all surprising—Dawkins revels in his role as a 'devil's chaplain'[3] and delights to speak of the wonders of science in sanctimonious tones, his alternative religion. The title for this book turned out to summarize the book in more ways than one.

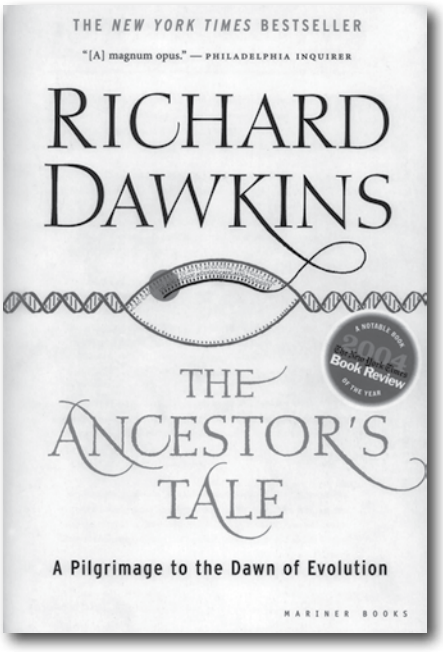
Backwards pilgrimage

The subtitle gives away one key component of the plot: Dawkins isn't going to give us the normal story of evolution by starting at the start and ending with the present (and usually, that means us—humankind). Instead, Dawkins is going to take us on a pilgrimage backwards in time, starting at the present and tracing our ancestors back. The journey is punctuated by what he calls 'rendezvous points', junctures in the evolutionary phylogenies which in forward time would be the occasion for major groups to split off from our common descent and proceed on their own independent evolutionary saga. But in Dawkins' backwards time, these are the points where the major groups rejoin us on a collective trek to meet our common ancestors—Dawkins terms these 'concestors'. Taking a cue from Chaucer's *Canterbury Tales*, the creatures we meet at these rendezvous points always have tales to tell. When Dawkins first introduced this format in his prologue, I wondered whether he actually intended to give us the tales in first person. I cannot say that I was disappointed that the answer was no—600 pages of talking animals would have been a bit much.

Dawkins does however allow a few animals to interject comments in the first person on rare occasion. The final tale closes with a comment from the bacterium *Thermus aquaticus*. While a cute touch, the bacterium has quite an attitude—and highlights one of the recurring lessons in the book:

> 'Look at life from our perspective, and you eukaryotes will soon cease giving yourselves such airs. You bipedal apes, you stump-tailed tree shrews, you desiccated lobe-fins, you vertebrated worms, you Hoxed-up sponges, you newcomers on the block, you eukaryotes, you barely distinguishable congregations of a monotonously narrow parish, you are little more than fancy froth on the surface of bacterial life. … We were here before you arrived, and we shall be here after you are gone' (p. 558).

The lesson, of course, is the non-specialness of humans in the grand scheme of life. This, in fact, is a major reason for the backwards chronology of the book. Dawkins feared that a forward chronology would give the appearance of 'aimed evolution', with man at the top of a 'progressive' evolutionary sequence.[4] Dawkins has already taken a beating at the hands of a number of fellow evolutionist scholars (recently and notably Michael Ruse[5,6]) for his tendency to use value-laden progressive terminology, and bringing in a new emphasis on human non-specialness is a bone to these critics. Dawkins has not given up on 'progress'—far from it, as he makes clear in his final chapter. But he believes equally strongly that humankind as a species needs to be put into evolutionary perspective, humbled from some idea of specialness.[7] This is



what he emphasizes repeatedly in *The Ancestor's Tale*.

In one of his favourite examples, Dawkins points to various species of birds and salamanders, where species A can breed with species B and species B with species C, but where A cannot interbreed with C (pp. 300–302). Look, Dawkins tells us, species barriers aren't as hard and fast as we tend to make them out to be. (Creationists of course have been saying this for years—the species barrier does not coincide with the real dividing point of 'kinds'. Indeed, a common hybridization criterion for 'kinds' allows for this transitive relationship.[8]) The larger lesson Dawkins draws is that all of animal life can be laid out like that, if we only had all of our evolutionary ancestors alive at once. And because of this, we need to get rid of our 'discontinuous' mental tendencies:

> '… many of our legal and ethical principles depend on the separation between *Homo sapiens* and all other species. Of the people who regard abortion as a sin … many are unthinking meat-eaters, and have no worries about chimpanzees being imprisoned in zoos and sacrificed in laboratories' (p. 303).

