The Fifth International Neurological Congress in Lisbon, 1953

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Abstract

We present an overview of the International Neurological Congress that was held in Lisbon, Portugal, on September 7–12, 1953, the fifth in the series of meetings that became a tradition and helped to establish Neurology and Neurosurgery as independent medical specialties in the mid-twentieth century. Four main symposia focused on vascular and metabolic diseases of the brain and on the parietal lobe. An additional 345 papers were read on diverse topics. The Congress was attended by 982 delegates from 39 countries. A central figure was Egas Moniz (1874–1955), the pioneer of cerebral angiography, who was awarded the Nobel Prize in Physiology or Medicine in 1949 for applying prefrontal leucotomy to manage certain forms of psychosis. Special tributes were paid to Constantin von Monakow (1853–1930) and Santiago Ramón y Cajal (1852–1934) on the occasion of the centennial anniversary of their births. A satellite meeting was held in Madrid immediately after the Lisbon conference; speakers including John F. Fulton (1899–1960), Sir Walter

Russell Brain (1895–1966) and Fernando de Castro (1896–1967) praised the discoveries of Cajal, the neuron theory, and their impact on the medical sciences and on the future of Neurology.

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Introduction

The International Neurological Congress that was held in Lisbon, Portugal, on September 7–12, 1953 [1] was the fifth in the series of conferences [2] that established Neurology as a standalone specialty independent of Internal Medicine and Psychiatry, and Neurosurgery as a standalone specialty independent of General Surgery.

The previous four meetings, which began the tradition after the First World War (Table 1), had taken place in Berne, Switzerland [3–10], London, England [11–15], Copenhagen, Denmark [16], and Paris, France [17].

The meeting after Lisbon was held in 1957 in Brussels, Belgium. That is also when the World Federation of Neurology was founded. Accordingly, for the quadrennial meetings held between 1957 and 1973 in Brussels, Rome, Vienna, New York, and Barcelona, the name “Internation-

tional Congress of Neurological Sciences” was also used. From 1977 onwards, the meeting became the “World Congress of Neurology.” It has been held every four years through 2009 under the auspices of the World Federation of Neurology and on a biannual basis thereafter [18, 19].

Participants and Organization

At the Fourth International Neurological Congress of Paris in September 1949, it was decided that the following Congress would take place in four years time in Lisbon. The Lisbon Congress was announced in several medical journals worldwide [20–25]. The four volumes of the published Proceedings (Fig. 1) constitute a valuable archival source [26–29]. There were 982 registrants from 39 countries [29]. Some of the authors are shown in Figure 2. Although it was decided that Germany and Japan should be invited to participate in the Congress [24], there was only one Japanese registrant, Masaru Kuru of Kanazawa University Surgical Clinic [29]. The meeting had six official languages [25] (Table 1). English became the official language of the meetings beginning with the Ninth International Congress of Neurology that was held in 1969 in New York.

Neurologists from 16 countries (two by proxy) convened in Lisbon on July 11–13, 1951, for the preparatory arrangements [20]. The local officers were António Flores, president; José Augusto Correia de Oliveira, vice president; Almeida Lima, secretary; Joaquim Ignácio da Gama Imaginário, treasurer; and Victor Ramos, vice treasurer. Fourteen vice presidents were elected to represent their countries: Paul van Gehuchten (Belgium), Deolindo Couto (Brazil), Alfonso Asenjo (Chile), Knud H. Krabbe (Denmark), Raymond Garcin (France), Francis M.R. Walshe (Great Britain), Lionello de Lisi (Italy), W.G. Sillevius Smitt (Netherlands), Georg H. Monrad-Krohn (Norway), Juan José López-Ibor (Spain), Nils Antoni (Sweden), Fritz Lüthy (Switzerland), Ihsan Sükrü Aksel (Turkey), and Henry Alsop Riley (USA). An additional 11 representatives were included by the time of the meeting to represent Argentina, Australia, Canada, Czechoslovakia, Germany, India, Iran, Iraq, Israel, New Zealand, and Peru [28].

Sir Charles S. Sherrington, Georges Guillain, André-Thomas, Théophile Alajouanine, and Egas Moniz were voted presidents of honor, and António Austregésilo vice president of honor. An 11-member Ladies Committee was formed [28].

