

Fictional selection

You cannot understand a story without understanding human nature, so literary critics should take their lead from evolutionary biology, argues Jonathan Gottschall

MARXIST, radical feminist, Foucauldian, deconstructionist, post-colonial and queer. It reads like the fight card for an ideological battle royal. In fact, these are some of the major schools of thought in literary criticism from the past 40 years – and they have much in common. Central to these and all other approaches to understanding literature that are influenced by post-structuralism is the idea that there is no innate human nature. Nature is nurture, or, put another way, our nature is simply to spoon up whatever culture happens to feed us – and we are what we eat.

Understanding a story is ultimately about understanding the human mind. The primary job of the literary critic is to pry open the craniums of characters, authors and narrators, climb inside their heads and spelunk through

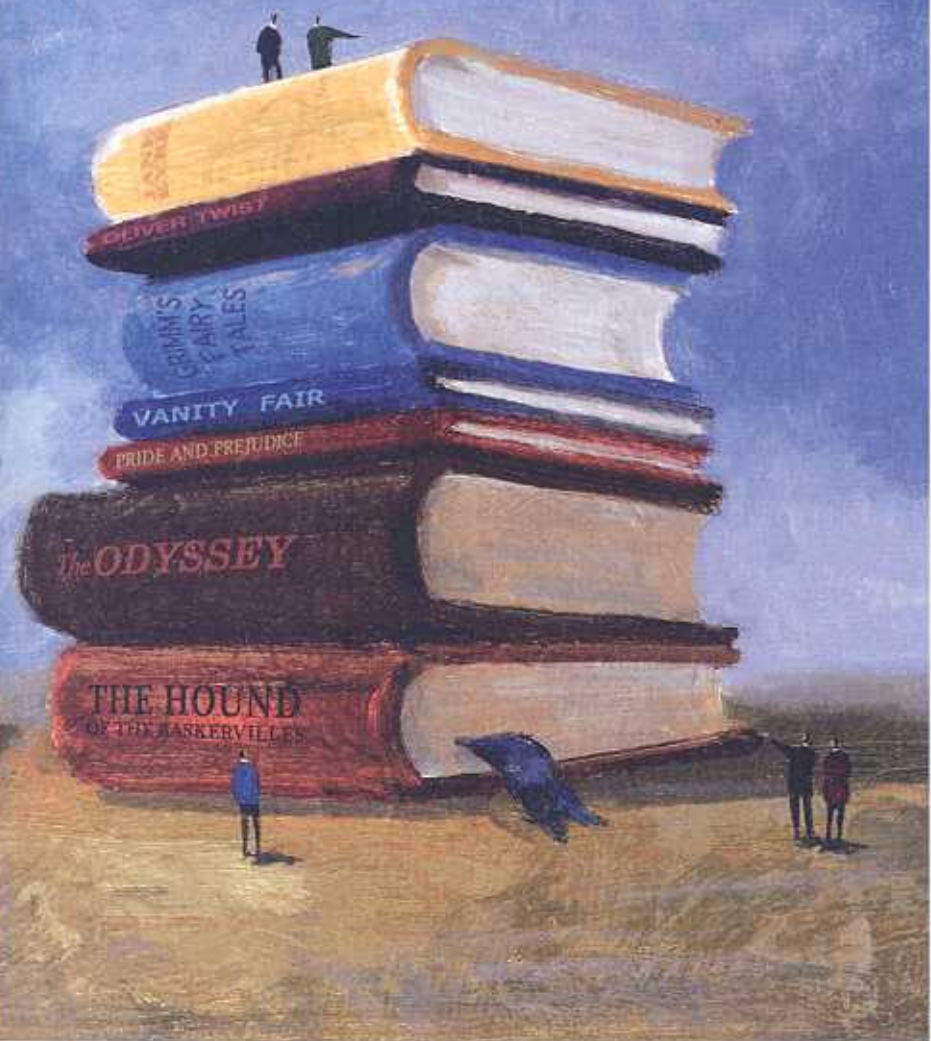
"Darwin's powerful lens brought sudden coherence to my experience of Homer's Iliad"

In short, there is a dreadful sense that the whole reputation of the study of the humanities is in free fall. This drop feels all the more vertiginous given the soaring stock of the sciences. While many literary scholars have responded by trying to knock science down a peg, literary Darwinists have taken the opposite tack. We have posed two questions: what exactly is science doing right that we are doing so wrong, and can we emulate it?

