



Book review: Justina Robson's *Natural History*

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Natural History. By Justina Robson. Bantam Books, New York, 2005. 327 pp., \$13.00 (paperback). ISBN: 0553587412.

But as the millions of years go by, so too, if we may judge the future by the past, will humanity as we know it ultimately yield place to some other animal form? What form? Whence evolved? We cannot say. But some Cosmic Intellect, watching the mature capacities of this unknown form, will almost certainly judge it to be more highly evolved, of greater value in the scheme of things, than ourselves. On Earth man has no permanent home; and if, as I believe, absolute values are never destroyed, those which humanity carries must be preserved elsewhere than on this globe.

Ernest W. Barnes (1933)¹

Rare are the books where an excerpt from a philosophical or scientific tract, like the one quoted above, can be regarded as almost a *spoiler* of the intricate and densely woven literary plot. *Natural History* is definitely such a book. In the constellation of the born-again space opera (think of Alastair Reynolds, Karl Schroeder, Iain M. Banks, John C. Wright, Greg Egan, and Charles Stross), we encounter a new and bright star. It is definitely not a supernova, it certainly is a variable star, but its future remains – as is still often the case in stellar studies – uncertain, pending future observations. Some of the data gathered so far are summarized in this brief review.

In the several centuries' distant future envisioned by Justina Robson in *Natural History*, the massed ranks of humanity find themselves the Unevolved. They are enhanced in many subtle ways, and they live longer, happier, and fuller lives than in any previous time in history, but they are no longer the greatest ape, the lords of nature. They are mere Monkeys. Or so the Forged, new and in many respects superior creations of bioengineering, would have them believe.

The Forged are still human, at least legally, but they are also unequivocally Other. Many are animal based: arachnids, hive-minded insectoids or avians (like one of the three main characters, an unconventional Forged engineer named Roc

Handslicer Corvax). Others are vast spaceships. Between these are hybrids, like the shuttle Ironhorse AnimaMekTek Aurora, "a smooth blue oval with a long, graceful tail like a gigantic airborne manta ray" (p. 64), and beyond all of them are the Gaiaforms. These are, vast creatures designed to carry out the megaengineering terraforming tasks that have rendered the Moon and Mars habitable.

Despite maintaining cordial (or at least politely cooperative) relations with the Unevolved, some of the Forged dream of Zion. They want self-determination so they can shake off their pre-ordained lives. Their bodies have been built for a purpose, so to deviate from that purpose is, in a sense, to rebel against themselves. When Corvax dissents from his original function and embraces a different life, he is slowly eaten from the inside. The Gaiaforms have to be kept in stasis because they were designed for such vigorous lives that they would consume themselves if sedentary. This is the tyranny of Form and Function. When one of the most extreme Forged independents discovers a habitable planet that circles the distant star poetically named Zia di Notte, the Forged have a world with the potential to become their Zion. What had been a slowly brewing crisis now suddenly explodes into the novel's plotline.

The title of the book is itself a delightful, multilayered provocation: Robson takes a half-forgotten term that encompassed much of what we now call the earth and life sciences, together with some aspects of astrobiology and planetary science, and makes it a symbol of the unity between cosmological, biological and cultural evolution. Without disclosing too much to prospective readers, one should say that the book's essential philosophical insight offers a fresh perspective on the central epistemological problem of all historical sciences, including the evolutionary biology: how can we distinguish between contingencies and the outcomes of inexorable, hidden laws? More specifically, what observable components of any complex system, be it the terrestrial biosphere or the Galactic Habitable Zone, have arisen through long-term functionalist interactions (like the natural selection in the dominant adaptationist view of biological evolution)? How much is merely the consequence of the structural and other constraints of each particular *form* manifested within the system (as in most of the contemporary art theory, or in the discarded biological theories of orthogenesis or saltationism)?

There is a huge amount of literature on this subject, and it presents one of the most interesting chapters in the entire history of ideas. The ebbs and flows of our understanding of the relationship of Form and Function in shaping the terrestrial biosphere, and indeed ourselves, have been masterfully presented by several modern evolutionists (for example, Stephen Jay Gould devoted more than two hundred pages of his *magnum opus*, *The Structure of Evolutionary Theory*, to the history of contending doctrines of functionalism and formalism in biological evolution; Peter Bowler's *Evolution: The History of an Idea* is also a fine entry point).

Natural History belongs to a sub-genre of science fiction that might be called "the transcendence novel". For classic prototypes, think of Clarke's *Childhood's End* and the Strugatsky brothers' *The Ugly Swans*. Egan's *Distress* and Schild's *Ladder*, Vinge's *A Fire upon the Deep*, Baxter's *Destiny's Children* trilogy, and Schroeder's brilliant *Lady of Mazes* are more recent works with the same theme. (By contrast, Wright's *Golden Transcendence* fails to join to this select club; it is more of an *anti-transcendence* novel, since it shows the reemergence of some all-too-human weaknesses and demerits in a "golden age".) Overarching all of these is the mighty cathedral of their great forebear, Olaf Stapledon's *Last and First Men* (1930).

The yearning for transcendence, for a cosmic phase transition to posthumanity, is a *leitmotif* almost from the opening of *Natural History*. Voyager Lonestar Isol, an insect-like cosmic explorer, and the first viewpoint character, expresses it most clearly. "Even a Forged life is so short and this place is so very big. How could you stand to be late?" (p. 3) "Is there nothing about you that stands out and above all of that glibly mortal hyperbole, that came this far and saw so little?" (p. 7)

What Robson suggests is a rehash of the transcendence idea in evolutionary (though not necessarily Darwinian) biology: in the same manner as a Lamarckian functionalism substitutes for the Darwinian one in the cultural evolution of humanity, something completely new – like the old formalist saltationism of de Vries and Goldschmidt? – but still perfectly natural, should be associated with the Transcendence (i.e. the particular form of transcending described in the novel is capitalized). Ironically enough, the Transcendent perspective in the novel obviates much of the old debate between functionalism and formalism. In words of the first human who consciously oversteps the boundary, “[y]ou know,... the whole issue of what shape you're in is really much more trivial than I thought” (p. 293). To say anything more here would be to spoil one of the most beautiful twists in the book.