The themes of the four main symposia were decided by the Executive Committee at the meeting of July 1951

Table 1. Some details on the first 5 INC, 1931–1953

INC	Dates	Venue	Official Languages	Centennial Homage	Officers	Themes	Delegates	Registration fee
First	August 31–September 4, 1931	Berne, Switzerland	French, German, English, Italian		B. Sachs, C.S. Sherrington, H. Alsop Riley	Brain tumors; Muscle tone; Nonsuppurative encephalitides; Trauma	890	CHF 25 (USD 5)
Second	July 29–August 2, 1935	London, England	English, French, German, Italian, Spanish	John Hughlings Jackson	G. Holmes, S.A. Kinnier Wilson, M. Critchley, E.A. Carmichael	Epilepsies; CSF; Frontal lobe; Hypothalamus	283	EUR 1.5 (USD 7)
Third	August 21–25, 1939	Copenhagen, Denmark	English, French, German		V. Christiansen, K.H. Krabbe	Endocrine-vegetative system; Heredo-familial diseases; Avitaminoses	338	Kr 40 (USD 15)
Fourth	September 5–10, 1949	Paris, France	French, English, Spanish, Russian	Joseph-Jules Déjerine	T. Alajouanine, R. Garcin	EEG and EMG; Thalamus and its pathology; Viral infections; Neurosurgery of pain	1,038	Fr 2,450 (USD 7)
Fifth	September 7–12, 1953	Lisbon, Portugal	Portuguese, French, Spanish, English, Italian, German	Constantin von Monakow, Santiago Ramón y Cajal	A. Flores, C. de Oliveira, P.A. Lima	Cerebrovascular diseases (two sessions); Parietal lobe; Metabolic diseases	982	PTE 430 (USD 15)

INC, International Neurological Congresses.

[24] as follows: Cerebrovascular diseases (clinical anatomy and physiology), chaired by Alajouanine; Cerebrovascular diseases (radiologic semiology and surgical treatment), chaired by Moniz; Parietal lobe, chaired by Walshe; and Metabolic diseases of the brain, chaired by Ludo van Bogaert [20, 28]. “As was fitting in the city of professor Egas Moniz, two of the major discussions were on vascular disorders of the brain” [30]. Those two symposia anticipated the importance of cerebrovascular disorders in clinical practice with the subsequent realization of Stroke Units worldwide as organized in-hospital facilities devoted to the care of patients with cerebral apoplexy.

Four invited speakers presented 20 min talks in each symposium, and 5 min discussions were allowed by writ-

ten application in advance. Afternoon sessions were arranged to permit 10 min free communications on miscellaneous topics [22].

Egas Moniz, Président d'Honneur

The selection of Lisbon as venue for the 1953 Neurological Congress had much to do with the work of Egas Moniz, notable statesman, physician, historian, and the first Portuguese scientist whose career was crowned with a Nobel Prize.

Born António Caetano de Abreu Freire, he adopted, as a student, the pen name of the nobleman Egas Moniz

Fig. 1. Upper, the four volumes of the Proceedings of the Lisbon Congress, totaling 1,700 pages [26–29]. Lower, a large version (8 cm in diameter) of the von Monakow-Cajal medal, also featured on the cover of the Proceedings, by the Portuguese sculptor Leopoldo de Almeida (1898–1975), professor of design at the Advanced School

of Fine Arts of Lisbon (Escola Superior de Belas Artes de Lisboa); a smaller size medal (3 cm in diameter) was the one actually given to the delegates. Private collection. In the middle, the folder that contained the program and the official documents [56] (credit: História da Neurologia Portuguesa, Sociedade Portuguesa de Neurologia).

Fig. 2. Delegates and officers of the Lisbon Congress. First and second row, group photographs. Courtesy: Neurosciences and History in Images, Antonio Subirana Oller Collection. © Spanish Society of Neurology, Museum and Historical Archive, Barcelona. Used by permission and protected by Copyright Law. Copying, redistribution or retransmission without the authors' express written permission is prohibited. Third row: M. Minkowski, H.

Olivecrona, P.M. de Almeida Lima, E. Moniz, F.M.R. Walshe. Fourth row: W.J. Freeman, D. Denny-Brown, R. Garcin, J.J. Lhermitte, and J.A. Correia de Oliveira. Credit: Spanish Society of Neurology, Museum and Historical Archive, Barcelona (Minkowski); Fulton [33] (the 79-year old Moniz at the 1953 Congress, wearing the Monakow-Cajal medal); University College London Hospitals (Walshe); National Library of Medicine, Bethesda, MD (all others).