It is only the 'discontinuous mind' that imagines the clear-cut

separation, and thereby panders to our own vanity and convenience (speciesism, Dawkins calls it).[9]

Yet at the end of the book, we find Dawkins clinging to progress. He believes that there is some type of objective, real progress (he even dares to call it 'value laden') embodied in the evolutionary progression. In an evolutionary 'arms race', for instance, the predators are 'themselves evolving in a systematic direction, getting systematically worse from their victims' point of view' (p. 601).

But Dawkins doesn't want to be seen as caving in to some sort of inner need for humans to be special—this is one aspect of progressive ideology that Dawkins abhors. Hence the emphasis on 'non-special' man. In a memorable passage, Dawkins writes,

> 'A historically minded swift, understandably proud of flight as self-evidently the premier accomplishment of life, will regard swiftkind … as the acme of evolutionary progress. … Elephant astronomers might wonder whether … there exist alien life forms that have crossed the nasal rubicon and taken the final leap to full proboscitude' (p. 6).

In effect, he is saying that our human fixation on brains, language, and the like are just specific cases of our 'speciesism'. Yet as Michael Behe acerbically commented, what would the elephants be contemplating this question with—their noses?[10] There really is something unique and quite special about the mind when contrasted with any other physical feature.[11] Dawkins just can't—or won't—see it.

So Dawkins remains in tension between his progressive ideals on the one hand, and his denial of human specialness. On the one hand, the countless distinctions between humans and animals[12] have to be brushed over, or better still, buried under as many examples of similarity as we can find. This tortured approach is necessary for Dawkins, because to have it any other way—to claim some area of specialness for people—is a vestige of the biblical creation account, which has man created special: 'in the image of God' (Genesis 1:26–27). On the other hand, Dawkins cannot bear to abandon the notion of biological progress, with all its religious overtones. Michael Ruse, no creationist, has brought the religious aspects to light admirably. Progress is comfortable, hopeful and future-oriented; it fills the need for an evolutionary eschatology.[13] Yet this might imply something—if people came late in a progressive evolutionary sequence, might we be special after all (at least in a relative sense)? Such are the conundrums of a religious evolutionist.

Photo by Schuyler Shepherd, www.wikipedia.org

A recurring theme in *The Ancestor's Tale* is the 'non-specialness' of humans. If elephants were the scientists, Dawkins writes, they would be fixated on discovering which life forms 'have crossed the nasal rubicon and taken the final leap to full proboscitude.'

Trapped in metaphor

A prominent attorney and law school dean once commented that his trial successes were due in part to the proper use of metaphor and analogy. 'If your analogy is good, the jury will be stuck with it. You've roped them with it, and they can't escape.' Even facts that don't quite fit get interpreted in light of the analogy. To some extent I think this applies to Dawkins. *The Ancestor's Tale* is a grand-scale romp through the ranks of all of life, from shrews to cauliflowers. Dawkins covers an encyclopedic range of zoological subjects. For him, everything makes sense in light of evolution. He appears genuinely oblivious to the anomalies in the theory. Very often, he probably is. Evolution is a metaphor that shapes the way he thinks. Even facts that don't quite fit get interpreted in light of it.

Convergent evolution is the classic example. When two animals going separate evolutionary ways independently evolve the same feature, what this really means is that the extraordinarily improbable[14] happened *twice*. This really ought to be considered an anomaly for those who accept evolutionary common descent.[15] Dawkins mentions a host of examples. Old World and New World monkeys evolved trichromatic vision independently of each other (and still more odd, independently of their reptilian ancestors) (p. 146). Jet propulsion has evolved twice independently (p. 591). 'True flapping flight' (not gliding) has evolved four times (p. 591). The eye evolved 40 to 60 times (p. 588).