I began asking these questions in the mid-1990s while I was working towards a PhD in English literature. At the time, I was sceptical of much of what I was being told in my literary theory courses, but my reasons were vague and disordered. These misgivings coalesced when I chanced across a tattered copy of the zoologist Desmond Morris's book *The Naked Ape* in a used-book store.

While the specifics of the 1960s best-seller were outdated by that time, its general attitude toward human behaviour was not. Morris argued that although humans have complicated culture and a stunning capacity to learn, this does not change the fact that we are also animals, vertebrates, mammals, primates and, ultimately, great apes. Aspects of our culture and intelligence mean that we are different from the other apes, but they do not emancipate us from biology or lift us above other animals onto an exalted link of the chain of being. What's more, it follows that the behavioural characteristics of the human animal, just like the physical ones, should be understood as the end products of a long evolutionary process. Morris did not claim that this rendered all other perspectives on human behaviour obsolete, just that an important fact had been neglected to the detriment of our understanding: people are apes.

At exactly the same time I was reading ▶



the bewildering complexity within to figure out what makes them tick. Yet, in doing this, literary scholars have ignored the recent scientific revolution that has transformed our understanding of why people behave the way they do. While evolutionary biologists have irreparably shattered the blank slate, most students of the humanities still insist that humans are born all but free of any innate nature.

My fellow literary Darwinists and I hope to change their minds. By applying evolution-based thinking to fiction, we believe we can invigorate the study of literature, while at the same time mining an untapped source of information for the scientific study of human nature (see "Truth in fiction", page 40). Darwinian thinking can help us better understand why characters act and

think as they do, why plots and themes resonate within such very narrow bounds of variation, and the ultimate reasons for the human animal's strange, ardent love affair with stories. It may sound like an innocent endeavour, but this is potentially revolutionary. If literary Darwinism is mainly right, then much of what has been written and said in the realm of literary theory and criticism in the second half of the 20th century is in need of significant revision.

Literary Darwinism has emerged during a period of crisis in literary studies. Enrolments and funding are in decline, books languish unpublished as readerships dwindle, and prospects for new PhDs are abysmal. Perhaps worst of all, literary scholars are at risk of being presented as laughing stock by novelists and held up to ridicule by satirical journalists.

The Naked Ape I was rereading Homer's *Iliad* for a graduate seminar on the great epics. As always, Homer made my bones flex and ache with the terror and beauty of the human condition. But this time around I also experienced the *Iliad* as a drama of naked apes – strutting, preening, fighting and bellowing their power in fierce competition for social dominance, beautiful women and material resources. Darwin's powerful lens brought sudden coherence to my experience of the story, inspiring me to abandon my half-drafted PhD dissertation and instead undertake a Darwinian analysis of the *Iliad*.

The study began with a simple observation. Intense competition between great apes, as described both by Homer and by primatologists, frequently boils down to precisely the same thing: access to females. In Homer, conflicts over Helen, Penelope and the slave girl Briseis are just the tip of the iceberg. The Trojan war is not only fought over Helen, it is fought over Hector's Andromache and all the nameless women of ordinary Trojan men. "Don't anyone hurry to return homeward until after he has lain down

alongside a wife of some Trojan," the old counsellor Nestor exhorts the Greeks. Capturing women was not just a perk of war, it was one of the important reasons for war. Achilles conveys this in his soul-searching assessment of his life as warrior: "I have spent many sleepless nights and bloody days in battle, fighting men for their women."

The intense competition for women suggests they were scarce. Some scholars have raised the possibility that Homeric peoples, including the Greeks of the 8th century BC, practised female infanticide. I argue that a potentially more important cultural practice has been overlooked. Although Homeric men did not have multiple wives, most leading men were polygynous: in addition to their wives they hoarded slave women who they treated as their sexual property. For every extra woman possessed by a high-status man, some less fortunate or less formidable Greek lacked a wife. Comparative anthropology shows that the results of such a situation are all but guaranteed. Wherever there are "missing females" – from modern China and India to ancient Greece – there will be strife

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over women and fierce competition among men for the wealth and prestige needed to attract them.

My study of Homer is informed by insights from a range of sciences including evolutionary biology, behavioural genetics, evolutionary and developmental psychology and cognitive science – what Harvard University psychologist Steven Pinker calls "the new sciences of human nature". But while the theory driving the study is scientific, the methods are not. Lately, however, my colleagues and I have been seeking to apply scientific methods in our investigations of literature.