(for Figure see next page.)

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(1080–1146), a medieval hero of the Portuguese resistance against the Moors. Before the realization of his medical breakthroughs, Moniz served as Senator, Foreign Minister, Ambassador to Spain, and Head of the Portuguese Delegation at the signing of the Peace Treaty of Versailles [31]. At some point he was jailed when, as Dean of the School of Medicine in Lisbon, prevented the Police from entering the University Campus during a students' protest [32]. He was fluent in six languages. In 1951, Moniz was invited to accept the Presidency of Portugal, but declined due to ill health [31].

Moniz introduced two major innovations, the expanded use of cerebral angiography for diagnostic purposes and the performance of prefrontal leukotomy in certain psychoses. Pedro Almeida Lima (1903–1985), who was the secretary of the Congress in Lisbon, had generally acted as Moniz's "surgical hands" in the leukotomy operations [33].

Moniz took part in two previous International Neurological Congresses. In 1931, he attended as *membre adhérent* the First Congress in Berne, where he presented a paper on "The localization of cerebral tumors by arterial encephalography" [34]. In 1935, he represented Portugal as one of the 20 vice presidents at the Second Congress in London [12]. As delegates, he and Lima attended the Programme Conference held at the Royal Society of Medicine in London on September 6–7, 1933 [11]. The presentations by Moniz and his colleagues on cerebral angiography at the London meeting were considered "among the numerous free communications worthy of note" [15]. Moniz actually foresaw the possibility that controlled surgical damage to the frontal lobes could be of benefit to human patients suffering from behavioral disorders [35]. At the session on the functions of the frontal lobe Moniz met Walter J. Freeman (1895–1972) of George Washington University, an encounter that critically influenced the latter's endeavors with respect to human frontal lobotomy in the United States [15].

Moniz did not attend the 1939 Congress in Copenhagen or the 1949 Congress in Paris. For the latter, though, he was registered as *membre titulaire* as well as "président d'honneur" of the Portuguese National Organizational Committee, with Flores presiding, Lima as secretary, Correia de Oliveira and Diogo Furtado as members; that Committee convened in 1947 in Paris to prepare the Congress originally planned for 1943, but postponed because of the Second World War [36]. Apparently, the Portuguese Committee extended an invitation for the following Congress to be held in Lisbon, and Flores assumed the presidency.

An International Congress of Psychosurgery was held in Lisbon in 1948 to honor the work of Moniz [35]. In Freeman's opinion, the introduction of cerebral angiography in 1927 and of psychosurgery in 1936 brought about revolutions in neurological diagnosis and treatment, the eventual extension of which was yet to be seen [31].

In the Proceeding of the closing session of the Paris Congress ("Séance de cloture et assemblée générale, Samedi matin, 10 Septembre 1949"), it is simply stated that the next meeting will take place in Lisbon ("Siège du V^e Congrès Neurologique International: Le prochain Congrès Neurologique International aura lieu à Lisbonne en 1953") [36]. Although there is no written explanation, in all likelihood it had to do with the Oslo Prize awarded to Egas Moniz in 1945 for his work on angiography, and the forthcoming Nobel Prize in 1949 for his work on leukotomy. Beginning in 1928, Moniz was nominated 18 times for the magna cum laude of the Swedish Academy both by Portuguese academics and by physicians abroad, including Freeman, as well as Eduard M. Busch of the Neurosurgical Department of the Military Hospital in Copenhagen, and Percival S. Bailey of the University of Illinois College of Medicine in Chicago (www.nobelprize.org/nomination/redirector/?redir=archive).

Moreover, Moniz had a special relation with the French school of Neurology, having trained in Bordeaux and Paris in 1909–1910 [37]. In July 1927, he traveled to Paris to present his results with angiograms to the Society of Neurology and the Academy of Medicine of Paris, both of which elected him as a corresponding foreign member [32]. That presentation formed the subject matter that resulted in Moniz's classic monograph on cerebral angiography [38].

Freeman (Fig. 3) referred to Moniz as *Cher Maître* (Dear Master) in their correspondence, and the 1949 Nobel Prize was largely driven by his advocacy for Moniz [39]. In Freeman's assessment, cerebral angiography became an indispensable method for every neurological and neurosurgical clinic in the United States [40]. With regard to leukotomy, despite the observation of retrograde degeneration in the thalamus after surgical lesions of the frontal lobe or the controversial status of psychosurgery after the introduction of medications such as chlorpromazine in the early 1950s for the medical management of schizophrenia, the explorations of Moniz led to an "opening of the silent area of the frontal lobe to further investigation into the intricacies of the mind-brain relationships, one of the most stimulating events of the century in Psychology" [40].

