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26TH ANNUAL MEETING

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Italian Society of Medical Humanities
Italian Society of Neurology - Group for the History of Neurology
Cultural Association of Italian Historical Hospitals

CONFERENCE ABSTRACTS

Edoardo Nicolò Aiello (University of Milano-Bicocca), Stefano Zago, Lorenzo Lorusso, Martino Ugolini, Barbara Poletti, Nicola Ticozzi, Vincenzo Silani

An Historical Confirmation for Language Impairment in Amyotrophic Lateral Sclerosis

Platform

Among clinicians and researchers, it is common knowledge that frontotemporal (FT) cognitive involvement in amyotrophic lateral sclerosis (ALS) started to be acknowledged in the late '90s of the 20th century. Relatedly, language impairment within the primary progressive aphasia (PPA) spectrum was fully recognized as semiotically and diagnostically relevant only in the last two decades, with its detection being deemed as sufficient to classify patients as cognitively impaired only within the 2017 revision of the consensus criteria for FT spectrum disorders in ALS.
By contrast, a considerable body of evidence on FT cognitive involvement in ALS, including PPA-spectrum language dysfunctions, can be traced in the literature as early as the late 19th century. Semeiotic evidence of language deficits and aphasic syndromes in ALS are worldwide retrievable dating from 1893, with more in-depth descriptions being delivered in the first half of the 20th century that strikingly overlap with current knowledge. Both mild-to-moderate deficits not meeting the clinical picture of aphasia were reported within phonological, lexical-semantic and morpho-syntactic components of language. Notably, both 19th- and 20th-century Authors described allegedly central both dysgraphic and dyslexic features in ALS – which are still to this day under-addressed in this population. Moreover, outstandingly clear descriptions of probable semantic dementia/progressive non-fluent aphasia co-morbid to ALS were delivered, at times also supported by neuropathological verification of perisylvian cortical involvement. Finally, starting from the fourth decade of the 20th century, reports on language impairment in ALS also happened to be supported by ad-hoc psychometric testing.

Manon Auffret (Société FDE, INCR, Rennes, CIC-1414, CHU de Rennes, Cynetiks - LTSI)

'Stranger than Fiction': The Nineteenth-Century Media Coverage of the Case of Phineas Gage

Platform

Objective: To describe and review the nineteenth-century media coverage of the case of Phineas Gage in the United States (US), England and France. Background: The case of Phineas Gage, a victim of a remarkable brain injury in 1848, has been exhaustively analyzed by Malcolm MacMillan in his book 'An odd kind of fame. Stories of Phineas Gage' (The MIT Press, 2000). However, 'only five reasonably different newspapers reports' were retrieved by MacMillan and his team of researchers within local archives. Based on MacMillan assumption that 'there are almost certainly more reports than [they] found', we decided to look for the existence of such articles using new resources: digitized newspapers archives, available online. Design/methods: Screening of online American (Newspapers.com®), English (The British Newspaper Archive®) and French (Retronews®) newspapers archives, with the search term 'Phineas Gage', between 1848 and 1899. Results: We found several other articles mentioning Gage on top of the 1848-1849 reports cited by MacMillan. In the US, the nineteenth-century media coverage included the initial accident (1848-1850), Gage's visit to Prof. Bigelow in Boston and the display of his skull cast and iron bar in the Museum of the Massachusetts Medical College (1850), Gage's death and the presentation of his skull to the Massachusetts Medical History by Dr. Harlow (1868). Finally, a similar case (a man who survived with

'nearly two inches of knife-blade penetrating his brain') revived interest in Gage's clinical case at the end of the century (1893). To be noted, the story of Gage's accident is also quoted by a French newspaper in 1850 and later (with some errors) by British newspapers (1850). Conclusions: Several reports tracing the story of Phineas Gage, from his accident to his death, were published between 1848 and 1893 in US newspapers, confirming MacMillan's hypothesis. Newly digitalized databases appear to be a valuable tool in historical research.

Nicola Baldi (Taranto Hospital, Taranto)

Dr. Dante Alighieri and the 'Evidence Based Medicine'

Symposium: Dante

The knowledge that Dante had of the various fields of medieval medicine, of both the clinical pictures of the diseases and the pathogenetic hypotheses of his times, it is well known. Dante would have acquired this knowledge by attending, directly or indirectly, the lessons of Taddeo Alderotti, one of the founders of the Bolognese Medical School. My presentation offers a new perspective, .based on the episode of Pier della Vigna, present in the XIII Canto of the *Inferno*. It concerns particularly the way in which the poet ascertains the origin of the complaints coming from the weeds into which suicides had been transformed. I establish a parallel between Dante's approach and the modern methods used in the diagnosis and therapy of diseases by means of 'Evidence Based Medicine', and I discuss some hypotheses about the possible origin of this parallelism.

Giuseppe Bersani (Sapienza University of Rome), Angela Iannitelli, Francesca Pacitti, Maria Caredda, Paolo Orsi

The Last ECT Experience at the Sapienza University: Eight Years (1992-2000) of Basic and Clinical Research in the General Frame of the Study of the Treatment

Symposium: ECT

The report presents the history and results of the latest scientific research experience on ECT carried out in the years 1992-2000 at the psychiatric clinic of the Sapienza University of Rome, where the treatment was invented in 1938.
In a clinical population of about 60 patients of both sexes, suffering from both depressive disorders and schizophrenia, a series of neurophysiological, neurochemical and neuroendocrine variables were investigated, evaluated in their relationship with the clinical response.
In accordance with the general framework of the research in the field, parameters related to the study of the seizure threshold, the duration of the seizure and the type of EEG response were evaluated in their relationship with diagnostic subgroup, dynamic changes along the treatment course and clinical response, as well as the modifications of the blood levels of Prolactin, GH and Nerve Growth Factor (NGF) and Brain-Derived Neurotrophic Factor (BDNF).
The dynamic characteristics of these parameters and the relationship between clinical response to treatment in the overall group and in the subgroups of depressed and schizophrenic patients were considered in relation to the hypotheses on the general mechanisms of therapeutic action of ECT, both for

what corresponded to the period of the research, than compared to the current evolution of knowledge. In addition to the scientific interest, the historical value of the research consists in having been the last experience in Italy of scientific research in the field of ECT, before the legal problems that have effectively excluded its use.

François Boller (Department of Neurology, George Washington University) Nicoletta Caputi (Rome)

Genius and Unruliness. The Case of W.A. Mozart and Eric Satie

Platform

Tics, repetitive, nonrhythmic motor movements or vocalizations often coprolalic are the cardinal feature of Gilles de la Tourette syndrome (GTS). GTS patients often have psychiatric comorbidities, such as attention deficit, hyperactivity or obsessive-compulsive disorder. Famous people thought to have had GTS include Emperor Claudius, Samuel Johnson and André Malraux. Mozart may have had GTS considering his restlessness, his obsessive-compulsive tendency and fondness for scatological jokes and phrases. Erik Satie (1866-1923) was unusual. A solitary man, he founded a church with him as only member. Cocteau described his verbal tics: He often added a contradictory word at the end of a sentence making him barely comprehensible. At his death, two broken pianos, many umbrellas and scores of unopened letters and packages where found at his squalid one room apartment where no one had been allowed to enter. He had a slow start in music. He flunked the Paris Conservatory. He played the piano at the Chat Noir in Montmartre before entering the Schola Cantorum. His compositions, some posthumous, provided the pathway to minimalism in classical music. His piano compositions, most famously the Gymnopédies of 1888 set the tone for experimentations of the next century. He influenced Ravel and Debussy and he became the patron of the 'Groupe des Six' assembled around Cocteau : Germaine Taillefer, Louis Durey, Arthur Honegger, Darius Milhaud, Georges Auric and Francis Poulenc. Satie's influence extended beyond music, He befriended André Breton, Magritte an others. The word 'surrealism' was actually coined by Guillaume Apollinaire to characterize Satie's music.

Francesco Brigo (Department of Neurology, Hospital of Merano, SABES-ASDAA, Merano, Italy; Group for the Study of Neurology, Italian Neurological Society SIN)

Refining the Anatomo-Clinical Method: Neurological Signs and Physical Examination

Symposium: Italian Neurology

In Italy, neurology was constituted as a distinct and autonomous field (although still deeply intertwined with psychiatry) only at the end of the 19th century. The recent neurological advances made in France were rapidly introduced and widely discussed among the Italian scientific community. The anatomo-clinical method applied by Jean-Martin Charcot (1825–1893) and his pupils was immediately accepted and further refined by the Italian neurologists, who recognized its clinical usefulness in identifying and diagnosing various neurological disorders. This led to important contributions to the refinement of the neurological examination, with the description of new signs and a deeper understanding of their pathophysiology.

Giovanni Mingazzini (1859-1929) first suggested that the Babinski sign reflects a complex mechanism that emerges in a pyramidal tract dysfunction; he described a famous arm test to detect slight organic paresis and, by proposing a sign to detect a mild paresis of the orbicularis oculi muscle, he recognized that the central facial palsy was associated with a mild motor impairment of the upper half of the face. Camillo Negro (1861-1927) described the cogwheel sign in Parkinson's disease and proposed an alternative method for eliciting the Babinski sign; together with his assistant Giuseppe Roasenda (1879-1959), he made important contributions to the semiology of peripheral facial palsy. In 1889, Leonardo Bianchi (1848–1927) published a manual on the semiology of diseases of the nervous system that can be regarded as the first to discuss systematically the full spectrum of neurological examination, correlating neurological signs to specific neuroanatomical lesions.

Francesco Brigo (Department of Neurology, Hospital of Merano-Meran), Mariano Martini, Lorenzo Lorusso, Paolo Mazzarello

Encephalitis Lethargica in the Literary and Poetic Work of Emanuel Carnevali (1897-1942)

Poster

Encephalitis lethargica is a theme that appears in the literary work of Emanuel Carnevali (1897-1942), writer and poet born in Florence and emigrated at the age of seventeen to the United States, where he remained until 1922 living between New York and Chicago. Having mastered the English language, while doing humble jobs and suffering from hunger and misery, he eventually managed to acquire a certain notoriety with his poems and was acquainted with some of the greatest poets in America. In 1922, at the age of twenty-five, he showed the first signs of lethargic encephalitis, and returned to Italy to be treated in various hospitals; in 1936, he was admitted to the encephalitis department of the Policlinico Umberto I in Rome directed by Giuseppe Panegrossi (1871-1953). Affected by post-encephalitic Parkinsonism, Carnevali died in 1942 at the Neurological Clinic in Bologna, suffocated by a piece of bread. The diagnosis of death reads: «epidemic encephalitis, postencephalitic Parkinsonism, cachexia».
The sometimes hallucinatory tone of *The First God*, an autobiography that has remained unfinished, and of some of his poems, such as *Queer things* (November 1929), could be attributed to the neurological effects of the disease. Herein, Carnevali described in some detail the neurological symptoms of lethargic encephalitis and post-encephalitic parkinsonism, mentioning the effectiveness of scopolamine against tremor.
In his literary and poetic work, this 20th century 'poète maudit' provided a fascinating first-hand account of his own experience as a patient affected by encephalitis lethargica and post-encephalitic parkinsonism.

