

Freud, forgotten Neurologist

JMS Pearce MD, FRCP

Emeritus Consultant Neurologist, Department of Neurology, Hull Royal Infirmary, UK.

Correspondence to:

J.M.S. Pearce, 304 Beverley Road Anlaby, East Yorks, HU10 7BG, UK.
Email: jms.pearce@me.com

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Abstract

For a five-year period before Sigmund Freud embarked on his original studies of psychological mechanisms, nomenclature, and psychoanalysis, he had extensive neuropathological training under von Brücke and executed research into neuronal cytoarchitecture and neural tracts. Influenced by Charcot and Theodor Meynert he carried out and published important clinical studies on aphasia and cerebral diplegia. He strived to carry his scientific discipline into his psychoanalytical work. As a Neurologist his role is underestimated.

Sigmund Freud (1856-1939) is remembered for his original studies on psychological mechanisms, nomenclature, and psychoanalysis. There is an abundant literature¹ about his work on a variety of clinical and neuropathological topics.² This important period (1882-1889) of the Freud oeuvre has been largely neglected.

He began his studies in Medicine at the University of Vienna in 1873, graduating MD in 1881. During this time he voluntarily took up research for the physiologist Ernst Wilhelm von Brücke (1819-92) with whom he worked for several years. In 1875, he visited his half-brothers in Manchester, and there harboured inklings of a future career in England despite his protests about English conservatism and bad weather. There followed a period of military service in 1879-80, and on graduating in 1881 he began further research in Brücke's laboratory.

For several years Freud studied and investigated neuropathology and neuroanatomy. He recognised a contractile fibrillary network of the neuron, spinal ganglia and the cytoskeleton,³ and loops of striae surrounding the nuclei in crayfish and lamprey (*Petromyzon marinus*).^{4,5,6} This confirmed the observations of Robert Remak (1815-1865) some 40 years earlier, now confirmed by electron microscopy.

In 1882 he left to earn a living in clinical medicine and was a resident at the Vienna General Hospital. There he acquired

neuropathological expertise³ from Theodor Meynert (1833-1892) and Hermann Nothnagel (1841-1905). In 1885 he was appointed to the academic post of *Privatdozent*, Lecturer in Neuropathology. In Innovative studies on the medulla, published in *Brain*, he used gold chloride to stain neural tracts and axis cylinders. In three papers he demonstrated the structure and function of the tracts between the cerebellum, inferior olivary nucleus and tract, the inferior cerebellar peduncle and the medulla oblongata.⁷ This work was held in high regard.

At this time he also developed an interest in the possible benefits of cocaine, which proved disastrous, and the source of much subsequent criticism although with ophthalmologist Carl Koller (1857-1944) he had shown its value as a local anaesthetic in eye surgery.

Awarded a travelling scholarship, he studied at the Salpêtrière Hospital under Jean-Martin Charcot (1825-1893) for 19 weeks between 1885 and 1886. There, the great Neurologist hugely inspired him. Charcot's lecturing bravura and his insights into hysteria⁸ and hypnosis directly determined Freud's later preoccupation with psychological mechanisms.

On return to Vienna he married Martha Bernays in 1886, and to improve the financial needs of his family, at Brücke's suggestion, he left research to begin practice as Consultant in nervous diseases, especially hysteria, at Berggasse 19, Vienna. Martha bore six children; the youngest was Anna Freud (1895-1982), a distinguished psychoanalyst in her own right.*

A Neurologist, trying to find treatment for patients with neurotic or hysterical symptoms, Freud came to believe in the repression of subconscious mental processes. He lectured in 1886 at the Vienna Medical Society endorsing Charcot's views; but his unconventional ideas were not well received.

