Arnold Pick and German Neuropsychiatry in Prague

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Circumscribed focal atrophy with frontal lobe dementia and progressive aphasia, as described originally by Arnold Pick, has been recognized recently as being much more common than previously believed. Although Pick disease became linked with argyrophilic inclusions (Pick bodies) and swollen neurons (Pick cells), the majority of focal atrophies have findings that are a variation of the classic histologic features. We discuss Pick's background and the circumstances that led to his major contributions to the study of behavioral neurology. We also review his original articles, the articles that subsequently established the entity of Pick disease, and historical documents pertaining to the continuation of German-language education in Prague after Prague's independence from the Austro-Hungarian monarchy. Arnold Pick's life and career exemplify the integration of neurology, psychiatry, and neuropathology, which represents one of the major contributions of German neuropsychiatry to the study of the nervous system. Pick is a major intellectual ancestor of present-day behavioral neurology. *Arch Neurol. 1996;53:935-938*

Arnold Pick was born of Austrian parents in 1851 in Moravia in the small town of Gross Messeritsch (Velke-Meziříčí). His secondary-school education in the gymnasium of Iglau (Jihlava) not only prepared him for the study of medicine, but also provided him with the foundation for a lifelong interest in literature and music. He graduated from medical school in Vienna in 1875 at the age of 24 years. As a student, he completed an elective at Landesirrenanstalt (a state mental institution) in Vienna in 1872 and between 1872 and 1874 became a student assistant to Theodore Meynert, the chairman of the Department of Neurology and Psychiatry at the medical school in Vienna. About that time, Carl Wernicke, who was a few years older than Pick, also spent 6 months with Meynert, whose main interest was neuroanatomy. Meynert influenced both young men considerably, as evidenced by their subsequent work. After his graduation, Pick completed a 6-month elective in Westphal's Department of Neuropsychiatry in Berlin, while Wernicke was there as Westphal's assistant. Pick was trained in the Austro-Hungarian Empire, while Wernicke was trained in Prussia, but there was a great deal of cross-fertilization in German-speaking academia, regardless of state boundaries, a tradition that goes back to the Middle Ages and, apart from a few interruptions by war, continues to this day.

From November 1875 to 1877, Pick worked in a state mental hospital in Wehlen and from 1877 to 1880 in the Prague asylum (Irrenanstalt). He received his habilitation in neurology and psychiatry (a degree that allowed him to teach) from the faculty of medicine in Prague in July 1878. The Prague asylum was in the old quarters of the medieval St Catherine Monastery, the tower of which still stands (**Figure 1**). With subsequent expansion, it became the site of the first Department of Neuropsychiatry, which was established in 1841 under the direction of Josef Ritter von Riedel, who was also the founder of the first German journal of psychiatry. von Riedel introduced progressive changes, such as occupational and music therapy, in the care of the mentally ill. To this day, the first Department of Neu-

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rology of Charles University is located on Katerinskà street in Prague in the ancient monastery with its baroque additions from 1790. The name of the building used to be synonymous with mental illness in Prague (similar to Bedlam in London). To say that "one belongs to Katerinsky" in Czech still means that one's sanity is in doubt.

In 1880, a new psychiatric institute opened in Dobrzan (Dobrany), about 110 km from Prague. Pick was first appointed assistant director and then became director of the institute from 1882 to 1886. In 1886, he was promoted to full professor and, a few months later, at the age of 36 years, he took over the chair of the department in Prague from Jakob Fischel. The selection committee records obtained from the Archives of the Carolinum in Prague show that von Krafft-Ebbing, of Graz, was the first choice, but von Krafft-Ebbing held out for the chair in Vienna, which he obtained a few years later. According to subsequent department lore,[1] Fischel did not have a "scientific" department, and psychiatry was looked down on by the rest of the faculty as a "dark discipline." Superstitions about mental illness were numerous; among them was the idea that exposing medical students to mental patients would be harmful to both. However, Pick quickly established a dynamic department based on research and patient care and developed an excellent reputation as a clinician. He took a keen interest in neuroanatomy and neuropathology and was primarily a neurologist rather than a psychiatrist. In one of his letters to the Ministry of Education, he requests to be identified as a professor of neuropathology, in addition to psychiatry, like his counterparts in Vienna and Graz. At the same time, a parallel Czech Department of Neuropsychiatry was established in the same building under the leadership of Cumpelik. The official language of instruction at the University of Prague was German, just as it was in all aspects of administration in the 19th century. The end of the 19th century saw a rise of Czech nationalism, and on the instigation of the Czech deputies in the Imperial Council in Vienna, a bill