Francesco Brigo (Department of Neurology, Hospital of Merano-Meran), Mariano Martini, Lorenzo Lorusso, Alessandro Porro

Lessons from the Past: The Moro Reflex (1918) and the Pathophysiology of Generalized Tonic-Clonic Seizures and Infantile Spasms

Poster

On 7 May 1918, giving a lecture entitled 'Das erste Trimenon' (The first trimester [of life]), the Austrian pediatrician Ernst Moro (1874–1951) wrote: 'If a young infant is placed on the examination table and one hits the pillow on either side with the hands, both arms move apart symmetrically and then converge with slightly tonic arch-like movements.' Moro called this phenomenon 'Umklammerungreflex' (embracing reflex), suggesting – in analogy with the behavior of newborn apes – that it allowed infants to clasp their mothers.
The Moro reflex (MR) is a primitive reflex disappearing after the first 3 months of life, which is still routinely elicited to evaluate the neurological status of the infant (although adopting the head dropping method). The neural center underlying the MR is located in the lower part of the brain stem, as this reflex occurs also in anencephalic infants. It is a behavioral phenomenon due to the activation of an archaic neural circuit present in the newborn and whose activity is later inhibited following brain maturation. In 1925, Ernst Moro coined with Berta Asal the term 'Blitz-Nick und Salaam Krämpfe' to indicate infantile spasms.
Given their semiological resemblance, both infantile spasms and generalized tonic-clonic seizures might be due (at least partly) to the pathological activation of the same neural archaic circuit involved in the genesis of MR. Such activation could occur through either a direct excitation or through an indirect 'liberating' mechanism secondary to epileptic disruption of cortical inhibitory control on subcortical structures.

Francesco Brigo (Department of Neurology, Hospital of Merano-Meran), Mariano Martini, Lorenzo Lorusso, Alessandro Porro, Laura Tassi, Oriano Mecarelli

Sprightly at 50! The first 50 Years of the Italian League Against Epilepsy (LICE)

Poster

This year marks the 50th anniversary of the Italian League Against Epilepsy (Lega Italiana Contro l'Epilessia, LICE). LICE is the only Italian scientific society that exclusively aims at contributing to the improvement of diagnosis, treatment, assistance, research, and scientific information in epilepsy. It is also very active to fight against the social stigma related to epilepsy, promoting and implementing awareness campaigns towards the general population. This scientific society was established for the first time in Milan in 1955 with Mario Gozzano (1898-1986) as President and Eugenio Medea (1873-1967) as Vice President. In the following years, it gradually progressively lost its vitality until 7 October 1972, when during a meeting in Venice it was formally reconstituted, with Elio Lugaresi (1926-2015) *as President*. Over the years, LICE encouraged the constitution of epilepsy centers across Italy, including those devoted to surgery (also thanks to the impulse of the neurosurgeon Claudio Munari, 1993-1999). The LICE promoted some multicentric studies, some of which with a huge impact on the scientific community. An example was the FIR.S.T. trial (1997), the first randomized controlled trial comparing immediate versus delayed treatment of epileptic seizures. Over the years, new electro-clinical epilepsy syndromes were described by prominent exponents of the LICE, many of whom had collaborated with Henri Gastaut (1915-1995) in Marseille. The included: myoclonic absences, electrical status epilepticus in sleep, tactile-evoked parietal spikes, early myoclonic

epileptic encephalopathy, Lafora disease, epileptic negative myoclonus, and autosomal dominant nocturnal frontal lobe epilepsy.

Francesco Brigo (Department of Neurology, Hospital of Merano-Meran), Mariano Martini, Lorenzo Lorusso, Viviana Versace

'*Wagner est une névrose*'. Metaphorical and Imitative Illustration of Emotions and their Neurophysiological Correlates in Richard Wagner's *Tristan und Isolde* (1865)

Poster

In 1888, Friedrich Nietzsche (1844-1900), who knew the work of the neurologist Charles Féré (1852-1907) on hysteria and hypnosis, famously dubbed the composer Richard Wagner (1813-1883) as a neurosis. Many of his contemporaries, including the physician Max Nordau (1849-1923), emphasized the sensory neurophysiological dangers associated with Wagner´s operas. Interestingly, in 1883 an article in Le Figaro compared Jean-Martin Charcot (1825-1893) to *'Wagner, le grand cabotin musical'*. Why hysteria was often mentioned about Wagner´s operas and why listening to his music raised strong emotional reactions? Why Wagner was considered a neurosis?
Several contemporary accounts described extreme emotional and physical reactions occurring during the early performances of Richard Wagner´s opera Tristan und Isolde (1865). Herein, Wagner used music to metaphorically illustrate or imitate some of the neurophysiological vegetative changes of the protagonists (e.g., breathing, heartbeat, delusions, orgasm), reflecting the all-encompassing, deeply physical nature of erotic desire. In 1894, Aldred Scott Warthin (1866-1931) at the University of Michigan showed that Wagner's music was associated with intense neurophysiological and emotional changes. The prelude of Tristan und Isolde appeared in Lars von Trier's 2011 film Melancholia, a vivid depiction of the neurophysiological and neuropsychological features of psychotic depression.
The musical illustration of emotive bodily reactions in Tristan und Isolde parallels the theories on emotion by modern authors, from William James (1842-1910) to Antonio Damasio (1944-). This opera has a profound impact on its listeners, affecting their perceptual experience, emotions and (neuro)physiological responses, possibly mediated by the human mirror neuron system (discovered by Giacomo Rizzolatti, 1937).

Francesco Brigo (Department of Neurology, Hospital of Merano-Meran), Mariano Martini, Lorenzo Lorusso, Olivier Walusinski, Emmanuel Drouin

Voices from the Past: The Pioneering Use of the Phonograph for the Diagnosis of Neurological Disorders

Poster

During a meeting of the Neurological Society of Paris on July 6, 1899, a certain Dr. Maurice Dupont (1857-1910) proposed the use of the phonograph for obtaining audio recordings of delusions and speech disturbances. Very little is known about this Dr. Dupont, 'chef du laboratoire d'électricité à Saint-Anne'. Dr. Dupont had investigated the use of the phonograph in the laboratory of Alix Joffroy (1844-1908), in the Saint-Anne hospital in Paris, where the remarkable collection of audio recordings of different types of delusions had made the hospital 'a museum of delusions'.

Before his audience, Dr. Dupont described the use of the phonograph to induce hypnotism and presented a sample of audio recordings of various delusions and speech disorders in different neurological conditions. According to Dupont, the phonograph was an effective tool «to collect, preserve and reproduce in a lively way, which speaks better than the writings, the delusions of the insane while preserving their intonation and accent, I would almost say the animated mimicry of the illness». Furthermore, this instrument could be used to follow the course of speech disorders, comparing its evolution over time.
This represents the earliest example of audio recordings for medical purposes. Audio recordings have been used rarely in neurology, a branch of medicine where the visual aspects dominate, to the extent that inspection can be enough to reach a definite clinical diagnosis. In the mid-20th Century, the advent of audio and video recordings supplanted audio recordings alone, relegating them to a very marginal role.

Francesco Brigo (Department of Neurology, Hospital of Merano-Meran), Mariano Martini, Lorenzo Lorusso, Olivier Walusinski, Emmanuel Drouin

Neurophysiology of Music and Sound Perception: The Pioneering Investigation by Eugenio Tanzi (1856-1934)

Poster

In the 19th century, several attempts were made to investigate the neurophysiological basis of sound perception. Johann Dogiel (1830-1916) employed plethysmography to assess volumetric changes while listening to music; Charles Féré (1852-1907) evaluated the effects of pitch and intensity on muscular strength, whereas Warren Plimpton Lombard (1855-1937) tested the amplitude of the knee-jerk reflex during music listening. In Italy, the psychiatrist Eugenio Tanzi (1856-1934) was the first to experimentally investigate the neurophysiological correlates of exposure to major and minor key sounds. Starting in 1886, by connecting a piano to a Hipp chronoscope, he measured the reaction time of 9 subjects without musical skills who were exposed to major or minor chords, evaluating their accuracy in identifying the mode. The minor chord was recognized earlier and more often than the major. Despite the small number of observations, he concluded that 'the minor third chord has a character of greater evidence than the major'. Tanzi claimed that the minor tone derived from spoken language, as the latter was made up of narrow intervals between sounds. This could explain the wide use of the minor mode among eastern, less civilized populations. According to Tanzi, these populations did not associate it with sadness because of their inability to distinguish between major and minor modes; the rhythm was predominant in their musical perception, whereas modal recognition was not fully developed. Unlike the qualitative investigations by Cesare Vigna (1819-1892), Eugenio Tanzi was the first to adopt a psychometric approach to the study of music and sound.

Michael Carey (Em Prof Neurosurgery, LSU Health Science Center, USA)

Robert Barany, Harvey Cushing: Ambition and Pride

Platform

Robert Bárány at the University of Vienna Medical School, studied the induction of nystagmus by irrigating the external ear canals with warm or cold water. He elucidated vestibular system function publishing a book

on this in 1907. A colleague complained that Bárány had omitted his work. An investigation absolved Bárány but rancor remained. Bárány was awarded the 1914 Nobel Prize for his vestibular research.
Assigned to a military hospital in 1914, Bárány initially treated brain wounds In the accepted fashion by packing the presumably infected wound open, not closing the scalp, to allow healing from below. This resulted in a 74% mortality from brain infection. Autopsy studies convinced Bárány that early after wounding brain missile wound tracks were not infected: the scalp could be closed immediately after brain debridement. He treated 10 patients thusly and all lived without complications. He sent these results to Austrian and German medical journals.
Bárány was captured by the Russians but was released in 1916 owing to his Nobel Prize. Returning to Vienna, he met disappointment: Academia rejected his wound treatment technique and he was denied a professorship. After secret meetings he was even accused of plagiarism! Bárány emigrated to Sweden.
Harvey Cushing, the 'Father' of American neurosurgery, had read Bárány's German paper and used Bárány's technique when a neurosurgeon in France in 1917. He wrote two papers delineating his superior results without citing Bárány.
The young Bárány *may* have failed to cite antecedent research owing to *careless ambition*. Cushing, the seasoned academic, failed to cite Bárány because of *pride and vanity*.

