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History of Neurology

Figures and Institutions of the neurological sciences in Paris from 1800 to 1950. Part IV: Psychiatry and psychology

Les figures et institutions des sciences neurologiques à Paris de 1800 à 1950. Partie IV : psychiatrie et psychologie

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ABSTRACT

We present a short historical review on the major institutions and figures who contributed to make Paris a renowned centre of physiology and neurology during the XIXth and the first half of the XXth century. We purposely chose to focus on the period 1800–1950, as 1800 corresponds to the actual beginning of neurosciences, and as 1950 marks their exponential rise. Our presentation is divided into four chapters, matching the main disciplines that have progressed and contributed most to the knowledge we have of the brain sciences: anatomy, physiology, neurology, and psychiatry-psychology. The present article is the fourth of the four parts of this review, which deals with the chapter on psychiatry and psychology. When the French Revolution occurred, only a few institutions were taking care of the mentally ill. In the Paris area, these included *Maison Royale de Charenton*, *Les Petites Maisons*, and one of the departments of larger hospitals such as *Hôtel-Dieu*, the *Salpêtrière Hospital* and *Bicêtre Hospital*. One of the founders of psychiatry in Paris at that time and thereafter was Philippe Pinel (1745–1826) who was the first to distinguish insane/alienated patients from misfits, beggars, and other vagabonds. During the first half of the XIXth century, his student Jean-Étienne Esquirol (1772–1840) also played a major role with his treatise on mental diseases and the 1838 law and the creation of asylums in all parts of France. Alienists were in general caregivers and learned by themselves. In contrast, at the academic level, the emerging disciplines psychiatry and neurology were very close to each other in the second half of the XIXth century, the best example being Jules Baillarger (1809–1890). The actual development of psychiatry and psychology and the foundation of psychoanalysis later in the XIXth

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Psychologie

century and in the first half of the XXth century owed much to several European doctors and scientists, particularly those from British institutions and from German-speaking universities in Central Europe. In France, important advances were once again initiated in Paris by Jean-Martin Charcot (1825–1893) and some of his pupils who renewed the concept of hysteria and the use of hypnosis. Sainte-Anne Hospital was created in 1867. This new institution located in the southern part of Paris became (and is still) one of the most important places in France for the treatment, research and teaching of mental diseases. Thereafter started new disciplines such as clinical psychology and neuropsychology; the scientific basis of psychology and notably the psychopathology hypothesis were established. A major revolutionary step occurred in Paris in the early 1950s with the discovery of neuroleptics and the birth of psychopharmacology. Here we present the biographical sketches of the most important Parisian scientists of these disciplines from that era, Philippe Pinel, Jean-Étienne Esquirol, Théodule Armand Ribot, Pierre Janet, Henri Louis Charles Piéron, Henry Ey, Jean Delay, Henri Laborit and Henri Hécaen.