Color version available online

Fig. 3. Upper left, Egas Moniz lecturing on angiography at the Hospital of Santa Marta in Lisbon. Credit: SAPO Jornal i-digital (online.sapo.pt/artigo/479975). Upper right, Walter Freeman receiving the academic chain from Moniz in 1950, with Ant3nio Flores assisting. Credit: National Library of Medicine, Bethesda, MD. Middle left, the Nobel diploma of Egas Moniz. Credit: Casa Museu Egas Moniz, Avanca (www.casamuseuegasmoniz.com). Lower

row, angiograms shown by Moniz in his keynote lecture at the 1953 Neurological Congress: left, a fusiform aneurysm of the internal carotid artery in a 27-year-old male who had presented with intense headaches; right, multiple aneurysms of the posterior temporal artery (at least three are indicated by arrows) associated with an angioma of the inferior parietal region in a 40-year-old male who presented with subarachnoid hemorrhage [26].

To plan and direct future Congresses of Neurology, a Committee was formed at the suggestion of Flores, composed of Riley (president) and Krabbe and Garcin (secretaries) [20].

The Congress opened on Monday, September 7, at 16:00 h, in the presence of General Craveiro Lopes and the Undersecretary of State for National Education, at the “Sala Portugal” of the Geographical Society.

Having retired in 1944, Moniz was 79 years old at the time of the Lisbon meeting. He died two years later, on December 13, 1955. In the opening address, Moniz welcomed the State officials and the audience and gave a brief overview of the development of cerebral angiography as a procedure of clinical examination, especially in cases of tumors, aneurysms and thromboses, mentioning the difficulties that he had initially encountered. He acknowledged the active contribution of Lima and the scientific exchanges in Paris with Jean-Athanase Sicard (1872–1929), Gheorghe Marinescu (1862–1938), and Maurice Robineau (1870–1950). He concluded by saluting, as the *Doyen d'âge* of Portuguese neurologists, the congressmen, thanking them for the honor of their presence and their “contribution to the progress of Neurology in the service of humanity” [28].

Allocutions by Flores, Correia de Oliveira and Lima followed. On behalf of the foreign delegates, Georg H. Monrad-Krohn (1884–1964), chairman of the Norwegian committee, complimented Moniz for his achievements in cerebral angiography and leukotomy, which opened up new provinces in the science of Neurology (“that most central and highest of all medical sciences, studying the system that integrates our numerous conglomerations of cells into living human individuals”), and affirmed: “We are now gathered again, neurologists from nearly all parts of the world, invited by our Portuguese colleagues...I hope then that this Fifth International Neurological Congress will be a great scientific success and, let me add, the wish that it will be an oasis of peace and harmony in the troubled and uncertain world of our age. We meet here not only as representatives of so many various nations, but above all, as members of the scientific brotherhood of our civilization” [28].

Select Papers

Mieczyslaw Minkowski (1884–1972) read the introductory paper on Constantin von Monakow and his contributions to Neuroanatomy and Neurology [29] in the

presence of von Monakow's daughter, Masche [1]. Later in the week, Minkowski spoke about the research of von Monakow and his school on the anatomy and pathophysiology of the parietal lobe [27, 28].

Seymour S. Kety (Bethesda) opened the first symposium with a talk on the physiology of the cerebral circulation in vascular diseases of the brain. Georg Schaltenbrand (Würzburg) followed by speaking about brain pressure and cerebrovascular diseases; Philip Cloake (Birmingham) spoke on obliterative inflammations of cerebral arteries; and Paul F. Girard (Lyon) covered the cerebrovascular malformations.

The second symposium included papers read by Traugott Riechert (Freiburg) on the surgical treatment of vascular thromboses, Egas Moniz (Lisbon) on the angiographic semiology of cerebral aneurysms, varicose veins and angiomas, Norman M. Dott (Edinburgh) on the therapeutics of saccular intracranial aneurysms, and Herbert Olivecrona (Stockholm) on the surgical treatment of arteriovenous aneurysms and vascular brain tumors [26]. Olivecrona detailed the surgical treatment of 96 arteriovenous aneurysms observed among 4,000 operated brain tumors (pages 145–150 in the published Proceedings [26]). Moore [41] of the University of Pennsylvania presented neuropathological findings in perivascular encephalolysis, and [42] Lichtenstein of the University of Illinois spoke on clinical and neuropathological aspects of Sturge-Weber-Dimitri syndrome.