Livia Castelli (Sapienza University), Elisabetta Sirgiovanni (Sapienza University), Luca Tonetti (University of Bologna)

Ugo Cerletti (1877-1963)'s ElectroShock Collection: Story of a Legacy

Poster

The Poster presents and discusses the Ugo Cerletti (1877-1963)'s Electro-Shock archival records uncovered at Sapienza University of Rome in early 2019. We sketch a hypothesis of why the ES Section, part of the Ugo Cerletti's Collection and Miscellany, was not donated to the Menninger Foundation in Topeka, Kansas, where the rest of Cerletti's neuropsychiatric records were sent by his family after his death on July 25, 1963. We reconstruct the stages that led to the preservation of these records by Giovanni Bollea at the Sapienza Child Neuropsychiatry Institute in the decades after Cerletti's death. Our hypothesis is that most probably the ES section came together with Ugo Cerletti's Miscellany, thanks to the intervention of Cerletti's close collaborator, Lamberto Longhi. Even if we do not offer a complete inventory or an analytic description, we provide an approximate description, dating and classification of the section.

Berenice Cavarra (Università degli Studi di Modena e Reggio Emilia), Marco Cilione

Perception, Imagination and Memory in Giorgio Valla's *De expetendis et fugiendis rebus*

Platform

The importance of Giorgio Valla in the history of Renaissance science has not yet been adequately recognized. In the vast background of his knowledge, gathered in a remarkable encyclopedic work entitled *De expetendis et fugiendis rebus* (Venice 1501), the natural sciences and medicine occupy a place of particular importance and express all the extraordinary value of his double competence as a humanist and a doctor. In the section of the encyclopedia relating to '*commoda et incommoda corporis*' (l. 48), Valla dedicates chapters 9 to 13 to the five senses, chapter 14 to imagination, chapter 15 to memory. In addition

to proposing a translation of some passages of the text, our contribution intends to evaluate the sources that the author uses in the treatment of the theme of perception; whether, as in Aristotle, Valla recognizes a role for the imagination in the relationship between perceptual experience and memory; how the author places the physiology of perception in the framework of the Christian orthodoxy that characterizes him.

Edgardo Contato (General Director of the SS Giovanni e Paolo Hospital in Venice)

Introduction by the President of ACOSI

Symposium: Historical Hospitals

This session is organized by the Italian Cultural Association of Historical Hospitals (ACOSI), which was founded in 2020 and initially included five ancient hospitals: the S. Maria Nuova Hospital in Florence, the Ss. Giovanni e Paolo Civil Hospital in Venice, the Ca' Granda Maggiore Policlinico Hospital in Milan, the Santo Spirito in Sassia Hospital in Rome, and the Hospital of the Incurables - MAS in Naples. The association promotes the historical, artistic, and cultural heritage of the ancient hospitals and their treasures (architecture, libraries, museums, collections, churches, works of art, ancient and historical medical instruments) through several projects. It aims to develop and facilitate the exchange, implementation, and dissemination of solutions for the management, conservation, and promotion of historical hospitals and other public or private historical health-related institutions, that adhere to this association. The institutions that are members of ACOSI, now include ten ancient hospitals, have a rich collection of material relevant to the history of the Neurosciences stored in their Museums and Libraries.

Michael Church (Kansas Historical Society)

The Menninger Clinic and Foundation Archives

Platform

In 1960 when Karl Menninger moved his office to Martin's Hill in northwest Topeka, Kansas, the old hospital he occupied, with its Georgian architecture and central tower, was a replica of Independence Hall in Philadelphia. The symbolism was fitting. Karl's move represented a break from the traditional treatment regime established by his brother William decades earlier at their hospital a few miles east. But the sprawling west campus and the new treatment facilities, research programs and museum he envisioned there also embodied in part the Foundation's response to the recent challenges of biopsychiatry.
A national leader in psychoanalytic treatment and education for decades, the Menninger Foundation simultaneously struggled against and embraced the emerging biological challenges. The Foundation's corporate records document efforts to respond to the efficacy of psychotropic drugs and other somatic treatments and the internal power dynamics that determined to what extent the new treatments were pursued at the hospital, treatment facilities, research department, and in educational programs at the veterans and state hospitals. At the same time, the Foundation began collecting and exhibiting the papers of influential persons in medicine and psychiatry in its expanding archives and museum, including pioneers in neurology and biopsychiatry such as Jelliffe, Cerletti, Bini, Mitchell, Meyer, Southard and others.
This complex response to emerging biological treatments by a leader in psychoanalysis is documented in the Menninger Clinic and Foundation archives at the Kansas Historical Society in Topeka which include over 2500 cubic feet of records.

Ingrid Daey Ouwens (SEIN (Stichting Epilepsie Instellingen Nederland))

From Personality Trait to Comorbid Disorder. The Case of the Epileptic Personality

Platform

The effect of temporal lobe epilepsy on personality is a historical observation dating back to the 1800s. In 1977, Bear and Fedio reported an excess of overt emotional traits (deepened emotionality, sadness, hypermoralism) in people with right sided temporal foci, whereas ruminative intellectual tendencies (religiosity, philosophical interests, humorlessness, sense of personal destiny) prevailed in those with left sided foci. 1 Emphasis on negative personality traits has instigated epilepsy-related stigmata. In the 1960s, eugenic laws barring people with epilepsy from marriage were still in force in the United States and the United Kingdom.
The existence of a 'temporal lobe epileptic personality' and specific personality traits in patients with temporal lobe epilepsy has been disputed and research is inconclusive. Bear and Fedio's initial study failed to include patients with other forms of epilepsy and to control for the presence or absence of psychiatric disorder. Six percent of people with epilepsy appear to suffer from a psychiatric disorder. This rises to 10–20% in populations with temporal lobe and/or refractory epilepsy. Mood disorders (particularly depression) are most common (24–74%), followed by anxiety disorders (10–25%). 2 Comorbid psychiatric illnesses, biological factors (e.g. frequency of seizures), cultural environment and social factors (e.g. unemployment due to epilepsy) affect behaviour in patients with epilepsy.
The assessment of behaviour in people with epilepsy has evolved from measurement of personality traits to a multifactorial approach of psychological, biological, and contextual factors that may contribute to behavioral characteristics.

Lucia Delaini (Northwestern University)

Of Habit and Wonder: Memory Practices and Embodiment in Late 1500 Italy

Platform

In his 1592 mnemotechnical manual, the *Plutosofia*, the Franciscan Filippo Gesualdo exhorted his readers to use embodied techniques or memorization, because 'Not only our intellect can take up habits, but also the hand, and the tongue'. In this essay, I will examine the body's role in the acquisition of intellectual virtues according to late Renaissance manuals for memorization.
These un-academic books became extremely popular when it was believed that memory techniques could manage the time's information overwhelm. In their pre-Cartesian, profoundly oral character, these 'memory arts' were based in a conception of human cognition hardly justifiable by the time's philosophy, even the most Aristotelean. From their techniques indeed emerges a powerful intertwining of mental and embodied practices, able to carry information quickly and securely from the world to the brain.
By analyzing the most complex and common of their techniques, the memory palace, my essay observes how this presupposes a deep knowledge of cognitive processes that look remarkably similar to those individuated by recent neurological and cognitive research. I will map the memory techniques onto two

main principles inspired by Aristotle, habituation (*hexis*) and wonder (*thaumazein*); this will clarify the different mechanisms making the senses (real or imagined) physical interaction, and personal participation, central factors in the intellectual operations of selection, organization, storage, retrieval, and recombination of data. Hopefully, these ancient ideas can stimulate our own reflections on tools and modes for information management.

Peter Devenyi (Carleton University)

The Cosmological Michelangelo

Poster

Michelangelo Buonarotti offered an enigmatic and perhaps universal insight: that had people known the amount of work required to realize an artwork like the *David*, he would not have been regarded as a genius. Creative work might be conceptually quantified as the mental and mechanical energies required in realization of any creative production. The First Law of Thermodynamics states total energy content of a *closed system*—like the universe—is unchanged after any physical process or reaction. Or that total energy which leaves an *open system*—like the cell—is the energy which enters it minus the energy left inside the system. The Second Law of Thermodynamics states total entropy of the universe cannot decrease but must remain positive for every reaction. Every spontaneous reaction must represent an increase in universal entropy ($\Delta S_{\text{universe}} > 0$), and a decrease in free energy of the biological system ($\Delta G_{\text{system}} < 0$). Complexification of living systems through growth and evolution does not violate the second law, for small molecules or metabolic byproducts lacking order are high in disorder and such loss reduces disorder unlike increased biological order. Time's arrow describes the inexorable progress of entropy, or inversely the progress of complexity itself, on a biological or cosmological scale. Michelangelo's sculpture of David is revolutionary for its naturalism and ontogenetic disparity in the bodily features of its still-growing subject—and is hypothesized to harmonize endergonic or energy-requiring processes associated with growth, and the exergonic or energy-yielding processes associated with the spontaneous release of energy.

Leander Diener (IBME University of Zurich)

The Vegetative Nervous System in the Laboratory. Experimentation in the 1920s and 1930s

Platform

Researchers made use of various laboratory technologies and techniques in order to make sense of nervous structures and functions linked to the vegetative nervous system. Apart from the ongoing identification of vegetative functions and structures in the late nineteenth century, the antagonistic organization of the vegetative subsystems proved to be the most problematic, but also the most promising aspect of this research. This paper looks at two researchers, one at Harvard University and one at the University of Zurich, and their physiological experimentation. Walter Bradford Cannon (1871-1945) in Boston and Walter Rudolf Hess (1881-1973) in Zurich, both being initially concerned with some of the central physiological problems of the time, created specific experimental systems based on the vegetative antagonism. They made use of novel technologies, techniques, animal models, and physiological concepts in order to investigate the 'epistemic thing' of the vegetative nervous system. Cannon and Hess represent exemplary cases in the

history of the vegetative nervous system for several reasons. First, both represent one important aspect of the vegetative nervous system: in Cannon's case the sympathetic nervous system and the 'fight or flight' mechanism, in Hess' case the parasympathetic nervous system and sleep respectively relaxation. Second, both established research networks in the US and in Europe which included the central protagonists of this sort of physiological research. Third, both were well-respected and regarded physiologists, in Cannon's case in the context of the global outreach of his scientific and political interventions, in Hess' case in the context of the awarding of the Nobel Prize for Physiology or Medicine in 1949.

