

## BOOK REVIEW

**Psychic Phenomena and the Brain: Exploring the Neuropsychology of Psi** by Bryan J. Williams. Gladesville, NSW: Australian Institute of Parapsychological Research, 2015. xii + 135 pp. \$35. ISBN 978–0987077226.

Although few of us worry about whether our brain is too moist, most agree with the physician Hippocrates who remarked that all experiences are intimately associated with the state of our brain. Whether this is because they all do, in fact, derive directly from the brain is however an unresolved question. Modern neuroscience assumes that all experiences derive from brain activity. Some phenomena are however not easily explained by contemporary neuroscience, and the brain might function as a kind of filter to consciousness (Kelly et al. 2007). Regardless of which perspective eventually turns out to be right, parapsychologists need to consider the brain in their theories.

Is extrasensory perception (ESP) more likely to occur in a specific brain state? Do psychics' brains differ from others' brains? Such questions are addressed in Bryan Williams' ambitious, interesting, and concise monograph. Those who have read Williams' articles cannot help but be impressed by his knowledge of the literature. Like his mentor, the late William Roll, he seems to be familiar with old literature concerning psychical research, modern neuroscience, and everything in between. About 19 of the monograph's 135 pages (including an useful index) consist of references. Roll and Williams have previously reviewed the literature (e.g., Roll & Williams 2010, Williams 2011, 2012, 2015, Williams & Roll 2008), and the monograph seems to derive primarily from their articles. Given the limited space, there are naturally some omissions, but the monograph is readable and wide-ranging.

Since the monograph is meant to make research accessible to curious laymen, Williams initially explains the meaning of all terms, and provides a brief historical review of parapsychological research. In addition, he highlights the results of meta-analyses that suggest psi exists. However, his review includes little about the criticism that the research has attracted, but Williams' focus is on psychic phenomena and the brain. In addition, his intention is only to give an overview of key findings.

Williams points out that skeptical neuroscientists such as Donald Hebb, Barry Beyerstein, and Kyle Kirkland seem to have assumed that telepathy

functions as a kind of mental radio in which a signal goes from a sender to a receiver. Williams thinks that this is an antiquated notion that appears to be inconsistent with research findings. He highlights some results that suggest that: “When ESP appears in consciousness, it comes in borrowed garb. The brain has a storehouse of used apparel . . .” (Roll 2006:13). In addition, he provides a brief, but adequate, overview of the brain, EEG, and fMRI, which laymen may like to return to. For this review, it seems sufficient to mention that alpha waves: “. . . typically occur during moments of relaxed awareness, when a person is not deeply engaged in cognitive thought and is only passively attentive to the surrounding environment” (p. 29).

Hans Berger developed the EEG in the 1920s, but it was only rarely used in parapsychological research until the 1960s. At that time, Joe Kamiya and others popularized biofeedback: Their articles were read by parapsychologists who realized that if they found a brain state associated with ESP scoring, then biofeedback could be used to teach percipients to induce and maintain that state. According to Kamiya, to achieve a high alpha state: “One must maintain a kind of calm alertness, accompanied by a quiet state of mind. It is a kind of serene, receptive, open state of mind” (Cavanna 1970:98). This reminded parapsychologists of the claims made by many psychics (White 1964). The initial research thus focused on the possible relationship between alpha waves and ESP scoring.

Williams does not provide a detailed review of the many attempts to determine whether alpha waves were associated with ESP scoring in forced-choice studies, but he concludes: “. . . although there was a slight tendency . . . it was not a very robust finding” (p. 32). He thinks that the results from other studies seem more promising. For example, Rex Stanford and John Palmer found that the high scorers had higher alpha density (37.5%) than the low scorers (12.1%). Williams highlights this, but fails to note that they also concluded that a division of the percipients

. . . around the alpha density median failed to predict ESP performance significantly. Results, like those of certain earlier work, suggest that an abundance of alpha rhythms indicates a psi-favorable state which is nonetheless insufficient, of itself, for ESP performance. (Stanford & Palmer 1975:235)