In all this, Dawkins doesn't once contemplate whether these exceedingly improbable occurrences cast any doubt on evolution as a whole. Dawkins actually uses them as indicators of what is likely to evolve—suggesting that if the

tape of life were replayed, echolocation would probably evolve again, since four animals independently evolved it (p. 589). To one who is not already a believer, the audacity is breathtaking. Echolocation is itself an evolutionary puzzle, and to suggest that it evolved four times multiplies the problems by as much.[16] To proceed from this to say that it would be likely to evolve again if evolution were repeated is to pile inference upon improbability—only a dedicated believer could miss the leaps of logic along the way.

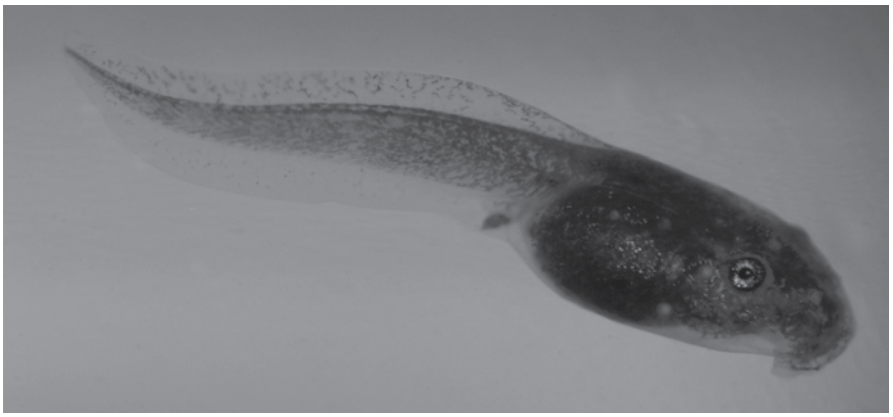


Photo by rainforest_harley's, from www.flickr.com

In his discussion of axolotls, tadpoles and frogs, Dawkins tips his hat to the 'information challenge', apparently without realizing it (or at least hoping his readers do not notice it).

Telling the tale

Of course, Dawkins has heard enough critics of Darwinism that he cannot always be oblivious to the problems. But *The Ancestor's Tale* was not the place for answering critics. Sometimes, this means just ignoring the criticism and probably hoping that the readers aren't thinking too much about it. For instance, in telling the 'axolotl's tale', Dawkins suggests that 'we can easily imagine a frog-like adult ancestor evolving into a tadpole-like adult descendant, because all frogs contain the genes for making a tadpole' (p. 315). Well, that certainly does help, does it not, having the necessary genes *already*? An axolotl is 'tadpole-like' and Dawkins says it came from a froglike ancestor which had part of its development suppressed.[17] But, Dawkins tells us frogs came from a jawless concestor who lived at rendezvous 22—a creature that did *not* genetically 'know' how to be a frog. This screams 'information challenge'[18]—and it seems incredible that Dawkins, knowing that this is the favourite attack point for his creationist and ID critics,[19] would tip his hat to information as he did in the axolotl's tale without saying something to answer them.

Dawkins is very good at using his storytelling skills to put together a (superficially) seamless Darwinian tale, ironing out rough spots with the stroke of a pen. The conclusion of the pilgrimage is one long example. Dawkins' 'Canterbury' is the origin of life. Dawkins tells the whole story of early origin-of-life theorizing by Darwin,[20] Oparin, Haldane, Miller and Urey, and then arrives at the currently popular 'RNA first' theory for life. When he gets to this, he spends four pages explaining enzymes (pp. 568–571) and a couple more on autocatalysis (pp. 571–573), before finally getting to the heart of the RNA theory: RNA as both replicator and catalyst. Dawkins sets up the story so that the 'RNA World' scenario answers virtually all of the questions he raised in his long build up about enzymes. A popular-level audience will presumably be overwhelmed with the explanatory power of the new theory. So when Dawkins acknowledges at the end of the chapter, 'There are many other theories that I have not gone into' (p. 581), the reader hardly gets a feel for the intense controversy that still swirls around this area even among the most sanguine evolutionists.[21] A well-told (and long) story is quite effective at covering over complicated scientific controversies.

