

## The Mysteries of Hysteria

### J. Bogousslavsky

Neurocentre, Genolier Swiss Medical Network, Switzerland.

Presented in part at the Pío del Río-Hortega Plenary Session, 65th Annual Meeting of the Spanish Society of Neurology, November 2013.

#### ABSTRACT

Jean-Martin Charcot began his main research in hysteria around 1870 and continued it until his death in 1893. Désiré Bourneville had awakened Charcot's interest in hysteria during his residency in Charcot's department, and it was Charles Richet's 1875 article on somnambulism that triggered Charcot's studies of hypnotism. Charcot's collaborators Paul Richer, Georges Gilles de la Tourette, Paul Sollier, Joseph Babinski, Sigmund Freud and Pierre Janet subsequently became the most famous investigators of hysteria. In 1908, a "quarrel of hysteria" pitted several of Charcot's pupils against each other: Babinski, who had developed the concept of pithiatism, was considered victorious against Charcot's first successor Fulgence Raymond. There was a surge of interest in hysteria associated with war psycho-neuroses in 1914-1918. Babinski's pupil Clovis Vincent developed a treatment for war hysteria called *torpillage* (torpedoing), a practice associating painful galvanic current discharges with 'persuasion'. After World War I, the neurological and psychiatric interest in hysteria faded away yet again, only to be revived at the turn of the last century. Contrary to popular belief, several of Charcot's concepts in hysteria are remarkably modern, even today. The main examples are 1) his traumatic theory, which pointed to psychological and even certain sexual factors several years before Freud; 2) his personal evolution toward accepting the role of emotional factors, which opened the way for Janet and Freud; 3) his claim of specific differences and similarities between such mental states as hypnotism, hysteria, and simulation, now confirmed by modern functional imaging studies; and 4) his 'dynamic lesion' theory, which correlates well with recently established neurophysiological mechanisms.

#### KEYWORDS

Salpêtrière, J. M. Charcot, H. Bernheim, P. Janet, S. Freud, J. Babinski, hypnotism, hysteria, pithiatism, shell shock, simulated disease, *torpillage*

Hysteria is one of the great mysterious diseases. The contemporary concept of this condition developed after the end of the eighteenth century, during the time of Franz Mesmer (1734-1815) and his pupil Artillery General Jacques de Chastenet, Marquis de Puységur (1751-1825), and also of Abbé de Faria (1756-1819).<sup>1</sup> While Mesmer and Puységur developed the concept of a magnetic fluid leading to somnambulistic states (mesmerization), Faria denied the existence of a magnetic fluid and of magnetization (animal magnetism), emphasizing instead the phenomena of 'awake sleep' and

the particular form of mental concentration behind hypnotism. Ecstatic crises and 'possession' with or without provoked hypnotic states had been associated with hysteria since Galen and Hippocrates, but it was during the second half of the nineteenth century that new ideas on hysteria, somnambulism, and hypnotism came to the forefront.

#### The historical background

The term 'hysterical' (from 'uterus') dates back to the sixteenth century and describes fits specific to women,

whereas the term ‘hysteria’ appeared several decades later. While the relationship between hysteria and the brain (rather than the uterus) had already been alluded to by Charles Lepois (1563-1633), Thomas Willis (1621-1675), Thomas Sydenham (1624-1689), and Pierre Pomme (1728-1814),<sup>2</sup> it was only during the nineteenth century that this notion became accepted, along with the concept of hysteria in men.

Jean-Martin Charcot (1825-1893) became especially interested in hysteria after 1870, probably because of the influence of his collaborator Désiré Bourneville (1840-1909).<sup>3</sup> It is interesting that Bourneville was the only one among Charcot’s residents to have a background in alienism; Charcot himself had absolutely no connection with that field, having started his clinical and scientific work in *clinique médicale*, the predecessor of internal medicine. Charcot’s first papers on hysteria appeared in 1871-1872, and they addressed ischuria, hemianaesthesia, and contractures.<sup>4</sup> It is likely that the military clashes in the Siege of Paris and the Commune, which resulted in hysteria cases among combatants, stimulated his interest. Another trigger was the dismantling of Delasiauve’s service at La Salpêtrière in 1870, eight years after Charcot’s arrival at the hospital. Because the facilities were being renovated, patients in that service who were not considered insane were transferred, along with Delasiauve’s resident Bourneville, to Charcot’s service.<sup>5</sup> They included mainly women with hysteria and epilepsy, conditions which at the time held little interest for the alienists who mainly focused on what we today would call psychoses.

Shortly before Charcot became interested in hysteria, alienists often referred to *folie hystérique* or *manie hystérique* (‘hysterical insanity’). Before that time, Philippe Pinel (1745-1826), considered the father of nineteenth century psychiatry, had barely mentioned hysteria,<sup>6</sup> and such physicians as Loyer-Villermay, Foville, and Romberg continued to defend the uterine theory during the first part of the nineteenth century. Étienne Georget (1795-1828), who made extraordinary early contributions to several fields of alienism before his death at the age of 33, clearly highlighted the role of the brain in hysteria in his article in the *Dictionnaire de Médecine* (1824).<sup>6</sup> Georget suggested terms, such as *attaques des nerfs* (nervous attacks) or *encéphalite spasmodique* (spasmodic encephalitis), before Jean-Louis Brachet (1789-1858) in 1847, and Paul Briquet

(1796-1881) in 1859, had published their respective treatises on hysteria that discarded the uterine theory.<sup>7,8</sup>

When Charcot became interested in hysteria, he had already studied several neurological diseases including multiple sclerosis, Parkinson’s disease, and stroke. He had begun working as a department head at La Salpêtrière in 1862, and Bourneville, who promoted Charcot’s interest in hysterical women, was only his third resident, after Victor Cornil and Charles Bouchard. No school as such had formed around him, and his study of hysteria was in fact what served to consolidate his role within a decade.<sup>9</sup> Because detectable organic disease was absent in hysteria, the La Salpêtrière internists at the time were probably rather pleased that the condition, so uninteresting for the alienists, had been taken over by Charcot. The master had literally entered a no-man’s land, but he was joined there by numerous residents, *chefs de clinique* and fellows, who would later become famous figures in neurology and psychiatry: Alix Joffroy, Fulgence Raymond, Albert Pitres, Paul Richer and Édouard Brissaud in the 1870s, followed by Gilbert Ballet, Charles Féré, Pierre Marie, Georges Gilles de la Tourette, Sigmund Freud, Pierre Janet, and Joseph Babinski.

### Hysteria for Charcot and his collaborators

Charcot’s ideas and concepts on hysteria evolved significantly over the twenty years during which he was active in this field. After his first articles on that topic appeared in the early 1870s, Charcot sponsored the publication of Bourneville and Regnard’s *Iconographie Photographique de la Salpêtrière* (1876-1877), which was devoted to hysteria.<sup>10</sup> Spectacular cases of hysteria were reported in detail, together with comprehensive photographic illustrations. In this book and in other reports, Charcot and his collaborators described the main characteristics and other clinical manifestations of ‘hystero-epileptic’ attacks, including the demonic form and often underlining their sexual undertones, in now-famous cases including Geneviève, Rosalie, and Justine.<sup>11</sup>

The concepts elaborated by Charcot in his first studies on hysteria were largely summarized by Paul Richer (1849-1933) in “Studies on hystero-epilepsy” (*Études cliniques sur l’hystéro-épilepsie ou grande hystérie*) (1881)<sup>12</sup>; Georges Gilles de la Tourette (1857-1904),

perhaps Charcot's most faithful pupil, published his three-volume treatise on hysteria (*Traité clinique et thérapeutique de l'hystérie d'après l'enseignement de la Salpêtrière*)<sup>13</sup> between 1891 and 1895. In short, Charcot initially emphasized two types of clinical manifestations: firstly, stigmatas, which were chronic manifestations including tunnel vision, hemianaesthesia or paralysis, etc.; and secondly, paroxysmal fits, among which the most spectacular event was the 'great hysteria crisis' or *grande crise d'hystérie convulsive* with its four successive phases (epileptoid period, clownism, passionate attitudes including the famous *arc-de-cercle*, and delirium). According to his first theory of hysteria, Charcot put forward that stigmatas were a diagnostic requirement, a claim which would be criticized after his death by two of his pupils, Freud and Babinski; however, another of his students, Gilles de la Tourette, always defended his mentor's initial concept. In light of the absence of a detectable organic brain lesion, Charcot developed the concept of a 'dynamic lesion', in particular at the level of the motor cortex in cases of motor paralysis. In fact, this concept was not entirely new; it had already been proposed by Briquet in 1859,<sup>8</sup> based on his ten years of experience with patients at La Charité.

Charcot defined hysteria as manifestations taking the appearance of organic brain disease, but without detectable lesions in the brain. In fact, he was mainly repeating Charles Lasègue's 1864 definition:

One provisionally calls hysteria an ensemble of nervous manifestations, which mainly develop in young women, exceptionally in young men, and which do not correspond to a known lesion of the nervous centres.<sup>14</sup>

Charcot did not mention psychological factors at first, even though the great alienist Bénédict Morel had done so several years before and slightly older contemporaries of Charcot including Charles Lasègue and Jules Falret had re-emphasized those factors before 1880.<sup>2</sup> However, in the early 1880s, Charcot underlined 'traumatic factors' underlying hysteria, especially in the presence of certain types of physical or emotional trauma, including sexual trauma.<sup>12</sup> He also delineated two novel concepts, an 'incubation phase' which was necessary before symptoms would then take place during an 'elaboration process'; this explained the frequently prolonged latency between trauma and clinical manifestations. It was while studying the

traumatic factors often masked by hysteria that Charcot described cases of hysteria in men.<sup>12,13</sup>

Shortly before, he had become fascinated by hypnosis, probably after having read Charles Richet's 1875 article on induced somnambulism.<sup>15</sup> One of his innovative steps was to develop the use of hypnosis with hysterical patients in 1878, following in the footsteps of Dumont-Pallier, who had ample experience at La Salpêtrière. In fact, Charcot and his closest followers (Richer, Gilles de la Tourette) considered that susceptibility to hypnotism was a characteristic or even a diagnostic feature of hysteria, and that the stages of *grande hystérie* corresponded to a mental state identical to that in hypnosis.<sup>13</sup> Charcot and his school thus distinguished two major types of hysteria, i.e. *grande* and *petite hystérie*, with the former being typically associated with susceptibility to hypnotism.