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R É S U M É

Nous présentons une revue générale historique brève sur les principales institutions et personnalités ayant contribué à faire de Paris un centre renommé de physiologie et de neurologie au cours du XIX^e siècle et de la première partie du XX^e siècle. La raison du choix de cette période allant de 1800 à 1950 s'explique par le fait que 1800 marque les débuts des neurosciences, et 1950 leur développement exponentiel. Notre présentation est divisée en quatre chapitres, correspondant aux principales disciplines ayant progressé et contribué le plus aux connaissances que nous avons sur les sciences du cerveau : anatomie, physiologie, neurologie, et psychiatrie-psychologie. Le présent article est la quatrième des quatre parties de cette revue générale, qui porte sur le chapitre de la psychiatrie et de la psychologie. Au moment de la Révolution Française, il existait peu d'institutions prenant en charge spécifiquement les malades mentaux, essentiellement pour la région de Paris La Maison Royale de Charenton, les Petites-Maisons, et un service dans certains hôpitaux comme l'Hôtel-Dieu, Bicêtre et la Salpêtrière. L'un des fondateurs de la psychiatrie à Paris fut à cette époque et dans la période qui suivit Philippe Pinel (1745–1826), qui eut un rôle prééminent dans la reconnaissance de la prise en charge spécifique des patients atteints de maladies mentales et de leur distinction des vagabonds et autres aliénés de la société. Son élève Jean-Étienne Esquirol (1772–1840) eût également une influence considérable durant la première partie du XIX^e siècle en rédigeant un traité sur les maladies mentales, participant à la conception de la loi de 1838 portant son nom, et obligeant à la création d'asiles pour les malades mentaux dans tous les départements de France. Si les aliénistes étaient en charge du soin aux patients et apprenaient pour l'essentiel leur métier par eux-même, les deux disciplines de la neurologie et de la psychiatrie en cours d'individualisation étaient très proches l'une de l'autre à l'échelon universitaire comme le montre le travail, entre autres, de Jules Baillarger (1809–1890). Le développement de la psychiatrie et de la psychologie, les fondations de la psychanalyse à la fin du XIX^e siècle et dans la première moitié du XX^e siècle seront réalisés par des auteurs éminents dans plusieurs pays d'Europe, notamment d'institutions britanniques, d'universités de langue allemande en Europe centrale. En France, c'est une fois de plus notamment à Paris Jean-Martin Charcot (1825–1893) qui s'intéressa à la psychologie et orienta plusieurs de ses élèves vers cette nouvelle spécialité en modernisant le concept d'hystérie et la thérapie par l'hypnose. La création en 1867 dans le sud de Paris de l'hôpital Sainte-Anne contribua de façon importante et durable à améliorer les soins portés aux malades et faciliter la recherche. Par la suite vont naître de nouvelles disciplines comme la psychologie clinique, la neuropsychologie, et s'établir les bases scientifiques de la psychologie avec la psychopathologie. Au début des années 1950 se produisit à Paris la découverte des neuroleptiques qui révolutionna la psychiatrie et conduisit à l'essor de la psychopharmacologie. Nous présentons ici les biographies résumées des principaux contributeurs parisiens de cette époque, Philippe Pinel, Jean-Étienne Esquirol, Théodule Armand Ribot, Pierre Janet, Henri Louis Charles Piéron, Henry Ey, Jean Delay, Henri Laborit, et Henri Hécaen.

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1. Introduction

The progressive delineation of psychiatry and psychology as new disciplines and the efforts to modernize the health services devoted to the mentally ill in the modern era took a long time and are described below.

2. Definitions

Although the term 'psychiatry' was introduced by German physician Johann Christian Reil (1759-1813) ('*Psychiaterie*') at the end of the XVIIIth century and accepted in France by the *Académie* in 1802 (Bogousslavsky and Moulin, 2009, 2011), it became more and more recognized in France only during the early XXth century. Similarly, the term '*psychiatre*' in French (psychiatrist in English) became widespread only during the late XIXth century and first half of the XXth century, progressively replacing the term '*aliéniste*'. Today, the usual definition of psychiatry is a part of medicine which studies and treats mental diseases and pathological troubles of psychic life. The term psychology appeared in the XVIIth and the XVIIIth centuries and its current definition is the scientific study of behavior and cognitive processes. In parallel, the term neurology was first coined in England during the XVIIth century by Thomas Willis (1621–1657). However, the individualization of neurology as a new discipline occurred much later during the second half of the XIXth century. In France, neurology specialists were called '*neurologistes*' only in 1896 and '*neurologues*' in 1907 (Bogousslavsky and Moulin, 2011; Rey and Morvan, 2005). Today, teaching in Universities of neurology and psychiatry is performed in Medical Faculties whereas training in psychology is made in Social Science Faculties.

3. Institutions in France at the turn of the XVIIIth and XIXth centuries

In the late XVIIIth and early XIXth centuries, only a few institutions were dedicated to insane/alienated people in Europe. In France, before the French Revolution and until Napoleon reign, a small number of special departments inside broader Public Hospitals were devoted to the alienated patients, as in Hôtel-Dieu, Salpêtrière and Bicêtre Hospitals in Paris (Fig. 1), Hôtel-Dieu in Lyon and a few other hospitals in several parts of the country. Specialized institutions called asylums were very few, the most renowned places being Maison Royale de Charenton (Charenton Royal Hospice) (Fig. 1) and *Les Petites Maisons* (The Little Houses) in Paris area, as well as *Les Charités des Frères de Saint-Jean-de-Dieu* (Saint Jean de Dieu Brothers of Charity) in different French regions.