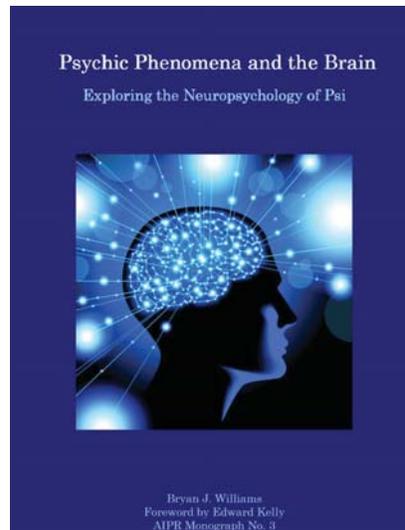
Some parapsychologists gave their percipients biofeedback training during which they were supposed to learn to produce alpha waves and maintain a high alpha state. For example, K. Ramakrishna Rao and José Feola (1973) conducted a clairvoyance test with a man who had been given biofeedback training: The results indicated that ESP scoring was associated with high alpha density. Prior to this study, Feola had however carried out two similar studies with four percipients and then the results were insig-

nificant for all percipients (Cavanna 1970:99).

The results of the biofeedback studies were inconsistent, and Williams suggests that the amount of training may have been insufficient. He does not however state how much training would be appropriate: According to Kamiya, for most people three or four sessions of 45 minutes is sufficient (Cavanna 1970:97). Williams devotes a paragraph to one of the better-known studies involving biofeedback (i.e. Honorton, Davidson, & Bindler 1971) and writes that the percipients received 20 minutes of training, though in fact they had 40–50 minutes. Nonetheless, the ESP scores were insignificantly higher during alpha generation than during alpha suppression. Reviews reveal that inconsistent and insignificant results in this line of research were common (Palmer 1978, Stanford 1975/1976).

Inconsistencies also become apparent when Williams reviews research involving the psychic Sean (Lalsingh) Harribance, who has participated in much research since the late 1960s. In two studies in the 1970s, Harribance had higher alpha density during high-scoring runs than during low-scoring runs (Morris, Roll, Klein, & Wheeler 1972). However, results from later studies suggested that below-chance scoring for Harribance was associated with alpha waves (Kelly & Lenz 1976, Kelly, Hartwell, & Artley 1978). Williams concludes that the research findings “. . . seem to suggest that alpha activity has a considerable role in the functioning of Harribance’s reported ESP ability” (p. 42). He has previously reviewed much of the research with Harribance (Williams 2015), and then made it clear that Harribance was often able to score significantly above chance in a number of forced-choice studies. In the current monograph, Williams devotes some space to the old studies and some to more recent studies (e.g., Roll et al. 2002). In addition, he covers research with other psychics: Malcolm Besant, Ingo Swann, and a woman known only as B.S.J.

The monograph also briefly covers some of the research concerning correlations in brain activity between individuals. The basic idea in this kind of study is that two individuals are separated: One of them is then exposed to some stimulus and the researcher expects that this will influence



the brain activity of the other. (Williams points out that percipients' brain activity in some studies seems to have been associated with the randomly occurring flash patterns of a strobe light despite the fact that no one looked at the light—thus a sender may not be necessary). Williams outlines a few of the studies, starting with one published in *Science* (Duane & Behrendt 1965), and correctly notes that the brief report contained few details and was rightly criticized. Later studies were better-controlled, but Williams thinks that the results from this line of research “. . . should perhaps be taken as tentative until further clarifying data are gathered . . .” (p. 51).

Some of the studies with the psychic Malcolm Bessent are covered in a chapter about precognition, in particular the more recent research. This indicated that even when Bessent's ESP scoring was insignificant, his brain activity was different when he looked at the target images compared with when he looked at decoy images. The researchers also found this difference when they studied how ordinary volunteers' brains reacted (these studies are reviewed in Don 2010). This is consistent with other research reviewed by Williams, which suggests that people unconsciously react to future stimuli.