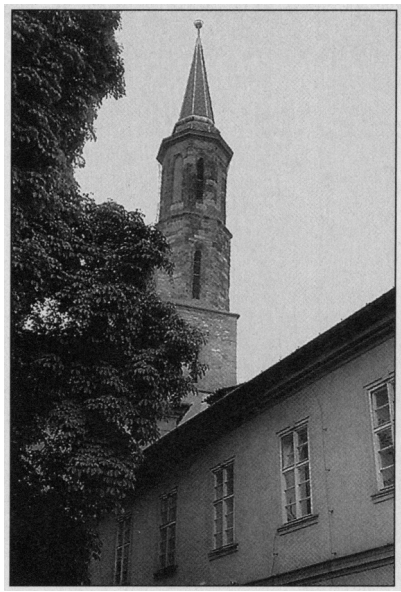

Figure 1. *The Prague asylum with a view of the medieval tower of St Catharine Monastery.*

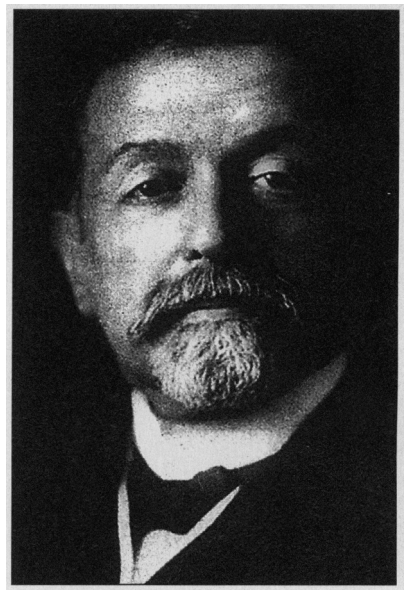

Figure 2. *Arnold Pick (from Brown[21]).*

was passed in 1882 to establish a Czech university in Prague. Thomas Masaryk was appointed as professor of philosophy in 1882. After the faculties of law and philosophy, the faculty of medicine duplicated all its departments and began to provide Czech instruction.[2]

Pick went on to become one of the leaders in neurology and neuropsychiatry, with 280 publications to his name, an unprecedented number at that time (**Figure 2**). The majority of these deal with aphasia, apraxia, agnosia, memory, consciousness, and other topics now termed *behavioral neurology*. His overall output in this field exceeds that of Wernicke, in part because he lived longer (Wernicke died in a bicycle accident in 1905 at the age of 45 years). Initially, Pick followed Wernicke's classification of the aphasias but later became interested in agrammatical speech disorders. He began a series of articles on this, but the work remained unfinished.[3-7] In the first volume of *Die agrammatischen Sprachstörungen*,[4] Pick reviewed the psychological and linguistic knowledge pertaining to aphasia. In agrammatism, he included not only a disturbance of syntax but also a global disturbance of language use. Pick distinguished 2 forms of agrammatism. The temporal variety is characterized by defective syntax with a quickened pace of speech, but wrong inflexions, prefixes, and suffixes. In the frontal variety, on the other hand, only substantive words are juxtaposed, as in a telegram, without syntactical elements.

