



Jean-Martin Charcot (1825–1893) and John Hughlings Jackson (1835–1911) at the Origins of Modern Epileptology

(History of Neurology)

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Abstract

Jean-Martin Charcot (1825–1893) and John Hughlings Jackson (1835–1911) were central figures in the emergence of modern epileptology, yet their contributions reflected different stages in the transformation of nineteenth-century neurology. Charcot's approach was grounded in systematic clinical observation, classification, visual documentation, and anatomoclinical correlation. His descriptions of petit mal, focal motor seizures, complex paroxysmal behaviours, and hystero-epilepsy illustrate the growing importance of seizure semiology and clinical differentiation. His work with Albert Pitres on the topographical diagnosis of focal seizures further demonstrated how epileptic manifestations could provide clues to cerebral localization. Jackson moved beyond description toward a dynamic physiological interpretation of neurological disease. He conceptualized epileptic seizures as excessive and disorderly discharges of nervous tissue and used the progression of focal motor seizures to infer the somatotopic organization of the brain. His descriptions of the “dreamy state,” including experiential, olfactory, visceral, and mnemonic phenomena, together with automatisms and altered consciousness, anticipated the later clinical characterization of temporal lobe epilepsy. These observations were embedded within his broader concepts of hierarchy, evolution, dissolution, and concomitance. The contributions of Charcot and Jackson therefore represent complementary stages in the epistemological transformation of epilepsy: from the systematic observation and classification of clinical phenomena to their interpretation as physiological events capable of revealing the organization of the nervous system. Their work helped transform the seizure from an object of description into an instrument for investigating the brain itself.

Keywords: Anatomoclinical correlation; Brain localization; Epileptology; Seizure semiology; Temporal lobe epilepsy



Introduction

Jean-Martin Charcot (1825–1893) and John Hughlings Jackson (1835–1911) were two giants of nineteenth-century neurology who, through different but ultimately complementary approaches, contributed to the emergence of modern epileptology. Their work belongs to a period in which epilepsy itself was undergoing a profound transformation: not only were its clinical manifestations being described with increasing precision, but the very way in which physicians approached the disorder was changing. To understand their contribution, it is therefore useful to return to the intellectual and scientific context in which they worked (*Comte 1830-1842; Charcot 1887-1888; York et al. 2006*).

Although Charcot and Jackson were partly contemporaries, their careers can be situated, with some chronological overlap, at different moments in the transformation of nineteenth-century scientific thought. In the interpretative framework adopted here, Charcot can be placed more firmly within the age of positivism, whereas Jackson's work already points toward a more dynamic and complex conception of the nervous system (*Comte 1830-1842; Charcot 1887-1888; York et al. 2006*).

Positivism and the Transformation of Nineteenth-Century Medicine

Positivism profoundly influenced the nineteenth-century conception of science. It developed during a period of economic growth, political transformation, and widespread confidence in progress. Science increasingly came to be regarded as the most reliable form of knowledge, and the scientific method acquired a privileged position in medicine and the natural sciences. Observation, experimentation, and verification became its central principles, accompanied by the ambition to extend this method to other domains of human knowledge (*Comte 1830-1842; York et al. 2006*).

The dominant philosophical figure in this context was Auguste Comte (1798–1857). In his *Cours de philosophie positive*, published in six volumes between 1830 and 1842, Comte formulated his well-known law of the three stages: theological, metaphysical, and positive. In the positive stage, knowledge was to be based on observable facts and their regular relations rather than on unverifiable metaphysical explanations (*Comte 1830-1842*).

This conception became one of the characteristic intellectual frameworks of nineteenth-century science. Toward the end of the century and, even more clearly, in the early twentieth century, however, confidence in an exclusively positivist model became progressively less absolute. The development of new disciplines—including scientific psychology, sociology, and modern neurology—was accompanied by increasing attention to the complexity of biological and psychological phenomena. The profound political and cultural crises that culminated in the First World War further undermined the optimistic confidence in progress that had characterized much of the preceding century (*Comte 1830-1842; Charcot 1887-1888; York et al. 2006*).