These efforts crash up against the scepticism of our peers – against a widespread feeling that any attempt to formulate a "literary science" is risibly oxymoronic. Our critics argue that literary scholars – Marxists, psychoanalysts, structuralists – have repeatedly tried to make the discipline more scientific, and that these miserable experiments in science-envy have always ended in farce. This is true, but literary Darwinism is different. While these approaches imported concepts, jargon and data from more scientific fields, they never attempted to adopt the scientific method, developing competing hypotheses and empirically testing them. To anyone who wonders how there can be a science of literature that assigns numbers to the riot of information conveyed in a text, we answer: that it is not easy, but it can be done.

Victorian values

Take the study recently completed by the leading figure in literary Darwinism, Joseph Carroll from the University of Missouri-St Louis, in collaboration with myself and two psychologists, John Johnson

Truth in fiction

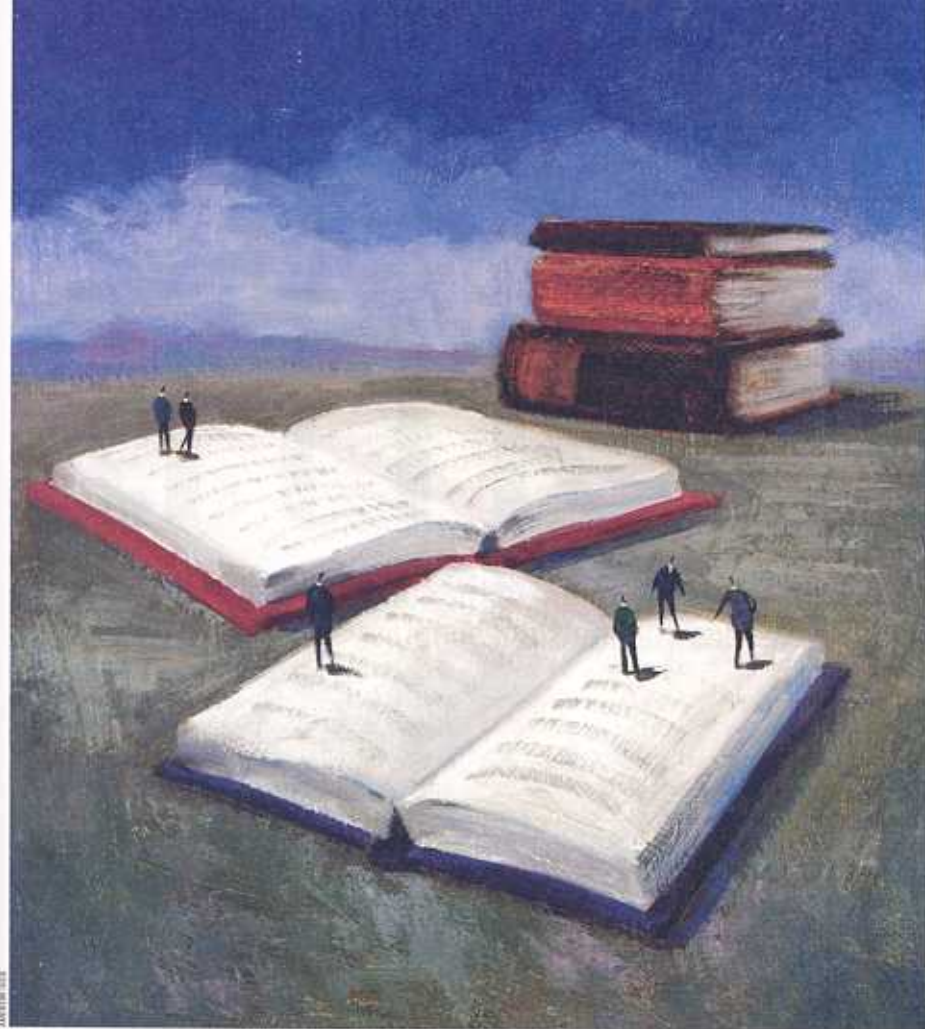
By seeing literature in the light of evolutionary biology, literary Darwinism can give fresh insights into old narratives (see main story) and a new repository of data with which scientific ideas about human behaviour, psychology, cognition and culture can be tested.

THE BEAUTY MYTH: Writer Naomi Wolf asserts that the emphasis we put on women's beauty is part of a socially constructed western "beauty myth". Evolutionary psychologists suspect that it is a pan-human evolutionary legacy. Who is correct? My colleagues and I addressed this question using computer-aided content analyses of collections of folk tales from across the globe. We found that female characters across scores of traditional societies were between two and six times more likely to be described with a reference to their attractiveness than males. Wolf's notion of the "beauty myth" may itself be mythological (*Human Nature*, in press).

