



## Historical profile

### Cécile Vogt

Neurobiologist who helped establish the field of functional neuroanatomy. Born in Annecy, France, on March 27, 1875, she died on May 4, 1962, in Cambridge, UK, aged 87 years.

There are many great scientific partnerships that stand out in history—Antoine and Marie Anne Lavoisier, Pierre and Marie Curie, Josef Jules and Augusta Déjérines—but perhaps less well known are Cécile Vogt and her husband, Oskar. Early pioneers in functional neuroanatomy and genetics, the Vogt partnership made a phenomenal contribution to brain research in the first half of the 20th century. “Their focus on both anatomy and physiology, using new technologies and multidisciplinary approaches to understand brain function, is fascinating”, Helga Satzinger (University College London, UK) commented to *The Lancet Neurology*.

Born Augustine Marie Cécile Mugnier to unmarried parents, she rebelled against her religious education at an early age. Instead, she was privately tutored and, at the age of 18, entered medical school in Paris, where at the time only 6% of medical doctorates were awarded to women. She studied under the neurologist Pierre Marie at the Bicêtre Hospital (Paris, France) and graduated in 1900 with a dissertation in neuroanatomy. During her time in Paris, Cécile’s path crossed with that of Oskar Vogt, who was working in the Déjérines’ laboratory at the Salpêtrière Hospital. A German neurologist five years her senior, Oskar had built up a successful practice as a psychotherapist and had developed a keen interest in the neuroanatomical basis of psychological phenomena. Although Cécile and Oskar were at first unable to speak each other’s language, there was a clear alignment of academic interests and life philosophy. They married in 1899 and embarked on a personal and scientific collaboration that would last a remarkable 60 years.

Cécile moved to Berlin to work with Oskar at his research institute, the Neurologische Zentralstation. But life in Berlin was not easy; Cécile and Oskar had to fight for her admission to scientific conferences and she wasn’t awarded her license to practice medicine in Germany until 1920. “The majority of the medical faculty in Berlin was completely against women studying”, explains Satzinger, “and Cécile was French—the former enemy—which made matters even worse.” Although she didn’t hold a named position, Cécile’s work was integral to that of Oskar, and of the institute as a whole. With a team of female technicians, Cécile began the painstaking process of tracing fibre connections in the brain, archiving thousands of brain slices that would form the basis of the largest collection of human and animal brain slices in

the world (now housed in the Cécile and Oskar Institute of Brain Research in Dusseldorf, Germany).

In 1907, the Vogts co-authored a landmark paper identifying the motor and sensory cortices as two functionally distinct areas of the cerebral cortex using a combination of physiological and anatomical methods. Cécile went on to focus on the organisation of the thalamus and the so-called striary system, structures that would later become known as the basal ganglia. She identified the association of structural differences in the striatum with movement disorders, such as Huntington’s disease and a disorder characterised by paralysis, which became known as Vogts’ disease. “There’s still much more to learn from the Vogts’ work because they looked in so much detail into the fine organisation of the cortex and the different cell types”, comments Satzinger. “The field of neurology is still coming back to certain questions that the Vogts already tried to answer.” In 1914, Oskar was appointed director of the new Kaiser Wilhelm Institute for Brain Research (KWI; Berlin, Germany), which he ran alongside his own institute, and Cécile took up the post of head of the anatomy department. In 1925, they established a genetics department—led by the Russian geneticists Elena and Nicolai Timoféeff-Ressovsky.

The Vogts made no secret of their leftist political leanings which, along with their employment of both Jewish people and women at their institute, no doubt made them a Nazi target. In 1934, the KWI was raided by the Schutzstaffel (SS); Oskar was accused of supporting the communists and relieved of his post as director. At this point it became very clear that the Vogts and their daughters Marthe and Marguerite, who were both now working at their parents’ institute, were no longer safe in Berlin. By 1937, the Vogts (now in their 60s) had opened a new Institute for Brain Research and General Biology in Neustadt. Cécile and Oskar continued with their research throughout World War II and, even though they themselves were Nazi targets, they gave shelter and employment to others fleeing persecution. The Vogts remained in Neustadt even after the war ended. Only after Oskar’s death in 1959 did Cécile move to Cambridge to live with her daughter Marthe, until her death in 1962.

From her time as a young medical student in Paris to her final years working by Oskar’s side, Cécile fought the pervasive preconception that women were intellectually inferior to men or unsuited to certain types of work. In the 1920s, she asserted publicly that nothing in her research supported a difference between the brains of men and women. But despite an illustrious research career, her contribution to neurology is all too often overlooked and overshadowed by that of her husband.

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For more on the **functional organisation of the cortex** see *Journal für Psychologie und Neurologie* 1907; **8**: 277–456

For more on **Cécile Vogt’s research on the striatum** see *Journal für Psychologie und Neurologie* 1911; **18**: 479–88

For more on **Cécile Vogt’s role in the advancement of women in science** see [http://discovery.ucl.ac.uk/47987/1/cecile\\_vogt\\_transl.doc.pdf](http://discovery.ucl.ac.uk/47987/1/cecile_vogt_transl.doc.pdf)