One of his most important neurological texts (though it sold only 257 copies) was: *Zur Auffassung der Aphasien: eine kritische Studie* ('On aphasia; a critical study', 1891)⁹ that reviewed the existing literature, criticising its anatomical approach. He discussed Broca's (1861) and Wernicke's (1874) respective demonstrations of expressive and receptive aphasia; he coined the term 'agnosia' for disturbances of recognition of objects, then called asymbolia. At that time, existing theories of aphasia relied on anatomical localisation which Freud disparaged, preferring a broader, neurolinguistic appraisal. He believed that a lesion in one part of the cortical region might cause change in another part of the cortex, perhaps presaging Geschwind's disconnection syndromes. The learning of language seemed to occur in the mind rather than in a restricted locus ('gap') in the brain.

In detailed letters to his friend Wilhelm

Fliess (1858-1928) and to his wife he described his migraine.¹⁰ He asserted that stimuli precipitated migraine by irritation of the meninges — an idea close to modern theories of the dural plasma extravasation and vasodilatation related to 5-HT₁ receptors on its mechanisms.¹¹

From the Neurology Department at the Institute for Children's Diseases, in the same year as his 'On aphasia', he published his monograph on the nature and course of cerebral palsy, including Little's disease, based on 35 personally studied cases. This led to his becoming a leading authority. Indeed, his last work in Neurology entitled *Die Infantile Cerebrallähmung* (Infantile Cerebral Paralysis, 1897)¹² was the most exhaustive, influential disquisition for many years.

Together with his private practice, he continued his clinical work at the Institute for Children's Diseases, enabling him to support his young family while he pursued his greater interest in clinical psychopathology through his practice with neurotic patients. We can see how many of his protean projects overlapped in time and how he had acquired analytical scientific reasoning, which he tried to apply to more subjective psychological investigations. But objective, measurable, and testable hypotheses were not the stuff of psychology, as its modern, often opaque jargon betrays.

With Josef Breuer, (1842-1925), also a former student of von Brücke, he explored the manifestations of hysteria. Breuer had treated the famous patient, Bertha Pappenheim—or 'Anna O', who suffered many hysterical symptoms. Instead of using Charcot's hypnosis they encouraged 'The talking cure' or 'chimney sweeping,' with abreaction, which seemed beneficial. They published their findings in *Studien über Hysterie* (1895) — the beginning of psychoanalysis. This was advanced in his *The Interpretation of Dreams* (1900), which although initially ignored, he thought his best book. He worked at intervals with Alfred Adler and C.G. Jung but neither could accept his notions of infantile sexuality, and they chose to pursue their studies independently. A massive literature¹³ attests to his psychoanalytic theories: the notions of infantile sexuality, the interpretation of dreams, the id and ego principles, and other original concepts many of which have persisted in contemporary psychiatry and in daily language.¹

I crave readers' indulgence if in what follows I speak of well known, admitted facts; the context necessitates this method. Freud's research in Neurology, mainly between 1882 and 1889 had yielded important results. Consequently he tried to find a physiological and materialist basis for his theories of the psyche,¹⁴ but these of necessity were subjective. When Freud originated psychoanalysis he wanted it to be a science. In this he acknowledged that the neurological influence



Figure 1. Freud blue plaque

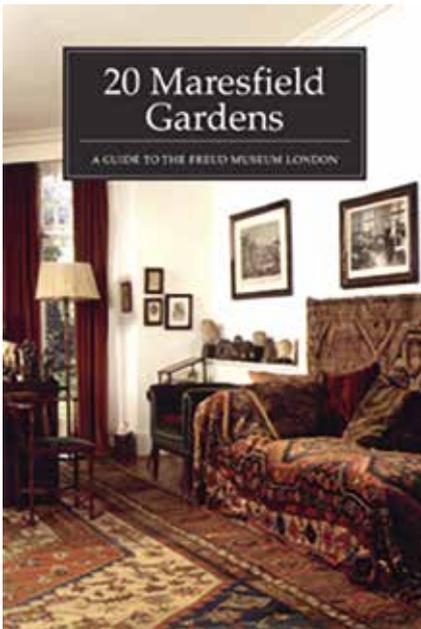


Figure 2. Freud's couch [Note picture of Charcot's demonstration above couch.]