For Charcot and his followers, susceptibility to hypnotism was always an abnormal condition, a claim which was vigorously criticized by Hippolyte Bernheim (1840-1919) and other colleagues from Nancy. This group, called the "Nancy School" by Charcot, denied that hysteria was a specific entity and affirmed that virtually anyone could be hypnotized under favourable circumstances.<sup>16</sup> This was not the first time that Charcot's theories on hysteria were challenged, and William Gowers in England had already revealed himself as one of Charcot's main opponents (mainly regarding convulsive hysteria), in the more 'scientific' setting of medical congresses and publications.<sup>17</sup> On the other hand, the quarrel between Charcot and Bernheim was covered by the press, and the issue became a popular subject of discussion. Bernheim's public 'hypnotism shows', which clearly went beyond the scope of medicine and were presented outside of hospital buildings, were the counterpoint to the other demonstrations conducted by Charcot and his pupils in the more private sphere of the laboratory at La Salpêtrière.<sup>2</sup> Charcot's sessions were criticized by Bernheim as having created a 'hysteria culture' representing only the La Salpêtrière and having nothing to do with mental disorders (according to the latter, the hypnotized women were simply reproducing manifestations they had seen previously in order to please their hypnotizers). One can appreciate that this description draws close to the controversial issue of simulation, and it must emphasize that while Charcot underscored the absence of organic lesions in hysteria,

he always considered that hysteria was totally distinct from simulation. Interestingly enough, Bernheim insisted that a key element in hypnotism was suggestion. This concept would provide a foundation for Joseph Babinski, Charcot's favourite pupil, when he developed his revised concept of hysteria and introduced the term 'pithiatism' fifteen years later.<sup>18</sup>

The dispute between La Salpêtrière and the Nancy school was not merely theoretical; it also formed the basis of impassioned legal disputes, which were highly popular events. The most famous of these trials was the Gouffé trunk case involving Gabrielle Bompard and Michel Eyraud.<sup>3</sup> The main debate was whether or not it was possible to perpetrate crimes while under hypnosis. Those representing La Salpêtrière claimed it was possible, while Bernheim and his colleagues professed the opposite opinion. The corpse of the bailiff Gouffé had been found near Lyon. It was proved to have been transported from Paris, where his murder had taken place, in a huge trunk ordered and purchased in London by Gabrielle Bompard a few days before. She had seduced Gouffé and lured him to her apartment, where Michel Eyraud, hidden behind a curtain, hanged him using a sophisticated device connected to the belt of Gabrielle's robe, which she had placefully placed round Gouffé's neck during sexual preliminaries.

The argument was that Eyraud might have hypnotized Gabrielle, who would therefore have engaged in criminal actions while in a somnambulistic state. Bernheim supported that point of view but was unable to present it personally in the trial because of a broken leg; as a result, his colleague Jules Liégeois, a law professor in Nancy, stood in for him and emphasized his own experiments with mock murders performed under hypnosis.<sup>19</sup> However, he was mildly ridiculed by the Parisian experts Paul Brouardel, Gilbert Ballet and Auguste Motet, who obviously favoured Charcot's position. The La Salpêtrière school sustained that crimes could not be committed during the lethargic first stage of hypnosis (although a hypnotised person in this stage could be the victim, but not the perpetrator, of rape); furthermore, the motor activities of the second and third stages (catalepsy and somnambulism) would not permit a hypnotized subject to commit crimes.<sup>3</sup>

In the end, the hypnosis argument was discarded and Gabrielle Bompard was sentenced to twenty years in

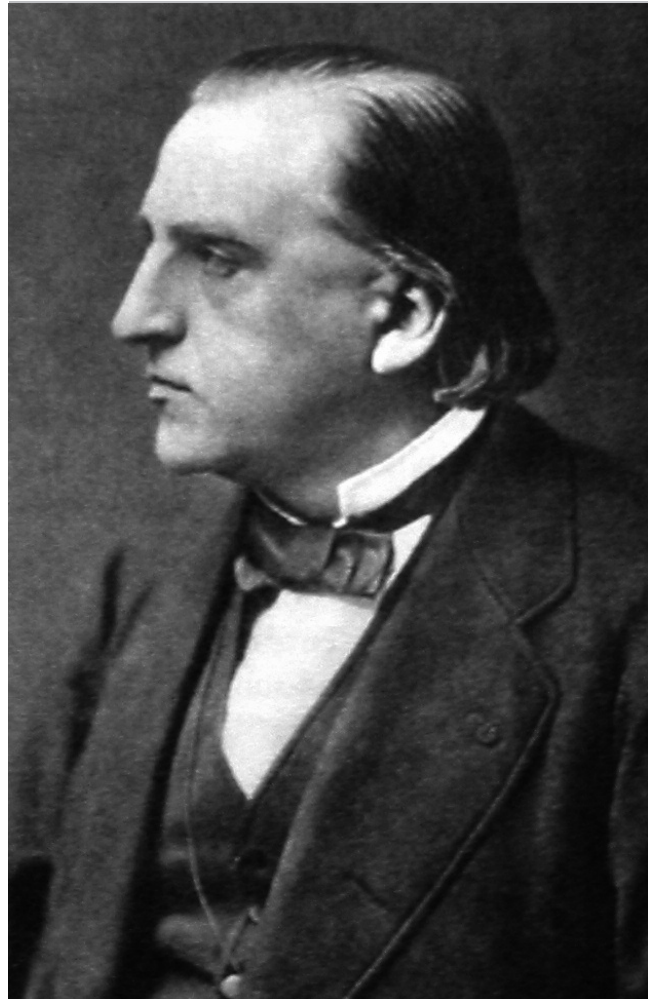


Figure 1. Jean-Martin Charcot (1825-1893)

prison, only escaping the death sentence because she was considered to have affective immaturity (Eyraud, in turn, was decapitated). Gilles de la Tourette wrote a famous epilogue on that occasion in which he proclaimed the victory of Charcot's theories over those of the Nancy School.<sup>20</sup> However, it appears that Charcot was not particularly satisfied, since he felt that the concepts of hysteria and hypnotism would remain damaged by the controversy for years to come.<sup>21</sup> In fact, the debate looks strange today in the context of these court cases, since Gilles de la Tourette himself had conducted several experiments involving staged murders committed by hypnotised subjects in Charcot's laboratory. These included a spectacular 'poisoning' by



Blanche Wittman, Charcot's celebrated hysterical patient who was depicted fainting into Babinski's arms during one of Charcot's lessons in Brouillet's *Une leçon clinique à la Salpêtrière*, painted in 1887; there was also the 'shooting' of a resident by another patient, in a sexually suggestive atmosphere in Charcot's laboratory. This case is reported at length in the book written in 1887 by Gilles de la Tourette<sup>22</sup> and dedicated to Charcot and Brouardel, who wrote its two prefaces. However, Gilles de la Tourette sustained that such 'crimes' could only take place in a laboratory setting and never in real life, although he did not explain why.

Gilles de la Tourette and his colleagues introduced the terms *grand hypnotisme* (in hysterical patients) and *petit hypnotisme* (in 'ordinary' subjects),<sup>22</sup> in line with Charcot's distinction between *grande hystérie* and *petite hystérie*. Hysterics were said to be able to develop *grand hypnotisme* by themselves, developing an *état second* (second state) with fugues and a new double personality arising from time to time. Several famous cases were reported during the second half of the nineteenth century, including Félicité X (fugues with abrupt changes in personality), who was monitored for several years by Eugène Azam<sup>23</sup>; the *sergent de Bazeilles* (a case of war neurosis with surges of involuntary memories), recorded by Ernest Mesnet<sup>24</sup>; the Émile X case (division of consciousness with ambulatory automatism in a young lawyer), described by Adrien Proust, Marcel Proust's father<sup>25</sup>; and the case of Mademoiselle Smith (intermittent somnambulism with 'Martian' glossolalia), reported by Théodore Flournoy in Geneva.

Bernheim and the Nancy school remained quite important, despite their clashes with La Salpêtrière, and Freud completed his own translation of Bernheim's book on suggestion in 1888,<sup>26</sup> a couple of years after translating one of Charcot's books.<sup>27</sup> Bernheim believed that the hypnotic state simply corresponded to a type of sleep induced by suggestion, and that this state was in no way specific to hysterical patients.<sup>16</sup> He had been influenced by James Braid's *Neurypnology* (1843) and by Ambroise Auguste Liébault, a general practitioner who had established a successful self-made practice of therapeutic hypnosis around 1850, and whom Bernheim visited in 1882. It is interesting to note that Charcot's two most prominent students in the areas of hysteria and hypnotism, Babinski and Freud, progressively distanced themselves from their mentor after his death and drew closer to Bernheim's theories,

especially those on the critical role of suggestion. Bernheim also developed a therapeutic concept of suggestion without hypnosis, which he called 'psychotherapy', although the term had originated with Van Eeden in 1895.<sup>28</sup>

Another consequence of these events was the rise of hypnotism in the public sphere; it spread far beyond medical circles, as had been the case in the decades which followed Mesmer's and Puysegur's experiences nearly a century before. Gilles de la Tourette himself vehemently complained of the proliferation of hypnotizers in non-medical practices throughout the country,<sup>13</sup> although the experiments he and Charcot conducted and supervised at La Salpêtrière were clearly partly responsible for the general public's enthusiasm. Several famous writers of the day (Jules Claretie, Guy de Maupassant, Edmond de Goncourt, Paul Arène) described in their novels what they had actually seen during the 'hypnotism shows' in Charcot's laboratory.<sup>29</sup> There were even several exaggerated cases in the medical milieu, a famous example being the later activities of Jules-Bernard Luys (1828-1897), a colleague of Charcot's at La Pitié, who developed theories and conducted experiments on hypnotism at a distance or in the presence of specific odours. He used a theatrical setting organized by his laboratory director Gérard Encausse, known in occult circles as Mage Papus, who worked as a doctor by day and then dressed in oriental robes to participate in occult secret ceremonies by night.<sup>30</sup> It seems that Luys was not really aware that many of his experiments had been set up by his collaborators and the patients themselves, but this also provides an interesting example of the unshakeable faith in hypnotism found among even well-recognized physicians at the *fin de siècle*.