Moniz was jointly awarded the Nobel Prize in Physiology or Medicine with Walter R. Hess (1881–1973) of the University of Zürich on October 27, 1949 (Fig. 3). On December 10, 1949, Olivecrona, as a faculty member of Karolinska Institutet, gave the Award Ceremony Speech during the Nobel festivities; Moniz could not be present to receive the Nobel Prize in person, and the Prize was delivered to the Chargé d'affaires of the Legation of Portugal (www.nobelprize.org/prizes/medicine/1949/ceremony-speech).

The keynote lecture by Moniz and João Pedro Miller-Guerra (1912–1993) on the angiographic appearance of intracranial aneurysms and angiomas (pages 79–141 in the published Proceedings [26], with 36 lantern slides; Fig. 3) covered cases of various forms of arterial aneurysms (fusiform, saccular, multiple, traumatic), varicose veins, and cerebral angiomas (arterial, venous, mixed). Angiography was crucial in revealing vascular conditions that were previously thought to be extremely rare or even misdiagnosed as tumors. Moniz considered the majority of cerebral aneurysms to be congenital, an idea not accepted by many neurologists at the time. Angiography

provided evidence in support of the congenital hypothesis.

During the Congress, there were a number of demonstrations. According to *The Lancet*, the most interesting of these was a series of radiographs showing the development of cerebral angiography in the hands of Moniz and Lima [30] as Exhibit XVIII, “Cerebral angiography and leukotomy: historical, bibliographic and documentary exhibition” [27]. Sir Geoffrey Jefferson (1886–1961) of the University of Manchester offered a warm appreciation of the friendliness and gracious hospitality of Moniz and his wife, dona Elvira de Macedo Dias [33].

In a tribute published the following year on the occasion of Moniz’s 80th birthday, Flores [43] recorded that the positive reception of the work of Moniz was evident in the dozens of papers presented at the Congress by authors from Europe, the Americas, and Asia, dealing with the applications of cerebral angiography to the diagnosis, classification, and surgical treatment of vascular malformations, lesions, and neoplasms of congenital or acquired etiology, including intracranial aneurysms, telangiectasias, carotid thrombosis, angiomas, and angioblastomas. In a unanimous consensus, modifications and technical refinements of the original method continued to prove its practical value, the benefit to patients, and the opening up of new paths to discovery in the fields of Neurophysiology, Neuropathology, and Neurotherapeutics.

The main speakers of the third Symposium, on the parietal lobe, were MacDonald Critchley (London) on unilateral and bilateral lesions, Jean Lhermitte (Paris) on anosognosia, Hans Hoff (Vienna) on the cooperation between the left and right parietal lobes, and Derek Denny-Brown (Boston) on parietal lobe apraxia [26]. Georges Anastasopoulos (Thessalonique) expanded on anosognosia, the body image and Gerstmann syndrome, and Valentino Braitenberg (Rome) presented work on the myeloarchitectonics of the parietal lobe [28].

According to a comment made in *The Lancet* on September 26, 1953 [30], as noted by Weiss and Shorvon [44], the presentation of Lhermitte on asomatognosia and anosognosia after damage to the parietal lobe was one of the most applauded in the entire Congress. In his lecture, “Des rapports de l’image corporelle avec les lésions du lobe pariétal” (pages 169–194 in the published Proceedings [26]), Lhermitte began by crediting the otologist Pierre Bonnier (1861–1918) for introducing in 1905 the term *schéma corporel* (body image), which comprises two aspects, a psychological and a neurological, and poses the question whether disturbances of the body