Within this broad historical interpretation, Charcot may be considered a particularly clear representative of positivism in medicine. Neurology, for him, was a science grounded in careful observation and the systematic classification of clinical cases. Neurological diseases were natural phenomena that could be objectively investigated through clinical examination and anatomoclinical correlation. His project was, in this sense, part of a broader attempt to give medicine a more rigorous scientific foundation (*Bourneville and Regnard, 1876-1880; Jackson 1884; York et al. 2006*).



Jackson represents a somewhat different intellectual development. Although he shared the nineteenth-century commitment to clinical observation, he progressively moved beyond the simple description and localization of neurological phenomena toward a dynamic and hierarchical conception of nervous function. Cerebral functions, in his model, were organized at different evolutionary levels and could be understood only through the relationships between those levels (*Charcot and Pitres 1883; Charcot 1887-1888; York et al. 2006*).

Charcot and the Clinical Observation of Epilepsy

Charcot's teaching at the Salpêtrière offers an important illustration of his clinical method. His famous lessons, particularly the Tuesday lessons, brought together students and physicians but were also open to a wider public (*Bourneville and Regnard, 1876-1880; Jackson 1884*).

On Tuesday, January 31, 1888, Charcot devoted a lesson to epilepsy and discussed what was then termed *petit mal*. His initial description is strikingly concise: the affected individual suddenly becomes unconscious for an instant; if holding an object, he drops it; shortly afterwards, he recovers and resumes his conversation. The episode was contrasted semiologically with *grand mal* (*Bourneville and Regnard 1876-1880*).

The description becomes less straightforward, however, when Charcot subsequently includes other manifestations, such as vertigo. From a modern perspective, it is therefore difficult to determine whether he was describing what would now be classified specifically as an absence seizure or a broader spectrum of brief epileptic manifestations. What is historically important is the attempt to distinguish forms of epilepsy through careful clinical observation and seizure semiology (*Bourneville and Regnard 1876-1880*).

Observation was indeed fundamental to Charcot's neurological practice. Photography consequently acquired a particularly important role at the Salpêtrière. Désiré-Magloire Bourneville (1840–1909), a physician, editor, and close collaborator of Charcot, and Paul-Marie-Léon Regnard (1850–1927), a physician and photographer, played distinct but complementary roles in the production of the *Iconographie photographique de la Salpêtrière*. Bourneville was chiefly responsible for the clinical texts, while Regnard produced the photographic documentation. The resulting volumes transformed photography into an important instrument for recording, comparing, and disseminating clinical phenomena (*Jackson 1884*).

Patients with epilepsy were among those documented. Particular attention was naturally directed toward patients in whom neurological abnormalities could also be objectively demonstrated. Some of the photographed patients, for example, presented with hemiparesis and were described as suffering from what was then called “partial epilepsy.” Photography thus became an extension of clinical observation: a means of fixing, comparing, and classifying physical manifestations of disease (*Jackson 1884*).

Charcot, Pitres, and the Topography of Focal Seizures

A particularly interesting aspect of Charcot's contribution concerns focal epilepsy. Recent historical scholarship has drawn renewed attention to the work of Charcot and Albert Pitres (1848–1928) on the topographical diagnosis of focal motor seizures (*Goetz, 1987; Brigo 2025*).



Their investigations attempted to establish relationships between the distribution of convulsive movements and the cerebral region involved in producing them. Retrospectively, elements of this reasoning can appear surprisingly close to questions that later became fundamental to the localization of the epileptogenic region (*Goetz, 1987; Brigo 2025*).

Such a comparison must, however, be made cautiously. It would be anachronistic to suggest that Charcot and Pitres had already formulated the modern concept of the epileptogenic zone. Rather, their work can be interpreted as an early attempt to use seizure semiology and clinical localization to identify the cerebral territory responsible for focal epileptic manifestations. In this more restricted sense, their investigations anticipated a mode of reasoning that would become fundamental much later in the presurgical evaluation of patients with focal epilepsy (*Goetz, 1987; Brigo 2025*).