Stefano Ferracuti (Sapienza University of Rome)

Benigno Di Tullio (1896-1979), a Founder of Criminology

Platform

Benigno Di Tullio M.D, was deeply influenced by Lombrosian positivism. His work established the foundations of clinical criminology and forensic psychiatry in Italy. While starting from biological constitutional bases, consistent with the basic approach, Di Tullio has always favored and promoted the development of criminology in an interdisciplinary sense, focusing on the study of the person who commits crimes on a personological level. In his perspective, the criminal trial had to be aimed, on the one hand, at ascertaining the legal aspect of the crime and, at the same time, studying the personality of the offender in relation to the constitutional, environmental and social factors that had led him to commit a crime. His work contributed significantly to humanize the punishment and to develop more modern perspectives of penitentiary treatment.

Stanley Finger (Washington University)

Dr. Oliver Wendel Holmes and Phrenology: How a Physician, Writer and Humorist Lampooned a 19th-Century Medical Fad

Platform

Oliver Wendell Holmes, Sr. (1809-1894), physician and Professor of Medicine at Harvard, was also one of the most famous American humorists of the nineteenth century. Trained in Boston and Paris, he incorporated medicine in his lectures, magazine articles, novels, and poetry. He was not restrained about debunking older medical fads and what he considered newer follies, including heroic interventions (e.g., bleeding, purging), homeopathy, and phrenology. This presentation examines how Holmes was exposed to phrenology as a medical student; how he scored when Lorenzo Fowler evaluated his skull; and then how he lampooned phrenology in different venues. Holmes thought phrenology was a pseudoscience since it only used cases that confirmed preconceived ideas. As for its practitioners, they were frauds relying mainly on advanced information and observing how people dressed and answered questions. But while dismissive of phrenological craniometry and its practitioners, he praised Gall for drawing attention to the brain as the organ of mind, individual differences, how children inherit personality traits, and the fact that some criminals are impaired by severe brain defects. In fact, he credited Gall and Spurzheim for helping to lay the foundations for scientific anthropology and the modern fields of psychiatry and psychology. By

examining what Holmes conveyed to the laity, historians can better appreciate some of the many factors that contributed to the decline of one of the most important fads of the nineteenth century.

Jurgen R. Gatt (University of Malta)

Choosing the Goat: Rhetoric and Science in 5th Century Animal Dissection

Platform

This paper discusses a key moment in the history of neuro-anatomy: the first recorded dissection of an animal's brain found in the Hippocratic treatise *On the Sacred Disease*. According to Lloyd's influential analysis, early dissections such as this were limited and pre-systematic. The Hippocratic author, for example, does not realize that dissection could falsify his own anatomical speculations and, more importantly, seems to use dissection only to attack his opponents. Yet the author shows himself a sophisticated dissector in at least one sense: he grapples explicitly with the identity of the experimental subject. We can *best* know that the god is not the cause of the disease, he argues, by dissecting goats for they are gripped with disease most frequently (πυκνότατα). This ambiguous term has often been understood to refer to an epidemiological fact, namely that goats have a high prevalence of epilepsy. An examination of the use of the term in this text, however, reveals a quite different justification: epileptic goats are the ideal experimental subjects because they are prone to suffer very frequent seizures. I argue that the author's own pathological theory of epileptogenesis, and his own method of arguing by analogy, makes this interpretation preferable. Moreover, the author also has excellent rhetorical reasons for choosing to dissect goats: it is yet another clever dig at his opponent's 'religio-magical' theory. In summary, then, I argue that the choice between rhetoric and science is a false one, at least when discussing the neuroanatomical dissection of *On the Sacred Disease*.

Javi Gomez-Laviner (York University), Justin Humphreys

Striking at the Heart of Cognition: Aristotelian *Phantasia*, Working Memory, and Psychological Explanation

Platform

This paper examines a parallel between Aristotle's account of *phantasia* and contemporary psychological models of working memory, a capacity that enables the temporary maintenance and manipulation of information used in many behaviors. These two capacities, though developed millennia apart within two wholly distinct scientific paradigms, share a common strategy of psychological explanation, *Aristotelian Faculty Psychology*. This strategy individuates psychological components by their target-domains and functional roles. Working memory and phantasia result from an attempt to individuate the psychological components responsible for flexible thought and are thus implicated in most of our robust cognitive processes, from reading comprehension to problem solving. We then present two novel objections which demonstrate that these capacities cannot explain our ability to engage in flexible thought, but merely re-describe that phenomenon. To escape the resultant impasse, we survey alternatives and argue that most promising strategies depend on identifying the *behaviors* attributed to intelligent thought and action.

Barend Frits Hogewind (Haaglanden Medisch Centrum), Françoise Elizabeth Irene Hogewind

'*De oculis'*, a Chapter on Ocular Anatomy by Constantinus Africanus

Platform

Purpose: The publication of the compendium Pantegni by Constantinus Africanus in the monastery of Monte Cassino in the eleventh century CE was a pivotal moment in the history of medicine in Western Europe. As the first fully comprehensive medical text in Latin, it became a highly influential text that served European physicians for centuries. The work is predominantly based on the Liber regalis by Haly Abbas (Baghdad, tenth century CE). The earliest available manuscript of the Pantegni (KB 73 J6) is handwritten and has been supervised by Constantinus himself. It includes a chapter on ocular anatomy. In this paper we try to distill the anatomic description by Constantinus.
Methods: The chapter 'de oculis' on ocular anatomy as found in chapter 13 of book 3 in KB 73 J6 is interpreted in the historical context and translated into Modern English.
Results: We present an English translation of the concerning chapter.
Conclusion: Constantinus bequeathed a compact but comprehensive account of the anatomy of the eye, which can be rendered into a contemporary representation with use of the historical context.

Benjamin W. Hunt (University of Calgary), Stephen Pow, Frank W. Stahnisch

Female Contributors in the Early Neurosciences: Case Studies of Diana Beck (1902-1956) and Sofia Ionescu (1920-2008)

Platform

There exists an understated but persistent debate within the neuroscientific literature as to who was the first female physician to practice modern, neurosurgical techniques within a clinical setting. Both the British practitioner and instructor, Diana Jean Kinloch Beck (1902-1956) and Sofia Ionescu (1920-2008), a Romanian neurosurgeon, have frequently been proposed as the person deserving of this accolade. Nonetheless, contention over the subject remains because of the nuances that invariably emerge when one attempts to discuss 'firsts' in interdisciplinary clinical developments. We present evidence in the form of two case studies of these pioneering neurosurgeons, who performed their first intracranial procedures in the mid-twentieth century in contexts where overcoming significant adversity in the form of institutional, social, and cultural barriers was undoubtedly part of the process. This issue is more complex than the question of who was simply first to perform a specific operation, scalpel in hand, as the two clinicians' first confirmed procedures were several years apart. Rather, the subject matter presented in this work pertains to a wider issue of academic exclusivity, crucial historical issues of gender in the neurosciences, and this in turn raises important questions regarding the nature of qualification and innovation in the related fields.

Angela Iannitelli (University of L'Aquila), Luigi Aloe, Marco Fiore, Paola Tirassa, Enrico Alleva, Francesca Pacitti, Giuseppe Bersani

NGF: from Chick Embryos to Mental Disorders. A Cool Italian Translational Research

Platform

In 1948 it was discovered in Viktor Hamburger's laboratory that the sarcoma 180 spurred neuritic growth when in contact with embrionic chick ganglia. Levi-Montalcini traced the effect to a substance in the tumor that was subsequently isolated and named Nerve-Growth Factor (NGF), the first of other proteic NGF-like factors, discovered throughout the 80s and 90s and denominated neurotrophins (NT).
NGF and BDNF, the main NTs, play a critical role in modulating key interaction of nervous, endocrine, and immune systems.
For about thirty years, important basic and translational research - the results of which we were lucky enough to discuss with Nobel Prize Rita Levi-Montalcini and her principal collaborator Luigi Aloe -, was carried out for decades at National Research Council of Rome (IBC-CNR) and then Sapienza University of Rome, National Institute of Health (SCIC Centre-ISS) and, in last years, Institute of Biochemistry & Cell Biology (IBBC-CNR) and University of L'Aquila, to study the role played by these NTs on normal and atypical human behaviors and psychopathology.
These lines have reached important results, that can be summarized in: gender variation and ultradian rhythms, differences of NGF and BDNF in healthy humans and schizophrenic patients; development of new animal models of psychopathology; search for innovative drugs modulating CNS plasticity; relevance of NGF and BDNF in psychophysical human stress and wellbeing, in schizophrenia and affective disorders and neuroleptic and antidepressant action; NGF as possible 'acroagonine' in ECT administration.

Marco Iosa (Department of Psychology, Sapienza University of Rome, Italy), Gabriella Antonucci (SmArt Lab, IRCCS Fondazione Santa Lucia, Rome, Italy)

Step by Step History of the Study of Human Walking

Platform

Already Plato and Aristotle noted the peculiarity of humans to walk with an upright trunk, a characteristic anciently developed by the homo erectus. However, the study of biomechanics started in the XVII century, with Descartes and Borrelli who used the Newton's laws to study human and animal movements. Later, the invention of photography changed the analysis of human movements into a science. In the second half of XIX century, Marey in France and Muybridge in California used a series of pictorial images to construct a 'stick diagram' to qualitatively describe the human movements. In the XX century, two Russian neurophysiologists changed the target of human movement analysis from biomechanics to neuroscience. Bernstein introduced the so-called 'motor equivalence problem' related to how the nervous system may choose a subset of commands among the abundant and redundant degrees of freedom of human body, a still open question in motor control and motor learning. Some years later, Luria introduced the concept of 'kinetic melodies' to describe how voluntary movements are the orchestrated result of different single motor activations. In the 70s, computerized systems allowed to obtain quantitative information from cameras, often combined with electromyography and foot switches. In the 90s, Gage used instrumented gait analysis to radically change the treatment of cerebral palsy, Perry published the most commonly used handbook of biomechanical gait analysis, and Berthoz showed the strict intertwine between cognitive and motor systems summarized in his famous sentence 'go where I'm looking, not look where I'm going'.