Figure 3. 20 Maresfield Gardens, London from <https://londonist.com/2015/08/five-things-you-have-to-see-at-the-freud-museum>

a scientist, metapsychologist, and diagnostician of society emerges as a quack.¹⁶ Despite such opprobrium, criticisms, and attempted refutations of Freud's work,¹⁷ its spell remains powerful long after his death.¹⁸ Psychoanalysis doubtless has theoretical and practical limitations. Freud exposed the flawed nature of human beings and their destructive conflict: no recipe for popularity. But his ideas were original, honest, brave and revolutionary. Validation of his scientific standing is shown by his election in old age as a Foreign Member of the Royal Society† on 25th June, 1936. His work in Neurology is unchallenged.

Disputes about religion, war and pacifism also occupied him. In a letter to Albert Einstein in the early 1930s, Freud observed that 'man has in him an active instinct for hatred and destruction.' He contrasted this 'instinct to destroy and kill' with an instinct 'to conserve and unify,' an instinct for love.

Biographical note

Freud was born to Jewish parents, Jacob and Amalie in May 1856 in Freiburg, Moravia, the first of seven children. In 1860 the family moved to Leopoldstadt in Vienna.¹⁹

Freud was a clever pupil at the local Gymnasium. From the age of eight he was reading Shakespeare and, despite the influence of an education in Greek and Latin, he later commented in a letter to Martha Bernays: 'I am taking up again the history of the island, the works of the men who were my real teachers all of them English or Scotch;' He began his studies in Medicine at Vienna University in 1873, graduating MD in 1881.

In Vienna he married Martha Bernays in 1886 and set up in private practice with neurotic patients and gradually developed his many controversial psychoanalytical theories, which were often traduced.¹⁹

When Hitler invaded Austria in 1938, Freud's many publications were burned, as the fruits of a 'Jewish science.' Like millions of Jews his family were persecuted, or murdered. Four of his sisters died in Nazi concentration camps. He was forced to flee to Britain in March 1938 where he spent his last days, still working, with his devoted daughter Anna at 20 Maresfield Gardens, London (Figures 2, 3). He surrounded himself by his collection of Roman fresco paintings, and sculpture, parts of mummy cases, paintings, treasured books on the cultures of Egypt, Greece and Rome, and his famous consulting couch.

In 1923, a diagnosis of verrucous squamous carcinoma of the palate had been made. He was subjected to over 30 operations by Hans Pichler (1877-1949) and an eminent Armenian American dentist, Varaztad Kazanjian (1879-1974), and endured a cumbersome prosthesis worn to replace his resected jaw and palate. Eventually, when yet another painful recurrence was deemed inoperable, with the agreement of Anna, he asked his friend Dr Max Schur (1897-1969), to administer morphine.²⁰ He died on September 23, 1939. His ashes were buried at Golders Green Crematorium.

Perhaps the last word on the integrity and legacy of Freud can be left to Albert Einstein after a long correspondence (Dec 1932):

"You have earned my gratitude and the gratitude of all men for having devoted all your strength to the search for truth and for having shown the rarest courage in professing your convictions all your life."

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*Founder of the Anna Freud National Centre for Children and Families at Hampstead in 1952

†Proposers: W H Bragg; A V Hill; A C Seward; L N G Filon; A W Conway; G P Lenox-Conyngham; W H Eccles; Robert Robison; D L Chapman; J Gray; P P Laidlaw; E D Adrian; Wilfred Trotter; A D Hall; W Stiles

of Brücke, Meinert and Charcot had coloured his subsequent thinking in his pioneering if controversial concepts in psychiatry.

Appraisal of psychoanalytic theory is beyond this author's expertise. The brilliant (not medically trained) scientist Medawar (1915-1987) maintained,¹⁵ 'Doctrinaire psychoanalytic theory is the most stupendous intellectual confidence trick of the twentieth century.' And Tallis carpingly objected, 'The verdict has been uniformly [sic] negative: Freud as