Agrammatism has become a popular and fertile area among modern linguists interested in aphasia. Pick emphasized the linguistic explanations of aphasic phenomena, and some interpreted this as turning away from Wernicke's concepts[1] and considered Pick to be one of the "holists" unwilling to divide aphasic phenomena.[8] His ideas are partly related to Hughlings Jackson's concept of aphasia being a failure to produce propositional speech. His concepts of speech comprehension are very similar to those in modern cognitive science.[9] He described stages of cognition that included formulation of thought, preliminary to the use of language, as distinct from the formulation of words, presaging modern linguistic concepts of preword processes. He even went back to what he called *the mental attitude*, where thought is still undifferentiated. The second stage would represent differentiated ideas; the third, the scheme of the phrase. Only after these formulations would the choice of words be accomplished. Pick also cautioned against oversimplification in observing aphasic phenomena: "The abnormal responses do not reveal the elements out of which speech is built."[6]

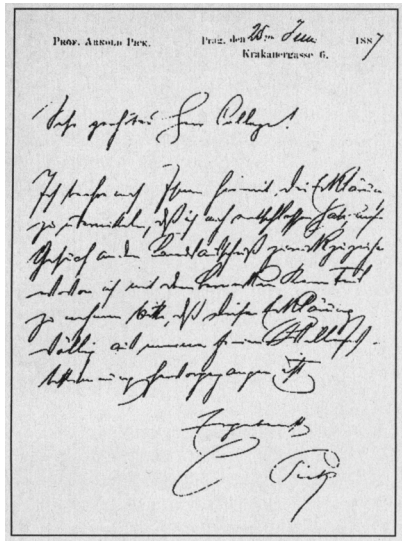

Figure 3. *Letter of disclaimer written on Arnold Pick's personal stationery.*

The breadth of Pick's scientific productivity is astounding, ranging from the microscopic study of the central canal in the spinal cord to hysterical psychosis. He did experimental work on the visual systems of dogs and wrote about counseling the relatives of psychiatric patients. He described reduplicative paramnesia first, which later became the Capgras syndrome. He wrote a text on the pathologic anatomy of the central nervous system with his friend Otto Kahler. Several of his works became eponymous, such as Pick visual hallucinations[10] and Pick disease,[11-13] a distinct form of presenile dementia presenting with behavioral syndromes due to focal atrophy. These original articles by Pick contain no histologic description. The term *Pick disease* has been shifted to mean the pathologic entity with silver-staining globular inclusions (Pick bodies), first described by Alzheimer,[14] ballooned neurons (Pick cells), and circumscribed atrophy.[15] According to this definition, Pick disease is relatively rare compared with Alzheimer disease (a ratio of 1:10). Recently, frontal dementia, primary progressive aphasia, dementia with amyotrophic lateral sclerosis, and corticobasal degeneration have been recognized as having a high degree of clinical and pathologic similarity to Pick disease.[16] If one considers these clinical conditions with "Pick variant pathology" as a continuum, or, as we called it, "Pick complex,"[16] Pick disease may be second in incidence only to Alzheimer disease, particularly in the presenile age group. Pick's contribution to behavioral neurology and neuropsychiatry may be appreciated even further if the ratio of the incidence of Pick complex to Alzheimer disease is closer to 1:4, as converging evidence indicates.

Pick's fame has spread far beyond the German-speaking medical and scientific community. He and Hughlings Jackson held each other in high esteem. He had Jackson's portrait on his desk and wrote several articles in the English-language literature.[5,10,17-20] Jackson wrote about Pick and popularized his work in England. Pick counted among his friends several members of the intellectual elite in Prague, such as Ernst Mach, a physicist, Friedrich Jodl, a philosopher, Steinach, a biologist and physiologist, and Sauer, a linguist, and corresponded with many of the leading neurologists of his time, such as Dejerine, Marie, Head, Jolly, and Raymond.[21] He lived in an elegant apartment house in Prague at 6 Krakauergasse, as attested by a letter written on his personal stationery (**Figure 3**). The building now houses the Bulgarian Embassy.

Pick became dean of medicine in Prague for 1 year (1891-1892), which is a standard practice in German universities. A dean was only primus inter pares, a rotating chair of the body of professors that constituted the executive committee of the faculty. He was said to prefer clinical activities to administration. In 1907, he was honored with the title *Hofrat* (court councillor). After writing several articles about the cognitive effects of war injuries, he retired in 1921. Pick's last years were marred by illness; he lost his sight as a result of a cataract and retinal detachment, and one of his eyes had to be enucleated. A renal stone was also removed, with many complications, and in 1924, at the age of 73 years, he died of urinary sepsis after undergoing another operation. His many pupils carried on his work. Otto Sittig, another behavioral neurologist, is well known for his significant work on apraxia, among other achievements. He edited Pick's work on aphasia posthumously, available in an English translation.[7] Sittig died in a concentration camp during the war. Oscar Fischer, who did significant work on senile plaques in the neuropathology laboratory in Pick's department around the same time as Alzheimer, also perished in a concentration camp. Other well-known pupils included Bruno Fischer, Max Löwy, and Alexander Margulis.