The monograph also contains sections about two flawed studies: An fMRI study (i.e. Moulton & Kosslyn 2008) that received much attention in the media and was rightly heavily criticized by parapsychologists (e.g., Palmer 2009). The other study (i.e. Venkatasubramanian et al. 2008) is less well-known. Williams devotes space to these studies because he wants the reader to learn from the mistakes of others.

Williams mentions some research concerning the association between temporal lobe lability and paranormal experiences, but laymen will need to consult other sources (e.g., Jinks 2012) to really appreciate the evidence. Space is also devoted to the hypothesis that the right hemisphere is more involved in the processing of information that derives from psi. Williams has previously written a detailed review of the literature about this (Williams 2012). The hypothesis can be traced back to writings of Frederic Myers (1885) and Jan Ehrenwald (1975). In addition, observations in the 1970s were consistent with the hypothesis (Targ & Puthoff 1977). Williams nevertheless notes that the research “. . . findings have not been very robust . . .” (p. 78).

Williams highlights the results of one study which indicated that six of the seventeen psychics who were assessed had right temporal lobe impairment, but he fails to note that five of the individuals in the control group also appeared to have this kind of impairment (Fenwick et al. 1985). He also points out that a psychic, B.S.J., scored high on a measure of temporal lobe lability (Alexander 2000). However, Harribance also scored somewhat high on the same measure, but he did “. . . not show evidence of the subjective

experiences, electrical lability, or elevated electrical anomalies that typically define complex partial seizures” (Roll et al. 2002:219). The questionnaire that was used was not designed with psychics in mind, who due to their anomalous experiences may score above average.

Harribance has stated that he often sees images in his left field of vision: This suggests the involvement of the right hemisphere. That said, Harribance has also said that he often hears a voice in his right ear, which suggests the involvement of the left hemisphere! Unfortunately, it seems difficult to briefly review all the thought-provoking results of the neurological assessments Harribance underwent that revealed anomalies (Alexander, Persinger, Roll, & Webster 1998, Roll et al. 2002). Williams seems to believe that the research with Harribance has shown that for his ESP ability the right hemisphere is of more importance than the left.

Almost in passing, Williams mentions a study with the psychic Ingo Swann, who had an unusual brainwave pattern when he was engaged in remote viewing (Persinger et al. 2002). A researcher has however pointed out (among other things) that there are at least two relatively uncommon patterns that are similar to the one displayed by Swann (O’Bannon 2003). One of the patterns has been associated with aging individuals in a low state of arousal. When Swann undertook the tests, he was 64 years old. Although the research with psychics is certainly fascinating, it still leaves the reader with more questions than answers.

Given his apparent interest in research with psychics, it seems somewhat surprising that the psychic Matthew Manning (Whitton 1974) never appears in the chapter about psychokinesis. Williams reviews some of the micro-psychokinesis studies with ordinary volunteers. In addition, he briefly outlines William Roll’s and Elson de A. Montagno’s observations concerning the similarities between complex partial epilepsy and recurrent spontaneous psychokinesis (RSPK), also known as poltergeist phenomena (Montagno & Roll 1983, Roll & Montagno 1983). Although EEGs have occasionally revealed anomalies in some RSPK agents’ brain activity, the meaning of these findings is still not clear.

The most in-depth neurological study of a RSPK agent was the one that focused on a woman known in the literature as Tina Resch (Roll & Storey 2004). She eventually developed complex partial epilepsy, but long after the investigations in the 1980s. Williams highlights some of the results of the research: Although the findings are interesting, the reader is once again left with more questions than answers.

In conclusion, Williams has clearly read a significant portion of the parapsychology literature, and his monograph provides laymen curious about neuroscience and parapsychology with a good starting point for more

in-depth investigations. Undergraduate students in particular will likely appreciate it. The monograph is however not primarily intended for parapsychologists, and they may prefer to read his more detailed articles instead (e.g., Williams 2011, 2012, 2015). Much of the research that the monograph treats is frankly difficult to cover in brief: Williams has nevertheless made an admirable attempt to do so and has clearly outlined what he believes are some key findings from several lines of research. The monograph ends with his conclusions, which in each case is that more research is needed. Williams concludes:

Parapsychologists are still very much in the early stages of exploring what goes on in the brain during the experience of psi, so it is quite difficult to tell at the moment where the path of discovery might lead. (p. 108)

Edward Kelly, who is a veteran parapsychologist, has written a Foreword to the monograph in which he repeats Williams' call for more research with psychics. He also believes that researchers have so far “. . . barely scratched the surface in terms of studying psi and the brain using modern neuroimaging techniques” (p. xi), but nevertheless thinks that Williams makes it evident that substantial successes have already been achieved, “. . . and the prospects for further success . . . look excellent” (p. xi).