What's in a name

Dawkins' title did indeed summarize the book well. A 'tale' it is. Dawkins does have a knack for explaining scientific concepts with interesting analogies and witty turns of phrase. This, and his dogmatic antitheism, is what made him a candidate for an endowed chair of 'the public understanding of science' at a secular university anyway. Dawkins has not cared much for publishing research in the scientific journals in recent years,[22] preferring a public literary career (as a glance at his curriculum vitae shows[23]). In the past several years particularly, Dawkins has tended to wander completely off scientific topics in favour of religion bashing.[24] *The Ancestor's Tale* is important in his professional career as the most significant science-oriented work he has produced in almost a decade. It is certainly the most massive, and its scope is impressive. Yet for his most significant science work in quite some time, it remains very much a popular science work. It is a 'tale' on a grand scale.

The Ancestor's Tale bears the marks of one who has been working on articles rather than books for quite some time. The 'tales' told by the 'pilgrims' are all winningly told, but they are uneven and unpredictable. They range from one to twelve or more pages. They vary from a simple description of a feeding habit (pp. 467–469), to an extended discussion of how to build a phylogeny (pp. 123–136). Sometimes the story is just about the species whose 'tale' is being told, and sometimes the eponymous 'tale' of the section merely serves as a convenient jumping off point, and the tale continues with hardly a mention of the species. ('The Redwood's Tale' is about dating methods, and spends about five times as many pages talking about radioactive dating methods rather than counting rings in trees.[25]) Sometimes also, even Dawkins' wonderful ability to communicate at

the popular level seems too much, making me wonder what he was thinking about his audience. The analogies are too elaborate; the scene setting takes too long. And when he throws out certain bits of information, such as 'All matter is made of atoms' (p. 517), I wonder whether he actually expects that someone who does *not* know this will be ploughing through a 600-page book that often uses species' scientific names.

The book's subtitle (*A Pilgrimage to the Dawn of Evolution*) is also well chosen. As the agent to 'dethrone' religion (the 'root of all evil' in Dawkins' view[26]), evolution is the hero of the plot for the advance of right thinking. And evolution is the source, the non-divine creator, of the natural world, a world that inspires in Dawkins that sense of awe that is effectively a replacement religion. A religious 'pilgrimage' is a wonderful metaphor for Dawkins' view of evolution.

Reading *The Ancestor's Tale* is something like reading a wittily written encyclopaedia of evolution. *The Ancestor's Tale* is not designed to convince anyone to believe in evolution. It assumes evolution and proceeds from there. It contributes much to the public myth of evolution as established fact, and nothing substantive to the defence of evolution against those who are aware of the fatal cracks in the evolutionary structure.