Charcot's last years were of great importance for his ideas on hysteria, and it must be emphasized that his sudden death in August 1893 undoubtedly deprived us of fascinating developments in the concepts of hysteria. In a way, these advances were made by his followers, including Sigmund Freud. Indeed, contrary to what he had initially claimed, Charcot became convinced that psychological factors did play a critical role in hysteria. He delineated the importance of old psychological traumas and of dreams in triggering hysterical manifestations, while also observing that hysterical features could accompany organic symptoms of well-

established organic diseases, such as multiple sclerosis.<sup>12,13</sup> Charcot had the idea of reproducing hysterical paralyses under hypnosis using a minimal re-enactment of an older physical trauma or otherwise evoking that trauma for the patient. This proved that the mental representation of the older trauma, and not the trauma itself, was responsible for the clinical manifestation, a concept which subsequently gave rise to Freud and Breuer's first theories on hypnoid hysteria, i.e. the reactivation of the unconscious memory of a prior psychologically traumatic event.<sup>2</sup> In several of his works, including *The Faith Cure*<sup>31</sup> which appeared only a year before his death, Charcot presented the concept of 'mental state' in suggestible hysterics; this state was associated with either external factors or inner psychological processes.<sup>11</sup> In fact, twenty years earlier, Charcot already supported the concept of a specific individual background promoting the development of hysteria. This propensity was first called 'hystericism' by Chambon in 1784, and later 'nervous mobility' by Armand Trousseau.<sup>32</sup> In his preface to the 1891 book by Gilles de la Tourette, Charcot clearly underlined the potential role played by mental factors in hysteria. In his introduction to Pierre Janet's doctoral thesis *Contribution to the study of the mental accidents of hysterics*<sup>33</sup> (presented to the faculty in July 1893, only a few days before Charcot's death), Charcot highlighted the importance of psychological processes and also stressed that the role of emotions had been poorly delineated in previous studies. In fact, Charcot's later acceptance of important psychological factors in hysteria came about through reciprocal interactions with Pierre Janet, who began working with him in 1889. According to Georges Guillain, Charcot's biographer and fourth successor at La Salpêtrière,<sup>34</sup> Charcot's last secretary Georges Guinon said that his mentor had mentioned, shortly before his death, that some of his own concepts regarding hysteria had become obsolete and that a thorough review of the subject had become necessary. Charcot was unable to pursue the matter further, but this undertaking was to be accomplished by his pupils and followers, mainly Pierre Janet, Joseph Babinski, and Sigmund Freud.

### Pierre Janet, Charcot's psychological successor

Pierre Janet (1859-1947) began his academic studies in philosophy and presented his doctoral thesis on psychological automatism in 1889.<sup>35</sup> His famous theory

stemmed from concepts previously developed by Jules Baillarger (1809-1890), one of the most prominent alienists and brain anatomists of the nineteenth century.<sup>9</sup> Janet's automatism would subsequently become one of the most important psychological concepts in early twentieth century psychiatry, and it gave rise to the 'mental automatism' of psychoses proposed by Gaëtan Gatian de Clérambault.<sup>36</sup> It also made the fortune of one of the most innovative literary movements of the 1920s: surrealism, credited with having given rise to automatic writing, although that technique had in fact been introduced by Charles Richet.<sup>2</sup>

Shortly after being awarded his Doctor of Philosophy degree, Janet started his medical studies and dedicated his time to Charcot's service at La Salpêtrière. Here, his mentor created an experimental psychology laboratory for him which Janet was able to keep after Charcot's death when Fulgence Raymond became the chair, although he had to transfer to Jean Nageotte's service after Jules Dejerine succeeded Raymond in 1911. In fact, Charcot had become acquainted with Pierre Janet in 1885, before Janet had begun his medical studies, when the famous philosopher Paul Janet had presented his nephew's first hypnotism experiments (on the cases of Léonie, Marie, Rose and Lucie) at a session of the Société de Psychologie Philosophique which Charcot chaired. After Janet started medical school in 1889, he managed to examine patients at La Salpêtrière, especially Marcelle in Jules Falret's service, Justine in Jules Séglas's service, and in Charcot's service, Achille and Madame D. The latter patient presented a fascinating case of severe anterograde and retrograde amnesia, descriptions of which were published by both Janet and Charcot, working separately, in 1892.<sup>27</sup> Charcot mainly described the clinical features of the case and cited 'dynamic amnesia' while Janet reported on treatment approaches including *analyse psychologique* and hypnosis; Charcot acknowledged the success of Janet's treatment one year later in volume II of his *Clinique des maladies du système nerveux*.<sup>39</sup> The case of Achille, a 33-year-old man who believed he was the devil, is also a good example of close collaboration between Janet and Charcot, who had asked his colleague to treat the patient; in the end, Janet described the experience as a successful case of 'modern exorcism'.<sup>40</sup>

Janet presented his doctoral thesis in medicine, *Contribution to the study of mental accidents of*

*hysterics*, on 29 July, 1893,<sup>33</sup> only a few days before Charcot's unexpected death. Charles Richet and Alix Joffroy were members of the panel. Janet emphasized the rupture in mental functions characterised by a tendency toward a split personality. He also introduced the concept of a "narrowed field of consciousness", in which certain ideas are eliminated from consciousness and undergo autonomous development. These "subconscious fixed ideas" (Janet used the term 'subconscious' rather than 'unconscious') are subsequently expressed as disguised somatic manifestations of hysteria.

For Janet, hysterical manifestations were therefore clearly symbolic and related to prior psychologically or physically traumatic events, the recollection of which had been banished from the individual's consciousness. He contrasted the "subconscious fixed ideas" of hysteria with the "conscious fixed ideas" in the obsessions and phobias characteristic of Janet's second great psychoneurosis, psychasthenia, a condition associated with a decrease in psychological 'tension' and surges of anxiety.<sup>41</sup> Interestingly, Catherine Bouchara recently discovered documents showing that Charcot already had a very clear concept of the unconscious mind at that time, and that this concept influenced Janet's doctoral work. Like Alfred Binet, Janet linked the amnesic states observed in cases of split personality to the process of psychological automatism. While the question of 'hysterism' was not new, and Lasègue, Falret and others had already mentioned the 'hysterical character',<sup>9</sup> it was really Janet's work that drastically transformed the existing concepts of hysteria into the novel view of a specific mental state.

While it is obvious that several of the initial concepts developed by Sigmund Freud in the 1890s owe much to Janet's work, and Janet emphasized Freud and Breuer's 1893 preliminary study in his doctoral thesis,<sup>42</sup> the two men disliked each other. Janet is remembered for his vivid criticism of psychoanalysis (especially the interpretation of dreams and sexual origin of psychoneuroses) at the international medical congress in London in 1913; Freud in turn refused to meet Janet in Vienna twenty-five years later. It is likely that one of the reasons for that dispute was priority in the discovery of the cathartic method of treating hysteria. Janet claimed that his approach with Lucie (1886) and Marie (1889) were the first documented cases of treating hysteria by reactivating conscious memory of

prior traumatic events that had been forgotten and transformed into "subconscious fixed ideas". However, the Anna O case of Josef Breuer dated back to 1880-1882, although it was first published in Freud and Breuer's book *Studien über Hysterie* in 1895.<sup>43</sup> Since then, this case has indeed been considered the first successful case of catharsis in hysteria. However, Henri Ellenberger<sup>44</sup> recently showed that the clinical fate of Anna O did not in fact correspond to either catharsis or a successful cure, which suggests that Janet was correct in his claims to priority.

Janet was always reluctant to admit that he had mentors, although he made a timid exception for Charcot and the psychologist Théodule Ribot, whom Janet succeeded in 1902 as chair of experimental psychology at the Collège de France. While he had criticized the concept of suggestion in hysteria as presented by Bernheim and the Nancy School, he also criticized his former director Charcot (after his death) for his fundamental error of having studied hysterical manifestations as if they were the clinical symptoms of organic diseases such as multiple sclerosis or tabes dorsalis. Actually, Janet was probably the first researcher to state explicitly that the clinical manifestations of hysteria did not correspond to nervous system anatomy and physiology, and he regretted that Charcot and his school at La Salpêtrière had not regarded hysteria as a mental condition at an earlier date.<sup>2</sup> He also suggested that several of the hysterical women of La Salpêtrière had in fact already been hypnotized by magnetizers years before being admitted to the hospital, and that their clinical manifestations were only replicas of what they had previously seen or experienced.

### **Sigmund Freud and conversion hysteria**

While Pierre Janet's books have never been re-edited, the writings of his rival Sigmund Freud (1856-1939) have come to be some of the most famous works in twentieth century literature. Before the period from 20 October, 1885 to 28 February, 1886, when he came to Paris to study under Charcot, Freud had worked mainly in experimental neurology in Vienna, and he had never published studies on the topic of hysteria. After his Parisian experience, Freud returned to Vienna and opened a private practice in April, 1886, taking time to translate a book of Charcot's which was published the same year.<sup>27</sup> On 15 October of the same year, he





Figure 2. Period chocolate advertisement portraying Charcot during a hysteria lesson (courtesy of the Olivier Walusinski Library, Brou, France).



delivered a presentation on male hysteria at a meeting of the *Kaiserliche-königliche Gesellschaft der Aerzte zu Wien* in which he supported Charcot's theories on hysteria. The audience did not find his position particularly novel, and furthermore, Freud's suggestion that they accept Charcot's view of hysteria as a form of traumatic neurosis was not well received.<sup>12</sup>

In Paris, Freud had met Charcot's guardians of the temple, including Gilles de la Tourette, Richer, and Babinski (who never quoted Freud in their own books, by the way), but he did not coincide with Janet, who was not yet attached to Charcot. While Freud was seduced by Charcot's theories, he managed to remain somewhat independent, as he was also interested in other viewpoints, especially that of the Nancy school. In 1889 he published a translation of a book by Bernheim,<sup>26</sup> whom he visited that year, along with Liébault. However, this did not stop him from naming his firstborn son Jean-Martin that same year, in homage to his former mentor.