Epileptic Automatisms and Wandering

Another remarkable case associated with Charcot concerned a patient who experienced paroxysmal episodes of wandering through Paris. The patient's movements through the city were reconstructed on a map. During these episodes, he apparently retained the ability to perform relatively complex behaviours and to interact with other people (*Richer 1881*).

The case is particularly interesting because of the differential diagnosis proposed by Charcot. He distinguished these recurrent episodes from somnambulism and interpreted them as epileptic phenomena. The fact that the patient appeared awake and could perform complex actions did not, in Charcot's interpretation, exclude epilepsy. Treatment with bromide was also considered (*Richer 1881*).

Seen historically, the case illustrates a problem that remains recognizable today: the interpretation of paroxysmal disorders involving complex behaviour and altered awareness. It also demonstrates how Charcot's approach to epilepsy extended beyond convulsive manifestations to more complex behavioural phenomena (*Richer 1881*).

Epilepsy, Hysteria, and the Salpêtrière

The history of Charcot at the Salpêtrière is inseparable from his work on hysteria. The hospital is often remembered as the setting in which Charcot described *hystéro-épilepsie* and *grande hystérie*, syndromes whose historical relationship with what would now be classified as functional neurological disorders has been extensively debated (*Bourneville and Regnard, 1876-1880; Jackson 1884; Marie 1925*).

It is important, however, to remember that women with genuine epilepsy were also hospitalized at the Salpêtrière. The coexistence of patients with epilepsy and patients with hysteria became an important element in later interpretations of Charcot's work (*Jackson 1884; Marie 1925*).

A particularly influential retrospective account was provided by Pierre Marie (1853–1940) in 1925, during the centenary commemorations of Charcot's birth. Marie recalled an institutional reorganization at the Salpêtrière that brought women with epilepsy and women with hysteria into close contact. According to his account, women with hysteria observed and assisted patients during genuine epileptic attacks, and some of the manifestations of those attacks subsequently appeared in their own clinical presentations (*Laycock 1845*).



Marie therefore suggested that imitation and the institutional environment might have contributed to shaping some features of the great hysterical attacks observed at the Salpêtrière. His account has subsequently become part of a broader historiographical argument according to which the clinical culture surrounding Charcot may itself have influenced the manifestations that were being observed (*Laycock 1845; Marie 1925*).

This interpretation should nevertheless be approached cautiously. Marie's account was retrospective, written decades after the events, and cannot by itself establish that Charcot's *grande hystérie* was simply an artefact created by suggestion or imitation. It does, however, draw attention to the complex interaction between disease, observation, institutional environment, and medical classification at the Salpêtrière (*Laycock 1845; Marie 1925*).

The Semiology of Hystero-Epilepsy

Whatever interpretation is given to its origins, Charcot described hystero-epilepsy with extraordinary semiological detail. He identified prodromal manifestations, different stages of the great hysterical attack, and so-called hysterogenic zones whose stimulation could precipitate an attack (*Jackson 1884; Marie 1925*).

Particularly relevant to the history of epilepsy was the first stage of the great hysterical attack, the *période épileptoïde*. Its manifestations included a tonic phase, a clonic phase, and a phase of resolution. The resemblance to genuine epileptic seizures was therefore explicit and probably reflected, at least partly, direct observation of patients with epilepsy (*Marie 1925*).

Yet Charcot's school did not simply identify hystero-epilepsy with epilepsy. Paul Richer (1849–1933), one of Charcot's pupils and a major contributor to the visual and clinical codification of hysteria, provided criteria for distinguishing hystero-epileptic attacks from genuine epileptic seizures (*Marie 1925*).

Charcot himself later acknowledged the terminological problem posed by the designation *hystéro-épilepsie*. The term had been maintained largely out of respect for established usage, despite his recognition that hysteria and epilepsy were distinct conditions. He expected the problematic terminology eventually to disappear (*Bourneville and Regnard 1876-1880; Marie 1925*).

