

# Science's new battle lines

In the second of three essays on the 'Two Cultures', **Georgina Ferry** detects that today's division lies between optimists and pessimists rather than between scientific and literary intellectuals.

Optimism was not in vogue in literary circles in 1959, at the height of the cold war. Indeed, it had not enjoyed much currency throughout the twentieth century. With the decline of religion, the rise of Freudian psychology and the social and political consequences of industrialization, writers turned inward and found that the only remaining certainty was death.

On the charge sheet that physicist and novelist Charles Percy Snow drew up against such "literary intellectuals" in his Rede Lecture of that year at the University of Cambridge, UK, was the belief among writers that scientists are "shallowly optimistic, unaware of man's condition". Snow robustly countered that scientists were perfectly aware of the tragedy of the individual, but that as social beings they felt a compulsion to act to improve the lot of others. "There is plenty in our condition which is not fate, and against which we are less than human unless we do struggle," he said. He was an advocate of science — but also of hope.

Snow believed that the cultural divide he described was a recent phenomenon. It did not exist before the mid-nineteenth century, as is obvious in Richard Holmes's brilliant panorama of the cultural impact of science in the Romantic period, *The Age of Wonder* (see *Nature* 457, 31–32; 2009). Holmes places at the centre of his narrative the personal friendship between chemist Humphry Davy and poet Samuel Taylor Coleridge. The young Davy's infectious curiosity and enthusiasm delighted the poet. For his own part, Davy saw no conflict between working as a scientist and writing verse himself. The two shared experiences such as the inhalation of nitrous oxide gas as part of Davy's medical research, and foresaw the great boon that painless surgery would represent. In a letter sent to Davy on the first day of the nineteenth century, Coleridge wrote that as science was "being necessarily performed with the passion of Hope, it was poetical".

## An unsteady alloy

Today, by contrast, some cultural commentators reserve a particular kind of literary scorn for the sciences' claim of human betterment. The influential philosopher John Gray,



Writers Ian McEwan (above) and Philip Pullman (right) are optimistic about science's capacity to solve global problems.



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**"Despair may or may not make good literature. Science, by contrast, is impossible without hope."**

formerly professor of European thought at the London School of Economics, is a prominent critic of Enlightenment thinking and takes a dourly pessimistic view of the capacity of humanity to behave in a selfless fashion. "The idea of progress is detrimental to the life of the spirit," he declares in his essay 'Agenda for Green Conservatism', reissued in his 2009 collection *Gray's Anatomy*.

Similarly, Martin Amis, author of novels including *Time's Arrow* and *The Information*, and short story collections such as *Einstein's Monsters*, has argued that far from being progressive, scientific advance has led to a steady demotion or "dis-appointment" of humanity. In a discussion on literature and science that he hosted in 2008 at the University of Manchester, UK, Amis explained how discoveries such as heliocentricity and evolution have knocked us off our Graeco-Judaean-Christian pedestal.

Expanding on the inevitability of humanity's use, or misuse, of science for baleful purposes, such as racially based eugenics, he concluded that "Human beings and science are an unsteady alloy". Asked what he meant, Amis answered: "Science means knowledge, knowledge is power, power corrupts. And that is not a metaphor — it is something the

intelligent among the political class have always understood."

Pessimists such as Gray and Amis argue that advances in knowledge and technology do nothing for human spiritual development. Most contemporary scientists would agree. The optimism of science is twofold: that its methods might reveal, one tiny pixel at a time, more of the wonder of the natural world; and that this knowledge might be applied to solve practical human problems. There is abundant evidence in both cases that this optimism is justified; but to ask that science should do more is fundamentally to misunderstand the nature of the enterprise.

As in the time of Davy and Coleridge, the fault line today lies between optimists and pessimists, rather than between science and literature. For example, astrophysicist Martin Rees, president of the UK Royal Society, has published one of the bleakest outlooks for

humanity of recent years. Entitled *Our Final Century* (Heinemann, 2003; the US title is the even more melodramatic *Our Final Hour*), Rees's book gives human civilization no more than a 50/50 chance of surviving until 2100. What he fears is not climate change but bioterrorism, deploying the very technologies that were developed as the solutions to many medical and industrial problems.

At the same time, literary figures are beginning to line up with the optimists. Philip Pullman is the author of the internationally successful trilogy *His Dark Materials* and a regular participant in discussions on climate change. An atheist who has nevertheless read his Bible, he robustly backs St Paul's imperative to be hopeful. "Hope is the name not of a temperament, or of an emotion, but of a virtue," he says. "A virtue is something that you have to work at, something you have to do. And we can try to think and act as if it's possible to survive and to make things better, because hope is a great energizer, a comforter, an inspirer."

Novelist Ian McEwan, author of *Atonement*, is intrigued by the way science expands the possibilities of human action. The protagonist of his novel *Saturday*, Henry Perowne,

is a brain surgeon. The plot, which McEwan characteristically winds up to a pitch of almost unbearable suspense, turns on Perowne's training in neurological diagnosis and includes a lovingly detailed account of a neurosurgical operation. McEwan has maintained an informed interest in science for at least a decade, and what attracts him

is its optimism. "You can't be curious and depressed," he told an interviewer (*The Independent*, 6 April 2007). "Curiosity is itself a sure stake in life."

McEwan participated in the Cape Farewell project of 2005, in which artists and writers joined environmental scientists on an expedition to Spitsbergen in the Arctic. Ever since, as he recently revealed in *The New Yorker*, he has been working on a novel that will have a physicist as its central character, and climate change as a "background hum". The physicist is not heroic: he is physically unprepossessing, a glutton and a philanderer, yet for all his human flaws he is trying to do something good.

**Hope for the future**

Snow's 1959 lecture is often seen as the first serve in a slanging match between the arts and the sciences that has been replayed fit-

fully ever since. His intention, however, was to focus on the necessity of action to alleviate the problems of the developing world, something that concerned him much more than the cold war. Today those problems are as acute as ever, and climate change will only exacerbate them. Few would now argue that science alone has all the answers, or deny that technological development has presented new problems of its own. We are left with two choices. We can either regret the massive social and global changes that have accompanied the shift to a largely technologically driven society, and predict humanity's decline; or we can use the skills we have — including science but also politics, art and literature — to try to mitigate the worst evils.

Despair may or may not make good literature. Science, by contrast, is impossible without hope. But it is not a shallow, Panglossian kind of hope. It is simply the energy to grapple with a problem and think about how it might be solved. We might well be adrift in a meaningless Universe, but we might as well try to make the best of it. ■

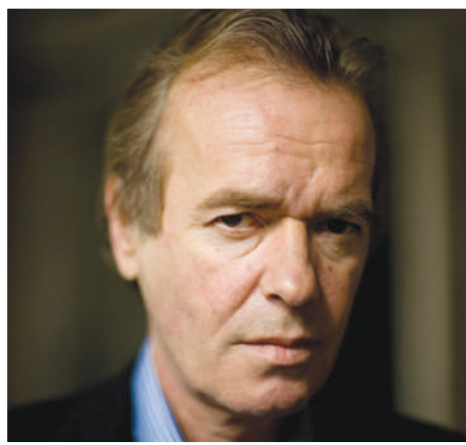
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Astronomer Martin Rees (left) fears that the human race may not survive the next century; author Martin Amis (right) worries that science may be misused.