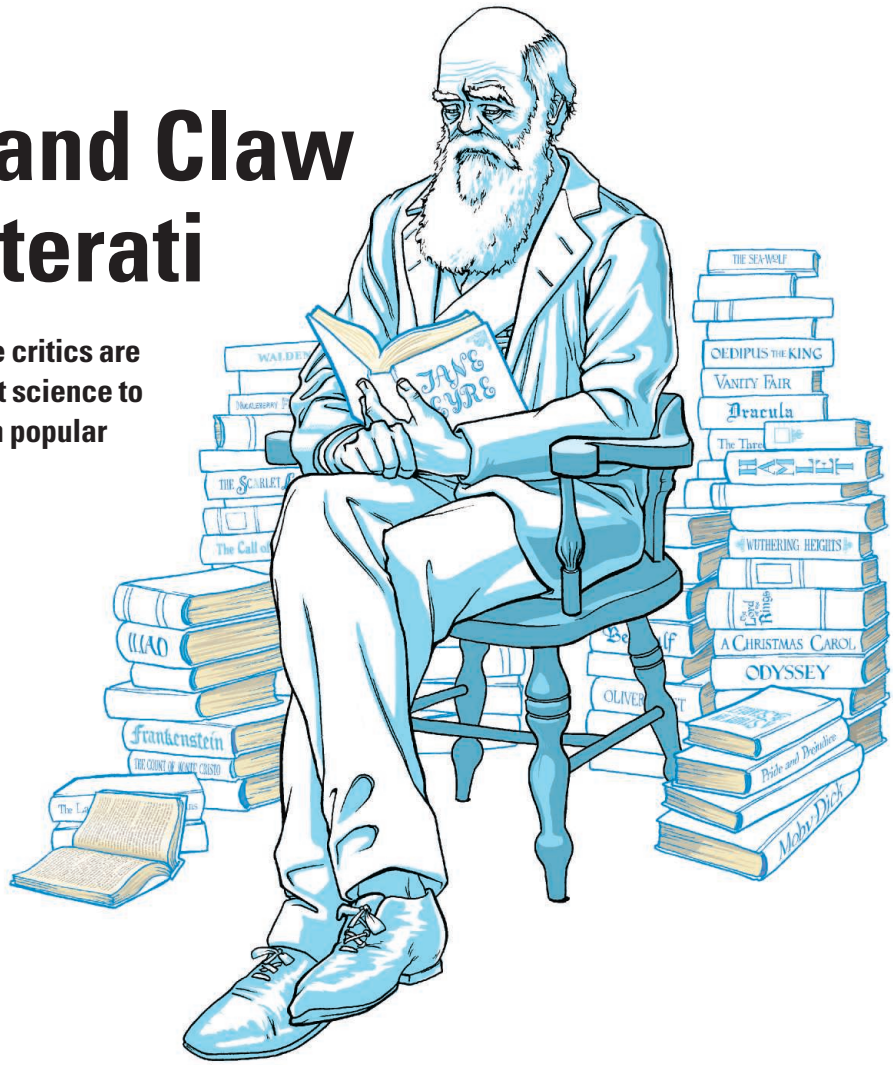
# Red in Tooth and Claw Among the Literati

**Upset by the isolation of their field, some critics are trying to bring Darwin's ideas and recent science to the study of literature. They haven't been popular**




**IN THE EARLY 1990s JOSEPH CARROLL, AN** English professor at the University of Missouri, St. Louis, presented a paper on the possibility of studying literature through the lens of Darwinian evolution. Not long afterward, he heard from a colleague that the paper had generated lots of discussion, though not for the most flattering reason. "People didn't think that anyone in literary studies cared about such things," Carroll recalls. "There was an argument over whether it was a hoax."

Carroll was indeed serious. For 2 decades prior, Freudianism, Marxism, poststructuralism, postcolonialism, and other fashionable "isms" had dominated the academic study of literature. These schools dismissed the idea that evolutionary pressures have shaped human nature, attributing all human nature to culture instead. Frustrated by this thinking, which he has grumbled is "unable to contribute in any useful way to the serious world of adult knowledge," Carroll rebelled. In 1994, he helped found a new field by publishing his self-described "big, baggy monster," *Evolution and Literary Theory*, a 536-page book promoting an approach to literature based on evolution science.