image belong to Neurology or to Psychiatry, disciplines once united, but now separated. Lhermitte approached the issue of body and mind, amply discussed by philosophers in the “clouds of metaphysics”, on solid anatomical grounds and the objective neuropathological interpretation of clinical data. After reviewing cases of hemiasomatognosia, paroxysmal dyssomatognosia, phantom limbs, heautoscopy, tactile inattention, and praxic functions, he enunciated a psychophysiological synthesis, arguing that consciousness cannot be limited to a small part or even the entire right (“minor”) parietal lobe. The effect of pathological lesions on brain physiology may differ from those induced by surgical excisions. When one locates a lesion, one must not pretend to localize a function, as there is an ensemble of underlying activities of various dispositions and essential plasticity. Should disturbances of the body image be attributed to lesions of the parietal cortex, of the subcortical white matter or of the thalamus? The clinicoanatomical evidence suggests that, first, neoplastic, vascular, and traumatic lesions involve both the cortex and the subcortical white matter; second, the damage often extends anteriorly or, most often, posteriorly, toward the parieto-occipital sulcus; third, the thalamoparietal projection is at times severely altered. Thus, it is more meaningful to focus the psychophysiological and philosophical problem of consciousness, defined by William James, on the consciousness of the self, which allows humans to acquire, through conceptual thought, the faculties of abstraction that other animals lack. Neuropathology offers numerous examples of a global dissolution as well as sectional disturbances of consciousness. To the hypothesis of Paul F. Schilder (1886–1940) that in a focal regression any organic change is capable of determining a perturbation of mental mechanisms located in that particular organic function, Lhermitte added that such a new organic arrangement gives rise to the interplay of subconscious desires, whose underlying purpose is to restore a balance of the total personality compromised by the lesion. Therefore, the problem of the body image cannot be considered solved. While it is proper for scientific research to discover new aspects of a problem at the end of each successful step, what can nonetheless be said is that the introduction in Neuropsychiatry of the notion of the image of our body has marked progress.

In the fourth Symposium, on metabolic diseases, the speakers were Ludo van Bogaert (Antwerp) on phosphatide thesaurismosis (Niemann-Pick disease), Sir Russell Brain (London) on kerafin storage disorders (Gaucher disease), Paul Castaigne (Paris) on glycogenoses (glyco-

gen storage disease), and Antonio Giampalmo (Genoa) on cholesterol lipidoses. Franz Seitelberger (Vienna) reported an atypical tardive form of infantile neuronal lipodosis with moderate hydrocephalus and cerebellar atrophy [26].

To cover the complete discussions of the 4 morning Symposia and the 345 afternoon communications [27] presented in the amphitheaters of Novo Hospital Escolar (Hospital de Santa Maria today) would be beyond the scope of the present article. A small sampling is given next of the ten sessions under the headings Miscellaneous, Anatomy, Physiology, Neuropathology, Clinical Neurology, Epilepsy, EEG and EMG, Neurosurgery, Clinical Psychiatry and Psychosurgery, and Treatment.

Roque Orlando (Buenos Aires) presented a case of leukoencephalopathy (Binswanger disease). Robert Wartenberg (San Francisco) gave a talk on pyramidal signs. Antônio Subirana (Barcelona) discussed a case of temporal epilepsy with a “feeling of immense happiness” preceding the convulsive attacks. Ernest A. Spiegel (Philadelphia) contributed a paper on stereotaxic surgery in extrapyramidal disorders, including chorea and Parkinsonism. Walter Freeman (Washington, DC) reviewed 200 prefrontal lobotomies with a 10–17 years follow-up [29]. H. Houston Merritt (New York) dealt with the pathophysiology of seizures and the status of Neurology as a specialty in various countries and the establishment of the National Institute of Neurological Diseases and Blindness in the United States Public Health Service. Gonzalo R. Lafora (Madrid) presented a paper on familial myoclonic epilepsy with dementia and neuronal degeneration [27].

Wilder G. Penfield (1891–1976) of McGill University was himself not present in Lisbon, but he had submitted written comments. Kenneth W.E. Paine (1921–1994) presented a preliminary report coauthored with Penfield on the outcome of cortical excision operations performed over a 6-year period on 234 patients to contain recurring seizures, also addressing the position of the epileptogenic focus, the EEG detection of abnormalities in interictal periods, and the pathology of the lesion [29, 45]. Like Harvey W. Cushing, Penfield appreciated the value of keeping detailed patient records and repeatedly analyzing them over time [46].

John F. Fulton (1899–1960) of Yale University gave a talk on the human and nonhuman primate limbic system, with emphasis on its function, connections, interrelationships with the neocortex, and some behavioral changes observed in chimpanzees after bilateral ablation of frontal and limbic cortices [47].