Axel Karenberg (University of Cologne)

Who was a Nazi? The German Neurological Society in the Post-War Years (1950-1985)

Platform

A study was conducted into how far former chairmen, honorary chairmen, and honorary members of the German Neurological Society (founded in 1950) could be regarded as incriminated from the National Socialist period. This presentation summarizes the principal results. 6 of the 7 'founding fathers' were former members of the nazi party NSDAP; 10 of the 13 presidents in office until 1976 had belonged to nazi organizations—the NSDAP, the SA ('Brownshirts') or the SS ('Blackshirts'). Moreover, 7 out of 10 honorary presidents had formal or substantive links to National Socialism. Of the German and Austrian honorary members appointed up to 1985, two-thirds had leanings to Nazi ideology or the National Socialist system. The question of how these, from today's perspective, strikingly high numbers of Nazi-incriminated executives during the post-war period can be explained and why it took more than 75 years until these connections could be clarified will be discussed. The talk concludes by outlining how the German Neurological Society and its members are currently addressing this historical legacy in order to establish a responsible culture of remembrance.

Peter J. Koehler (Maastricht University), Jorik Nonnekes, Bas Bloem (University of Nijmegen)

Non-Pharmacological Treatments of Parkinson's Disease since 1817

Platform

Throughout the evolution of treatments for Parkinson's disease, drug therapy has been of great importance. Non-pharmacological treatments have been advocated since Parkinson's publication (1817). We describe these treatments and discuss their use putting it in a general medical historical context. We consulted popular English, German and French neurology textbooks as well as three voluminous 20th century neurological handbooks.
James Parkinson applied bloodletting and vesicatories. Since then a number of non-pharmacological treatments have been applied. We categorized them into 1) physical and mental rest; 2) diet; 3) hydrotherapy/balneotherapy; 4) electrotherapy; 5) nerve stretching & suspension; 6) vibration therapy; 7) exercise; 8) physical therapy; and 9) psychotherapy.
In most textbooks, the section of non-pharmacological treatments is much smaller than that of pharmacological treatments. Charcot, Gowers and Oppenheim seem to have been important sources for many of the textbooks listed, although the particular authors not always copied the opinion. Physical and mental rest were popular around the turn of the century and then became less important. Dietary advises were only provided in a few textbooks. Hydrotherapy, in particular warm baths, was suggested by many of the authors, although some warned against the bustle of hydrotherapy institutes that had become fashionable in the 1840s. Electrotherapy was advised by most, but criticized by some. Nerve stretching, more particularly suspension treatment, was applied for a short period. Vibration therapy was gradually taken over by physical therapists, sometimes using Zander apparatuses. The latter were also offered for passive and later active exercises (looking like modern home-trainers).

Peter J. Koehler (Maastricht University), Olaf Schijns

Adolf Meyer: the Neuroanatomist and Neuropsychiatrist behind Meyer's Loop and its Significance in Neurosurgery

Platform

Adolf Meyer's (1866-1950) insights into the neuroanatomy of the optic radiation play an important role in understanding the development of visual field deficits after temporal lobe resection. He studied medicine in Zurich, where his interest in neuroanatomy was stimulated. In 1892, he decided to go to Chicago. In 1904, he was appointed Professor of Psychiatry at Cornell University Medical College (New York). The pinnacle of his career was attained in 1910 with his appointment as director of the psychiatric clinic at Johns Hopkins Hospital, the first academic department of psychiatry in North-America. However, he also made important contributions to neuroanatomy.
In 1907, he published his first work on 'the peculiar detour of the ventral portion of the geniculocalcarine path', nowadays also known as the 'Meyer's loop' of the optic radiation in the temporal lobe. In 1910, he was consulted at the neurosurgical ward of Harvey Cushing (1869-1939) and saw a patient with a gunshot wound through the left eye and inferior temporal lobe. After the house officer concluded that the perimetry was normal, Meyer advised to perform a perimetry with < 300 intervals after which a contralateral quadrantanopia was diagnosed in the right eye. This Meyer-Cushing encounter was a pivotal moment for the discovery of and further elaboration on the anatomical course of the optic radiation, the interpretation of visual field defects and the consequent anatomical localization of the lesion, which was crucial in an epoch without sophisticated neuroimaging.

Boleslav L. Lichterman (Dept. of Humanities, First Moscow State Medical University, Russia)

Starch, Sweat and Space: on Life and Work of Victor Minor

Platform

Victor Lazarevich Minor (1890-1969) is widely known as an author of starch iodine test for hyperhidrosis (Minor's test). The aim of this presentation is to demonstrate life and career of a Soviet neurologist in professional, social and historical context. It is based on archival materials – archive of Imperial Moscow University, archive of the Burdenko Neurosurgery Institute, and a private archive of Minor's family.
Victor was a son an internationally famous Moscow neurologist professor Lazar Minor. In 1916 he graduated from medical faculty of Imperial Moscow University, and after two years of military service returned to Moscow and worked in a neurology clinic. Studies of autonomous nervous system and various methods of treatment of autonomic disorders were very popular in 1920s. In 1926 Victor Minor suggested to evaluate them by a simple test: a body region is covered by iodine solution, and then (when it dries) the region is powdered with starch; when person oozes sweat the starch changes color (in becomes blue). Next year Minor visited O.Foerster's neurosurgery clinic in Breslau where L. Guttmann became interested in Minor's test and modified it. In late 1930s Minor married his PhD student Lidia Novikova and fathered a son Alexander (who became a biophysicist and studied olfaction). From 1944 until 1953 V.Minor was a head of a 'cabinet for neurology of sweating' at the Burdenko Neurosurgery Institute and studied sweating disorders after peripheral nervous system damages. Shortly before Stalin's death he was fired from the institute because of his Jewish origin.

During last decades of his life Victor Minor was involved in private neurological practice and wrote a fantastic novel about Moon exploration. His biography may serve as a case study of a clinical neurologist in the 20th century.

Donatella Lippi (Department of Experimental and Clinical Medicine, University of Florence, Florence, Italy), Raffaella Bianucci (Dipartimento di Culture e Società, Università di Palermo, Palermo, Italy), Francesco M. Galassi (Archaeology, College of Humanities, Arts and Social Sciences, Flinders University, Adelaide, SA, Australia), Francesco Arba (Stroke Unit, Careggi University Hospital, Florence, Italy)

Dante Alighieri as a Neurologist and Neuroanatomist through the Divine Comedy

Symposium: Dante

The year 2021 marked the 700th death anniversary of the Italian poet Dante Alighieri (1265-1321). Dante is known worldwide for his masterpiece, the Divine Comedy, which describes his journey across the three realms of the afterlife: Hell, Purgatory, and Heaven. Many biographical elements confirm the link between Dante and the world of medicine, which is also widely reflected throughout his entire work.
In this perspective, neurological knowledge is also well represented: Dante shows familiarity with fundamentals of functional neuroanatomy, and accurately describes as a modern Neurologist symptoms and signs that could be attributed to various neurological diseases. We will review some examples of Dante as Neurologist and Neuroanatomist, and discuss differential diagnosis of some Great Poet's emblematic descriptions of possible neurological cases.

Lorenzo Lorusso (UOC Neurology and Stroke Unit, ASST Lecco, Merate, Italy)

Neurology and Videos: the Diagnosis in the Eye of the Beholder

Symposium: Italian Neurology

Since its early days, cinema has been recognized as having profound cultural value, with an important educative role, especially in neurology training. The film has been increasingly used as an educational tool in teaching medical subjects. The film can offer new perspectives for introducing medical students to their future professional activity and several authors have confirmed 'film can increase students' motivation to understand clinical principles and become a driving force to stimulate learning' using new digital devices for spreading knowledge. The contribution of the Italian Neurologist to the development and the application of cinematography in scientific and educational knowledge began at the end of the 19th century with Gaetano Rummo (1853-1917), who used chronophotography and cinematography projection as a didactic and clinical tool in Central and Southern Italian Universities.
At the beginning of the 20th Century, two other neurologists, Camillo Negro (1861-1927) and Vincenzo Neri (1880-1960) applied cinematography to study their patients describing and video-recording important clinical signs that retain their validity and usefulness for the neurological examination. Among them, are the 'bulbo-palpebral hyperkinetic phenomenon' in peripheral facial paralysis (described and documented in cinematographic recordings by Negro) and several signs proposed by Neri for the evaluation of hemiparesis, gait disturbances, and other neurological deficits.

Lorenzo Lorusso (UOC Neurology and Stroke Unit, ASST Lecco, Merate, Italy), Stefano Zago, Teresa Difonzo, Gianfranco Denes, Roberto Cubelli, François Boller

Aphasiology in Italy between the Unification and the Beginning of the First World War, or the Contribution between Broca and Marie

Symposium: Italian Neurology

In Italy, the interest in the relationship between the brain and the disorders of the language can be traced back to ancient Roman times, continued through the medieval and renaissance periods, and lasted until the 20th Century. In particular, between the Unification and the beginning of the First World War (i.e., between the study of aphasia by Broca and Marie), scholars with specific academic training provided a great contribution to the understanding of the anatomical-functional mechanisms underlying aphasia, but also to its classification and rehabilitation. This lecture provides an overview of the studies on aphasia performed in Italy between Broca and Marie's contributions. More than a hundred original articles on this topic were published in Italian medical journals with little international circulation and visibility. The Italian contribution to the study of aphasia reflects the interest in this condition shown by other physicians and scientists across Europe but is characterized by its originality and relevance.

Bart Lutters (University Medical Center Utrecht)

Division of Labor or a New Discipline? – The Troubled Emergence of Neurosurgery in the Netherlands

Platform

During the first decades of the twentieth century, Amsterdam neuropsychiatrist Louis Muskens (1872-1937) asserted that surgery of the human nervous system was to be performed by neuropsychiatrists rather than general surgeons, as, according to Muskens, only neuropsychiatrists possessed the knowledge, skills and technological expertise to surgically intervene into the human nervous system. At the time Muskens laid out his views and took up the practice of nervous system surgery himself, however, a clear division of labor between general surgeons and neuropsychiatrists had already emerged in the Netherlands, which was shaped by the professional identities fashioned by individuals active in these disciplines. Both general surgeons and neuropsychiatrists regarded surgical performance as an activity to be reserved for general surgeons, requiring specific experience, skills and innate qualities, whereas both breeds of physicians regarded the diagnosis and localization of nervous system disorders as the domain of neuropsychiatry, whose practitioners possessed a comprehensive scientific understanding of the nervous system, observational skills, and expertise in diagnostic technology. Even though Muskens' views and surgical practices were strongly rejected by both his surgical and neurosurgical colleagues, his rhetorical challenge of the existing division of labor between general surgeons and neuropsychiatrists was an important catalysts for the emergence of neurosurgery as a demarcated discipline in the Netherlands, one that was performed by a specially-trained surgeon exclusively dedicated to nervous system surgery. The case of Muskens thus provides a striking example of the ways in which professional identities shaped medical practice and the emergence of a new discipline.

