Books

Fearful asymmetry

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Russell Davies reviews Right Hand, Left Hand by Chris McManus

COFFIN-SCREWS are traditionally left-handed. "Left-handed sugar-bowl" is an old-time name for a chamber-pot. Left-footedness is roughly twice as common as left-handedness. The BBC test-card, showing the little girl playing noughts-and-crosses, is printed the wrong way round, because some Corporation executive didn't want her natural left-handedness to be depicted. The right foot is generally more ticklish than the left, and the right testicle, where present, both larger and higher than the left.

Asymmetry rules; and yet as recently as 1993, for an Edinburgh Science Festival survey, 50 per cent of respondents in the AB social class defiantly registered their belief that the heart is positioned centrally in the human body.

With that kind of information available in profusion, you can tell that this is not just a serious exposition of scientific theory, but a collector's scrapbook. Chris McManus, Professor of Psychology and Medical Education at University College, London, has devoted his career to "handedness and lateralization", and his files are full of curious observations. Among them are many items of left-hander lore that he is at pains to demolish, such as the old-wives' claims that left-handers are more creative than the rest of us, or die younger, or that because the Gaelic root of their name means "awkward", people called Kerr and Carr are more predominantly left-handed than the population at large.

Supposedly notorious lefties, such as Picasso, turn out to be nothing of the sort - though on the other hand (as it were), it's true that intelligences as venerable as Sigmund Freud and the physicist Richard Feynman really did have trouble remembering which hand was which, and had to resort to mnemonic devices to remind them.

This is all fun; but no matter how Professor McManus sugars the pill with his store of lore, his theory that handedness proceeds from a principle of asymmetry informing the entire universe is a serious one. In fact it's so serious that its intertwining of physics and biochemistry is going to baffle or exhaust many readers. His obliging attempt to summarise the argument begins promisingly: "Most people are right-handed because they have a gene called the D gene, and that same gene means most of us also have language in our left [brain] hemisphere . . . the D gene is probably a mutation of

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the situs gene, which has been responsible for humans and all other vertebrates having their heart on the left side." So much for the internal asymmetry of our bodily construction.

But if we pursue the argument into microscope territory, things get more demanding. Take the human embryo. Early in its development, we're told, "cilia in the nodal region" (a cilium may be imagined as a lashing-tailed shape reminiscent of a spermatozoon) "waft a current containing determinants of development in an anti-clockwise direction. The cilia beat clockwise because they are made principally of L-amino acids", of which almost all organisms on earth are composed. And not only on earth - incoming meteorites have been found to carry the same L-amino acids, and Prof McManus is one of those who believe that's how the acids (and life) got to be here in the first place.

But cranking up the microscope still further, we reach a level where the general reader, if I'm any example, will lose the plot. I'm happy to accept that "L-amino acids may also predominate because of what physicists call 'failure of conservation of parity', which is reflected in an asymmetry of the weak interaction at the sub-atomic level": but from this statement, I was unable to take very much - apart from a general sense that there is no comforting symmetry at the heart of matter, but, as ever, something more lopsided.

But I shall keep trying, if only to complete the chain of reasoning that takes McManus from our social conventions and prejudices about handedness - sheep and conservatives to the right, goats and radicals to the left - all the way to "the deepest laws of physics of which the universe is constructed".

His central theory itself is tough medicine, but Prof McManus has the skilled teacher's knack of administering enough sugar to help it go down. At the same time, he certainly raises a vast number of questions that he leaves unanswered, even at the anecdotal end of his argument. What correlation is there, for example, between handedness and the "hair whorl on the back of the head, which goes clockwise in about three-quarters of people and makes the hair part on the left"?

The answer may lie on the Internet. Like many scientific inquiries, the book is designed to interact with the outside world. To that end, a body of "hypernotes", amplifying many of McManus's detailed points, may be accessed at www.righthandleft hand.com. I predict a large number of visitors - all tapping away, be it said, with both hands.

Russell Davies is a writer and broadcaster.

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