*Studien über Hysterie*, which Freud published with Josef Breuer in 1895, is often considered his founding theoretical study of hysteria,<sup>43</sup> and the article does in fact present the princeps case reports of Anna O (Bertha Pappenheim) and of Emmy von N (Fanny Moser). However, Freud's first paper on hysteria dated back to 1886,<sup>45</sup> and he had published other preparatory articles with Breuer before 1895, including his preliminary observations in German<sup>42</sup> and an article published in French in Charcot's *Archives de Neurologie* in 1893.<sup>46</sup> This article was devoted to the distinction between hysterical and organic paralyses. Janet had just published his own article on hysteria in *Archives de Neurologie*<sup>47</sup> and was finishing his doctoral thesis; from his works, Freud borrowed the observation that hysterical manifestations developed as if neurological anatomy did not exist, and they were expressed as changes in body posturing and gestures. While Charcot complimented Freud on his article, this statement was in fact strongly opposed to his own initial theory of a localized 'dynamic lesion' in the cortical motor areas. In line with Janet's theory and the newly evolving ideas of Charcot, Freud also underlined the importance of mental factors: "the paralyzed organ or the abolished function is associated in the subconscious with a strong affect, and the limb becomes free when this affect is subdued". Scholars have emphasized how strongly Freud's publications of

1892 to 1895 seem to be influenced by Janet; his concepts and wording are little more than direct quotes from Janet's works.<sup>2</sup>

The other person with a profound influence on Freud at that time was Josef Breuer (1842-1925). Freud had met him during his experimental histological studies with Ernst Brücke in the late 1870s. Breuer equalled Charcot in terms of his tremendous impact on Freud's own original creativity. After their articles of 1893, Freud and Breuer published their famous *Studien über Hysterie*<sup>43</sup>; the article included Breuer's presentation of the Anna O case, followed by four case studies by Freud (Emmy von N, regarded as Freud's first 'cathartic' cure in 1891, Lucie R, and Katharina and Elisabeth von R). The case of Anna O, classically considered the founding example of a cathartic cure of hysteria, was the oldest one; Breuer had followed up on the patient between 1880 and 1882 (her true name was Bertha Pappenheim, 1860-1936). However, the term 'catharsis' did not appear in the original report by Breuer, who used his own English terms, e.g. 'talking cure' or 'chimney sweeping'. To describe the patient's manifestations, Breuer used the French term *caprices*. Ellenberger<sup>44</sup> provided a masterly account of how twentieth-century Freudian mythology has transformed the Anna O case and subsequent reports, even though available data suggest that the patient was neither a convincing case of classical hysteria, nor had she been cured by Breuer at all.

The presentation of the case indeed seems to have remained unique in the literature: dissolution into two personalities living with a time difference of 365 days. Meanwhile, the 'cure' for the symptoms was linked not only to the reactivation of specific traumatic memories, but to an incredible process whereby each specific instance of symptom manifestations had to be recalled in reverse chronological order. In this context, Freud combined Janet's therapeutic concept of the reactivation into consciousness of "subconscious fixed ideas" with the 'pathogenic secret' theory of Moritz Benedikt (1835-1920).<sup>48</sup> Benedikt, another neuropsychiatrist from Vienna, had also amiably exchanged ideas with Charcot. Beginning in the 1860s, he had developed several concepts on hysteria and was also the first scholar to highlight the role of a dysfunctional sex life. In 1894, he introduced the concept of a 'second life' corresponding to all private mental representations, imaginings, and desires that

one person keeps to himself or herself.<sup>49</sup> From time to time, this gives rise to pathogenic secrets which can be expressed in hysteria.

It was around this time (1894) that Freud introduced the psychological notion of *Abwehr* (defence),<sup>50</sup> a word which he also borrowed from one of his mentors, Theodor Meynert (1833-1892). Defence was a process designed to facilitate forgetting painful and traumatic memories, the unconscious representation of which would lead to intrapsychic conflicts and clinical manifestations. Soon after that, Freud emphasized that the memories involved in that mechanism were frequently of a sexual nature. Interestingly enough, Freud seemed to use the words *Abwehr* (defence) and *Verdrängung* (repression) interchangeably in many instances, although he also acknowledged that repression into the unconscious is only one form of defence, which may also encompass rejection or conversion. In his article on defence psycho-neuroses (*Abwehr-Neuro-Psychosen*), Freud delineated three types of hysteria:

1) Defence hysteria (*Abwehrhysterie*), in which the subject defends himself against representations with unpleasant effects (Freud soon abandoned this wording since he found that the concept was valid for all neuroses).

2) Retention hysteria (*Retentionshysterie*), in which the subject is unable to discharge his experiences emotionally through 'abreaction' (Freud soon cast doubt on whether this constituted a delimited form of hysteria since he emphasized that defence mechanisms were always involved as well).

3) Hypnoid hysteria (*Hypnoidhysterie*), Breuer's concept of a hypnoid state in response to previous fear-inducing trauma; Freud claimed that he had never seen a case himself.

It must be emphasized that while Freud used the term 'conversion' in 1894 (psychoneurosis)<sup>50</sup> and again the following year in the Emmy von N case report in *Studien über Hysterie*,<sup>43</sup> the term 'conversion hysteria' never appeared in Freud's early writings. He used it for the first time in the case of young Hans (1909), in order to distinguish it from the term 'anxiety hysteria' (*Angsthysterie*), introduced one year before by W. Stekel in response to Freud's suggestion.<sup>51</sup> The central symptom of anxiety hysteria was phobia, which was

focused on an object responsible for the patient's anxiety.

Anxiety hysteria thus differed from anxiety neurosis (*Angstneurosis*), a concept dating to 1895,<sup>52</sup> in which anxiety was not provoked by a specific object. In contrast to anxiety hysteria, conversion hysteria generated no anxiety, and corresponded to an attempt to solve an intrapsychic conflict through somatic expression, thereby precluding manifestations of anxiety. In anxiety hysteria and conversion hysteria, the term 'hysteria' was fully justified; in both conditions, repression served as an attempt to separate mental representations from their corresponding emotions.

In 1896, when Freud was beginning to highlight the role of sexuality in psycho-neuroses, he was mentioned as an authority on hysteria at the International Congress of Psychology in Munich.<sup>2</sup> He elaborated a novel classification of neuroses and psycho-neuroses: neuroses were rooted in the subject's current sexual life (with neurasthenia being associated with masturbation and anxiety neurosis, with sexual frustration), whereas psycho-neuroses were linked to past sexual life (hysteria and obsessions).<sup>53</sup>

Regarding hysteria, he remained faithful to Breuer's hypothesis that clinical manifestations corresponded to the unconscious somatic surge of prior traumatic experiences, in a symbolic form.<sup>54</sup> However, by introducing the *Abwehr* concept, Freud was already distancing himself from Breuer, as well as incorporating the mechanism of a "chain of subconscious fixed ideas", which Janet had detailed in his 1891 report on the Marcelle case.<sup>55</sup> When Freud and Breuer published their preliminary observations in 1893,<sup>44</sup> Janet had already published at least seven detailed reports on hysteria in the preceding seven years.

Leaving aside the clear influence of Janet's theories, it is interesting to note that Breuer and Freud's founding hypothesis also closely resembled Charcot and Richer's concepts as summarized fifteen years before in Richer's book on hystero-epilepsy which Freud had apparently not read.<sup>2</sup> Richer had indeed emphasized the fact that many episodes of *grande hystérie* corresponded to a form of reactivation of past traumatic experiences, often of a sexual nature, and these notions were later developed by Freud working independently. However, in September 1897, only a few months after revising

his classification of neuroses and psycho-neuroses, Freud wrote to his friend Wilhelm Fliess (an otorhinolaryngologist whom he had met ten years before) that he had just gone through a dramatically difficult phase. He had discovered that a large part of the traumatic ‘memories’ reported by his hysterical patients were confabulations (especially memories of seduction by their fathers).<sup>2</sup> While this came as a shock to Freud, it also allowed him to advance in his own theories, as he shifted his interest from repressed memories towards his patients’ hidden desires and fantasies.

Freud also continued to distance himself from Janet, who never accepted his sexual theories, and in 1896 he moved beyond Janet’s ‘psychological analysis’ to ‘psycho-analysis’. The beginnings of the psycho-analytic group date back to the fall of 1902, with Kahane, Reitler, Adler and Stekel, who flocked to Freud. Freud subsequently completed several observations of hysteria, such as the famous case of Dora in 1900; this report was a masterpiece of dream analysis.<sup>56</sup>

It is striking that throughout the twentieth century, ‘conversion’ as a term and concept progressively replaced hysteria and even managed to colonize such international classifications as the DSM IV,<sup>57</sup> which lists ‘conversion disorder’ (F44.X [300.11]) and the ICD-10,<sup>58</sup> which lists ‘dissociative or conversion disorders’. Although most neurologists and general physicians around the world would not necessarily accept Freudian theories today, they use the term ‘conversion disorder’ instead of ‘hysteria’ without realizing that in doing so, they refer implicitly to a pure Freudian hypothesis, i.e. the conversion of psychic distress into a somatic manifestation.

