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Features

He knows what's going on inside your head; Interview; Steven Pinker

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* Steven Pinker's jeans and wild hair have made him academia's rock star but it is his incendiary ideas that get the crowds going. The evolutionary psychologist believes everything from road rage to adultery may be explained by our genes

* Epilepsy can be studied by placing a grid of electrode-tipped needles over the brain. These constantly record brain activity. Doctors then just sit and wait for a seizure. The electrodes will show them where to operate. For the patient it's boring. He needs something to do.

Steven Pinker, professor of psychology at Harvard, has the answer. Play word games.

"They're perfectly happy to participate ... The hope is that in the future this might be a more widely used technique to connect neurobiology to language more closely."

You can do more or less anything you like with animals -stick needles in their brain, whatever. Animals, however, don't have language. So if you want to study what happens in the brain when humans use language, you need somebody with severe epilepsy and boredom. Then, instead of looking at the crude, large-scale brain regions you already know are involved, you can get right down to the neuronal nitty-gritty where the action is for Pinker.

Famously good-looking with his blade-like jawline, equally famously rock'n'roll with his long, curly hair and his cowboy boots, Pinker is, along with Richard Dawkins and a handful of others, a global science celebrity. In a series of books -notably *The Language Instinct*, *How the Mind Works* and *The Blank Slate* -he has provided in pacy prose with autobiographical anecdotes and pop cultural references a layman's guide to the science involved in being human, conscious and verbally adept. Above all, he has been science's leading spokesman for the view that we are made by nature as well as nurture, an idea that can still enrage students and left-wing intellectuals.

"Their anger is weakening but it's still there," he says.

Scientists are still banned by student bodies for simply saying that, when we are born, we are not a "blank slate" but a particular structure, prefabricated to be human. The reason they get angry is, basically, Nazism. Before the second world war, the orthodox view was that we inherited most of what we are. Hitler took this to the extreme by saying Jews and others were innately biologically inferior. Such people could not be improved, only killed. The backlash that followed was based on the belief that biology was nothing. Humans were infinitely malleable. Anybody could thus be improved by their education and environment. Nobody need be killed.

Curiously, it was a man now known primarily for his extreme left-wing views who first began to undermine this orthodoxy. From the late 1950s onwards, the linguist Noam Chomsky formulated a theory of the deep structures in the mind from which language springs. These structures are universal and they precede the acquisition of any given language. They are innate and, therefore, the newborn baby is not a blank slate but a language-forming machine.

For some reason, Chomsky was not, in general, anathematised by students and the left. But the biologist EO Wilson, arguably the greatest living scientist, was. In 1975 he proposed that we could study human behaviour in a similar way to how we studied the genetically determined behaviour of ants. He was called a Nazi and racist and he was frequently assaulted.

Finally, standing on the shoulders of these two giants, comes Pinker, a giant himself who has done more than anybody else to destroy the idea of the blank slate.

"We can't be a blank slate no matter how much of a role learning plays in our lives. Even on grounds of intellectual coherence, there has to be human nature."

Pinker has also led the charge to overthrow another post-war intellectual orthodoxy. This was the view that language was, in effect, an impenetrable wall, it is just what we are and where we live. Nothing could be said about language because that meant you had to use language and try imagining a thought without words. You can't. We are prisoners of language.

Pinker says we needn't be, that the blank wall hypothesis is as incoherent as the blank slate. His new book -*The Stuff of Thought: Language as a Window into Human Nature* (Allen Lane, Pounds 25) -explains why. Apart from anything else, language isn't a prison because it is so fabulously powerful.

"We are born with not a finite repertoire of behaviour but combinatorial, generative mechanisms with which you can build an exponentially explosive number of different ideas out of this inventory with which you were born. You can co opt structures that are designed to do one thing but can do other things."

So, for example, we naturally think metaphorically. Habitually we see time in terms of space -"That is some way/distance in the future"; and love in terms of a journey -"we've come a long way together". This obviously helps us master time, and, indeed, love, by transferring into the familiarity of three dimensions. But it also means we can use this metaphorical power to find new ways of thinking about the world. We are only human, but being human has infinite possibilities.

But, more importantly, there is the way verbs in particular point to, as Pinker puts it in the book, "the ethereal notions of space, time, causation, possession and goals that appear to make up a language of thought". In other words, there is something behind language, it is a window not a wall, a window onto human nature.

Language is a product of the way we are made to understand the world from the moment we are born.

But what and where are these ways? The book is full of the clues Pinker has found.

For example, he has studied the kind of mistakes children make when they are learning language. A boy may say, "All the animals are wake-upped." The boy is following a rule -there would be, for example, nothing wrong with "All the animals are seated" -he is not simply repeating things he has heard his parents say. This suggests he has the innate capacity to follow linguistic rules.

It also casts light on the overwhelming sense any parent has that a child is a character, not an empty vessel, the moment it is born. "Parents are very finely tuned to the individual idiosyncrasies of their children. Studies of identical twins show that parents often think they are fraternal (non-identical) until a DNA test proves otherwise. Fraternal twins are never mistaken for identical twins."

Through threats, rejections, secrets, language seems able to infect us like a disease. "Language is not just a window into human nature," Pinker writes, "but a fistula; an open wound through which our innards are exposed to an infectious world".

To protect ourselves from this, he believes, we indulge in doublespeak, excessive politeness and evasion. We don't say, "Come up to my flat for sex." We say, "Would you like to come up for coffee?" It is all a way of avoiding infection/rejection.

In the end, there is something like the machine code of a computer -something that the user never sees -behind language. It seems to be a code of causes, of time and space and movement. It is an idea that Pinker finds exhilarating. It means that we can teach ourselves to escape from the prison of language.

"Education," he writes, "is likely to succeed not by trying to implant abstract statements in empty minds but by taking the mental models that are our standard equipment, applying them to new subjects in selective analogies, and assembling them into new and more sophisticated combinations."

He believes we can get there, we can get to the machine code. But he admits there may be one final problem, a problem often referred to as "the hard problem" by philosophers.

"There may be problems that lie outside the space of thinkable thoughts, and the hard problem of consciousness may be one of them. I very much like the argument of Colin McGinn (a British philosopher) that there may be an academic discipline of problems the human brain is incapable of solving. It could be called philosophy."

Pinker looks like a middle-of-the-road rock star and, in many ways, he is a middle-of-the-road man. Politically he is a centrist and, scientifically, he carefully navigates his way between extreme interpretations. He is also a

very typical secular optimist. He believes liberal democracy, the scientific method and effective economic institutions are leading us irreversibly to higher ground.

Isn't this a bit of a narrow American perspective?

"It's certainly a western perspective. I think ultimately people are happier and better off with science and democracy and economic prosperity."

There is something unnervingly perfect about this man and, wickedly, I console myself with the thought of his two failed marriages. Now he lives with a woman who has two stepchildren, it's the childless Pinker's first experience of anything like fatherhood -though he says it's more like grandfatherhood.

I don't know if his view of language is right or wrong. Many think he's wrong, but probably more -now with the support of neuroscience and computer studies of language -think he's right. Either way, it's his grid of needles that we can feel probing our minds, literally as we speak.

Out of the mouths of babes, a review of The Stuff of Thought, Books, Culture, pages 45-46

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