

# Ideas

OCTOBER 6, 2002

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**Big trouble**  
The specter of terrorism haunts a rust-belt city  
*By Eyal Press*



## The southpaw solution

*Scientist finds secrets of the universe in the palm of his hand*

**By Emily Nussbaum**

AT A CERTAIN POINT during my reading of Chris McManus's new book "Right Hand, Left Hand," I lost my grip, philosophically speaking. It might have been round about Chapter 6, when the suggestion appeared that crashing meteors from outer space might provide a clue for why we favor one hand over the other. (Suffice it to say that it's a long story involving L-amino acids and something called the Search for Extraterrestrial Homochirality, or SETH.)

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Then again, I'm right-handed, like 90 percent of the population. All the scissors are made just for me. So at first, "Right Hand, Left Hand" sounded more like a lark than a heavy-duty volume from Harvard University Press: a collection of fun facts, with a smattering of science. And there's definitely plenty of lively weirdness between the covers. In the course of 362 pages, I discovered that muppets are left-handed (puppeteers need their more dexterous hands for the head); smells are rated more highly when inhaled into the right nostril; and Ehud, the son of Gera the Benjamite, is the first left-hander on record. Also, that lefties make better fencers (but don't die earlier, and aren't more creative), and that cack-handed is only one of many derogatory terms for their kind.

But if all this sounds goofy, McManus — a professor of psychology and medical education at University College, London, and a founding member of the academic journal *Laterality: Symmetries of Body, Brain and Cognition* — has you fooled. For he has assembled more than a simple pile of trivia. Instead, he has developed

professor of psychology and medical education at University College, London, and a founding member of the academic journal *Lateralities: Symmetries of Body, Brain and Cognition* — has

simple pile of trivia. Instead, he has developed (in his lively, chatter-box, detail-obsessed way) nothing less than a key to all mythologies. Handedness, he suggests, is the surprising clasp that links the chain of life, tying together everything from the heart pounding away on the left side of the body to the asymmetry of all creation. “The key to building complexity is asymmetry,” argued McManus, a twinkly-eyed (and right-handed) Brit in a leather jacket, as we sat last Thursday in a cafeteria just before Harvard’s tongue-in-cheek Ig Nobel awards ceremony — at which he would be honored for one of his more unusual findings. While he acknowledges that not all the proof is at hand, he suspects that the facts might tilt his way soon enough. The book itself marshals lore from every possible discipline, from physics to philosophy, politics to semantics, with some stops in mathematics and chemistry. There’s even a poem in there, entitled “Toward the liberation of the left hand.” All of which makes “Right Hand, Left Hand” less like a textbook and more like a 3 a.m. dorm-room bull session with the most passionate, unnervingly polymathic stoner around — or perhaps like swallowing the red pill that reveals the Matrix.



Part of this trippiness has to do with the undeniably peculiar nature of right and left as categories. They are, as McManus puts it, “some of the most confused and confusing words in everyday use.” These seemingly banal directional devices are entirely relative to the perspective of the viewer, and thus nearly impossible to describe with mere words. Indeed, they require reference to visual devices: often, the ones dangling at the ends of our arms. To demonstrate this problem, McManus suggests that we imagine trying to explain right and left to a handless (and heartless) Martian: It can’t be done. Moreover, there are several neurological conditions that impair the recognition of left and right. No less a force than the Russian Imperial Army was once reduced to tying bundles of straw and hay to illiterate soldiers’ legs and shouting at the recruits, “straw, hay, straw, hay!” Even physicist Richard Feynman used a mole on the back of his hand to keep the categories straight.

According to McManus, all life forms possess some variation on handedness, from the molecular level on up. Neutrinos are lefties, DNA twists to the right, and conch shells spin both ways. Mechanical objects from spiral staircases to corkscrews are notable for their asymmetrical

**LEFT HAND, Page H5**

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*Emily Nussbaum writes the Summary Judgment column for Slate.*

swirls, while the human brain's right and left hemispheres famously work together in a peculiarly lopsided vaudeville act. McManus further suggests that the asymmetry of molecules may trigger asymmetry all the way up the evolutionary ladder. Indeed, the seemingly symmetrical human body is in fact a Rube Goldberg machine of asymmetry, with tiny clockwise swirling cilia triggering the development of our typically left-sided heart, and the heart likewise knocking the rest of the internal organs into their efficient, unbalanced tangle of tubes and sacks. The left testicle, for instance, droops lower not because (as the ancient Greeks suspected) it is heavier, but because the snarl of inner tubes dictated by the heart simply

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makes that position more efficient. (A 1979 paper on this subject won McManus his Ig Nobel.)