### Joseph Babinski and pithiatism

In his 1909 doctoral thesis, Henri Cesbron, the grandson of Lasègue, summarized the advances in hysteria which were taking place in France at the time of Charcot’s death.<sup>59</sup> Leaving aside Janet’s and Babinski’s original work, P. Blocq mainly reiterated Janet’s concept of the reduced field of consciousness; Joseph Grasset (1849-1918) emphasized general psychological aspects that had already been mentioned by Charcot and Janet. Paul Sollier (1861-1933), one of Charcot’s most brilliant students and perhaps the first clinical neuropsychologist in history,<sup>60</sup> proposed a physiological phenomenon, i.e.

the inhibition of certain cortical regions, as the functional basis of hysterical paralysis. This theory made him a pioneering figure, as he was in many other fields of what would become behavioural neurology. Sollier hypothesised that certain cortical regions were “put to sleep” in hysteria, whereas other regions became unusually active, and this would explain the absence of visible morphological alterations in the brain itself.<sup>61</sup> His predictions were only confirmed with functional MRI in the last few years.<sup>62-64</sup>

To cite a more obscure perspective, Binet-Sanglé suggested a more mechanistic view, involving “regression of neurons”.<sup>59</sup> Albert Pitres (1848-1928), who had been Charcot’s resident before developing his own neurological school in Bordeaux, also studied hysteria extensively and summarized his research in a famous two-volume monographic study.<sup>65</sup> Pitres remained faithful to certain initial ideas of Charcot’s, including hysterical stigmata, while also acting as an intermediary between the La Salpêtrière tradition and Babinski’s novel ideas; his status as one of one of Charcot’s earliest collaborators did not oblige him to follow the established dogma, in contrast to Charcot’s “bodyguards” Gilles de la Tourette and Richer. Another of Charcot’s close collaborators, Charles Féré (1852-1907), also distanced himself from Charcot’s statement that susceptibility to hypnotism was specific to hysterics and moved closer to Bernheim’s position.<sup>3</sup>

Nevertheless, the main advances in hysteria from the La Salpêtrière neurological school were associated with studies by Joseph Babinski (1857-1932). Babinski had been Charcot’s *chef de clinique* in 1885, and he had participated in many exhibitions of hysterical women in the laboratory of La Salpêtrière; this is shown in Brouillet’s famous 1887 painting in which Blanche Wittmann falls fainting into his arms as Charcot, imperturbable, teaches a fascinated audience. One can state that Babinski wrote four main articles on hysteria. The first one appeared in 1886 and focused on the influence of certain magnets<sup>66</sup>; subsequently, in 1891, he published a lecture on hysteria echoing the style of Charcot-Richer-Gilles de la Tourette.<sup>67</sup> His novel and revolutionary ideas appeared only later, in his articles of 1901 and 1909.<sup>68</sup> After that date, his views did not evolve significantly, not even during World War I when Babinski was particularly active in the study of hysteria in soldiers. As a result of these studies, he published a famous book with Jules Froment in 1917.<sup>69</sup>



Babinski's first innovative idea drew from Lasègue's statement that hysteria could not be studied and defined in the same way as other diseases of the nervous system because of its infinite manifestations. In consequence, he emphasized negative criteria that would permit doctors to rule out organic disease. For instance, shortly before Charcot's death, Babinski had noticed that tendon reflexes were not increased in hysterical palsy.<sup>70</sup> He had also been struck by the fact that stigmata were absent in several patients who had never been examined previously, a finding that contradicted Charcot's initial statement that hysterical stigmata were constant and permanent.<sup>71</sup> Babinski's new approach was to combine these negative criteria used to exclude other illnesses with certain positive criteria listed in his 1901 article in which the concept of suggestion played a central role. Babinski actually defined hysteria as a "psychic state granting the subject the ability of auto-suggestion".<sup>67</sup> This claim had more in common with Bernheim's ideas than with Charcot's, although Babinski would not acknowledge the influence of the former until 1907.<sup>71</sup> In the Littré dictionary of the time, which was quoted by Babinski, the term 'suggestion' corresponded "in the medical sense [... to an] action through which one attempts to have an obviously unreasonable idea accepted by another person".<sup>67</sup> Using that definition, Laplane and Bonduelle have emphasized the intrinsic contradiction present in Babinski's term 'auto-suggestion'.<sup>17</sup> According to the Littré definition, 'suggestion' had a negative or pernicious connotation, while 'persuasion' implied convincing someone to do the right thing. Although these differences appear to have faded away over the years, they were significant at the time. Babinski actually mentioned the concept of 'persuasion' in the second part of his criteria for a positive diagnosis of hysteria, i.e. sensitivity to persuasion by the examiner which results in a cure for the clinical manifestations. He created a neologism, 'pithiatism' (from the Greek, 'to persuade' and 'healing'), which he believed should completely replace 'hysteria'.<sup>67</sup> Although emphasis on patient persuasion by the examiner was a useful step away from pure hypnotic therapy, pithiatism remained the weak link in Babinski's developing theories: firstly, persuasion therapy was not always synonymous with a cure for symptoms, and secondly, citing a response to a specific therapy in the definition of a disease is obviously teleological.<sup>72</sup>

Babinski's 1901 revision of hysteria was widely and quickly accepted, and his concepts were included in Bouchard & Brissaud's textbook of medicine in 1905.<sup>73</sup>

However, hysteria and pithiatism were also debated at length at the 1907 Congress of Alienists and Neurologists of France and French-Speaking Countries in Lausanne, and at two memorable sessions of the Société de Neurologie de Paris, held on 9 April and 14 May, 1908, and presided over by Maurice Klippel (1858-1942).<sup>74</sup>

These sessions have recently been reviewed by Laplane and Bonduelle, who highlight the lack of civility in the debates.<sup>17</sup> Recalling the quarrel of aphasia that had broken out between Jules Dejerine and Pierre Marie in 1905, we might well call these sessions the "quarrel of hysteria". At the first session, Babinski's systematic approach easily destroyed the arguments of his main opponent, Fulgence Raymond, who held Charcot's chair at the time. It is perhaps significant that six years before that date, on 7 November, 1901, Raymond chaired the session in which Babinski first presented his theory of pithiatism.

The brutality of some of the interventions performed on patients during these sessions has also been described<sup>17</sup>: examples include Dejerine's chloroform tests to determine whether contractures would disappear, traumatic lesions occurring when one of Raymond's residents applied force to a contracture, and simulated abdominal operations. Babinski gave a detailed explanation of his concept of pithiatism at the second session, but Ballet, Croq, Dejerine, and Vogt countered that disappearance of the symptoms did not mean that hysteria was their underlying origin. Oscar Vogt (1870-1959) drew attention to Babinski's reluctance to consider psychological theories, and Babinski did in fact state that while he could not identify any particular mental background in hysteria, he accepted its non-organic and psychic nature. He flatly rejected affective and emotional factors<sup>75</sup> and regarded the entire body of Janet's and Freud's research as having no value or importance, although he was willing to recognise psychotherapy as method of treatment.<sup>69</sup> Henri Claude, who would later occupy the psychiatry chair at Sainte-Anne, proposed discussing the role of emotional factors in hysteria in a future session, but it never took place. While the attendees concluded that hysteria and simulation were different, Babinski, with Brissaud's support, stated that there were no clinical features distinguishing hysteria from simulation, and that only 'moral considerations' could be used to rule out simulation in individual patients!



Figure 3. Paul Richer's drawing of a demonic attack of hysteria.



The result was widespread uncertainty about the diagnosis of hysteria vs simulation, and terms such as caprice, vice, fault, poor education, or bad behaviour were often used to describe these patients.<sup>76</sup> This trend is obviously reminiscent of what had happened during the preceding centuries, when hysteria was associated with demonic possession.

Questions about simulation and the mischievous nature of hysterical patients would become quite critical during World War I, when significant numbers of combatants developed shell shock and other psychoneuroses.<sup>77</sup> This period allowed Babinski, along with Jules Froment, to delineate the ‘physiopathic syndrome’, corresponding to reflex contractures associated with motor weakness, atrophy, and vegetative nervous changes after minimal trauma.<sup>69</sup> Babinski and Froment mentioned that Charcot and Vulpian already had reported disorders of this kind. They also underlined their similarity to ‘hysterical manifestations’, given the dissociation between their severity and their initial traumatic cause, but they reported that these disturbances differed from pithiatism in that they were resistant to ‘counter-suggestion’.

Babinski clarified several foggy concepts which had developed around hysteria in the years surrounding Charcot’s death, mainly by establishing clear-cut negative and positive diagnostic criteria. However, his exaggerated emphasis on auto-suggestion and pithiatism now appears as dogmatic as certain ideas of Charcot’s which he had criticized. His refusal to consider Janet’s and Freud’s already well-developed psychological theories makes him look somewhat old-fashioned and limited. Nevertheless, his revised view of hysteria represented a major advance in clinical neurology before World War I, and it continues to influence modern generations of doctors even today.

### Hysteria during World War I

While interest in hysteria declined among neurologists after the 1907 sessions of the Société de Neurologie de Paris, a strong new impulse was provided by the war and the rapid appearance of numerous cases of shell shock. That term had been coined by Charles Myers in a 1915 article<sup>78</sup> describing the condition as “a punch on the head, without any pain after it” and followed by neurological and behavioural manifestations, usually

in the absence of significant brain lesions. These patients were initially treated alongside others with organic lesions, but it soon became necessary to develop specific approaches and treatments for shell shock.<sup>77</sup>

Of the 7 891 000 individuals mobilized in France, 1 375 000 died and 4 266 000 were reported wounded, but no proper statistics on cases of shell-shock and war psycho-neurosis were available.<sup>79</sup> Hospitals were transformed for the wounded soldiers and neurological clinics typically became devoted to managing shell-shocked patients with functional disorders. Babinski, Dejerine, Sollier, Roussy, and others became heads of such clinics in Paris and elsewhere, and this triggered a revival of studies on hysteria in the form of war psychoneurosis, as well as the publication of a large number of articles and books.<sup>77</sup>

The Société de Neurologie de Paris organized several special sessions to address the topic, and three volumes of the *Revue Neurologique* appeared during the first phase of the war. Patriotism was omnipresent in these studies, and it is interesting to see that this was also true in the other camp: Freud, Wagner-Jauregg, and others were actively involved in medical care as well. We have already addressed the fascinating issue of World War I psychoneuroses elsewhere.<sup>77</sup> Several ‘new’ hysterical manifestations were reported in 1915, including camptocormia or trunk flexion,<sup>80</sup> and bird-in-the-cage syndrome.<sup>81</sup>

Overall, two main trends of management developed: the first was led by ‘pure’ neurologists, such as Babinski and Gustave Roussy, following a hard-line approach according to which psychological aspects were mainly used to detect trickery and pretence and to achieve a successful ‘persuasion’ effect, understood as sufficient to send patients back to the lines. The second trend was more psychotherapeutic, and as such it was led by psychiatrists or former neurologists who had evolved towards the study of mental disorders, such as Paul Sollier, André Léry, Paul Voivenel, and Ernest Dupré. The latter group emphasized a type of management similar to what we now call psychotherapy, while the former group developed a more brutal approach that included electrotherapy; this was soon called *torpillage* by the combatants themselves.<sup>82</sup> The hard-liners’ actions undoubtedly reflect their obsessive fear of failing to identify cases of simulated disease.



