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**Title:** Interview: The language detective. By: Marchant, Jo, New Scientist, 02624079, 7/5/2008, Vol. 199, Issue 2663

**Database:** Academic Search Alumni Edition

## Interview: The language detective

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### Section:

#### Interview

Linguist Steven Pinker says that a small thing like grammar can reveal a huge amount about how we think

Everyone's favourite linguist, Steven Pinker, is known for his theory that the mental machinery behind language is innate. In his latest book, *The Stuff of Thought*, he asks what language tells us about how we think. He says the words and grammar we use reflect inherited rules that govern our emotions and social relationships. Jo Marchant asked Pinker why he thinks that concepts of space, time and causality are hard-wired in our brain, and why he's turning his thoughts to violence

Why do you think grammar reveals our intuitive theories about the physical world?

We can learn about our conceptions of space, time and causality from the way we use prepositions, tense markers and verbs. Take causality and verbs. If someone turns down a dimmer switch and the lights dim, people say "he dimmed the lights". But if someone turns on the toaster and the light dims, people don't say "he dimmed the lights". When we talk about cause and effect in the most direct way possible - namely using a subject and a verb like "to dim" - the causation must be direct and intended.

I suspect this concept of causation is part of the inherited machinery of our brains. We see the same concept in other domains, such as in assigning moral responsibility. Dick Cheney was not charged with

attempted murder when he accidentally shot his friend while hunting - the intention makes all the difference.

Doesn't language reveal information about our social relationships too?

Consider the phenomenon of indirect speech. Why do you say "if you could pass the salt that would be awesome", instead of "give me the salt"? It's because if you give people a direct command, you're presuming that you can expect compliance, which is tantamount to treating the person with the salt as some kind of underling. By uttering a non-sequitur and counting on the hearer to guess our true intention, we can convey that we want the salt without bossing them around. This, together with examples of innuendo, politeness, euphemism and veiled threats, tells us that people are always mindful of what type of relationship they have with their listener, and they craft their sentences accordingly.

How can you test your ideas?

That depends on which idea you are asking about. To test hypotheses about how people use words, you can devise computer animations of causal scenarios (such as a boat travelling in one direction but buffeted by fans that push it in another) and see what combinations of forces lead people to use verbs like "cause", "let", "prevent" and so on.

Surveys of hundreds of languages can be used to test for universal patterns in language, such as causative verbs requiring direct causation. And to test hypotheses about whether thoughts about time (such as "at 3 pm") co-opt parts of the brain used for thoughts about space (such as "at the corner") you can study people with neurological disorders who can no longer use words in their temporal sense but retain an ability to use them in a spatial sense, and vice versa.

Are there any "thoughts that we can't think" - ideas that don't fit into the conceptual framework of our brains?

It's possible that some of the big, philosophical questions may be beyond us, such as the so-called "hard problem" of consciousness: why does being conscious actually feel like something? Why does a red thing look red to me, as opposed to merely triggering a different response in my brain than a green thing? The philosopher Colin McGinn has suggested that this and other classic problems of philosophy strike us as eternally puzzling, possibly because they seem holistic; by contrast, science advances when problems are combinatorial - for example, chemicals are composed of elements and equations are composed of symbols. I have suggested that human intelligence is largely combinatorial, which explains why holistic problems can baffle us. Note that this is a falsifiable hypothesis: some genius may in the future come up with a theory of consciousness (or of meaning, or of free will) that makes us all slap our foreheads and say, of course!

Your theories upset a lot of people. For example, if human nature is innate, this suggests we can't improve ourselves. How do you discuss these ideas without getting embroiled in the politics?

My previous book, *The Blank Slate*, examines why theories of human nature are so politically sensitive. One reason is that people confuse an empirical theory of how humans are with a political theory of how we ought to treat people. This is dangerous. If you base a policy that all groups should be treated fairly - that women and ethnic minorities must not be discriminated against, for example - on the claim that there are no biological differences between groups of individuals, then are you prepared to back down from fair treatment if, down the line, we find that there are in fact biological differences?

Anxieties about human nature can be found at both ends of the political spectrum. Traditionally, the left has been committed to the doctrine of the blank slate, which implies that the right kind of society can create perfect human beings. Those on the right have hated the idea that our moral instincts might be products of evolution rather than gifts of God. I show that there has been some rethinking in recent years, with the more astute political theorists paying more attention to the sciences of human nature, crafting more subtle political philosophies as a result.

Is there anything you don't know about language?

Lots of things! For example we don't know how children acquire language - exactly what learning mechanisms we are born with, and how they allow the child to learn. We have only the first inklings of the genetic basis of language. And we have no idea of the sequence in which language evolved in the first place.

rounds off two book trilogies: on human nature and on language. Where next?

My next book will be on the decline of violence and its implications. Rates of murder, warfare, genocide, torture and deadly riots are lower now than at any moment in human history. Assuming that we haven't changed biologically, then what has changed in our psychology and society to make that possible?

How do you go about working out what makes societies less violent?

By looking at historical records. One hypothesis is that the development of a judicial system can mitigate people's thirst for vengeance: they can present their grievances to a disinterested party and see the offender punished, rather than going the route of vendettas and blood feuds. That can be tested by looking at violence rates after a judicial system is introduced, or by comparing similar societies with and without a judicial system. Another hypothesis is that trade diminishes violence. If you want what someone else has, you buy it from him rather than kill him.

Do you hope to find answers that can be applied to society in the future?

I hope so. People like to moralise about violence - to say that there are bad people who like war, and good people who like peace, and that we need to make people more peace-loving. Perhaps, but that should be treated as a testable hypothesis, not a self-evident truth. Does pacifism lead to a less violent society, or does it lead to appeasement, and hence to more violence? I hope that violence can be treated as an empirical, not just a moral, question.

Profile Jo Marchant

Born in Montreal, Canada, in 1954, Steven Pinker got a BSc from McGill University, Montreal, in experimental psychology, then a PhD from Harvard University, where he is now professor of psychology. His books include *The Language Instinct* and *How The Mind Works*. His latest, *The Stuff of Thought*, is out in paperback in the UK now (August in the US).

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By Jo Marchant

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