Paolo Mazzarello (University of Pavia)

From Basic Research to Practical Applications: the Golgi School and the Peripheral Nerve Regeneration

Invited Lecture

The scientific school of Camillo Golgi, which flourished in the Institute of Histology and General Pathology of the University of Pavia, contributed significantly to the study of animal tissue regeneration. Particularly relevant were the investigations developed by Aldo Perroncito (1882-1929) who conceived an extensive work program based on the serial histological analysis of the degenerative and regenerative processes of the experimentally injured peripheral nerve. Preceding Santiago Ramón y Cajal (1852-1934), Perroncito clearly defined the main phases of the regenerative process, from early to late, thus providing the fundamental neurobiological cognitive basis of modern peripheral nerve reconstructive surgery. For these studies he was awarded the prestigious Warren Prize (1907) from the medical board of the Massachusetts General Hospital and the Lallemand Prize (1910) from the Paris Academy of Sciences.
During the First World War, the surgeon Giovanni Verga, another collaborator of the Institute of Histology and General Pathology of the University of Pavia, applied the results of Perroncito's studies to peripheral nerve surgery, carrying out innovative interventions on war trauma patients treated in the Military Hospital "Collegio Borromeo" directed by Camillo Golgi.

Cecilia Panti (University of Tor Vergata)

Dante and the Medieval Perspectivism: a Reappraisal

Symposium: Dante

Recent historiography concerning Dante's optics and visual theory is almost unanimous in ruling out the possibility that the Italian poet had direct access to the works of the major 13th century Latin perspectivists such as Roger Bacon, John Peckham and Witelo, who in turn had popularised the optics of the Arab scientist ibn al-Haytham (Alhazen). Dante's visual references, both in the Convivio and the Commedia, lack the technical sophistication found in Alhazen and the perspectivists. This undeniable fact has been taken as solid evidence that Dante drew common ideas about vision from more general sources, especially the commentaries of Albertus Magnus, Thomas Aquinas, and Averroes on Aristotle's De anima and De sensu et sensato. My talk intends to challenge these conclusions and support the thesis - partly developed in the last century by the art historian Alessandro Parronchi - that Dante directly accessed the literature of the perspectivists, particularly Bacon's Perspectiva, if not the very De aspectibus by Alhazen. In fact, Dante's simplified version of Alhazen's intromissionist theory was neither commonplace nor readily accessible in the Aristotelian commentaries. These two conclusions will be illustrated through some textual examples and parallel passages concerning direct and reflected vision.

Marco Piccolino (University of Ferrara)

Marian Lydia Shorey (1873-1922): the Sad Story of a Brilliant Woman Scientist at the Inception of Modern Neuroembryology

Platform

Marian Lydia Shorey (1873-1922) was an American scientist in the early twentieth century who is hardly remembered in the history of science. When she is mentioned her name is often spelt incorrectly, sometimes she is considered to be a man, and almost no biographic data can be found on her. Nevertheless, the experimental work she carried out on chick embryos during the preparation of her PhD thesis at Chicago University (which led to the publication to two papers in 1909 and 1911), represents a milestone in the birth of modern of neurobiology. Through the subsequent research of Samuel Randall Detwiler and Viktor Hamburger in America, and of Rita Levi-Montalcini and Giuseppe Levi in Italy, Shorey's results opened a research path that would eventually lead Levi-Montalcini and Stanley Cohen to discover Nerve Growth Factor, the first molecule of an entirely new and extremely important class of biological regulators. Here I report the results of biographical research, initiated in collaboration with Germana Pareti, which sheds some light on the complex and sad events that led a promising woman scientist, from rural America, to fail in the establishment of a research and teaching career and, eventually, to take her own life on 26th August 1922, like her sister, Bina May, had done six years earlier.

Marco Piccolino, (University of Ferrara. Italy), Nicholas J. Wade (University of Dundee, Scotland)

Dante 'Visual Illusionist'. The Clouds and the Falling Garisenda Tower of Bologna

Symposium: Dante

The interests of the poet Dante Alighieri (1265-1321) in many aspects of the science of his age is well known. In his masterwork, the 'Divine Comedy', his forays into optics reflected the contemporary revival of optical studies. This was fostered mainly by Arab scholars (especially Alhazen) and later integrated in a Christian vision of the universe, seen as a light emanation of God. Robert Grosseteste, followed by Bacon, Witelo, Peckham and others, placed the study of optics at the centre of medieval culture and science. Despite Dante's great interest in optics and vision, particularly well developed in the 'Paradise' (the last of the three 'Cantiche' of the Comedy), it is generally held that the widespread presence of these themes in the Comedy did not imply a direct knowledge of visual science. There is, however, at least one occasion, in which, Dante's reflection on vision led to an original observation, that of an apparent motion of a building - the Garisenda tower, one of the leaning towers of Bologna. Visually induced motion had been reported earlier by Lucretius, Ptolemy and Alhazen in the context of clouds passing in front of the moon but Dante provided the first description of apparent motion of a building when clouds passed. This presentation, which will delve into the scientific and historic aspects of Dante's Garisenda observation, might shed a new light on the sources of the poet's scientific culture

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Annalisa Pizzinga (Sapienza University of Rome)

Vittorio Erspamer (1909-1999): Anatomy of a Discovery from Enteramine to Serotonin

Poster

The section of History of Medicine at Sapienza houses the archive of Vittorio Erspamer, donated by his wife Giuliana Falconieri in 2001. The inventory contains particularly important materials for reconstructing Erspamer's first period of histochemical and pharmacological research, and on enteramine studies, but also to retrace the phases of chemical and biological tests that have allowed the identification of biogenes and various other amines and peptides.
A study in laboratory notebooks related to enteramine research was conducted which brought to light the thoughts and experiments that led Erspamer in those researches.
The history of the discovery of serotonin tends to relate that Erspamer only discovered enteramine in 1933 by looking for its chemical nature. And that the studies that led to the identification and chemical characterization were instead those of Rapport et al. in the United States between 1947 and 1949.
From the research it became clear that Erspamer first obtained the extract containing enteramine in 1937. Not only that, but in 1948, and before the isolation of serotonin, the Italian pharmacologist had also described the chemical structure of the substance.

Mario Po' (Director of the Scuola Grande di San Marco in Venice)

History of Medicine Museum of the SS Giovanni-Paolo Hospital and Scuola Grande di San Marco in Venice

Symposium: Historical Hospitals

The History of Medicine Museum and Medical Library of the Ss Giovanni-Paolo Hospital and Scuola Grande di San Marco in Venice is part of the edifice that was built by the Confraternity of San Marco in 1260. In 1347, the Scuola had opened a hospice nearby to provide medical care, food and lodging for the poor, the elderly and the destitute. By 1410 the Scuola changed from a penitential congregation to a philanthropic institution. In 1437, the Scuola negotiated with the Dominican friars of the Church of Santi Giovanni e Paolo to rent some land on the Rio dei Mendicanti. Here in 1483 they built a new building, but this was destroyed by fire in 1485. In 1490, Leonardo Corradin donated a building in the Calle della Testa to the brotherhood and the hospice was moved to the Campo Santi Giovanni e Paolo, where it remains today. Gradually the Scuola grew through the donations of land and money from wealthy patrons and by 1529, houses were built to house the poor. In 1797, after the fall of the Venetian Republic, the Scuola was suppressed by Napoleonic decree. In 1808, the Scuola with Hospital San Lazzaro dei Mendicanti and the Convent of Ss Giovanni e Paolo was transformed into a Military Hospital. In 1819, it became the civic Hospital of Venice, as it remains today. Since 2014 the Scuola has regained its function as a leading centre for medical history, science and the arts in Venice with a History of Medicine Museum including neurosciences books and artifacts.

Jonathan R. Pollock (Dept. of Neurosurgery, Queens Hospital , Romford, London, UK)

Les tumeurs fongeuses de la dure-mere, Antoine Louis, 1771: The Paper and a Reassessment of its Place in the History of Meningioma Management

Platform

Introduction: Louis of Paris published a detailed case series of symptomatic abnormalities of the skull and dura in Volume 5 of the Mémoires de l'Académie Royale de Chirurgie, designating them 'tumeurs fongeuses'. Harvey Cushing of Boston in 1938 and numerous others have cited the paper as an early reference to meningioma, a common benign brain tumour. We examine the cases and evaluate the paper, utilising an English translation.
Summary: 20 patients between ages 2 and 51 were described, presenting between 1695 and 1767 from across Europe between Spain and St Petersburg. Clinical features, surgery, wound treatments, outcome and postmortem findings were detailed. The likely pathologies are wide-ranging. 2 may be post-traumatic hernias. There are several probable infections including 4 cases of tertiary syphilis and 3 infections following trauma. 11 were probably tumours of which 5 were malignant and only 3 are suggestive of meningiomas. Louis vigorously advocated surgical treatment as an underutilised therapy, usually carried out in several stages.
Conclusion: Louis and his co-authors demonstrated great descriptive and diagnostic skill which set the scene for the later classification of skull and dural pathologies, and were ambitious advocates of surgery. His paper merits a prominent place in the historical literature of cranial tumour treatment.

Jonathan R. Pollock (Dept of Neurosurgery, Queens Hospital , Romford, London, UK), Mariam Awan, Lauren Harris, Jonathan Benjamin (Essex Neurosciences Centre, Queens Hospital, Romford, London, UK)

A Short History of Cranial Surgery in the Eastern Districts of London, UK, 1750-1950

Platform

Introduction: Three hospitals in East London, The London Hospital (1926), Whitechapel, St Bartholomew's Hospital ('Bart's') (1939), Smithfield and Oldchurch Hospital, Romford (1946), developed Neurosurgery units under the leadership of Hugh Cairns (1896-1952), John O'Connell (1906-2001) and Leslie Oliver (1909-1990). We describe cranial surgery between the era of Percivall Pott (1714-1788) at Bart's and the foundation of these units , and the influence of the North American school of Neurosurgery.
Sources: Archive material, historical surgical instruments, biographical and neurosurgical literature.
Summary: Cranial surgery progressed from trephine for skull fracture by Pott via his successor John Abernethy (1764-1831), to advances in pathology, investigation and clinical diagnosis in the 19thC by James Paget and others. Following localisation-guided surgery from 1886 , L B Rawling (1871-1940) at Bart's and H Souttar (1875-1964) at the London Hospital contributed innovative techniques , including the use of Souttar's craniotome. Souttar's house surgeon Cairns studied in Boston under Harvey Cushing and commenced Neurosurgery at the London Hospital along Cushing lines. Oliver, under Cairns' direct influence, commenced Neurosurgery in Romford to meet the demands of the growing outer London population . O'Connell trained in Ann Arbor and Chicago and practised at Barts until 1971, enhancing his reputation by carrying out the earliest separations of craniopagus twins.