*Torpillage* was developed by Clovis Vincent (1879-1947), the future founder of French neurosurgery who had studied under both Raymond and Babinski. In his clinic in Tours, Vincent initially used faradization with persuasion, a technique that had already been developed by Babinski before the war for treating hysterics. Limited success, however, encouraged him to develop a more painful but effective method associating galvanic current with forced 'rehabilitation'. This usually consisted of electric discharges being delivered to the affected parts of the body while the doctor insisted that the patient get better immediately. "Achieving this is a real struggle", Vincent was heard to say, although he reported favourable statistics of successful cases of soldiers quickly being sent back to the front and a failure rate of less than 3%.<sup>83</sup> In 1916, several soldiers started to rebel against *torpillage*, but Vincent accused them of feigning illness. A more serious incident occurred with another soldier, the *zouave* Baptiste Deschamps, who accused Vincent of practicing torture. A physical fight broke out when Deschamps hit Vincent, unaware that the latter was a former amateur boxer who would hit back without hesitation. A military trial ensued, which resulted in the suppression of the controversial technique. Vincent himself requested an assignment at the front, where he worked as a doctor in the infantry trenches for the rest of the war. Electrotherapy was not dead, however, and the following year, the Swiss-born Gustave Roussy (1874-1947), Dejerine's student, developed an adapted method of faradization coupled with 'moral treatment' at the hospital in Salins-les-Bains.<sup>84</sup> He had refined his technique, which he had developed at Hôpital Paul-Brousse, a military clinic in the suburbs of Paris; one of his patients was *cuirassier* Louis-Ferdinand Destouches, who would later become one of the century's most famous writers under the pseudonym of Céline. In fact, Céline drew from his experience with Roussy (portrayed as Professor Bestombes) in his celebrated 1932 novel *Voyage au Bout de la Nuit*.<sup>85</sup>

The faradic current he used initially was weak, but Roussy soon increased its intensity in order to maximise his successes. He also began placing the electrodes on sensitive areas including the scrotum or the sole of the foot. Along with Michel d'Oelsnitz and Jules Boisseau, he emphasised the need for pain in treatment, combined with moral support, isolation, and strict physical re-training. Following a disagreement with Vincent over the authorship and results of

*torpillage*, Roussy had to deal with several mutinies and refusals to undergo treatment by soldiers admitted to Salins-les-Bains. After a military trial, he was forced to temper down his patriotic enthusiasm, and electrotherapy was quickly abandoned once again in the early months of 1918.<sup>82</sup> This therapy for war hysteria was by no means limited to France; it was also used by the Allied and German forces. Some employed particularly aggressive methods<sup>86</sup> and their rationale was based on a heightened concept of "weakness of the will", borrowed from Brodie in 1837.<sup>87</sup> After the war, future Nobel laureate Julius Wagner-Jauregg (1857-1940) even went to trial because of his methods, and Freud testified in his favour.<sup>77</sup>

These trends corresponded to different hypotheses explaining the origin of war psychoneuroses (which, apart from hysteria, also included cases of hallucinatory psychosis, various forms of delirium, catatonia, etc.).<sup>88</sup> An organic (biological) origin was supported by Babinski, and also by the psychiatrist Joseph Capgras (1873-1950), although to some extent both of them recognized mental factors associated with hysteria. In psychological circles, the 'post-commotional hypothesis' was supported by Gilbert Ballet (1853-1916), Chair of Psychiatry at Sainte-Anne during the first part of the war, while the 'post-emotional hypothesis' was sustained by psychiatrists André Léri (1875-1930) and Maurice Dide (1873-1944), who coined the term 'shock-emotion'.<sup>89</sup>

It is obvious that the war reopened the old unresolved debates on organic vs psychic factors in hysteria, especially given the renewed interest in detecting simulation. In order to encompass all different factors, Paul Sollier defined three types or levels of war hysteria: *hystérie brute* (gross hysteria), in which physical trauma and lesions played a critical role, *hystéro-traumatisme* (hystero-trauma), in which somatic and psychic factors were equally important; and *hystérie vulgaire* (common hysteria), with psychic factors playing the main role. For Sollier, it was important to highlight that hysteria could be due to either physical or mental factors to justify his definition: "a physiological disorder in which somatic and psychological phenomena are associated in variable proportions".<sup>90</sup>

### **Hysteria: a contemporary condition?**

By the beginning of the twentieth century, hysteria, along with general paresis or tabes dorsalis, had

become one of the most commonly diagnosed nervous disorders. It also provided the topic of over one fifth of all doctoral theses in neurology.<sup>91</sup> In 1891, Guinon estimated that some 8% of the 3168 patients attending Charcot's outpatient clinic had hysteria.<sup>34</sup> These figures contrast sharply with reports from the twentieth century, as shown, for instance, by the dwindling numbers of doctoral theses on hysteria: from 111 in the 1900s to 85 in the 1910s, 13 in the 1920s, and 10 in the following twenty years.<sup>91</sup> By 1912, Chauffard was insisting that almost no patients with hysteria were to be found in clinical departments.<sup>92</sup> This decrease in diagnoses of hysteria was interpreted by certain authors as proof that Charcot and his school had been responsible for transient 'epidemics' of hysteria, which naturally disappeared in later years.<sup>93</sup> Other hypotheses included the 'de-Victorianization' of society and a psychological evolution of the population which had rendered them less prone to spectacularly overt somatic expressions.<sup>91</sup>

In fact, after the brief rise in interest associated with World War I, hysteria returned to where it had been before Charcot, i.e. a no-man's land between psychiatry and neurology. The immediate consequence of that transition was a marked decrease in scientific interest and studies.<sup>94</sup> Nevertheless, available clinical experience suggests that hysteria did not disappear, and has even remained quite stable over the years.<sup>95</sup> In 1955, Guillain's book on Charcot stated that there had been no changes in the prevalence of hysteria, although the way it was reported had evolved and cases were now described as 'functional disorders'.<sup>34</sup> This discrepancy between medical historians and clinicians mainly reflects a diagnostic reconceptualization whereby the entity underwent a nosographic shift and non-clinicians assumed it had disappeared. Stone et al.<sup>95</sup> recently examined 68 textbooks published between 1877 and 2005, and found a marked decrease in both the use of the term 'hysteria' and in interest in that condition.

To most practising neurologists today, it is obvious that while certain hysteria manifestations have evolved (Charcot's *arc-de-cercle* seems to have nearly disappeared in patients from the Western world), hysteria remains common in both outpatient and inpatient settings.<sup>95</sup> Moreover, several questions remain unresolved, such as the relationship between hysteria and simulation and exaggeration of symptoms. Another

unanswered question is the relationship between hysteria and coexisting organic disease of the nervous system, an issue which had already been addressed by Paul Yakovlev in 1924 in his fascinating doctoral thesis,<sup>96</sup> completed after he had spent three years in Babinski's service and immediately before emigrating to the USA to launch his successful career at Harvard. Functional brain studies using magnetic resonance imaging (MRI) may help us understand some of the mysteries still attached to hysteria. Preliminary experiments indeed suggest different types of motor activation in patients with organic vs hysterical palsy.<sup>62,63</sup> Recently, using functional MRI, Cojan et al.<sup>97</sup> demonstrated preserved motor intention in hysterical palsy, with preparatory activation in the motor cortex, but no activation during failed movement. They also found activation in the ventromedial prefrontal cortex (vmPFC), a region involved in motivational and affective processing, along with activation in the precuneus and ventral lateral frontal region (VLF), which is associated with self-related mental representations. On the other hand, feigned palsy (simulation) in instructed controls activated the usual frontal areas subserving conscious motor inhibition (inferior frontal gyrus, IFG). By demonstrating different mechanisms behind motor inhibition in hysterical vs feigned palsy, these findings may provide proof that hysteria and simulation are intrinsically distinct conditions, with distinct neurophysiological correlates.

### **The boomerang effect: Charcot was right!**

The literature on the history of hysteria seems to show an eagerness to present Charcot's concepts as obsolete. Particular emphasis is placed on the 1908 sessions at the Société de Neurologie de Paris and the two days that supposedly ended the decades of Charcot's supremacy.<sup>17,71,91</sup> This insistence is probably partly linked to Charcot's dominating personality, which explained why his 'erroneous ideas' would have been regarded as untouchable dogma for years. However, this perspective only considers Charcot's early theories (ovarian compression, stigmata), whereas the significant advances of the last part of his career, such as his emphasis on traumatic and mental factors, are not typically mentioned. Detractors also borrow Janet and Babinski's assertion that Charcot's basic underlying error was approaching hysteria as if it were a condition

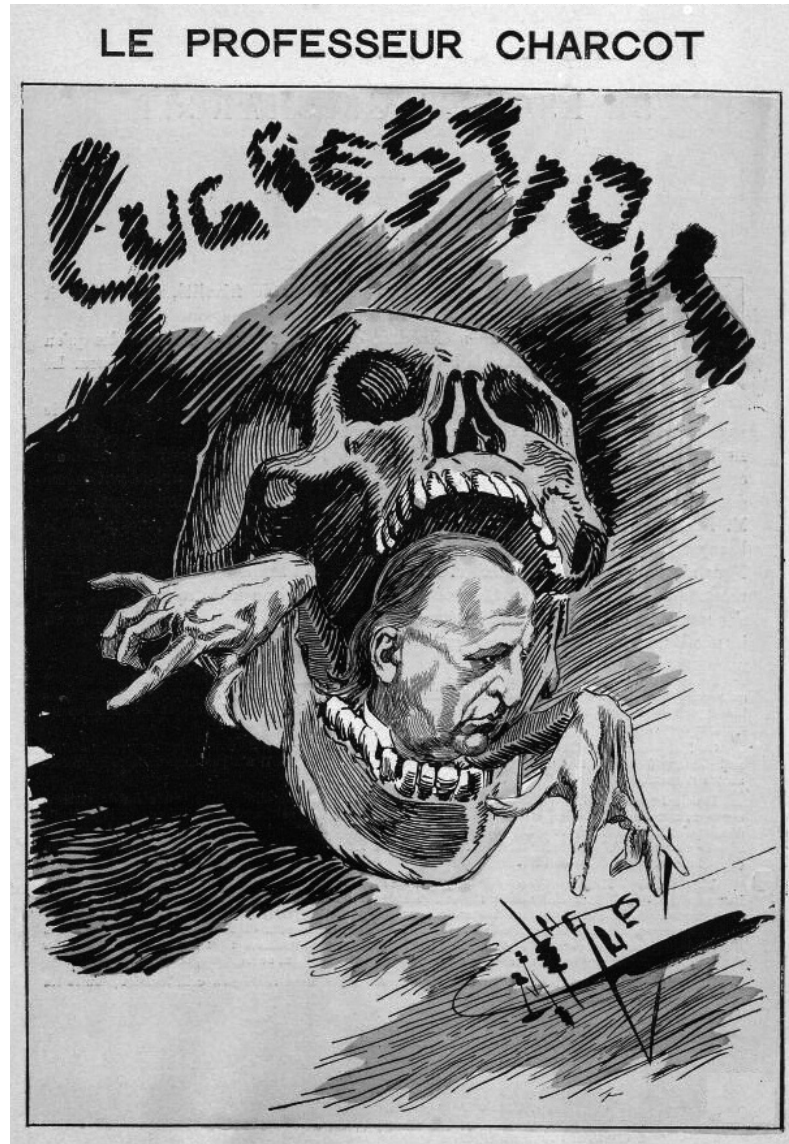


Figure 4. Sketch of Charcot emphasising suggestion in the management of hysteria.