The hourglass figure: In the same vein, Wolf and others maintain that perceptions of attractiveness are subjective, culture-specific and ever-changing. Evolutionary psychologists, however, see beauty as an indicator of good health, fertility and genetic quality, so that certain aspects of attractiveness should remain constant across cultures and time. In particular, Devendra Singh from the University of Texas at Austin has famously argued that a low waist to hip ratio in women is a sign of youth and fertility, giving an evolutionary explanation for why men find women with hourglass figures more attractive. Early this year he and colleagues presented findings from a search of literature from the UK, India and China, spanning the 16th, 17th and 18th centuries, which revealed that these stories consistently portrayed women with a small waist as beautiful. This cross-cultural and cross-historical consensus, formed before the advent of mass media

and without the benefit of modern scientific knowledge, suggests that beauty does indeed have a biological basis (*Proceedings of the Royal Society B*, vol 274, p 891).

ROMANTIC LOVE: Academics routinely claim that romantic love is not a universal human emotion. Some have even specified the time and place it was invented, claiming it was the creation of troubadours in 12th-century France. Analysis of folk tales offers a way to test these ideas. In a study published last year, Marcus Nordlund from Gothenburg University, colleagues at St Lawrence University and I coordinated a content analysis that found salient depictions of romantic love in folk-tale traditions broadly scattered in space and time. Either people everywhere have independently learned to respond to each other in this way, or romantic love is an innate part of human nature evolved by natural selection (*Philosophy and Literature*, vol 30, p 450).



from Pennsylvania State University in DuBois and Daniel Kruger from the University of Michigan in Ann Arbor. This was a web-based survey of more than 500 avid readers, designed to test specific hypotheses at the nexus of literature and evolutionary science. Respondents answered questions about the motives, mate-selection strategies and personalities of 144 principal characters in a broad selection of Victorian novels, and also rated their own emotional responses to the characters.

What did we find? First, that readers' responses reflect an evolved psychological tendency to envision human social relations as morally polarised struggles between "us" and "them". Protagonists and their allies form cooperative communities which readers empathise with and participate vicariously in. By contrast, readers tend to view antagonists and their allies as an "out-group" – a malign force, motivated by a desire for social dominance as an end in itself, that threatens the very principle of community.

In addition, the data also allowed us to

weigh in on some old and acrimonious literary debates. For instance, scholars have long argued about whether authors tightly control literary meaning, or whether readers create their own highly idiosyncratic interpretations of the novels they read. In recent decades the most influential figures in literary analysis have promoted the latter view, spawning the mantra of "the death of the author". Our findings contradict this. While readers do vary in their emotional and analytical responses, the variation is contained within tight boundaries. At least as far as the Victorian novel goes, the author is alive and well, expertly orchestrating reader response.

To take one more example, feminist scholars have long maintained that European fairy tales wantonly inflict psychic violence upon the vulnerable minds of children, especially girls, by promoting stereotypical gender roles. They maintain that images of swashbuckling heroes and beautiful young maidens yearning for dashing princes are not in any sense "natural", but instead reflect and

perpetuate the arbitrary gender arrangements of patriarchal western culture. To test this assertion I convened a team of content analysts to gather quantitative data on the depiction of folk-tale characters from all around the world. What we found was that the feminist critique is both right and wrong. European tales do portray males as more active and more physically courageous, while females are much less likely to be the main character, and have far more emphasis placed on their beauty. But it also became clear that these stereotypes are not merely constructed to reinforce male hegemony in western societies. We encountered precisely the same gender descriptions wherever we moved through the landscape of world folk tales – across continents, cultures and centuries, and in all societies from hunter-gatherer to pre-industrial. While cultural attitudes undeniably influence gender identity, some differences between male and female folk-tale characters are universal, perhaps because they have deep roots in biological differences between the two sexes.

Without doubt literary Darwinism is still at a stage of adolescent awkwardness. Nevertheless, we believe our approach has the potential to breathe new life into a struggling field. In literary studies, faulty theories of human nature have given rise to faulty theories of literature, which have in turn generated faulty hypotheses. What's more, because literary methods are exclusively non-quantitative and often impressionistic, these hypotheses have rarely been systematically tested. As a result, literary scholars have seldom produced knowledge that can withstand the critiques of the next generation. At least literary Darwinism offers hope of breaking out of this cycle. At best we will start to build a literary understanding that can progress in much the same way that science progresses. Sure, it is a bold experiment that may not succeed, but what experiment worth doing is risk free? ●

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