References

1. The anatomical side of the title's double meaning brings to mind some titles from the late Stephen Jay Gould: *The Panda's Thumb*, W.W. Norton, New York, 1992, and *The Flamingo's Smile*, W.W. Norton, New York, 1987.
2. Especially his misotheistic distribe, *The God Delusion*, Transworld Publishers, London, 2006; see review by Bell, P., Atheist with a mission, *J. Creation* **21**(2):28–34, 2006; <www.creationontheweb.com/delusion>.
3. The title of another of Dawkins' books. See review: Weinberger, L, Secular sermons: A review of *A Devil's Chaplain* by Richard Dawkins, *Journal of Creation* **21**(2)20–23, 2007.
4. A recent summary of the controversy over 'progress' is in Shanahan, T., Evolutionary Progress? *BioScience* **50**(5):451, 2000.
5. Ruse, M., *The Evolution-Creation Struggle*, Harvard University Press, Cambridge, MA, pp. 221–222, 2005.
6. Ruse, M., *Mystery of Mysteries: Is Evolution a Social Construction?* Harvard University Press, Cambridge, MA, pp. 131–132, 1999.
7. Dawkins called this idea of 'specialness' 'human chauvinism' in a 1997 book review, republished in Dawkins, *A Devil's Chaplain*, Houghton Mifflin, New York, pp. 206–217, 2003.
8. See Wieland, C., Variation, information and the created kind, *Journal of Creation* **5**(1):42–47, 1991; Sarfati, J., *Refuting Compromise*, Master Books, Green Forest, AR, pp. 230–234, 2004; Scherer, S., Basic types of life; in: Dembski, W. (Ed.), *Mere Creation: Science, Faith, and Intelligent Design*, InterVarsity Press, Downers Grove, IL, 1998.
9. This line of thinking has led Dawkins to support the 'Great Ape Project', with the goal of giving apes 'fundamental moral and legal protections.' (Homepage, <www.greatapeproject.org>, accessed 14 September 2007.) See Dawkins' essay, 'Gaps in the Mind', in Cavalieri, P. and Singer, P. (Eds.), *The Great Ape Project*, Fourth Estate, London, pp. 80–87, 1993.
10. Behe, M.J., The pilgrim's regress: A review of *The Ancestor's Tale* by Richard Dawkins, *The American Spectator* **38**(3), April 2005; <www.arn.org/docs/behe/mb_ancestorstalereview_0506.htm>.
11. For an overview of the problems in evolution-of-the-mind scenarios, see Thompson, B. and Harrub, B., Consciousness: the king of evolutionary problems, *CRSQ* **41**(2):113–130, 2004.
12. Presuppositions run deep. Dawkins would correct this sentence to read, 'humans and the *rest* of the animals'. You can hardly even select your terminology without encountering these issues.
13. See Ruse, ref. 5, and Weinberger, L., Evolution as eschatology: A review of *The Evolution-Creation Struggle* by Michael Ruse, *Journal of Creation* **20**(1):31–33, 2006.
14. If not outright impossible, in terms of information science. See generally Gitt, W., *In the Beginning Was Information*, Christliche Literatur–Verbreitung e.V., Bielefeld, Germany, 1997; and Gitt, W., Information, science and biology, *Journal of Creation* **10**(2):181–187, 1996.
15. See, for example, Woodmorappe, J., Are pseudogenes 'shared mistakes' between primate genomes? *Journal of Creation* **14**(3):55–71, 2000.
16. See Weston, P., Bats: sophistication in miniature, *Creation* **21**(1):28–31, 1998, and Meyer, A., The world of whales, *Creation* **19**(1):26–29, 1996.
17. Dykes, J., The Axolotl. The fish that walks? *Creation* **27**(4):21–23, 2005.
18. See generally Gitt, ref. 14.
19. Dawkins' one attempt to answer the information challenge is republished in Dawkins, ref. 7, pp. 91–103, and devastatingly critiqued in Truman, R., The problem of information for the theory of evolution, 15 July 2005, <www.trueorigin.org/dawkinfo.asp>. See also Weinberger, ref. 3.
20. Quoting Darwin's famous letter to Hooker: 'But if … we could conceive in some warm little pond, with all sorts of ammonia and phosphoric salts, light, heat, electricity, &c., present, that a protein compound was chemically formed …' (p. 560).
21. For an overview, see Swee-Eng, A., The origin of life: A critique of current scientific models, *Journal of Creation* **10**(3):300–314, 1996; Mills, G.C. and Kenyon, D., The RNA world: A critique, *Origins & Design* **17**:1, 1996; <www.arn.org/docs/odesign/od171/rnaworld171.htm>. Evolutionist A.G. Cairns-Smith listed at least 19 serious chemical hurdles in *Genetic Takeover and the Mineral Origins of Life*, Cambridge University Press, 1982; <www.creationontheweb.com/rna>.
22. His early, fairly prodigious, output was part of the rite of passage for every young academic.
23. Curriculum Vitae for Clinton Richard Dawkins, <www.simonyi.ox.ac.uk/dawkins/CV.pdf>, 13 September 2007.
24. It is not entirely fair to accuse him of abdicating his commitment to science education, for Dawkins is simply being consistent: his science and his religious views are intimately connected. Theists, ironically enough, can appreciate Dawkins' refusal to artificially separate 'science' and 'religion.' See Sarfati, J., *Refuting Evolution 2*, Master Books, Green Forest, AR, pp. 35–49, 2002.
25. 'Dendochronology' is the proper scientific term.
26. Dawkins hosted a television documentary with this title: Root of all evil?, Channel 4, United Kingdom, screened in two parts during 2006.