**NEMO C. MÖRCK**

nemomorck@hotmail.com

### References Cited

- Alexander, C. H. (2000). Neurophysiological and psychological assessment of an individual experiencing anomalous mental phenomena: A second case study. Paper presented at the 43<sup>rd</sup> Annual Convention of the Parapsychological Association.
- Alexander, C. H., Persinger, M. A., Roll, W. G., & Webster, D. L. (1998). EEG and SPECT data of a selected subject during psi tasks: The discovery of a neurophysiological correlate of psi. Paper presented at the 41<sup>st</sup> Annual Convention of the Parapsychological Association.
- Cavanna, R. (Editor) (1970). *Psi Favorable States of Consciousness*. New York, NY: Parapsychology Foundation.
- Don, N. S. (2010). Electrical activity in the brain and the extraordinary mind. In *Mysterious Minds* edited by S. Krippner & H. L. Friedman, Santa Barbara, CA: Praeger, pp. 113–127.
- Duane, T. D., & Behrendt, T. (1965). Extrasensory electroencephalographic induction between identical twins. *Science*, 150:367.
- Ehrenwald, J. (1975). Cerebral localization and the psi syndrome. *Journal of Nervous & Mental Disease*, 161:393–398.
- Fenwick, P., Galliano, S., Coate, M. A., Rippere, V., & Brown, D. (1985). 'Psychic sensitivity', mystical experience, head injury and brain pathology. *British Journal of Medical Psychology*, 58:35–44.
- Honorton, C., Davidson, R., & Bindler, P. (1971). Feedback-augmented EEG alpha, shifts in subjective state, and ESP card-guessing performance. *Journal of the American Society for Psychical Research*, 65:308–323.