Carroll wasn't alone in his despondency. Other literary scholars have described their field as "a backwater" and "embarrassingly out of step" with science. Following Carroll, some began incorporating neuroscience, cognitive science, anthropology, and—most prominently and controversially—evolutionary psychology into their work.

Some of that work reads like traditional, pre-1970s English scholarship: discussions of tone, style, context, and theme. But it also explores how evolution might have shaped aspects of literature. On a deeper level, writers investigate the potential adaptive benefits of storytelling for our Pleistocene ancestors and the mystery of why humans spend so much time immersed in it. (By one measure, we spend 4 hours per day consuming, discussing, and creating stories, and 4 minutes per day having sex.)

Most scientific lit scholars incorporate at least some evolution into their work because evolution provides a framework for understanding human behavior. And many focus on evolutionary psychology because it explores the origins of mental phenomena, including narratives and aesthetics, and can bridge evolutionary biology and the humanities. Some recent evopsychology also emphasizes the plasticity of the human mind, which helps explain how universal human behaviors (such as storytelling) can exist but can nevertheless be expressed in different ways in different cultures.

**Online**
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Podcast interview with author Sam Kean.

Straddling multiple fields, this analysis has earned a mixed response. Carroll says most scientists encourage his work: Supporters include evolutionary psychologist Steven Pinker and biologist Edward O. Wilson of Harvard University and biologist David Sloan Wilson of Binghamton University in New York state. In contrast, applying evolutionary thought to the human mind has never been popular in the humanities, and scientific lit crit has met with bemusement and occasional hostility. (Three scholars who used scientific ideas in their analyses were denounced as "protofascists" at a prominent academic meeting for literary scholars in the 1990s by a critic who admitted he hadn't read their work.)

But since 2007, the number of books and articles incorporating Darwinian and other scientific thought into literary studies has more than doubled, Carroll says. Carroll himself released a new book in March, *Reading Human Nature*, which summarizes the accomplishments of evolutionary criticism and anticipates where it might be headed. It's not a unified field; some of its members in fact distance themselves from Carroll. But these scholars are united in one sense: They're convinced not only that evolution-

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ary thought can improve literary research but also that literature can teach scientists a thing or two about human evolution.

**Out with Freud, in with Darwin**

Humanities scholars have criticized scientific lit crit as too general or too reductive to say anything meaningful about individual works. Pinker makes a similar argument, saying that although the approach may help us identify how our craving for fiction evolved, he's not convinced it will enrich our understanding of specific texts.

In his new book, Carroll contests these claims, saying that science can offer insight into even the most pored-over works in the canon. In a chapter devoted to *Hamlet*, he explores the neuroscience of depression, among other topics. Carroll also cites the work of Michelle Scalise Sugiyama, a cognitive scientist at the University of Oregon, Eugene, who reinterpreted the Oedipus tragedies. Standard commentary has been dominated by Freudian theories about people's repressed desires to have sex with their parents, but she argues that, in light of widespread anthropological evidence of cultural taboos against incest, that reading simply isn't tenable.

Another examination of the classics is *The Rape of Troy* by Jonathan Gottschall, an English professor at Washington and Jefferson College in Washington, Pennsylvania, who completed his Ph.D. thesis under the aegis of David Sloan Wilson. The book examines *The Iliad* and *The Odyssey* and employs anthropological work on warfare and evolutionary work on polygyny to show, Gottschall argues, that "patterns of violence in Homeric society are tantalizingly consistent with … acute shortages of available young women relative to young men." In this reading, whatever reasons the Greek mythic heroes invoked for waging war—status, money, honor—they were fundamentally fighting for marriages and their evolutionary legacy.

Gottschall has also looked outside the Western canon, by studying hundreds of ancient fairy tales worldwide. Although the tales differed in some ways, Gottschall concluded that the same basic underlying characters—handsome young males, pretty maidens, and shrewish older women—appear pervasively in all cultures. This counters, he says, the popular feminist argument that such stereotypes appear only in the fairy tales of Western societies and merely reinforce Western patriarchy.

