

Q & A

Steven Pinker

Steven Pinker is Johnstone Professor of Psychology at Harvard University. He studies visual cognition and the psychology and neuroscience of language, and has written six books: The Language Instinct, How the Mind Works, Words and Rules, The Blank Slate, and two technical books on language acquisition that are not sold in stores.

What turned you on to your area of science in the first place? I never trust scientists' answers to this question (including my own). People craft their autobiographies into satisfying narratives, and retrospectively plant portents in early chapters that foretell what will happen in later ones. Reality is more like a home movie: too boring to interest anyone but the protagonists. Genes and chance fit people with certain talents and temperaments for science, and a normal upbringing exposes them to the cultural prerequisites. At some point they take a course or find a summer job in which the goals interest them, the daily grind seems pleasant, and the peers are congenial. They gradually start to specialize in the field in college and beyond, and there they are.

I like a good story, too, so here's one. When I was a teenager, my parents gave me a subscription to a monthly series of Time-Life science books: *Electricity and Magnetism*, *The Planets*, *Evolution*, and a really interesting one called *The Mind*. It first showed me that the mind could be studied scientifically, like magnetism or Mars, and I've been interested ever since. That's my story and I'm sticking to it (for now).

Do you have a favourite paper? Within biology, Robert Trivers's "The evolution of reciprocal altruism" (1971, *Q. Rev. Biol.* 46, 35–57). It not only solved the problem of how altruism could evolve among non-kin, but supported the theory with an

insightful analysis of moral emotions such as sympathy, gratitude, guilt, shame, trust, and anger.

Do you have a scientific hero?

My advisor, the late Roger Brown, invented the scientific study of language acquisition and performed the first experiments on the Sapir-Whorf hypothesis (that language affects thought), the 'tip-of-the-tongue' phenomenon, and flashbulb memories (where were you when you heard that JFK was shot?). He was an elegant man and a brilliant writer, who authored a witty and original textbook in social psychology, which had the fate of most witty and original textbooks: it didn't sell.

What is the best advice you've been given? Roger warned me that however much I studied children, I'd never really understand what they were doing — words of realism that saved me from much frustration. Another invaluable bit of advice came from an editor, when I was planning my first book for a general audience. She said I should not think of my readership as the general public — truck drivers, grannies, chicken pluckers. They don't buy books. Any attempt to reach them would lead me to write in motherese. Instead, I should write for an old college roommate — someone as smart as I was but who didn't happen to go into my field. Respecting the intelligence of readers and acknowledging their lack of specialized knowledge are the two prerequisites for good science writing.

Do you have a favourite conference? Yes: a week-long conference in Venice on 'Selection and the Mind', organized by Michael Gazzaniga, with David Hubel, Jean-Pierre Changeux, Stephen Jay Gould, Gary Lynch, and three or four others. The speakers and the audience were the same. There were two two-hour talks a day, separated by four hours of lunch and discussion. My least favourite is the annual Society for Neuroscience meeting. Twenty-eight thousand people at an

enormous convention center standing by posters or speeding through 15 minute talks.

Any views on the 'electronic revolution' in journal publishing?

It's about time. It's insane that large publishers can enjoy the unpaid labor of authors, referees, and editors and then force librarians to pay through the nose. In the age of the Internet all they can offer is prestige, which, as our colleagues in the humanities would say, is a social construction. Editorial boards can perform a prestige transplant and move *en masse* to new electronic journals.

Any strong views on the peer review system? It's better than the alternative but leaves much to be desired. Who doesn't have a horror story about an idiotic review from a prestigious journal? Perhaps reviewers can themselves be reviewed, like on amazon.com.

What do you think are the big questions to be answered next in your field?

First, how a basic thought — a proposition consisting of a subject and a predicate — is represented in the brain. We have ideas about how to represent a purée of concepts — 'dogs', 'men', 'biting' — but not the difference between 'Dog Bites Man' and 'Man Bites Dog'. Second, how innate dispositions unfold in biological development. We have reason to believe that the genome predisposes people to fear snakes, crave sex with attractive partners (who are not their siblings), and acquire grammatical language. But we have no idea how information in DNA can wire such traits into the brain.

What is the major ethical issue facing biology today?

Dealing with the so-called bioethicists. Many are in favour of preventable suffering, infirmity, and death, as long as they get to preserve some badly argued intuitions about human dignity and naturalness.

Department of Psychology, Harvard University, William James Hall, 33 Kirkland St., Cambridge, Massachusetts 02138, USA.
E-mail: pinker@wjh.harvard.edu