RM. 8906

Kendall, the first person to describe the fossils of Scarborough. He had to do so anonymously, after being sent down from Cambridge University for multiple arson attacks on his old college. His father hired the best lawyers and got him off in the lawsuit that followed, but his college knew he was guilty.

This book has, in my opinion, been inspired by the success of Richard Fortey's fine *The Hidden Landscape* from the same publishers in 1993 (reviewed in *Nature* **368,** 366–367; 1994). Sadly any comparison stops there. Some of the photographs in this one are badly reproduced, the index is inadequate and much of the history it records is parochial, myopic and often factually wrong. The history of geology is no more a field for ill-informed enthusiasm than is brain surgery.

*H. S. Torrens is in the Department of Earth Sciences, Keele University, Staffordshire ST5 5BG, UK.*

# Written by the right hemisphere

**Of Two Minds: The Revolutionary Science of Dual-Brain Psychology**
by Fredric Schiffer
*Free Press: 1998. 239 pp. $25*

**Chris McManus**

As empirical scientists, we all believe in experiments, so let's try the following. Close your left eye and cover the inside (nasal) half of your right eye. Look around using just the outer (temporal) half of your right eye. How does it feel? Now try it the other way, using the temporal half of your left eye. Does it feel any different? To be more specific, with one side did you feel distressed and immature, while with the other you smiled, and felt comforted and mature?

When Fredric Schiffer did this "[he] knew that it would be profoundly important ... [he] rigorously studied it ... [and found it had] significance for both understanding our human mind and furthering our ability to deal with a variety of emotional or psychological problems". Certainly his theory is broad. Not only does it explain and indicate the treatment for pre-menstrual syndrome, manic depression, multiple personality disorder, anxiety disorders, addictions, hypnosis, psychosis and heart disease, it will also help us be "truly healthy", and "contribute in our attempt to make this human endeavour succeed, to permit our species to achieve its full meaning and its magnificent potential".

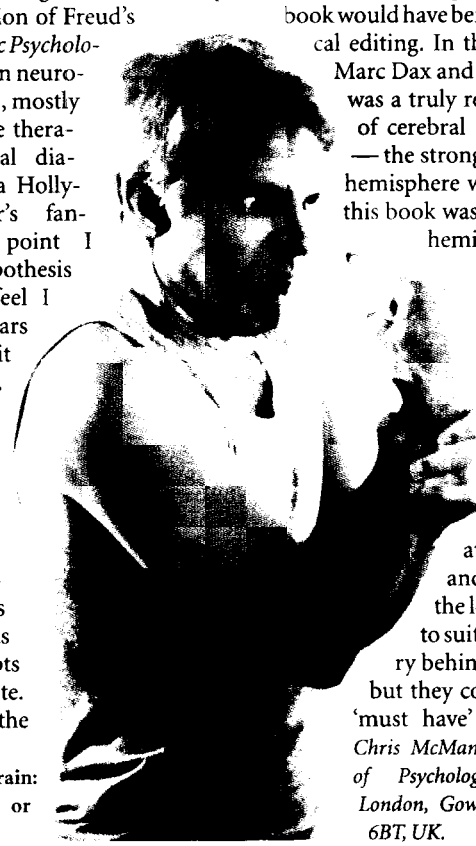
The rationale of the experiment is that it restricts visual input to just one hemisphere, which responds with its own personality, perhaps previously suppressed. Your unconscious, immature right brain should have expressed itself when looking to the left side, and your mature self when looking to the right.

But maybe you didn't see the world as distressing when viewed with the right hemisphere. A series of non-falsifiability gambits then follows. If the effect was reversed, you should look for hidden traumas in early life. If both views seemed equivalent, then perhaps both sides of the brain are equally calm and healthy (or equally troubled and distressed). Or maybe one side is totally dominant (although six months of therapy might help "the subordinate hemisphere become more liberated").

Schiffer's theory is an extension of hemisphericity, the dubious concept that spawned books such as Betty Edwards's *Drawing on the Right Side of the Brain* (J. P. Tarcher, 1989) and Carol G. Wells's *Right-Brain Sex* (Avon Books, 1989), which claimed that the separate processing modes of the left and right cerebral hemispheres, analytic and intuitive, could be switched on and off at will. The novelty here is that hemisphericity is taken to its ultimate conclusion, so that, "we are of two minds [and personalities], each associated with one cerebral hemisphere". In particular the "unconscious is an intact mind (albeit immature), with its own thoughts, feelings and actions, a mind we physically associate with one of the cerebral hemispheres". In true psychoanalytic fashion, this is a world of titanic struggles, "between the orbital frontal cortex (and the hippocampus), trying to calm the amygdala on each side, and ... between the entire left mind and the entire right mind". Perhaps inevitably, this version of Freud's *Project for a Scientific Psychology* dressed in modern neuroscience ends in tears, mostly on the couch of the therapist, whose clinical dialogues sound like a Hollywood scriptwriter's fantasies: "At that point I explained my hypothesis because I didn't feel I could wait a few years for her to come to it in her own time ... To Carol's surprise, her symptoms suddenly abated."

The problems of the theory are manifold. Absence of compelling empirical evidence is one, with tedious clinical transcripts being no substitute. More theoretically, the visual field restrictions don't prevent information from the fovea reaching both hemispheres, and corpus callosum transfer means any remaining asymmetries are likely to be extremely small. Particularly problematic is the specific claim that, "I found no significant differences between right- and left-handers in... the side of their emotional responses... and I have observed no differences in their clinical responses to therapy". If any reliable phenomenon were truly related to functional hemispheric asymmetry then differences between right- and left-handers would be a strong expectation, 2–5 per cent of right-handers and 30–35 per cent of left-handers showing atypical lateralization. Absence of an association points the explanatory finger strongly at placebo effects based on a mere metaphor. When I say I am in two minds, I do not literally mean so.

The writing style is execrable (and the diagrams no better, the anatomy of the visual tracts and half-fields being wrong). Much of the book is written in the breathless first-person historic beloved of bad popular science writing (to parody, "I am in Los Angeles. I watch the scalpel slice into the glistening pink brain ..."). Poor analogies abound, such as an image being sent through the corpus callosum, "sort of like e-mail". Peculiarly infuriating is prefixing descriptions of scientists with "prominent", "distinguished", "renowned", "very distinguished", "consummate", "highly regarded", "fine", "eminent" and "pioneering"; even the author's siblings are an "esteemed philosopher" and an "esteemed Shakespearian scholar" — the book would have benefited from their critical editing. In the nineteenth century, Marc Dax and Paul Broca made what was a truly revolutionary discovery of cerebral functional asymmetry — the strong association of the left hemisphere with language. Perhaps this book was written with the right hemisphere.



RONALD GRANT

**Left brain v. right brain: respectable theory or Hollywood fantasy?**

If *Of Two Minds* has any lasting impact, it may be in Schiffer's novel sunglasses idea. These 'John Lennon' specs have round lenses, with each lens completely clear at one edge and shading to dark at the other. Rotate them and have, say, input to just the left or just the right side, to suit one's mood. The theory behind them may be flawed, but they could still be next year's 'must have' fashion accessory.

*Chris McManus is in the Department of Psychology, University College London, Gower Street, London WC1E 6BT, UK.*