similar to an organic disease. However, this tactic was in fact necessary to deliver an unbiased scientific approach to a disorder about which virtually nothing was known at the time (the uterine theory still had proponents). Additional criticisms include the theatrical features of hypnotism sessions at La Salpêtrière, and the ease with which hysterical patients would have deceived the old man with mock fits and epidemics of *grandes crises d'hystérie*.<sup>2</sup>

Babinski is thus often presented as the saviour who led scholars out of the dark ages and ended years of submission to the late neurology emperor.<sup>17,71</sup> Nevertheless, while Babinski indeed clarified the clinical criteria for diagnosis, his own concept of hysteria seems rather retrograde and limited today. He was reluctant to accept emotional factors, and he also managed to hide his lack of concern for dynamic mental mechanisms behind the fixed and rather primitive factors he



regarded as psychological. Despite pithiatism's overall weaknesses, Babinski's technique proved to be long-lasting. Neurologists recognised it as a very effective way of eliminating deeper psychological issues in order to concentrate on overt clinical manifestations; additionally, the simplified Freudian concept of conversion of intrapsychic conflicts into somatic manifestations lent it a sufficiently psychological flavour. It is likely that Charcot's more zealous followers, such as Gilles de la Tourette, also contributed indirectly to the need to unseat their mentor by refusing to distance themselves from his dogma. Charcot had correctly foreseen this risk at the time of the quarrel with the Nancy school: while Gilles de la Tourette proclaimed the supremacy of La Salpêtrière, Charcot was convinced that this so-called victory would harm advances in hysteria and hypnotism.<sup>21</sup> Actually, the dispute quickly became misinterpreted: while some think Charcot rejected Bernheim's idea of the suggestion phenomenon, Bernheim was in fact negating the existence of hysteria itself. However, Charcot never denied the existence of suggestion, contrary to the common belief that holds that Bernheim, and Babinski ten years later, had to contradict him on that issue in order to make their other points.

I hope that the present survey of the evolving concepts of hysteria, from the early years of the nineteenth century to the followers of Charcot and later developments, will help demonstrate that many of Charcot's ideas have an astonishingly modern flavour, provided they are viewed from the dynamic perspective of the evolution of emerging neurology and psychiatry. There are indeed several major examples of Charcot's pioneer concepts in hysteria. Firstly, one should not forget that it was Charcot who stirred up scientific interest in hysteria at a time when neurology did not exist and neither alienism nor medicine considered it to be a true field of study. Secondly, Charcot originated the theory that trauma underlies hysteria, and even emphasized its marked sexual component twenty years before Freud. This theory also made him one of the earliest proponents of male hysteria. He was the first to list mental factors as critical determinants of hysteria and promoted Janet's early medical research in that area by creating the first experimental laboratory in a neurology service. Thirdly, several of Charcot's intuitive conclusions have in fact been confirmed by recent modern imaging and neurophysiological studies.<sup>63</sup> For instance, the concept of the 'dynamic lesion' is

compatible with current theories of brain functioning in normal and pathological situations. Interestingly enough, it was Sollier, the Charcot's brightest follower in the area of neurophysiology, who elaborated this concept further, adding the hypothesis of activation vs deactivation of different brain regions as the dynamic mechanism behind hysteria.<sup>61</sup> That concept has recently been validated by functional MRI studies, which have also shown that Charcot, and not Babinski, was absolutely correct in sustaining that hysteria and simulation were two different conditions with different cerebral mechanisms.<sup>97</sup>

Finally, we must highlight that functional MRI studies have also confirmed one of Charcot's most cherished claims, i.e. the proximity of hypnotism to hysteria, the very theory which had been the most vehemently criticized by Bernheim and his colleagues. Cojan et al.<sup>98</sup> recently demonstrated that hypnotic and hysterical palsy displayed the same preparatory activation in the motor cortex, along with the same activation of the precuneus (associated with self-related mental representations); in contrast to simulated palsy in instructed controls, there was no direct activation of the inhibitory frontal motor region (IFG). However, as Charcot believed, hypnotism, hysteria, and simulation are different conditions and they also exhibit differences in their functional brain patterns.

## References

1. Postel J, Quérel C. Nouvelle histoire de la psychiatrie. Paris: Privat; 1983.
2. Ellenberger HF. À la découverte de l'inconscient. Histoire de la psychiatrie dynamique. Villeurbanne: Simep-Éditions; 1974.
3. Bogousslavsky J, Walusinski O, Veyrunes D. Crime, hysteria and Belle Époque hypnotism: The path traced by Jean-Martin Charcot and Georges Gilles de la Tourette. *Eur Neurol*. 2009;62:193-9.
4. Exposé des titres scientifiques du docteur J.-M. Charcot. Paris: Imprimerie Victor Goupy et Jourdan; 1883.
5. Gauchet M, Swain G. Le vrai Charcot. Paris: Calmann-Lévy; 1997.
6. Abricossos G. L'hysterie aux XVIIe et XVIIIe siècles. Étude historique et bibliographique. Paris: G. Steinheil; 1897.
7. Brachet JL. Traité de l'hystérie. Paris and Lyon: J.-B. Baillière and Charles Savy Jeune; 1849.
8. Briquet P. Traité clinique et thérapeutique de l'hysterie. Paris: J.-B. Baillière and Fils; 1859.
9. Bogousslavsky J, Moulin T. From alienism to the birth of modern psychiatry: a neurological story? *Eur Neurol*. 2009;62:257-63.

10. Iconographie photographique de la Salpêtrière, service de M Charcot, par Bourneville et P. Regnard. Paris: Progrès Médical, V. Adrien Delahaye et Cie; 1877.
11. Owen ARG. Hysteria, hypnosis and healing. The work of J.-M. Charcot. New York: Garrett Publications; 1971.
12. Richer P. Études cliniques sur l'hystéro-épilepsie ou grande hystérie. Précédé d'une lettre-préface de M. le professeur J.-M. Charcot. Paris: Adrien Delahaye et Émile Lecrosnier; 1881.
13. Gilles de la Tourette G. Traité clinique et thérapeutique de l'hystérie d'après l'enseignement de la Salpêtrière. Paris: Librairie Plon; 1891 (vol 1), 1895 (vol 2,3).
14. Lasègue C. Études médicales du professeur Ch. Lasègue. 2 vol. Paris: Asselin; 1884.
15. Richet C. Le somnambulisme provoqué. Arch Physiol Norm Pathol. 1875; 11:348-78.
16. Bernheim H. Hypnotisme, suggestion, psychothérapie. Paris: Doin; 1891.
17. Laplane, D, Bonduelle M: Le débat sur l'hystéries. Rev Neurol (Paris). 1999;155:815-21.
18. Babinski J. Définition de l'hystérie. Rev Neurol. 1901;9:1074-80.
19. Liégeois J. De la suggestion hypnotique dans le droit civil et le droit criminel. Séances et travaux de l'Académie des Sciences Morales et Politiques. 1884;122:155-240.
20. Gilles de la Tourette G. L'épilogue d'un procès célèbre, suivi de répons à M. Gille de la Tourette par Bernheim. In: Lacasagne A. L'affaire Gouffé. Lyon and Paris: A. Storck and G. Masson; 1891. p.126-38.
21. Duncan G. Gilles de la Tourette: Aspects connus et méconnus de sa vie et de son oeuvre. Poitiers: Impression des thèses; 1995.
22. Gilles de la Tourette G. L'hypnotisme et les états analogues du point de vue médico-legal. Paris: Librairie Plon; 1887.
23. Azam E. Hypnotisme et double conscience. Origine de leur étude et divers travaux sur des sujets analogues. Avec des préfaces de MM. Paul Bert, Charcot et Ribot. Paris: Félix Alcan; 1893.
24. Mesnet E. De l'automatisme de la mémoire et du souvenir dans le somnambulisme pathologique. L'Union Médicale. 1874 July 21 (No. 87), July 23 (No. 88).
25. Proust A. Un cas curieux d'automatisme ambulatoire chez un hystérique. La Tribune Médicale. 1890 March 27 (No. 13), p.202-3.
26. Bernheim H. Die Suggestion und ihre Heilwirkung. Übersetzung von Sigmund Freud. Leipzig und Wien: Deuticke; 1889.
27. Charcot JM. Neue Vorlesungen über die Krankheit des Nervensystems ins besondere der Hysterie, Übersetzung von Sigmund Freud. Leipzig and Vienna: Toeplitz und Deuticke; 1886.
28. Van Eeden P. The theory of psychotherapeutics. Med Mag. 1895;1:230-57.
29. Marquer B. Les romans de la Salpêtrière. Réception d'une scénographie clinique. Jean Martin Charcot dans l'imaginaire fin-de-siècle. Geneva: Droz; 2008.
30. Parent A, Parent M, Leroux Hugon V. Jules Bernard Luys: a singular figure of 19th century neurology. Can J Neurol Sci. 2002;29:282-8.
31. Charcot JM. La foi qui guérit. Revue Hebdomadaire. 1892;5:112-32
32. Espanet F. Hystéricisme et hystérie. Du sommeil hystérique en particulier. Paris: A. Parent imprimeur de la Faculté de Médecine; 1875.
33. Janet P: Les accidents mentaux des hystériques [thesis]. Paris: Faculté de Médecine de Paris; 1893.
34. Guillaïn G. J.-M. Charcot, 1825-1893, sa vie, son oeuvre. Paris: Masson & Cie; 1955.
35. Janet P. L'automatisme psychologique. Essai de psychologie expérimentale sur les formes inférieures de l'activité humaine. Paris: Félix Alcan, Ancienne Librairie Germer Ballière & Cie; 1889.
36. Clérambault G de. Oeuvre psychiatrique. Paris: PUF; 1942.
37. Janet P. Étude sur un cas d'amnésie anterograde dans la maladie de la désagrégation psychologique. International Congress of Experimental Psychology. London: Williams & Norgate; 1892. p.26-30.
38. Charcot JM. Sur un cas d'amnésie rétro-antérograde probablement d'origine hystérique. Rev Méd. 1892;12:81-96.
39. Charcot JM. Clinique des maladies du système nerveux. Vol. 2. Paris: Félix Alcan; 1893. p.266-88.
40. Janet P. Un cas de possession et d'exorcisme moderne. Bull Univ Lyon. 1894:41-57.
41. Janet P. Les obsessions et la psychasthénie. Paris: Alcan; 1903.
42. Breuer J, Freud S. Über den psychischen Mechanismus hysterischer Phänomene (Vorlaufige Mitteilung). Neurol Zentralblatt. 1893;12:4-10,43-7.
43. Breuer J, Freud S. Studien über Hysterie. Leipzig and Vienna: Deuticke; 1895.
44. Ellenberger HJ. Médecines de l'âme. Essais d'histoire de la folie et des guérisons psychiques. Paris: Fayard; 1995.
45. Freud S. Beitrage zur Kasuistik der Hysterie. I. Beobachtung einer hochgradigen Hemianesthesie bei einem hysterischen Manne. Wien Med Wschr. 1886;36:1633-8.
46. Freud S. Quelques considérations pour une étude comparative des paralysies motrices et hystériques. Arch Neurol (Paris). 1893;26:29-43.
47. Janet P. Quelques définitions de l'hystérie. Arch Neurol (Paris). 1893;25:417-38 and 1893;26:1-29.
48. Benedikt M. Beobachtung über Hysterie. Reprint from Zeitschrift für praktische Heilkunde, 1894. p.27.
49. Benedikt M. Second life. Das Seelenbinnenleben des gesunden und kranken Menschen. Wiener Klinik. 1894;20:127-38.
50. Freud S. Die Abwehr Neuro-Psychosen. Neurol Zentralblatt. 1894;13:362-4 and 1894;13:402-9.
51. Laplanche J, Pontalis JB. Vocabulaire de la psychanalyse (sous la direction de D. Lagache). Paris: PUF; 1967.
52. Freud S. Über die Berechtigung von der Neurasthenie einen bestimmten Symptomen komplex als Angstneurose abzutrennen. Neurol Zentralblatt. 1895;11:50-66
53. Freud S. Weitere Bemerkungen über die Abwehr Neuro-psychosen. Neurol Zentralblatt. 1896;15:434-48 (in French: L'hérédité et l'étiologie des névroses. Rev Neurol. 1896;4:161-8)
54. Freud S. Zur Etiologie der Hysterie. Wien Klin Rundschau. 1896;10:379-81, 395-7, 413-5, 432-3, 450-2.