Carroll and Gottschall have examined more modern fiction as well. In a paper they wrote with psychologists John A. Johnson and Daniel Kruger, they asked hundreds of literary experts to rate their attitudes toward antagonists and protagonists in 201 Victorian novels and then tabulated the numbers. They found that experts rated antagonists as overtly dominant and selfish, whereas protagonists displayed altruistic and selfless behavior. In one sense this is trivial: Good guys are good, bad guys bad. But the authors argue that experts overwhelmingly perceived consistent "prosocial" behavior among characters that people root for.

Carroll and his colleagues then drew on anthropological research to argue why this behavior appeals. In our fraught hunter-gatherer days, when humans roamed about in small bands, people had to sacrifice selfish interests and work together, or they'd perish. In contrast, self-aggrandizing or dominant behavior threatened group survival. Victorian novels, in this view, merely dress up these ancient, evolved preferences in crinolines and top hats.

***Most humanities scholarship today is "unable to contribute in any useful way to the serious world of adult knowledge."***

**—JOSEPH CARROLL, UNIVERSITY OF MISSOURI, ST. LOUIS**

If fiction does reinforce cooperative and egalitarian behavior, and if that behavior did ensure the survival of hunter-gatherers, then perhaps the ability to create and understand literature gave our ancestors a survival advantage; it is what evolutionary scientists call adaptive. It's an appealing theory—it makes literature essential to life—but it has proved contentious.

First, most scholars distinguish between modern, written literature and more fundamental forms, such as oral stories. And stories can indeed be adaptive in human culture because they work "like a flight simulator" for social life, says Brian Boyd, a Nabokov scholar at the University of Auckland in New Zealand. His 2009 book, *On the Origin of Stories*, examines works as diverse as *Horton Hears a Who!* and *The Iliad*. Boyd argues that animals often chase, frisk, and playfight, and in a similar way, humans "refine their most important cognitive skills through art." In fiction, "we learn to understand events and shift perspectives at a faster clip than usual, to enjoy simulations of a wide range of social situations, and to generate a wider range of options."

Storytelling could also have an evolutionary benefit by bringing societies, especially oral societies, closer together and fostering cohesion. Ellen Dissanayake, a professor of music at the University of Washington, Seattle, has argued that all the arts generally fulfill this purpose and are therefore adaptive.

Evolutionary biologist Geoffrey Miller of the University of New Mexico, Albuquerque, has argued instead that literature and other arts arose through sexual selection. In brief, in his view, a talent for storytelling provided evidence of a big brain and language skills, which make someone a more attractive mate. Literature was our peacock tail.

Boyd sees some truth in both the social-cohesion and sexual-selection models, though he's less keen on the latter. Sexual selection usually results in divergent behavior between the sexes, and both males and females (despite some differences in taste) indulge just as readily in fiction. Boyd calls sexual selection "another gear, but not the engine" that drove the evolution of storytelling.

Although receptive to the idea, Boyd and other scholars don't necessarily believe that literature itself (in contrast to simple storytelling) is adaptive. Their case is subtle.

William Flesch, a professor of comparative literature at Brandeis University in Waltham, Massachusetts, distances himself from "literary Darwinists" like Carroll. But the finding that self-aggrandizers are villains in Victorian fiction meshes with Flesch's own work on evolutionary game theory and literature, in which rogues are generally punished. Game theory (the prisoner's dilemma is the classic scenario) explores how people cooperate with or screw each other over in various situations, and how they respond to later interactions with the same people. Flesch focuses on "altruistic punishment": situations in which bystanders will punish a rogue, even if the rogue never hurt them personally.

"There has to be a reward for altruistic punishment," Flesch says; otherwise human cooperation can't evolve. And he argues that the ability to grasp narratives and keep track of people's reputations probably helped

to distribute punishments and rewards and therefore proved adaptive. What's more, if there were conflicting interests among people, he says, those who crafted persuasive narratives—perhaps by fictionalizing them—would have gained advantages as well. But even if certain components of literature are adaptive, Flesch says, it doesn't follow that the ability to create or understand literature itself—the full, flowery, emotionally charged production—is adaptive. Flesch instead calls literature a mental spandrel, an epiphenomenon of various evolved traits that happen to work well together.