Conclusion: The developments in East London summarise the radical change in cranial surgical practice from treatment of head injury to a surgical discipline treating multiple intracranial pathologies, between 1750 and 1950.

Alessandro Porro (University of Milan)

Neuroanatomy in 3D and in Color: the Italian Art of Anatomical Ceroplasty

Symposium: Italian Neurology

In antiquity, the representation of structures of the nervous system in neuroanatomical treatises was limited to and conditioned by two-dimensionality. The advent of ceroplastics made it possible to create wax models of anatomical or pathologic specimens that could accurately depict organs and lesions in color and three-dimensionality. The 18th century represented 'the golden age of ceroplastics', with the production of high-quality anatomical specimens, extremely accurate in their depiction of normal or pathological anatomy, that were used in medical and surgical training, complementing and sometimes substituting cadaveric dissections. Due to their intrinsic complexity, the creation of anatomical specimens of the nervous system for teaching or learning purposes has always represented a technical endeavor requiring high technical skills. This was particularly true for the representation of microscopic structures, whose rendering required the availability of the microscope, and that therefore began only during the 19th century. In Italy, the art of ceroplastics was particularly developed and flourished especially in Bologna and Florence, leading to the creation of high-quality wax models illustrating different neuroanatomical structures, including the sense organs.

Alessandro Porro (Milan University Italy), Lorenzo Lorusso (ASST Lecco. Merate. Italy), Bruno Falconi (Brescia University Italy), Antonia Francesca Franchini (Milan University Italy)

Management Training in the Fifties in Milan: the Role of Industrial Psychology

Poster

In Milan, in the Fifties, Occupational (Industrial) Medicine and Occupational (Industrial) Psychology found a common field of interest and a privileged venue in Clinica del Lavoro 'Luigi Devoto' (the oldest health organization in the world for the study, treatment, and prevention of occupational diseases). This convergence was due to the work by Marcello Cesa-Bianchi (1926-2018) and his assistants.
Textile industry was the main one in Lombardy; a Special Section in Clinica del Lavoro 'Luigi Devoto' was devoted to the study of 'fattore umano' (the human factor).
For management training some leaflets were printed, showing the activity of Special Section and the principles of industrial psychology.
Some themes were, at time, very topical: attitudinal selection; professional profiles; workplace and fatigue; absenteeism; human relationship and workers' attitudes; management training.
Leaflet's printing started 1956 and went on the Sixties, with no regular periodicity.
Special Section activity was devoted to:

- Statistical Studies
- Physiological Work Organization (Ergonomics)

- Industrial Psychology
- Work Hygiene
- Medical Control of Health and Working Skills.

The Authors presents some leaflets concerning: the role of special section; industrial psychology facing the technological progress; the colors from a psychological point of view
Those leaflets, due their intrinsic characteristics, are equivalent to the so-called 'gray literature'.
They are very scarce materials, and a complete set is not available in public libraries.

Alice Naomi Preti (University of Milano'Bicocca), Teresa Difonzo (Fondazione IRCCS, Ca' Granda Ospedale Maggiore Policlinico, University of Milan), Lorenzo Lorusso (Neurology Unit, Lecco-Merate), Stefano Zago (Fondazione IRCCS, Ca' Granda Ospedale Maggiore Policlinico, University of Milan)

Floor-effect Strategy to Evaluate Faking Cognitive Impairment in the 20th Century Europe

Poster

Although the evaluation of the feigned cognitive impairment received particular attention in the 90s in the United States, early contributions date back to the first half of the 20th century in Europe. Authors as Theodor Ziehen, Alfredo Coppola and André Rey contributed to the development of the early test of malingering in terms of 'floor-effect strategy', i.e. cognitive tasks in which malingers perform incorrectly believing that the tasks are difficult even though they are extremely simple. In Germany, Ziehen proposed that a reduced memory span was an indicator of simulation, an aspect confirmed by modern studies. Coppola in investigating the case of the 'Smemorato of Collegno', in addition to the Ziehen's *Simulationsversuch* (Zago et al., 2004) proposed two further tests that were 'Flag Test' and a 'procedural memory test'. The first one consists in reporting colours and spatial layout of flags of different countries; the other regards the evaluation of routine tasks. Rey developed a series of very simple tasks, which seem difficult. Some of the most well-known malingering tests are still in use (Frederick, 2002). These include Rey fifteen-item Memory Test, the Dot Counting Test and the Word Recognition Test. These European researchers contributed to the development of the detection strategy based on the assumption that failure on simple questions is an effective indicator of malingering because even marked impaired individuals are able to answer them.

Michele Riva (University of Milano Bicocca), Lorenzo Lorusso (Merate Hospital, Merate)

Neurology in Dante

Symposium: Dante

The Italian poet Dante Alighieri (1265–1321) in his masterpiece *La Divina Commedia* (*The Divine Comedy)* reported medieval notions of neuroanatomy and neurophysiology (e.g. the connection between brain and spinal cord, function of optic nerve and peripheral nerves, knowledge of vegetative nervous system). He also described some neurological disorders (e.g. epileptic seizures, effects on nervous system by metal intoxication, and narcolepsy), especially in the *Inferno*, the first part of the Divine Comedy. These accurate

descriptions have led some authors to believe that the poet himself may have suffered from a neurological disease (epilepsy or hypersomnia). Damned souls of the *Inferno* seem to be also afflicted by psychiatric disorders, such as melancholia and depression. It is less known whether Dante had a sound level of medical knowledge, as demonstrated by his description of some physical and mental disorders, often using a technical language and showing to be familiar with theories of Hippocrates, Galen and coeval physicians. The analysis of Dante's works confirms that poetry – as well as literature in general – may be an important source of information for historians of medicine, including scholars interested in history of neurosciences.

Lara Rzesnitzek (Charité Universitätsmedizin Berlin Psychiatrie)

Lothar Kalinowsky, National Socialism and the Early Selling of 'Electroshock Therapy'

Symposium: ECT

Subsequently to Nationalist Socialism's raise to power in Germany, Lothar Kalinowsky (1899-1992), a Berlin neurologist and psychiatrist of Jewish origin, had emigrated to Italy, Rome, and joined Ugo Cerletti's (1877-1963) and Lucio Bini's (1908-1964) invention of l'elettroshock as new 'shock therapy'. When the aggravated Italian racial laws following the Pact of Steel in May 1939 forced Kalinowsky to leave the Italian exile, Bini handed over the Apparecchio per l'elettroshock – brevetto Prof. Bini for promotion beyond Italy. However, diverging interests of clinical colleagues, industrial companies and mental health care politics stood in the way of their endeavor. The story of Kalinowsky and the early selling of 'electroshock therapy' reveals as an intriguing histoire croisée: Not only was it closely involved with the political, scientific and economic conditions before and during World War II, with mutual influences passing the borders of Italy, Germany, Switzerland etc.
Especially the private correspondence between Bini and Kalinowsky as well as the non-official medical and technical reports of the Siemens Archive show that there was also a crossing in the sense of a cooperative or competing interdependency of medical, professional, political or economic interest of physicians on the one and industrial companies on the other side.

Gül A. Russell (University Health Science Center College of Medicine; Texas A&M Institute of Neuroscience)

Continuity Despite Change: in Diagrams of the Eye: From Ḥunayn ibn Isḥāq to Vesalius and Kepler

Platform

The eye diagram attributed to Ibn al-Haytham in the printed Latin edition of his optics, Opticae thesaurus alhazeni (1572), was inserted by Friedrick Risner to rectify the absence of one in the original text. The puzzling question has been where the Risner diagram came from. I will argue, based on detailed comparative analysis, that the source is not Vesalius as claimed, but the oldest extant schematic eye diagram in Hunayn ibn Ishāq's Ten Treatises on the Eye (c. 860), which was widely disseminated in its Latin translation from Arabic. In the absence of precursor models, it constitutes the oldest extant representation of ocular anatomy, based on Galen. "Hunayn's eye" appears to have served, with minor adaptations, as a template until the 17th century, despite dissections of ocular anatomy that invalidated its anatomical

features, retaining details with no anatomical function. Examples will include the so-called "serial dissection" diagrams of Vesalius in De Humani corporals fabrica (1543), based on direct observation, as well as in that of Kepler, Ad Vitellionem paralipomena (1604). In identifying the focusing function of the lens in the formation of the retinal image, Kepler incorporated the new anatomy of Plater (1583) into his optics. The questions raised by such continuity will be addressed, and a possible explanation sought in the perceptual mechanisms underlying transmission.

Eglė Sakalauskaitė - Juodeikienė (Vilnius University), Paul Eling (Radboud University)

Hildegard of Bingen (c. 1098–1179) on Insomnia in her *Causae et curae* and Physica

Platform

Hildegard of Bingen (c. 1098–1179) was a 12th century Benedictine abbess, a visionary, a composer, a poet, a healer, and one of few medieval women who produced treatises on medicine. In her Causae et curae and Physica the abbess described physical functions and mechanisms of sleep, dreams and waking, regarding sleep as both a passive and an active process. Hildegard described some symptoms, and potential causes of a disease that we currently call insomnia, with considerable precision: 'Yet it often happens that a human lies awake and cannot sleep, when his mind is occupied with various thoughts, conditions and contradictions (...). For in sadness or fear, in distress, anger, or other such adversities and preoccupations, the blood often turns restless'. The abbess described treatments for this condition suggesting to take fennel, yarrow, and green sage. The author even clarified the putative mechanism of action of these herbs, also mentioning three cardinal parts of healthy sleep: 'For the warmth of fennel induces the beginning of sleep, the warmth of yarrow stabilizes the sleep, and the warmth of sage slows the heartbeat and depresses the blood vessels of the neck so that sleep may continue'. In this presentation, we analyze Hildegard's writings in the context of Greco–Roman physiological theories, which were held to the end of the Middle Ages and later. We also discuss questions concerning the abbess's putative education, the originality of her works, and the significance of her writings in the context of current knowledge on sleep medicine.