After Pick's retirement, Otto Poetzl, from Vienna, another behavioral neurologist, whose main interest was cortical visual disturbances such as visual agnosia continued the traditions of excellence and the emphasis on neurology within the German Department of Neuropsychiatry in Prague. It is remarkable that the new independent Czechoslovak Republic maintained the German university even after the breakup of the Austro-Hungarian Empire in 1918. This appears to be a curious paradox considering the intense nationalism and anti-Austrian feeling that brought about the creation of Czechoslovakia. One must remember, however, that about a quarter of the population of the new republic was German speaking. There was also a large German-speaking Jewish population in Prague. The majority of academics and intellectuals were bilingual. Although Masaryk led his nation against Austrian and Hungarian domination, he was a product of German academic institutions and culture, very much like his contemporary Arnold Pick.[22] During this period and subsequently, the Czech Department of Psychiatry remained purely psychiatric. Organic diseases of the brain were left to a newly formed Division of Neurology, which was separated from the Department of Internal Medicine in 1925 by Henner, who took over an endocrinology clinic from Biedl of the Lawrence-Moon-Biedl syndrome fame. The German and Czech departments, although located one above the other in the same building, had minimal scientific contact. Only during the lectures of outstanding visitors would the members of the 2 departments attend each other's meetings. This

separation, of course, did not exclude personal friendships between individual members of both clinics.

When Poetzl returned to Vienna to take the chair of neurology in 1928, Edward Gamper became the professor of German neuropsychiatry in Prague. Gamper also took over the neurology clinic and contributed significantly to the clarification of the neuropathology of the Wernicke-Korsakoff syndrome. One of his assistants, Albert Kral, survived the concentration camp at Theresienstadt and became a prominent psychiatrist in Montreal and London, Ontario, best known for his concept of "benign senescent forgetfulness." Gamper was summoned to examine Hitler in 1938 in Berchtesgaden, but his car went over a cliff on his return. The official version of the cause of the accident was ice on the road, but rumor had it that the Gestapo had strung a wire across the road to kill him. Katie Kral recollected that Gamper had petitioned for the release of his Christian-Socialist brother from prison. His successor and the last chairman of the department, Kurt Albrecht, is said to have walked around in a brownshirt uniform in high boots accompanied by a wolfhound, but continued to have Czech and Jewish patients on the ward. During the Nazi occupation of Czechoslovakia, the SS surrounded the Czech clinic when a radiotransmitter was suspected of being hidden there. Without the solidarity of their German colleagues, the situation would have been worse for the Czech doctors. Albrecht was found dead of a gunshot wound in the clinic at the end of the war, assumed to be a suicide. (Another version has it that he opened fire on the people who were trying to accelerate the takeover.) Thus ended the remarkable story of the German Department of Neuropsychiatry in Prague.

Arnold Pick was a product of the integration of neurology, psychiatry, and neuropathology, which was one of the major contributions of German medicine at the turn of the century. His leadership in the bilingual environment of Prague spanned a major historical change from the German-language–dominated university education that has survived into the bilingual environment of the independent Czechoslovakia. A review of Pick's original articles and those of his successors, which subsequently established the entity of Pick disease, suggest that his contribution to neurology is much greater than was hitherto appreciated. Pick disease, or circumscribed focal atrophy as described originally by Pick, has recently been recognized as being more common than previously believed. Although Pick disease became linked with specific histologic features characterized by globular argyrophilic inclusions and swollen neurons, the more common, recently described entities of frontal lobe dementia and primary progressive aphasia have pathologic findings that are a variation of the classic histologic picture and clinically indistinguishable from Pick's original descriptions. Arnold Pick is a major intellectual ancestor of present-day behavioral neurology.

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