- Jinks, T. (2012). *An Introduction to the Psychology of Paranormal Belief and Experience*. Jefferson, NC: McFarland.
- Kelly, E. F., & Lenz, J. (1976). EEG correlates of trial-by-trial performance in a two-choice clairvoyance task: A preliminary study. In *Research in Parapsychology 1975* edited by J. D. Morris, W. G. Roll, & R. L. Morris, Metuchen, NJ: Scarecrow Press, pp. 22–25.
- Kelly, E. F., Hartwell, J. W., & Artley, J. L. (1978). A second two-choice clairvoyance EEG study with Lalsingth Harribance [Abstract]. *Journal of Parapsychology*, 42:54–55.
- Kelly, E. F., Kelly, E. W., Crabtree, A., Gauld, A., Grosso, M., & Greyson, B. (Editors) (2007). *Irreducible Mind*. Lanham, MD: Rowman & Littlefield.
- Montagno, E. de A., & Roll, W. G. (1983). A neurobiological model for psychokinesis. In *Research in Parapsychology 1982* edited by W. G. Roll, J. Beloff, & R. A. White, Metuchen, NJ: Scarecrow, pp. 272–273.
- Morris, R. L., Roll, W. G., Klein, J., & Wheeler, G. (1972). EEG patterns and ESP results in forced-choice experiments with Lalsingth Harribance. *Journal of the American Society for Psychical Research*, 66:253–268.
- Moulton, S. T., & Kosslyn, S. M. (2008). Using neuroimaging to resolve the psi debate. *Journal of Cognitive Neuroscience*, 20:182–192.
- Myers, F. W. H. (1885). Automatic writing. II. *Proceedings of the Society for Psychical Research*, 3:1–63.
- O'Bannon, R. M. (2003). [Letter to the Editor]. *Aperture*, 2(2):9.
- Palmer, J. (1978). Extrasensory perception: Research findings. In *Advances in Parapsychological Research 2* edited by S. Krippner, New York, NY: Plenum Press, pp. 59–243.
- Palmer, J. (2009). Winning over the scientific mainstream. *Journal of Parapsychology*, 73:3–8.
- Persinger, M. A., Roll, W. G., Tiller, S. G., Koren, S. A., & Cook, C. M. (2002). Remote viewing with the artist Ingo Swann: Neuropsychological profile, electroencephalographic correlates, magnetic resonance imaging (MRI), and possible mechanisms. *Perceptual & Motor Skills*, 94:927–949.
- Rao, K. R., & Feola, J. (1973). Alpha rhythm and ESP in a free response situation. In *Research in Parapsychology 1972* edited by W. G. Roll, R. L. Morris., & J. D. Morris, Metuchen, NJ: Scarecrow Press, pp. 141–144.
- Roll, W. G. (2006). A discussion of the evidence that personal consciousness persists after death with special reference to poltergeist phenomena. *Australian Journal of Parapsychology*, 6:5–20.
- Roll, W. G., & Montagno, E. de A. (1983). Similarities between RSPK and psychomotor epilepsy. In *Research in Parapsychology 1982* edited by W. G. Roll, J. Beloff, & R. A. White, Metuchen, NJ: Scarecrow, pp. 270–271.
- Roll, W. G., & Storey, V. (2004). *Unleashed. Of Poltergeists and Murder*. New York, NY: Paraview Pocket Books.
- Roll, W. G., & Williams, B. J. (2010). Quantum theory, neurobiology, and parapsychology. In *Mysterious Minds* edited by S. Krippner & H. L. Friedman, Santa Barbara, CA: Praeger, pp. 1–33.
- Roll, W. G., Persinger, M. A., Webster, D. L., Tiller, S. G., & Cook, C. M. (2002). Neurobehavioral and neurometabolic (SPECT) correlates of paranormal information: Involvement of the right hemisphere and its sensitivity to weak complex magnetic fields. *International Journal of Neuroscience*, 112:197–224.
- Stanford, R. G. (1976). Scientific, ethical, and clinical problems in the “training” of psi ability. In *Surveys in Parapsychology* edited by R. A. White, Metuchen, NJ: Scarecrow Press, pp. 288–304. [Original work published 1975]
- Stanford, R. G., & Palmer, J. (1975). Free-response ESP performance and occipital alpha rhythms. *Journal of the American Society for Psychical Research*, 69:235–243.
- Targ, R., & Puthoff, H. E. (1977). *Mind-Reach*. New York, NY: Delacorte.

- Venkatasubramanian, G., Jayakumar, P. N., Nagendra, H. R., Nagaraja, D., Deeptha, R., & Gangadhar, B. N. (2008). Investigating paranormal phenomena: Functional brain imaging of telepathy. *International Journal of Yoga, 1*:66–71.
- White, R. A. (1964). A comparison of old and new methods of response to targets in ESP experiments. *Journal of the American Society for Psychical Research, 58*:21–56.
- Whitton, J. L. (1974). "Ramp functions" in EEG power spectra during actual or attempted paranormal events. *New Horizons, 1*:174–183.
- Williams, B. J. (2011). Exploring the psychic brain: On neuroscience and psi phenomena. *Australian Journal of Parapsychology, 11*:154–192.
- Williams, B. J. (2012). Extrasensory perception and the brain hemispheres: Where does the issue stand now? *NeuroQuantology, 10*:350–373.
- Williams, B. J. (2015). Empirical examinations of the reported abilities of a psychic claimant: A review of experiments and explorations with Sean Harribance. In *Evidence for Psi* edited by D. Broderick & B. Goertzel, Jefferson, NC: McFarland, pp. 102–137.
- Williams, B. J., & Roll, W. G. (2008). Neuropsychological correlates of psi phenomena. Paper presented at the 51<sup>st</sup> Annual Convention of the Parapsychological Association.