This point is historiographically important. The expression hystero-epilepsy can easily give the modern reader the impression that Charcot failed to distinguish hysteria from epilepsy. His own writings and those of his school suggest a more complicated situation: an inherited terminology persisted even as clinicians increasingly attempted to distinguish the disorders semiologically (*Bourneville and Regnard 1876-1880; Marie 1925*).

From Thomas Laycock to John Hughlings Jackson

Before considering Jackson directly, it is useful to examine the influence of Thomas Laycock (1812–1876). Laycock, like Jackson, had strong connections with Yorkshire and was an important early influence on Jackson's neurological thought (*Jackson, 1870; Charcot 1887-1888; York et al. 2006*).

Laycock developed a theory of cerebral reflex action according to which much of cerebral activity could be understood as automatic and reflexive. This represented an important



extension of the reflex principle from the spinal cord to the brain. He also accepted the possibility of unconscious cerebral and mental activity and attempted to relate mental disorders systematically to cerebral disease (*Jackson, 1870*).

Jackson inherited important elements of this anatomical and physiological approach, but he did not simply reproduce Laycock's ideas (*Jackson, 1870; Charcot 1887-1888; York et al. 2006*).

One important difference concerned the relationship between consciousness, mind, and brain. Jackson's position evolved over time. Although he had earlier entertained the possibility of unconscious or subconscious mental states, he later became increasingly sceptical of the very expression "unconscious states of mind," which he regarded as potentially contradictory (*Charcot 1887-1888; York et al. 2006*).

More fundamental to his mature thought was the doctrine of concomitance. According to this doctrine, mental states and nervous states were fundamentally different phenomena that occurred in parallel. For every mental state there was a corresponding nervous state, but neither directly caused or interfered with the other. Jackson thus adopted a form of psychophysical parallelism rather than a straightforwardly materialist identity between brain and mind (*Charcot 1887-1888; York et al. 2006*).

Jackson was born in Yorkshire and trained in both York and London before becoming associated with the National Hospital for the Paralysed and Epileptic at Queen Square. His professional environment brought him into contact with many important physicians and neurologists, and he was eventually elected a Fellow of the Royal Society (*York et al. 2006*).

His early work as a medical journalist also played an important role in establishing his position within London medical society. His personal life, meanwhile, was marked by profound loss, particularly the early death of his wife, after which he lived an increasingly solitary life while continuing his intense scientific activity (*York et al. 2006*).

Jackson's Neurological Method

The neurological world in which Jackson began his career was very different from modern clinical neurology. In the second half of the nineteenth century, neurology was only gradually becoming an autonomous discipline. There was no standardized neurological examination comparable to that of the twentieth century, and much neurological reasoning depended on correlating clinical observations during life with pathological findings at autopsy (*York et al. 2006*).

The localization of cerebral function was also a matter of intense debate. Older traditions, including the legacy of Franz Joseph Gall (1758–1828) and phrenology, coexisted with competing theories concerning localization and distributed cerebral function. It would therefore be an oversimplification to say that the nineteenth-century brain was universally regarded as "equipotential"; rather, the degree to which individual functions could be localized remained controversial (*York et al. 2006*).

Jackson's method was innovative because it systematically combined anatomical, physiological, and pathological reasoning. A central principle was that the same clinical symptom could result from different pathological causes. Description alone was therefore insufficient: the physician had to determine where within the nervous system a pathological



process was occurring and how that lesion altered normal function (*Charcot 1887-1888; York et al. 2006*).

Neurological diagnosis thus became inseparable from localization and physiological interpretation (*Charcot 1887-1888; York et al. 2006*).

The Epileptic Seizure as an Excessive Nervous Discharge

One of Jackson's most important contributions to epileptology was his conception of the epileptic seizure as the result of an excessive discharge of nervous tissue (*Jackson 1880; Reynolds and Edward 2007*).