Elisabetta Sirgiovanni (Sapienza University of Rome)

Acroagonines: the Audacious Attempt to Reproduce ECT in Vials

Symposium: ECT

In the years 1947-1957, following a turbulent retirement, Ugo Cerletti, the father of electroconvulsive therapy (1938), invested his energies in a new audacious project, funded by the Italian National Council of Research (CNR) and conceived as an extension of his ECT research. *Acroagonines* is the name Ugo Cerletti gave to alleged liquid substances he conjectured to be produced by the brain under electroconvulsive treatment. Cerletti held these substances responsible for depressive patients' recovery after ECT and thus, he tried to extract them from electro-shocked animals' brains in order to get drugs to inject psychiatric patients. If we exclude some publications in English by Italian scholars, in international works acroagonines have been rarely mentioned. I will agued in this paper that the relevance of acroagonine theory should be acknowledged for both the history of psychopharmacology and the neuroendocrine explanation of mental illness.

I used unexplored archival materials stored at Sapienza University of Rome ('ES Section') with established bibliographic and other archival sources, including related collections at the Kansas State Historical Society Archives.

Elisabetta Sirgiovanni (Sapienza University of Rome), Livia Castelli

The CNR Center for the Study of the Physiopathology of Electro-shock: a Restart or a Revival?

Poster

The 'Center for the study of the physiopathology of Electro-shock' was founded by Ugo Cerletti after retirement from the Sapienza Clinic, and it lasted a decade (1947 -1957). The Center was aimed at carrying on research on electroconvulsive therapy, with focus on acroagonines. A famous scientific film was produced and was awarded at the World Psychiatry Congress in Paris in 1950.
We will explore a series of difficult circumstances that led Cerletti to seek funds at the National Research Council of Italy, circumstances that forced the Center's activity to be legally moved out of the university and located at the Santa Maria della Pietà Hospital, the Provincial Asylum.
The history of Cerletti' Center, established in a climate of post-war renaissance, constitutes an interesting starting point to discuss an approach in the historiography of Italian academic institutions of the time, which discusses an oscillation between the rhetoric of the 'restart' and that of the 'revival'.
The study was made through archival sources, many of which unpublished, including collections at the Sapienza Archives, State Archives of Rome, and Kansas State Historical Society Archives.

Frank W. Stahnisch (University of Calgary)

'We didn't know how this worked anymore – Science:' Institutional Contexts, Strategies, and Founding Figures of Brain Research in the Early Max Planck Society, 1948–1968

Platform

When World War Two drew to a close in Europe on May 8, 1945, many institutes for brain research, psychology, and psychiatry of the former Kaiser Wilhelm Society (KWG) were relocated, divisions closed, collections deported, technological devices stored, and individual buildings damaged and destroyed. Numerous scientists and research scholars had been forced into exile to North America, Britain, and elsewhere around the globe; others had died in the skirmishes of warfare during the war, disappeared in prisons and concentration camps, had been incarcerated as prisoners of war, or were displaced at the beginning of 1945, so that they could no longer return to their homes or former research institutions. Those émigré brain scientists, psychologists, psychiatrists, biologists, and cyberneticists, who had been forced out of Germany and later its occupied countries, found new work settings abroad and very few returned to Central Europe.
This paper examines the development of brain research activities as it progressed through the structures and platforms of the Max Planck Society (Max-Planck-Gesellschaft or: MPG) after its foundation on 26 February 1948 in Goettingen. It thereby relates to important changes in the cultural and political contexts of the Federal Republic of Germany, the immediate postwar period, and social reforms of the early 1960s. It is the goal of this project to tease out some formative elements and dynamics which influenced the brain sciences, behavioural sciences, and cognitive sciences of this period during the reconstruction process of

the Max Planck Society. What where the main driving forces? Which personal and networking resources or structural features served the prospects of new productivity and research progress in the brain sciences since the immediate postwar period? And how could the traditions and resources from the Kaiser Wilhelm Society be worked into the newly created extra-university research colossus which the MPG was to become? This paper draws on historical archive material from the MPG (Berlin) as well as from specialized brain research institutes in Munich, Frankfurt, and Cologne, along with oral history information from interviews with former MPG members. Research support from the official Research Program on the History of the Max Planck Society is thankfully acknowledged for this project.

Angelo Tanese (General Director of the Santo Spirito Hospital in Sassia in Rome)

Introduction and Visit to Santo Spirito Hospital in Sassia and Lancisiana Library

Symposium: Historical Hospitals

The S. Spirito Hospital in Sassia is the oldest in Europe. It was founded in 727 AD as a building intended for accommodation, assistance, and care for pilgrims who came to Rome to visit the tomb of Saint Peter. In 1198, under Pope Innocent III, it was rebuilt and used as a hospital.
The Lancisiana Library, located in the upper loggia of the Palazzo del Commendatore (16th century), was founded in 1711 by Giovanni Maria Lancisi (1654-1720), an illustrious physician who served as pontifical archiatrist of Innocent XI and Clement XI. It was inaugurated on 21 May 1714, in the presence of Pope Albani. The bibliographic collections of the Library consist of approximately 19,000 volumes, including incunabula from the 16th century, several books from the 17th-19th centuries, and manuscripts dating back to the 14th-19th centuries. The Lancisiana Library is specialized in the History of Medicine and Science.

Antonio Veraldi (FPA – FORUM PA, Rome)

Linking Tradition and Innovation

Symposium: Historical Hospitals

We filter the tradition that comes down to us through our personal history. Tradition is not what it is, it becomes what we want it to be.
In this dance of ours between past and future, we make very little progress in our present.
To change healthcare, to make real innovation destined for the well-being of people and our communities, we must learn from our past and let it go; we must "see" the future and we do today, getting rid of the "this cannot be done now", the "it's impossible", the "never".
We have to take full responsibility to change with will, ingenuity, desire considering what the history of medicine and neuroscience have taught us.
And because we learn more by observing something and testing it and learning less when something is told to us, we have to model with our history.
Because we learn better from models, because we are more spurred to action by models that have also been implemented in the past in the medical history.
We activate this process of desired discovery, embracing the past and opening ourselves to visions. But let us now change our conception of health and our health organizations: for the benefit of the people to whom our service and our communities is intended!
Let us change healthcare today, choosing values and principles to inspire us. Aware of the limitations and risks. Knowing that by innovating we can run the risk of forgetting the good of man.

Nicholas J. Wade (University of Dundee, Scotland)

The Arrow in the Eye

Platform

For centuries diagrams showing image formation in the human eye have employed an arrow as the stimulus. What are the origins of the arrows? Kubovy has suggested that the metaphor of light as an arrow can be traced to a painting by Mantegna in 1455. However, arrows are not illustrated in texts on perspective until 1646. The arrow of light did not penetrate the perspectivist's eye but ceased at its surface. Only after Kepler's (1604) analysis of image formation in the eye and Scheiner's (1619) accurate account of ocular anatomy did the arrow enter the eye to form an inverted and reversed retinal image. Arrows are represented in the 1646 Latin edition of Niceron's book on curious perspectives but not in the French edition of 1638. Niceron was an artist and mathematician who described linear, conical, and cylindrical (mirror) anamorphoses. In his Dioptrique (1637) Descartes integrated Kepler's dioptrics with Scheiner's anatomy to illustrate retinal image formation and the stimulus was an arrow. Niceron was a pupil of Mersenne and an acquaintance of Descartes. Thereafter, arrows have been used extensively in physical and physiological optics as well as in texts on art. Thus the arrow of light speeds towards the eye and penetrates it, leaving its mark to be processed. This metaphorical conflation of art and optics assisted in the analysis of image formation in the eye, but it has left a pictorial platform from which the analysis of perception is considered to commence.

Nicholas J. Wade, (University of Dundee, Scotland)

Visual Motion Illusions before Dante

Symposium: Dante

Illusions of motion are among the oldest visual illusions that have been recorded. Induced motion refers to the apparent visual movement of a stationary object, usually in the opposite direction to the real movement of other objects. What seems to be a clear description of induced motion was given by Euclid (ca. 300 B.C.) in his *Optics*. He wrote: '*If, when certain objects are moved, one is obviously not moved, the object that is not moved will seem to move backward*'. Lucretius (ca. 50 B.C.) gave accounts of several motion illusions including induced motion: clouds at night passing in front of stars resulted in the stars appearing to move in the opposite direction. Ptolemy (ca. 150) noted the phenomenon with regard to water flowing past a stationary boat; his account displays an appreciation of the relativity of motion perception with respect to the frames of reference that are in operation. Perhaps the most common and compelling instance of induced motion is when moving clouds partially obscure the moon rather than stars, as Ibn al-Haytham (ca. 1040; also known as Alhazen) noted. Latin translations of Alhazen's book on optics influenced many of the philosophers writing before Dante but the work on induced motion was not pursued. Dante (1320) made the novel observation of induced motion seen in a nearby building: the Garisenda tower appeared to tilt when clouds passed over it.

Yuri Zagvazdin (Nova Southeastern University, Fort Lauderdale, Florida, USA), Mashukova Anastasia, Cheryl Purves

Sympathetic Innervation of Salivary Glands: Textbook Contradictions and Long Lasting Conundrum in Research Literature

Platform

Information regarding the effect of the sympathetic nervous system on the function of the salivary glands is contradictory and confusing. Some Anatomy and Physiology textbook authors claim that activation of the sympathetic nerves decreases flow of saliva, while other suggest that sympathetic innervation has a stimulatory effect. We have investigated the historical roots of this contradiction. Since the beginning of the second part of the 19th century, studies of C. Ludwig established the excitatory action of the sympathetic nerves on the activity of the main salivary glands. These findings were later confirmed in brilliant experiments by C. Bernard, C. Eckhard, R. Heidenhain and J. Langley. By the beginning of the 20th century, I. Pavlov and W. Cannon observed and emphasized that fear and other unpleasant emotional reactions arrest salivation and release of other digestive juices. Cannon related fear to the generalized activation of the sympathetic nervous system, the so called 'Fight or Flight' response. It appears that Cannon's stature and popularity became the driving force advancing the notion about the inhibitory role of the sympathetic system on the outflow of saliva. This idea permeates a segment of the teaching literature today. However, unequivocal experimental proof of the suppressive effect of the sympathetic nerves on salivary secretion is still lacking.

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