4. The first alienists and nosological studies in the early XIXth century in Paris

One of the early attempts during the XVIIIth century to provide a nosological classification of mental illnesses came from several contributors, especially François Boissier de Sauvages (1706-1767) in France and William Cullen (1755–1766) in Scotland (Fischer-Homberger, 1970). The first half of the XIXth century witnessed a rapid development in the study of mental diseases, notably in Paris, thanks to Philippe Pinel (1745–1826) who was the first at the Bicêtre and later at the Salpêtrière hospital - to distinguish insane/alienated patients from misfits, beggars, and other vagabonds (Fig. 2) (Anonymous, 1967; Harris, 2003; Tan and Yeow, 2004). Pinel proposed four main nosological entities of mental diseases, mania, melancholia, dementia and idiocy. His student Jean-Étienne



Fig. 1 – Drawing of Paris map which shows the location of the main hospitals where mentally ill patients were treated at the time of the late XVIIIth century and during the XIXth century. 1: Hôtel-Dieu; 2: Salpêtrière Hospital; 3: Bicêtre Hospital; 4: Maison Royale Charenton, today named Esquirol Hospital; 5: Sainte-Anne Hospital.

Dessin d' un plan de Paris montrant la situation géographique des principaux hôpitaux prenant en charge les patients atteints de maladies mentales à la fin du XVIII^e siècle et au cours du XIX^e siècle. 1 : Hôtel-Dieu ; 2 : hôpital de la Salpêtrière ; 3 : hôpital Bicêtre ; 4 : Maison Royale de Charenton, appelée aujourd' hui hôpital Esquirol ; 5 : hôpital Sainte-Anne.

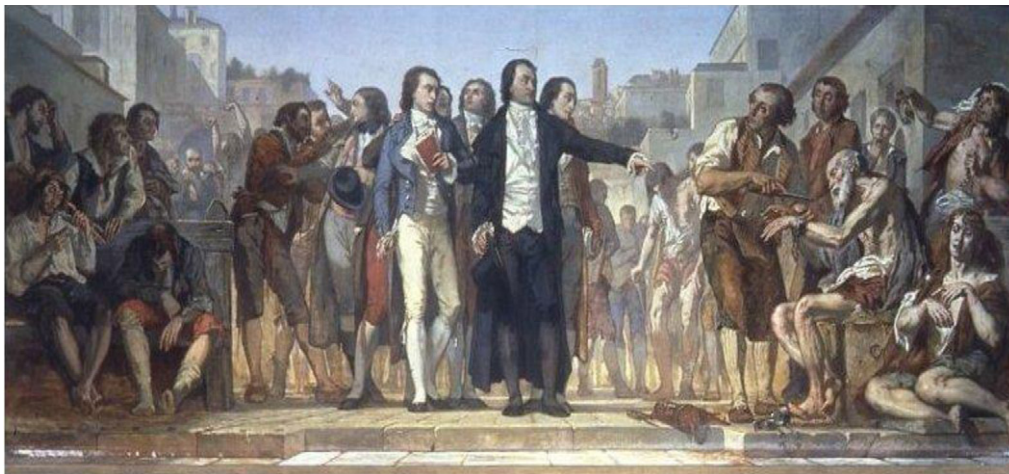


Fig. 2 – Pinel releasing insane patients at Bicêtre hospital. Oil on canvas by Charles Louis Mullet.
Pinel libérant les aliénés à l' Hôpital Bicêtre. Huile sur toile de Charles Louis Mullet (Académie nationale de médecine).

Esquirol (1772–1840) also played a major role with his treatise on mental diseases in 1838 and his responsibility in the 1838 law. This prompted the creation of specialized institutions for the mentally ill in almost all French Départements (counties) which took several decades. However, psychiatry was not recognized as a distinct discipline in French Universities. Alienists were devoted to the care of patients but did not perform any research. Academic study of mental illnesses was performed by only very few alienists (Bogousslavsky and Moulin, 2011). One of the most famous example is Antoine Laurent Jessé Bayle (1799–1858) who made his thesis in Charenton, entitled 'Research on mental diseases' (Bayle, 1822), which showed that a form of dementia, general paralysis of the insane, was associated at autopsy with a meningoencephalitis. This was only half a century later that Jean Alfred Fournier (1832–1914) would demonstrate the syphilitic origin of the process (Fournier, 1879). Bayle's report was revolutionary since it linked without doubt mental alienation with brain organic abnormality. It triggered a number of reports associating mental disorders with brain lesions, leading to the 'organicist' theory, as emphasized by the alienists Jacques Joseph Moreau de Tours (1804–1884) and Bénédicte Augustin Morel (1789–1873) (Bogousslavsky and Moulin, 2011). Two other alienists did important publications in other domains of the nervous system, Jules Gabriel François Baillarger (1809–1890) and Ernest Charles Lasègue (1816–1883). These few examples demonstrate that in the mid-XIXth century, the two emerging disciplines, neurology and psychiatry, were closely linked at the academic level. Accordingly, Baillarger founded the journal *Annales Médico-Psychologiques* in 1843 with Laurent Alexis Philibert Cerise (1807–1869) and François Achille Longet (1811–1871).

