FestiveReviews

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Occult arts and sceptical sciences

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Invisible forces
In the 19th century, "psychic" phenomena were taken seriously by many scientists.

Physics and Psychics: the Occult and the Sciences in Modern Britain
Richard Noakes
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One day at the end of the 1980s, I saw conjuror James Randi stop by at the *Nature* office and read people's minds. His sketches of what an editor was thinking – after picking a random word from a random page in a book on the shelves – resembled those presented by British physicist Arthur Chattock as examples of telepathy in the *Journal of the Society for Psychical Research* in 1897–1898. Chattock was one of many physicists inspired to investigate "psychic" phenomena at the time, thanks to the work of their distinguished peer, Oliver Lodge.

Randi was not, of course, reading minds. He made his name debunking "psychics" such as Uri Geller, who claimed to have paranormal powers such as telepathy and telekinesis. Randi would reproduce such feats while openly admitting that he was using nothing but stage conjuring techniques (although he would not reveal what they were). As Richard Noakes explains in his new book, *Physics and Psychics: the Occult and the Sciences in Modern Britain*, this same pattern could be found in the late 19th century: professional magicians of the Victorian theatre such as John Nevil Maskelyne often challenged the claims made by psychics, mediums and spiritualists by repeating their tricks using stage magic.

You might expect such exposure of fraud to have been as welcomed by the scientists of the time as Randi's exploits have been in the modern day. But while many 19th-century scientists were sceptical of the bangs, levitating tables and spirit manifestations of Victorian séances, the prevailing view was that of people like chemist and entrepreneur William Crookes, electrical engineer Cromwell Varley, and Lodge himself, who believed that the task of science was to weed out the fraudsters so that we might better understand genuine psychic influences.

It has been common to regard Lodge and Crookes as anomalies. They were certainly scientific eminences – both had knighthoods and strings of awards for their work – but were nonetheless credulous individuals. Yet Noakes shows that an interest in psychical phenomena was shared by many prominent physicists of the late Victorian and Edwardian eras, including J J Thomson, Lord Rayleigh, James Clerk Maxwell, Gabriel Stokes, Francis Aston, and Pierre and Marie Curie. A historian at the University of Exeter, Noakes has been excavating this seam for several years, and *Physics and Psychics* is the rich, scholarly and long-awaited culmination of his efforts.

In the late 18th century, it seemed as though science would be a bulwark against the mystics and charlatans. A 1784 French commission, which included Antoine Lavoisier and Benjamin Franklin, was charged with assessing the claims of the German physician Franz Anton Mesmer that he could manipulate a force called "animal magnetism" for medical and paranormal ends. The commission concluded that there was nothing in it. And in 1853 Michael Faraday dismissed the craze for "table turning" (a type of séance) as a delusion produced by involuntary motions.

Yet as the enthusiasm for spiritualism, theosophy and other mystical movements gathered pace in the latter half of that century, scientists – and especially physicists – increasingly lent their cautious support. It's not entirely clear why this was so, but three key factors were likely at play. First, the secularization and materialism of scientific thought left devout Christians such as Maxwell and Rayleigh uneasy. They began to seek ways to rescue articles of faith, such as the immortal soul, from the strictures of physical law.

Second, late-19th-century physics increasingly revealed invisible forces, emanations and influences: electromagnetic waves (studied by Maxwell and Lodge), cathode rays (Thomson and Crookes), X-rays and radioactivity (the Curies). These developments in science itself left its proponents ever less sure about what was, and was not, physically possible. The ether, thought to be the carrier of Maxwell's waves, was widely suspected of being a "bridge between worlds", capable of transmitting information from some unseen realm (where perhaps tenu-

ous but intelligent beings existed) to our mundane sphere.

The third factor was new telecommunications technologies – such as the telegraph (which Varley helped develop) and the radio waves discovered by Heinrich Hertz in 1887 and soon used for transatlantic messaging. Together, they showed that it really was possible to transmit "voices" invisibly and wirelessly over great distances. If you could send them between London and New York, why not between the living and the dead?

These technologies were enlisted by physical scientists keen to study psychical effects. Crookes, for examples, hooked up people in séances to electrical circuits, so as to spot if the connection was broken as the medium sneaked off to dress as a "spirit". He developed the radiometer – a tiny windmill encased in a vacuum chamber – as a device for sensing delicate psychic forces; it ultimately became a means to demonstrate the radiation pressure of light. The duty of science, Crookes wrote in 1870, was to examine these phenomena either to "inform their genuineness or to explain the delusions of the honest and to expose the tricks of deceivers". Such scientific testing was central to the mission of the Society for Psychical Research, formed in the early 1880s by physicist William Barrett and others. The society still exists; its president from 2000 to 2004 was astrophysicist Bernard Carr.

The interest of physicists in psychical phenomena began to wane only in the 1920s – not so much because they all became firm sceptics but because the authority to make scientific pronouncements in the area was wrested from the physical sciences by the growing discipline of psychology. Noakes argues that, even if there was plenty of credulity involved in the way, say, Crookes was taken in by charismatic mediums, we should be wary of looking back at this episode and asking how all these first-class scientists could have been so foolish. Their psychical interests "were of a piece with the scientific and technological enterprises for which our protagonists are justly remembered", he writes.

What's more, we need to abandon the naive notion that advances in science and technology inexorably relegate such ideas to the dustbin. On the contrary, they create new places for them to reside: the ether, radio waves, quantum nonlocality, the Internet, dark energy. Brain-imaging methods are now making a kind of rudimentary mind-reading possible, and talk of "mind downloading" resurrects ideas about immortality and the transmigration of souls. The deeper question is why these ideas are so tenacious – and what, if anything, is worth salvaging from them.

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