An important predecessor was Robert Bentley Todd (1809–1860). Influenced by the contemporary work of Michael Faraday (1791–1867) on electricity and magnetism, Todd developed an explicitly electrical conception of nervous function and epilepsy. He envisaged the brain in terms of nervous polarity and proposed that epileptic attacks resulted from sudden, explosive electrical discharges arising from an abnormal accumulation of tension within the nervous system (*Jackson 1880*).

Jackson subsequently developed the concept of nervous “discharge” in a markedly different theoretical framework. By 1869–1870 he was describing convulsions in terms of sudden, excessive, and disorderly discharges of nervous tissue, and this became central to his conception of epilepsy (*Reynolds and Edward 2007*).

The resemblance to modern definitions of epileptic seizures is striking, but it is essential to avoid anachronism. Unlike Todd, Jackson did not formulate his theory in explicitly electrical terms. His conception of nervous discharge was closely related to contemporary ideas of nervous energy, metabolism, and the chemical processes of anabolism and katabolism. In his later writings, nervous discharge could be understood as the sudden liberation of energy accumulated within nervous tissue (*Jackson 1880*).

Thus Todd and Jackson arrived at superficially similar metaphors of “discharge” through different physiological models. Todd's model was explicitly electrical; Jackson's was predominantly chemical, metabolic, and physiological (*Jackson 1880*).

Jackson's historical innovation therefore lay not in discovering the electrical nature of epilepsy, but in systematically interpreting the seizure as the transient clinical manifestation of excessive and disorderly activity within nervous tissue. This conceptual move helped transform epilepsy from a disorder defined principally by its outward convulsive manifestations into one understood in terms of abnormal nervous function (*Jackson 1880; Reynolds and Edward 2007*).

Jacksonian Seizures and Cerebral Somatotopy

Jackson's observations of focal motor seizures provided another crucial contribution. By carefully studying how convulsive movements spread from one body region to another, he recognized that seizure progression reflected an ordered representation of the body within the nervous system (*Charcot and Pitres 1883; Jackson 1888*).

The localization of cerebral function was still controversial during this period, and Jackson's clinical observations provided powerful evidence that motor functions were not distributed



randomly throughout the cortex. The orderly progression of a focal motor seizure suggested an equally ordered organization of motor representation (*Charcot and Pitres 1883; Jackson 1888*).

Jackson therefore used pathological phenomena to infer normal cerebral organization. A seizure was not merely an event to be classified; its progression could serve as a physiological experiment revealing the organization of the nervous system (*Charcot and Pitres 1883*).

Louis François Bravais (1801–1843) had described unilateral convulsive phenomena before Jackson. Charcot himself acknowledged this priority while nevertheless emphasizing the greater systematic and physiological significance of Jackson’s investigations. It was in this context that the eponym Jacksonian epilepsy became established (*Jackson 1888; Goetz 1987; Brigo 2025*).

The eponym thus reflects not simple priority of observation but the conceptual significance Jackson gave to the phenomenon: focal seizures became evidence for cerebral localization and somatotopic organization (*Charcot and Pitres 1883; Jackson 1888; Brigo 2025*).

The “Dreamy State” and Temporal Lobe Epilepsy

Jackson’s contribution to epilepsy was not confined to motor seizures. Equally important were his observations of what he termed the dreamy state (*Jackson and Stewart 1899; Hogan et al. 2003; Vannemreddy et al. 2010*).

These episodes involved a striking combination of complex psychic experiences and more elementary sensory phenomena. Patients might report vivid experiential symptoms such as déjà vu or unusually intense mnemonic reminiscences. At the same time, they could experience what Jackson called “crude sensations,” particularly olfactory, gustatory, and visceral sensations (*Jackson and Stewart 1899; Hogan et al. 2003; Vannemreddy et al. 2010*).

Automatisms could also occur, including chewing movements, lip movements, or grimacing, together with varying degrees of impairment of consciousness (*Jackson and Stewart 1899; Hogan et al. 2003; Vannemreddy et al. 2010*).