Robson's book masterfully exploits some of today's fashionable scientific notions, such as the Galactic habitable zone in astrobiology and M-theory in fundamental physics. M-theory (along with its parent-theory, Green-Schwartz-Witten superstrings) is particularly well-employed in constructing the mechanism of desired Transcendence. Whether this controversial theory will stand its ground by the time of Gaiasol and the events described in the novel is uncertain (and unlikely in my view), but that is a secondary issue.

As an important aside, we occasionally get a glimpse of the process so sadly familiar from the twentieth century: the gradual transformation of noble idealists into violent revolutionaries, and finally into vicious tyrants. Robson subtly exploits this political theme: contrary to what might be expected, she does not offer instant moral support for the self-proclaimed victims of oppression among the Forged. It is clear from the start – in similarity to almost all revolutions in human history – that only a vocal minority of the Forged are the true promoters of the ideas of the Forged Independence Party. However, as human history amply demonstrates, it sometimes takes no more than a strongly organized and unsatisfied minority to unleash a civil war, followed by tyranny, destruction, and long-term sufferings. As the events of *Natural History* unfold, we are left with the pessimistic sense that a true *deus ex machina* is required. Vicious civil war may be averted by a near-miraculous brush with the Transcendence, and a protagonist can be saved from consequences of her own extreme views by inadvertently Transcending, but Robson makes the general note of warning quite clear. This is another reason why even readers not keen on transcendence theme should drink from the spring of this delightful book.

None of this is to deny that *Natural History* has weaknesses. In terms of sheer reading pleasure and colorfulness of the scenery, it lags behind *The Golden Age* or *The Lady of Mazes*. As a novel of ideas, it has flaws and inconsistencies that are never resolved, since the author typically hurries to another witty passage or the next Big Idea. For example, one indispensable assumption that drives the plot is that the Forged need an Earth-like planet—but for what, exactly? If they can survive and prosper on Jupiter and Saturn (which offer them vast living space), the discovery of an Earth-like planet many parsecs away should be little more than a matter for their curiosity. Zephyr Duquesne, the Unevolved inspector of the newly-discovered planet, is *inter alia*, a poster child for the politically oppressed of our times; this politically correct anachronism is emphasized by the fact that it takes a Forged to notice that she's “short, female [and] black” (p. 71).

Further, if the future society has adopted a very broad definition of human rights, evidently based on the notion of personhood rather than human form, why are artificial intelligences (AIs) deprived of these rights? It is stated at one point that AIs are not sentient, but that sounds more like a pretext than the real reason, especially since the one AI described in some detail, Zephyr's abacand (an advanced cousin of your mercifully quiet laptop) is certainly Turing-intelligent and quite witty in addition. The same dilemma applies to virtual-reality constructs that apparently possess autonomous personas, but are not protected by Gaiasol police/military, virtual reality branch. If it is just a human flaw in the system, to be corrected in time, as sounds plausible at first glance, how is it that even the Transcendence won't accept Zephyr's

abacand? This dilemma suggests a quasi-mystical vitalism, like that which permeates much of the leftist environmentalism we see today, which enthusiastically affirms animal rights but shuns any idea of attributing rights to machines, even future intelligent machines. This will, clearly, remain an open philosophical question as long as specific criteria for testing sentience remain undefined, and Robson is entitled to have her opinion on this expressed in the novel. On the other hand, if the delicate issue of rights is concerned, isn't more natural and reasonable when in doubt to err on the side of inclusiveness, rather than exclusiveness?

The resolution of the novel is weak, even if we accept that its very end, a fine "return to normal life" episode given from the viewpoint of a dog (*homage* to Clifford Simak?) is intentionally softened. There is no powerful sense here of a triumph over evil, and the only casualty is punished not for his evil schemes, but for black-marketeering of a kind that may be politically incorrect by some current standards but seemingly violates no one's rights. This outcome is unlikely to provide readers with the Aristotelian *catharsis*. Of course, the novel's lack of closure may also be a marketing ploy to allow room for future sequels.

Finally, the author provides some rather smug "hints and tips" for the illuminated. For example, in naming the city-like structure on the mysterious planet Tanelorn, Robson not only flaunts the book's literary roots (which is fine in itself), but also implies the existence of higher dimensions, and that some of the plot's secrets will be resolved through additional dimensions/universes. Moreover, since Tanelorn is the fixed point in the Moorcockian multiverse, and it turns out much later that the structure on Zia di Notte plays exactly the same role for the Transcendent Ones, the "hint" is perhaps too strong.

All in all, Robson's book is a worthy addition to the small library of novels that give serious and careful consideration to the ramifications of a Stapledonian vision of humanity's cosmic evolution. *Natural History* is not perfect, but it provides an enjoyable and colorful journey. If you are interested in the fate of humankind and what Georges Lemaitre called the "searching of souls as well as of spectra", you'll feel welcome on this lyrical voyage.²

¹ *Scientific Theory and Religion, Gifford Lectures 1927-1929* (Cambridge U. Press, Cambridge, 1933), p. 503. Barnes, the Bishop of Birmingham, was a distinguished mathematician, theologian and an early futurist, whose prescient ideas about cosmic evolution are closely related to the similar ideas of his more famous contemporaries, such as H. G. Wells, O. Stapledon, J. B. S. Haldane or K. E. Tsiolkovsky.

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