This resembles the "cheesecake" analogy put forth by Pinker in *How the Mind Works*. Evolution gave us cravings for the concentrated calories in fats and sugars, and cheesecake happens to deliver fats and sugars in concentrated doses. Similarly, we might crave ingredients of literature for sound evolutionary reasons, and novels might simply mainline those components to our minds. Pornography is another example.

Still, arguments like that haven't dissuaded some literary Darwinists. Carroll still believes literature (or at least its oral predecessors) had adaptive value. So does Gottschall, although he admits he lacks sufficient data to prove this: "Right now all I can do is tell a just-so story." But instead of arguing, he wants to import methods from the sciences to frame this hypothesis and test it. "We need help from experimentalists," he says, "expertise beyond what most of us [literary scholars] have."

*"Evolutionary psychology has concentrated on lurid and fraught aspects of human nature … all the juicy stuff that dominates people's lives" and makes for lively fiction.*

—STEVEN PINKER, HARVARD UNIVERSITY

### What science can learn

Pinker has criticized Darwinian lit crit for focusing so heavily on evolutionary psychology and neglecting general psychology, linguistics, and other disciplines. But he says the focus makes sense. "Evolutionary psychology has concentrated on lurid and fraught aspects of human nature," he says, including sex, beauty, jealousy, dominance, status—"all the juicy stuff that dominates people's lives" and makes for lively fiction.

But evolutionary literary scholars have criticized evolutionary psychology as well—especially what they call "narrow" or "orthodox" evolutionary psychology. In fact, they feel their work can bend back and improve evolutionary psychology's understanding of the human mind.

Carroll and Gottschall point out that textbooks of evolutionary psychology often omit art and other aspects of imagination. "Survival, mating, parenting, kin networks, and adaptations for social interactions within groups—[those books] think that that pretty much covers it" for human nature, Carroll says. "What they're missing is that art, religion, and ideology regulate and direct behavior," he adds. "Those imaginative features regulate people's birthing systems and kinship networks, or whether they practice polygamy or monogamy." Without those nuances, "you're just missing the subject, you're not talking about human beings."

Blakey Vermeule, a professor of English at Stanford University in Palo Alto, California, approaches literature more from a cognitive science than an evolutionary perspective, but she argues that literature can still illuminate how the mind evolved. For instance, we impose narrative patterns on the world, which reveals how our minds work. Children and Alzheimer's victims both tend to find deep, ultimate causes in random events: They tend to say things like, "Clouds are really 'for' raining." Stories offer an entry point for understanding how these narrative tendencies emerge, Vermeule says: "Literature is a massive database people can look at and figure out what questions to ask" about human cognition.

Literary criticism might even inform biology generally by showing how the mind can open up new avenues for evolution. For example, Flesch says studying literature might help explain how altruistic behavior can develop among nonkin. "The emotions that good stories are particularly effective at eliciting, outrage and indignation" over unfair treatment, he says, are exactly the responses that lead to altruistic punishment and cooperation.

Still, although literature might illustrate the roots of cooperation, many literary scholars themselves remain wary of cooperating with evolutionary literary critics. A few months ago, *Critical Inquiry*, a leading journal for literary theory, published a 33-page article with the blunt title "Against Literary Darwinism." And although Carroll and Gottschall have a book-length manuscript on their Victorian novels study (titled *Graphing Jane Austen*), they've had difficulty finding a publisher.

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—JONATHAN GOTTSCHALL, WASHINGTON AND JEFFERSON COLLEGE

Gottschall says the resistance to Darwinian lit crit among literary scholars reminds him of resistance among religious groups to evolution itself. "There's the fear that if you were able to explain the arts and their power scientifically, you'd explain them away," he says. "Humanities are the last bastion of magic."

Yet ideas have emerged recently that might help reconcile the divergent worldviews of scientific and traditional literary studies. Edward O. Wilson and others now argue that human beings might have evolved not only specific mental skills—like language—but also a general tendency for mental flexibility. Our minds, in other words, evolved to be plastic. Carroll and others have taken up the idea and argue that literature has adaptive value precisely because it promotes and enhances this plasticity.

If that's true, the notion may someday provide a bridge between the two cultures. "I try to stress that evolution has shaped human minds to be reshapable more than other minds," Boyd says. "It's really not so far from things said for a long time in some areas of the humanities."

–SAM KEAN

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