

avoid bias, ratings were done by psychiatrists not involved in patient selection and postoperative treatment. Seventeen of 23 patients alive at long-term follow-up were seen in person and relatives were interviewed. The reduction in anxiety ratings was significant both as 1-year and long-term follow-up. Seven patients were, however, rated as experiencing significant adverse events, the most prominent symptoms being apathy and dysexecutive behaviour; also neuropsychological performance was significantly worse in these patients. I therefore agree with Matthews & Eljamel that we must continue to evaluate the efficacy and safety of NMD.

Declaration of interest

C.R. has participated in numerous educational events sponsored by pharmaceutical companies and has been a consultant for Pfizer.

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Rück, C., Andréewitch, S., Flyckt, K., et al (2003) Capsulotomy for refractory anxiety disorders: long-term follow-up of 26 patients. *American Journal of Psychiatry*, **160**, 513–521.

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Authors' reply: Rück makes reference to a series of studies reporting personality change following anterior capsulotomy, including his recent review of 26 patients undergoing thermal capsulotomy for anxiety (Rück *et al*, 2003). He raises interesting questions about the prevalence of personality change following certain (if not all) neurosurgical procedures for mental disorder, and such questions remain, we believe, essentially unaddressed by previous research. Rück's rate of apparent personality change following anterior capsulotomy is comparatively high at approximately 30% of patients. This rate is higher than those rates reported in earlier literature, which suggest

rates of up to 10% for stereotactic subcaudate tractotomy (Ström-Olsen & Carlisle, 1971; Goktepe *et al*, 1975) and 2% for stereotactic cingulotomy (Dougherty *et al*, 2002). However, 24% of patients undergoing limbic leucotomy had transient apathy which resolved fully (Montoya *et al*, 2002).

In addition to the lack of uniformity of measurement across studies, another key difference may lie in the fact that many of the larger studies included patients with a variety of diagnoses, including depressive disorder, obsessive-compulsive disorder (OCD) and anxiety disorder. In fact, non-OCD anxiety disorders made up a small percentage of most of the studies cited above, whereas Rück's study sample comprised entirely patients diagnosed with non-OCD anxiety disorder.

The lesions of anterior capsulotomy disrupt the continuity of the fronto-striatal-pallidal-thalamic circuits which are believed to be dysfunctional in OCD (Modell *et al*, 1989). Important connections between the orbitofrontal cortex, anterior cingulate regions and the thalamus also lie in the anterior part of the internal capsule and are thought to play an important role in the pathogenesis of major depressive disorder (Tekin & Cummings, 2002).

Most psychiatrists, neurologists and neurosurgeons would probably predict high rates of serious psychopathology – including personality changes – if such lesions were made within 'healthy brains'. If the existing literature can be considered reliable, including the report of Rück and colleagues, it is quite remarkable that the reported rates of significant frontal psychopathology are so infrequent. Hence, three possibilities (at least) must be considered:

- that neuropsychological and personality screening for frontal impairment has been grossly inadequate in almost all studies;
- that the deleterious effects of frontal surgery on patients with chronic intractable affective disorders may be minimised because the target brain structures are already dysfunctional, perhaps with important frontal functions being undertaken by non-frontal structures (such plasticity of mammalian brain function is plausible, see e.g. Kolb & Gibb, 1993);
- different forms of psychiatric disorder may be associated with different risks of adverse consequences following

NMD; for example, thermal capsulotomy for non-OCD anxiety disorders may present a higher risk of frontal psychopathology than capsulotomy for OCD or depression.

In reality, the true picture may represent a combination of influences from these three factors. What is clear is that all NMD must be accompanied by detailed prospective audit with comprehensive evaluation of 'frontal' neuropsychology and personality functioning.

Declaration of interest

K.M. has received payment for lectures on the management of depression from various pharmaceutical companies.

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Neuroscience and psychodynamics

I was taken by surprise to read a positive article concerning psychoanalysis. In response I would like to make some comments on facts and their interpretation, the individual and his or her context and the impossible relationship between mind and brain.

I agree that psychoanalysts can have an interesting dialogue with neuroscientists, but it oversteps the mark to conclude that consciousness (and unconsciousness) can be explained by the working of the brain. There is an interaction between a working brain and its context. In this sense I agree with Hobson's (2003) comments on the two directions of causality, but there is more to be considered: consciousness and unconsciousness are not explained by this interdependence.