Centennial Tributes

At the suggestion of the Spanish delegation, the psychiatrist Juan José López-Ibor (1906–1991) presiding, a festive Session was held in Madrid on Monday, September 14, immediately after the conclusion of the Lisbon Congress, to commemorate the centennial of Cajal’s birth [20, 22, 25]. A special train was arranged to depart for Madrid from Lisbon on Sunday, September 13, at 8:00 a.m. [28, 44].

Sponsored by the Spanish neuropsychiatrists [24], the meeting opened with a visit to the Cajal Museum and continued with a series of presentations at the Advanced Council of Scientific Research (Consejo Superior de Investigaciones Científicas).

Fulton spoke in French about the impact of Cajal’s discoveries and the neuron theory on Sherrington’s physiological work, as well as about the lifelong friendship of the two pioneers; an English translation of that speech was published later [48]. Sir Walter Russell Brain (1895–1966), president of the Royal College of Physicians at the time, spoke about the future of Clinical Neurology [49], citing fragments from Cajal’s “Stimulants of the Spirit” [50]; the speech was structured around patient care, clinical research, and the “new” techniques for studying the brain, including EEG, neuroradiology, and neurochemistry (Fig. 4). The Belgian psychiatrist André DeWulf (1903–2000) covered Cajal’s neuroanatomical discoveries, and the Peruvian neurologist Julio Óscar Trelles (1904–1990) reviewed Cajal’s impact on medical science. Fernando de Castro (1896–1967) closed the session by reviewing, on behalf of Cajal’s alumni [1], the life and work of their *maître*, and revisited the neuron theory, the principle of dynamic polarization, the studies on neurogenesis, and the tracing of crossed and uncrossed anatomical pathways; most of that material appeared in print in a couple of centennial tributes published in French [51, 52].

Three months after the Neurological Congress, a festive ceremony took place in the Auditorium of the University of Zürich to commemorate once again the centennial of the birth of von Monakow [53], with Minkowski giving the keynote address [54]. In the same year, a memoir on von Monakow was published by the Latvian author Margarete von Pusirewsky (1888–1948) [55].

Postscript

In 1953 Portugal was ruled by Prime Minister António de Oliveira Salazar (1889–1970) and the *Estado Novo* regime ([en.wikipedia.org/wiki/Estado_Novo_\[Portugal\]](http://en.wikipedia.org/wiki/Estado_Novo_[Portugal])).

Fig. 4. Upper, the speeches of Minkowski in Lisbon [29] and Fulton in Madrid [48] in honor of von Monakow and Cajal, respectively. Middle, participants at the complementary event in Madrid: J.J. López-Ibor, J.F. Fulton, W.R. Brain, J.O. Trelles, F. de Castro. Credit: Banco de Imágenes de la Medicina Española, Real Aca-

demia Nacional de Medicina, Madrid (López-Ibor, de Castro); National Library of Medicine, Bethesda, MD (Fulton); National Portrait Gallery, London (Brain); Spanish Society of Neurology, Museum and Historical Archive, Barcelona (Trelles).

The Neurological Congress was under the patronage of General Francisco Higino Craveiro Lopes (1894–1964), President of the Republic, and Fernando Andrade Pires de Lima (1906–1970), Minister of National Education and professor of Law at the University of Coimbra [25]. The local newspaper *República* covered the Congress, monitored by the *Comissão de Censura* [56]. Craveiro Lopes showed sympathy for the Opposition and was involved in the failed coup of Júlio Botelho Moniz (1900–1970) in the spring of 1961 to overthrow Salazar (en.wikipedia.org/wiki/Francisco_Craveiro_Lopes). Pires de Lima, who had promoted technical education, the fine arts, and the campaign against illiteracy, was marred by the expulsion, in 1947, of 26 professors of democratic ideals (pt.wikipedia.org/wiki/Fernando_Andrade_Pires_de_Lima).

Certain shortcomings of the Congress in Lisbon were pinpointed by the Norwegian neurologist Johan A. Aarli, past president of the World Federation of Neurology, including problems in the timing of the presentations in relation to the size of the audiences, the large number of communications in small sessions that attracted relatively little interest and a susceptibility to national pride in the selection of authors for some of the topics [18].