Jackson did not interpret the dreamy state simply as a loss or diminution of consciousness. He sometimes described it as a state of “over-consciousness”: an apparently paradoxical intensification of subjective experience occurring simultaneously with an impairment of ordinary awareness of the external environment (*Jackson and Stewart 1899; Hogan et al. 2003*).

Through repeated observation of these phenomena, Jackson associated this form of epilepsy with the temporal region, particularly the region that he later discussed in connection with the “uncinate group of fits.” Retrospectively, his clinical descriptions correspond remarkably closely to phenomena now associated with medial temporal lobe seizures (*Jackson and Stewart 1899; Hogan et al. 2003; Vannemreddy et al. 2010*).

This is one of the clearest examples of Jackson’s ability to use epilepsy as a window into normal brain organization. The seizure provided information not merely about movement, but about memory, perception, subjective experience, and consciousness itself (*Jackson and Stewart 1899; Hogan et al. 2003; Vannemreddy et al. 2010*).



Consciousness, Hierarchy, and Dissolution

Jackson's interpretation of epilepsy cannot be fully understood without considering his broader theory of nervous organization (*Charcot and Pitres 1883; York et al. 2006*).

Influenced particularly by evolutionary thought, he conceived the nervous system as hierarchically organized. In its mature formulation, this hierarchy consisted of lower, middle, and highest centres. Functions were represented at lower levels and progressively re-represented in increasingly complex forms at higher levels (*Charcot and Pitres 1883*).

The highest levels were associated with the most complex, differentiated, and voluntary forms of nervous activity. Lower levels were comparatively more automatic, more general, and more primitive (*Charcot and Pitres 1883*).

Neurological disease, in Jackson's view, did not normally create entirely new functions. Instead, it produced what he called dissolution: the reverse of evolutionary organization (*Charcot and Pitres 1883*).

When a higher level was damaged or temporarily disabled, two types of manifestation followed. The first consisted of negative symptoms, reflecting the loss of the function normally performed by the affected higher level. The second consisted of positive symptoms, produced, in Jackson's theoretical framework, by the release of lower-level activities from the control normally exerted by higher centres (*Charcot and Pitres 1883*).

This distinction was fundamental to Jackson's neurological thought. Symptoms were therefore not simply direct expressions of a lesion. What the clinician observed was a combination of what had been lost and what had been released (*Charcot and Pitres 1883; York et al. 2006*).

Epilepsy provided Jackson with an especially powerful model for this reasoning. Within his hierarchical theory, an epileptic event could interfere with higher forms of organization while allowing more automatic or less differentiated nervous activities to become clinically manifest. Seizure manifestations could therefore include both negative elements, related to impairment of higher functions, and positive elements, resulting from abnormal activity or the release of lower nervous arrangements (*Jackson 1880; Charcot and Pitres 1883*).

Consciousness and Concomitance

Jackson extended this hierarchical reasoning to consciousness (*Hogan et al. 2003; York et al. 2006*).

The account is more complex than a simple division of consciousness into voluntary, intermediate, and automatic levels. In his writings on the dreamy state, Jackson described component concerned the relationship with the external environment, including perception and the organization different degrees of consciousness and attempted to analyse each in terms of both subjective and objective components (*Jackson and Stewart 1899; Hogan et al. 2003*).

The subjective component concerned internal experience: sensations, images, memories, and the individual's experiential world. The objective of action (*Hogan et al. 2003*).

The dreamy state was particularly revealing because these dimensions could become dissociated. A patient could experience extraordinarily vivid subjective phenomena while simultaneously becoming less adequately related to external reality. Thus, the seizure showed



that consciousness could not be understood simply as either present or absent (*Jackson and Stewart 1899; Hogan et al. 2003*).

Jackson's doctrine of concomitance provided the philosophical framework for this interpretation. Mental states did not directly cause nervous states, nor did nervous states simply become mental states. Instead, the two occurred in parallel: changes in cerebral activity were accompanied by corresponding changes in consciousness without requiring a direct causal interaction between the two domains (*Charcot 1887-1888; York et al. 2006; Hogan et al. 2003*).