55. Janet P. Étude sur un cas d'aboulie et d'idées fixes. *Rev Phil.* 1891;31:258-87 and 382-407.
56. Freud S. Bruchstück einer Hysterie-Analyse. *Monatschr Psychol Neurol.* 1905;18:285-310.
57. American Psychiatric Association. MINI DSM-IV. Critères diagnostiques (Washington DC: APA; 1994). French translation by Guelfi JD et al. Paris: Masson; 1996.
58. OMS. Classification internationale des maladies. Sixième révision. Chapitre V (F). Troubles mentaux et troubles du comportement (CIM-10/ICD-10). Descriptions cliniques et directives pour le diagnostic (traduction de l'anglais coordonnée par CB Pull). Geneva, OMS and Paris, Masson; 1993.
59. Cesbron H. Histoire critique de l'hystérie. Paris: Asselin et Houzeau, Librairies de la Faculté de Médecine; 1909.
60. Bogousslavsky J, Walunski O. Marcel Proust and Paul Sollier: The involuntary memory connection. *Schweiz Arch Neurol Psychiat.* 2009;160:130-6.
61. Sollier P. Genèse et nature de l'hysteria. Paris: F. Alcan; 1892.
62. Halligan PW, David AS. Conversion hysteria: towards a cognitive neuropsychological account. Hove: Psychology Press; 1999.
63. Vuilleumier P. Hysterical conversion and brain function. *Prog Brain Res.* 2005;150:309-29
64. Ghaffar O, Staines WR, Feinstein A. Unexplained neurologic symptoms: an fMRI study of sensory conversion disorders. *Neurology.* 2009;67:2036-8.
65. Pitres A. Leçons cliniques sur l'hystérie et l'hypnotisme faites à l'hôpital Saint-André de Bordeaux. Ouvrage précédé d'une lettre-préface de M le professeur J.-M. Charcot. Paris: Octave Doin; 1891.
66. Babinski J. Recherches servant à établir que certaines manifestations hystériques peuvent être transmises d'un sujet à un autre sujet sous l'influence de l'aimant. *Progr Méd.* 1886: 2e série IV:1010-1.
67. Babinski J. Hypnotisme et hystérie. Du rôle de l'hypnotisme en thérapeutique. Leçon faite à la Salpêtrière le 23 juin 1891. Paris: G. Masson, Librairie de l'Académie de Médecine; 1891.
68. Babinski J. Démembrement de l'hysterie traditionnelle. *Sem Méd.* 1909;29:3-8.
69. Babinski J, Froment J. Hystérie-pithiatisme et troubles nerveux d'ordre réflexe. Paris: Précis de médecine et de chirurgie de guerre, Masson & Cie; 1917.
70. Babinski J. Contractures organiques et hystériques. *Bull Mem Soc Méd Hôp Paris.* 1893;10:327-46.
71. Derouesné C. Pithiatism versus hysteria. In: Philippon J., Poirier J, editors. Joseph Babinski: A Biography. Oxford: OUP; 2009. p.297-319.
72. Rivers WHR. Instinct and the unconscious contribution to a biological theory of the psycho-neuroses [Internet]. 1920. Available from: <http://psychclassics.yorku.ca/Rivers>
73. Bouchard C, Brissaud F. *Traité de Médecine.* Paris: Masson; 1905.
74. Babinski J. Discussion sur l'hysterie. *Rev Neurol.* 1908;16:365-404 and 494-519.
75. Babinski J. Émotion, suggestion et hystérie. *Rev Neurol.* 1907;15:752-754.
76. Klippel M, Weill GA. *Traité de Médecine.* Paris: Masson; 1927.
77. Tatu I, Bogousslavsky J. Le poilu, l'hystérie et le neurologue. Combats autour des psychonévroses de la Grande Guerre. Paris, in press, 2010.
78. Myers CS. A contribution to the study of shellshock: being an account of the cases of loss of memory, vision, smell and taste admitted to the Duchess of Westminster's War hospital, Le Touquet. *Lancet.* 1915;1:316-20.
79. Audoin-Rouzeau S, Becker JJ. *Encyclopédie de la Grande Guerre 1914-1918.* Paris: Bayard; 2004.
80. Souques A, Rosanoff-Salofi M. La camptocormie. Incurvation du tronc, consécutive aux traumatismes du dos et des lombes. Considérations morphologiques. *Rev Neurol.* 1915;23:937-9.
81. Chavigny P. *Psychiatrie aux armées.* Paris Médical. 1915;5:415-23.
82. Tatu I, Bogousslavsky J, Moulin T, Chopard JL. The 'torpillage' neurologists of the Great War: electrocuting hysterics for the Fatherland. In submission.
83. Vincent C. La rééducation intensive des hystériques invétérés. *Bull Soc Méd Hôp Paris.* 1916:1198-208.
84. Roussy G, Boisseau J, d'Oelsnitz M. *Traitement des psychonévroses de guerre.* Paris: Masson; 1918.
85. Céline LF. *Voyage au bout de la nuit.* Paris: Denoël & Steele; 1932.
86. Adrian ED, Yealland JR. The treatment of some war neuroses. *Lancet.* 1917;i:867-72.
87. Brodie BC. *Lectures illustrative of certain nervous conditions.* London: Longman; 1837.
88. Crocq J. La psychiatrie de la Première Guerre Mondiale. Tableaux cliniques, options pathogéniques, doctrines thérapeutiques. *Ann Méd Psychol.* 2005;163:269-89.
89. Léri A. Centre neurologique de la Ile Armée. *Rev Neurol.* 1917;25:449-56.
90. Sollier P, Chartier, Rose F, Villandre C. *Traité clinique de neurologie de guerre.* Paris: Félix Alcan; 1918.
91. Micale MS. On the 'disappearance' of hysteria: a study in the clinical deconstruction of a diagnosis. *Isis.* 1993;84:496-526.
92. Tournay A. *La vie de Joseph Babinski.* Amsterdam: Elsevier; 1967.
93. Showalter E. *Hystories: hysterical epidemics and modern culture.* London: Picador; 1997.
94. Widlocher D, Dantchev N. Charcot et l'hystérie. *Rev Neurol.* 1994;150:490-97.
95. Stone J, Hewett R, Carson A, Warlow C, Sharpe M. The 'disappearance' of hysteria: historical mystery or illusion? *J R Soc Med.* 2008;101:12-8.
96. Yakovlev PI. Association pithiatio-organique. Origine, nature, portée clinique de l'élément pithiatique surajouté aux différents syndromes organiques principalement du système nerveux et la méthode d'observation objective du symptocomplexe pithiatio-organique. Paris: PUF; 1924.
97. Cojan Y, Waber L, Carruzzo A, Vuilleumier P. Motor inhibition in hysterical conversion paralysis. *Neuroimage.* 2009;47:1026-37.
98. Cojan Y, Waber L, Schwartz S, Rossier L, Forster A, Vuilleumier P. The brain under self-control: modulation of inhibitory and monitoring cortical networks during hypnotic paralysis. *Neuron.* 2009;62:862-75.