The neuroscientific concept of the 'mirror neuron' is merely an interpretation, and one that for me is no more than a false explanation, or at least a tautology. To call a neuron firing during the execution and observation of the movements of another person a 'mirror neuron' is, of course, an interpretation of the two simultaneous phenomena. To say more on this matter we need an interpretation by the subject him- or herself. When Hobson writes that minds mirror one another, that statement does not tell us anything about self-consciousness.

In considering the interaction between one person and another in relation to identity and self-consciousness, the mirroring stage plays an important role. However, as investigators we remain outsiders. To learn about the subjective experience of

mirroring we need the interpretation of the subject. This interpretation will include the symbolic function of human beings (i.e. the potential to recall a reality by a word) and goes beyond the imitation (mirroring) of words. Of course, the subject hears the spoken words from the other within the context. But there is more than just the repetition of the word of the other. This is what is referred to as the hole in the being, or the gap between the thing and the word (as Hegel, Heidegger and Sartre postulated). When we consider the subject as a thing among other things, then something very strange happens when the subject names him- or herself; a hole is then made in the person's own being. This is what is referred to as alienation: 'The human being has a special relation with his own image – a relation of gap, of alienating tension' (Lacan, 1988).

There is always a gap between the spoken word and the thing for speech to exist, but once the subject speaks, he actualises the gap again and again. What then can be the relation between the mind and the brain? Nowadays the neurosciences are popular, so it is quite accepted to say that the psychic functions are epiphenomena of the brain. For me this statement is much too simplistic. It does not take into account

that there is a fundamental difference between a word and the thing it describes. As mirroring needs a distance between the two objects, so it is *a fortiori* necessary that there is a distance between the symbolic and the material. The distance between word and thing creates a suspense in which symbolic function tries to bridge that gap. Interpretation is one of these metaphorical bridges.

Since there is a fundamental gap between symbol and thing, between thought and matter, it is impossible to explain the mind as a product of the functioning brain. Thoughts are not the excreta of neurons. In this sense the (un)conscious can not be found in the neuron. Explaining the mind as a product of the brain is a metaphor, and a bad metaphor.

Hobson, R. P. (2003) Between ourselves: psychodynamics and the interpersonal domain. *British Journal of Psychiatry*, **182**, 193–195.

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One hundred years ago

Psychopathology in prisons

THE philosophic doctrine that our actions are free is generally based on the consciousness of freedom; and in its legal aspect on the sense of accountability or responsibility. That this consciousness of freedom exists is a psychical fact, and therefore a psychological examination of the conviction, an analysis of this psychical phenomenon, is a necessary preliminary to the philosophical inquiry.

It may be contended that the question of a transcendental ego or noumenal will behind, superior to the law of causation and capable of free choice, is not legitimately within the domain of psychology; but it is manifest that if psychology, in unfolding and genetically explaining the

phenomena of volition, prove that this mode of consciousness does not necessitate any such idea of a transcendental will, that in fact this sense of freedom may and does accompany actions which are absolutely determined, the psychological foundation is taken away from the doctrine of free will. This task Professor Hoche of Freiburg¹ has set himself to accomplish. He is frankly a determinist, entirely at variance with the Kantian doctrine of a self-determining will. He affirms that the observations of psychopathology must be taken into account in the normal psychology, because the mental

¹*Dik Freiheit des Willens, vom Standpunkte der Psychopathologie*. Von Professor Dr. A. Hoche. Wiesbaden: J. F. Bergmann; and Glasgow: F. Bauermeister. 1902 (Demy 8vo, pp. 40. Is. 3d).

activities of the insane do not differ intrinsically from those of the so-called normal, but only in degree; and that, moreover, there exist all gradations from the sane to the insane.

Now, the feeling of freedom exists in many forms of mental disease, particularly and to a high degree in mania, as to whose unfreedom of volition no doubt can exist, and this feeling of freedom, Dr. Hoche contends, is related to the central emission of motor impulses.

In the next place, the observations of psychopathologists show that in the empiric character much greater differences exist in permanent, deeply-seated, elementary qualities than is customarily recognized by theoretic psychology. The value, therefore, of conclusions based on the hypothesis that