Epilepsy therefore occupied a particularly important place in Jackson's thought. By observing alterations in movement, sensation, memory, behaviour, and consciousness during seizures, he was able to construct a general model of neurological function based on hierarchy, evolution, dissolution, and concomitance (*Charcot and Pitres 1883; Hogan et al. 2003; York et al. 2006*).

From Jackson to Twentieth-Century Temporal Lobe Epilepsy

Jackson's observations of the dreamy state, automatisms, visceral and olfactory sensations, and altered consciousness anticipated the later systematic characterization of temporal lobe epilepsy (*Jackson and Stewart 1899; Gibbs et al. 2002; Hogan et al. 2003; Vannemreddy et al. 2010*).

The connection should again be expressed historically rather than teleologically. Jackson did not possess the electrophysiological, surgical, or neuropathological tools that would become available in the twentieth century. Nevertheless, he identified a coherent cluster of clinical phenomena and related them to temporal cerebral regions with remarkable accuracy (*Jackson and Stewart 1899; Hogan et al. 2003; Vannemreddy et al. 2010*).

During the twentieth century, particularly with the development of electroencephalography and the systematic study of patients with psychomotor and temporal lobe epilepsy, these clinical observations acquired a new physiological framework. The work of investigators such as Frederic Andrews Gibbs (1903–1992) and Erna Leonhardt Gibbs (1904–1987), and, in a different surgical tradition, Wilder Graves Penfield (1891–1976) and his collaborators, helped establish temporal lobe epilepsy as a recognizable electroclinical and anatomical entity (*Mullan and Penfield 1959; Gibbs et al. 2002*).

Jackson's work can therefore be regarded as an important clinical precursor of this later development, although the modern concept of mesial temporal lobe epilepsy emerged only through the convergence of clinical observation, EEG, neuropathology, and epilepsy surgery (*Mullan and Penfield 1959; Gibbs et al. 2002; Vannemreddy et al. 2010*).

Conclusion

Charcot and Jackson approached epilepsy from different but complementary perspectives (*Charcot and Pitres 1883; Bourneville and Regnard 1876-1880; York et al. 2006*).

Charcot's work exemplified the power of systematic clinical observation, description, visual documentation, classification, and anatomoclinical correlation. His studies ranged from petit mal and focal motor seizures to complex paroxysmal behaviours and the difficult differential diagnosis between epilepsy and hystero-epilepsy. Even when viewed through the limitations and categories of nineteenth-century medicine, his work illustrates the progressive



transformation of epilepsy into an object of rigorous neurological investigation (*Bourneville and Regnard 1876-1880; Richer 1881; Jackson 1884; Marie 1925; Brigo 2025*).

Jackson moved from clinical observation toward a general physiological theory of nervous function. Epilepsy was central to this project. The seizure became an excessive nervous discharge; focal motor seizures revealed cerebral somatotopy; the dreamy state provided access to the neurological organization of memory and consciousness; and the concepts of hierarchy and dissolution explained why neurological disease could simultaneously produce losses of function and the emergence of more elementary patterns of activity (*Jackson 1880; Charcot and Pitres 1883; Jackson 1888; Jackson and Stewart 1899; Hogan et al. 2003; Reynolds and Edward 2007; Vannemreddy et al. 2010*).

The historical importance of these two figures therefore extends beyond the description of particular forms of epilepsy. Charcot helped establish the clinical phenomena that required explanation; Jackson increasingly asked what those phenomena revealed about the organization of the nervous system itself (*Charcot and Pitres 1883; York et al. 2006*).

Their work marks an important stage in the transformation of nineteenth-century epileptology: from the observation and classification of seizures toward their use as physiological phenomena through which the organization of the human brain could be investigated (*Charcot and Pitres 1883; York et al. 2006; Vannemreddy et al. 2010*).

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