Nonetheless, the Lisbon Congress solidified the institution of quadrennial international neurological meetings, which had been thwarted once again, this time by the Second World War. The tensions between former enemy countries were quenched around the common research goals for a second time, cementing the conciliatory spirit that had prevailed in 1931 at the First International Neurological Congress. In Berne, the relation of Neurology to General Medicine and Psychiatry in Universities and Hospitals of various countries was the theme of the closing session chaired by Bernard Sachs (1858–1944). Seven national representatives, namely, Mieczyslaw Minkowski (Zürich), Theodore H. Weisenburg (Philadelphia), Jean Lépine (Lyon), Max Nonne (Hamburg), Ladislav Haškovec (Prague), Constantin von Economo (Vienna), and Bernardus Brouwer (Amsterdam) reported on the status of Neurology in their respective countries. The following Resolution was unanimously voted upon the meeting's adjournment: "Neurology represents an entirely independent specialty in Medicine. Unfortunately, this fact has not been sufficiently recognized in various countries. The First International Neurological Congress hopes that the Universities and Hospital Authorities of the various States will take active steps to further the progress of Neurology" [6].

In Paris, two similar Resolutions were voted unanimously at the closing session, following a discussion on the status of neurological studies in various countries and a presentation by the chairman, Pearce Bailey (Washington, DC) on the “Current trends in Neurology in the USA” [36]. The first Resolution read: “The Fourth International Neurological Congress resolves that an international committee shall be elected with the view of considering what can be done in the different countries to promote the working conditions of Neurology.” And the second: “At the IVth International Congress of Neurology at Paris, the Members from all countries made the following resolution, where as: (1) The study of the nervous system is a field sufficiently vast to place Neurology as an independent and central branch of Medicine. (2) Neurology has expanded far beyond a diagnostic specialty into the field of modern therapeutics for diseases and disabilities of the nervous system. (3) In consideration of the above, the management of diseases of the nervous system can only be adequately administered by a competent neurologist in the interest of public welfare. Therefore, be it resolved that: (1) Neurology be recognized in the field of Medicine in all countries as a central, independent, dynamic specialty; and as such receive adequate recognition in all teaching institutions of the world, in governmental medical departments, and in research organizations. (2) All medical therapies dealing with the nervous system a considered and maintained as the primary responsibility of the neurologist” [36].

Beginning with the Paris meeting of 1949, the Congress has uninterruptedly endured as the central event in world Neurology. It has signified the global presence and coming of age of Neurology as a standalone medical discipline; it facilitated the exchange of ideas across entire schools, and contributed to the dissemination of information and scientific progress in the basic and clinical research in the neurosciences, despite the Cold War and its discontents [9, 18].

A landmark of the gathering in Lisbon was the 8th Meeting of the International League Against Epilepsy (ILAE), which was held in conjunction with the Neurological Congress. ILAE was founded in Budapest in 1909. A workshop took place on Monday morning, September 7, 1953, devoted to temporal lobe epilepsies; it was attended by 46 delegates [44]. Henri Gastaut, the driving force of that session, had circulated a paper beforehand under the title “So called *psychomotor* and *temporal* epilepsy: a critical study” and solicited written commentaries from 20 leaders in the field, which he presented at the meeting for open discussion [44, 57]. The ILAE conference is regarded as one of the most influential in the modern history of

epilepsy research, as those insightful papers defined much of the scope of research for decades to come and generated concepts which remain topical today. Issues of terminology, classification, pathogenesis, EEG correlations, and treatment were hotly debated. One of the main conclusions was a unanimous rejection of the notion that temporal lobe epilepsy is highly localized; instead, the significance of a spreading network comprising limbic, thalamic, and cortical structures was fully recognized [57].

Moreover, members of the International Society of Multiple Sclerosis had an opportunity to meet as well, and the Luso-Hispanic Society of Neurosurgery hosted a complimentary banquet for foreign neurosurgeons [56].

Just like Berne, the Lisbon Congress brought together scientists from all continents, helped to cross-fertilize ideas across schools, and fostered a successful model of international collaboration [9]. The decades that followed witnessed a blooming of brain research and the birth of most important societies, including the World Federation of Neurology in 1957 during the Sixth International Neurological Congress; the International Brain Research Organization in 1961 as a forum for improving the communication and collaboration among brain scientists worldwide, who number more than 75,000 today; the Society for Neuroscience in the United States in 1969, which has grown to 37,000 members; and the Federation of European Neuroscience Societies in 1998, currently representing 24,000 basic and clinical neuroscientists from 43 member societies across 33 countries.

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The authors report no proprietary or commercial interest in any product mentioned or concept discussed in this article.

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