To each of these rules, however, there are unsettling exceptions. For example, some humans are born with a condition called situs inversus: Their heart beats on the right, not the left, and all their other organs are correspondingly reversed, with no ill effects. Mysteriously, people who have such mirrored bodies are not more likely to be left-handed.

If the science of handedness is fascinating, it's the cultural manifestations that truly wrinkle the forehead. According to McManus's findings, humans feel, seemingly intuitively, that right (and clockwise) is better, stronger, and more natural. This shows up most obviously in language: *gauche* and *sinister* both derive from words for left, while dexterity and adroitness are rooted in the right. In the Bible, God sorts the blessed sheep to the right, the cursed goats to the left; in the Koran, a similar division takes place. In the medieval era, left-handedness was considered devilish. And in Albania under Communist dictator Enver Hoxha, left-handedness was simply illegal.

As for the political usage of left and right, McManus confirms that it derives from the seating plan of the French National Assembly of 1789, but he adds the surprising thought that the assembly's arrangement may not have been arbitrary: People who choose to sit on the left-hand side of a room tend to

# MIRROR, MIRROR

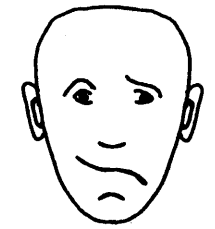
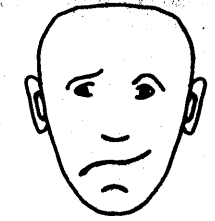
Some puzzles from  
Chris McManus's  
*'Right Hand, Left Hand'*



**CURIOS GEORGE:** Which way does George Washington face on the \$1 bill?

make more spontaneous movements of their eyes to the right, just as those on the right look more often to the left, and these tendencies correlate to different personality traits. Therefore, it's possible that the Assembly's seating plans, and hence our own political language, reflect "deep personality differences" between leftists and rightists.

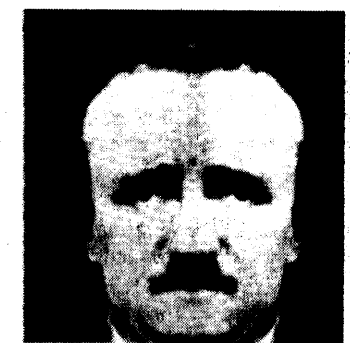
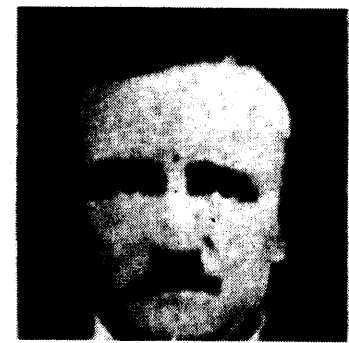
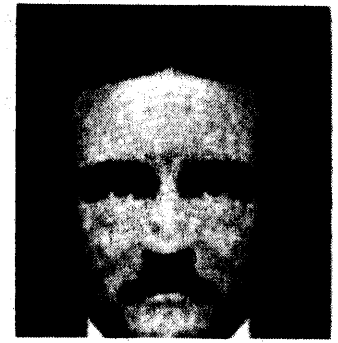
Those with a biological predilection for using their left hands have certainly taken the brunt of their societies' biases, sometimes in vicious ways. In Zulu culture, for example, parents deliberately scald



**FACE/OFF:** Which face looks happier? Most respondents say the one on the bottom, with the half smile on the left. Below, which are the right hands?



**MY OTHER LEFT FOOT:** Johann Tischbein's 1787 portrait of Goethe appears to show the poet with a left foot on his right leg.



**TURNING THE OTHER CHEEK:** Edgar Allan Poe as he was (center) and as a composite of two left cheeks (right) or two right cheeks (left).

a left-handed child. But even without such overt stigmatization, it's simply impossible for lefties to escape the constant dominating symbolism of left and right, which extends from the arrangement of bodies during burial to table manners. Even abstract symbols have a left-right bias: in traditional heraldry, the "bend dexter" (the forward slash) represented a legitimate son, whereas the "bend sinister" (a backward slash) was a sign of a bastard. And it's hard to deny that intuitively speaking, the forward slash ("*/*") feels more positive than its opposite.

After a while, reading "Right Hand, Left Hand" is something like learning a strange new word, and then hearing it all the time. Even an object as innocent as a mirror, one realizes, flips right and left, but not up and down. I can't say I'm convinced by all of McManus's theorizing — several mathematical passages are so abstruse that I began to fear for my own sense of balance. But the book is a useful corrective to the popular science notion that symmetry trumps all. And for sheer thought-provocation? Well, give the man a hand!