5. Advances in psychiatry and psychology in Europe in the second half of the XIXth century

The expansion of psychiatry and the rise of psychology, later in the XIXth century, were strongly influenced by the scientific

revolution in all medical fields and owed much to several European doctors and scientists, particularly those from British institutions and from German-speaking universities in Central Europe (Braunstein and Pewzner, 2010; Hochmann, 2004; Hothersall, 1984; Misiak and Sexton, 1966; Shorter, 1997; Viney and King, 2003). Although the present article is not aimed at describing in detail the evolution of psychiatry and psychology of that time, we will briefly recall the most important steps. Several British philosophers, particularly John Locke (1632–1704) and David Hume (1711–1776), had an important impact on the origin of psychology. Later, John S. Mill (1806–1873) proposed the term psychology to describe the scientific concept of a self-directed mind. British psychologists as Alexander Bain (1818–1903) and Herbert Spencer (1820–1903) and later James Ward (1843–1925) founded the 'associationist' theory and experimental psychology. During the same period, scientists and notably psychiatrists from German speaking universities in Central Europe were influenced by both the 'romanticism' and the 'organicist' theory of diseases. One of the first contribution came from Karl Ideler (1795–1838). Later, in Germany, Emile Kraepelin (1856–1926) made an overview of the psychic semiology of his time and proposed a renewed nosological classification of psychoses with two groups, "early onset dementia" and manic depressive psychosis, and thereafter a third one, paranoia. This classification will be adopted within a few years by others. The Swiss Eugène Bleuler (1857–1938) learned after Kraepelin and further delineated psychoses introducing the term schizophrenia instead of early onset dementia, thus adding a new psychopathology. He will be inspired by a contemporary physician, the Austrian Sigmund Freud (1856–1936). Freud was first trained by neurologists such as Theodor Meynert (1833–1892) and Hermann Nothnagel (1841–1905) in Vienna. Later he came to Paris and learned hysteria and hypnotism under Jean-Martin Charcot (1825–1893). He then returned to Vienna and made a revolutionary breakthrough in psychology. He defined new frontiers in the human psyche, with the unconscious, the self and the superego, and proposed psychotherapeutic interventions notably psychoanalysis. Karl

Jaspers (1883–1969) added the phenomenological philosophy, whereas Ludwig Binswanger (1881–1966) described among others an important clinical sign in psychopathology of manic states, the flight of ideas (*Ideenflucht* in German, *fuite des idées* in French) i.e. subjective experience that thoughts are racing.

6. The influence of Charcot and his pupils in the transformation of alienism into academic psychiatry in Paris

In France, important advances during the second half of the XIXth century were once again initiated in Paris by Charcot (Bogousslavsky, 2011). In contrary to the commonly held view, emerging neurology had much stronger influence on psychiatry ('alienism') than the reverse (Bogousslavsky and Moulin, 2009). This was largely due to the neurology school built-up by Charcot at the Salpêtrière Hospital. Although Charcot had for most of his career little interest in mental diseases (Goetz et al., 1995), his works on hysteria and hypnosis and the commitment of many of his students have facilitated such a development (Bogousslavsky, 2011; Bogousslavsky and Moulin, 2009, 2011; Bogousslavsky et al., 2009; Lhermitte, 1950). When Charcot took over Louis Delasiauve's (1804–1893) department after 1870, he was put in charge of epileptic and hysteric patients at the Salpêtrière hospital. With Désiré Bourneville (1840–1909), he tried to establish an organic approach of mental diseases. Charcot started to use hypnosis with hysterics in 1878. Charcot and his school considered the ability to be hypnotized as a clinical feature of hysteria, although they later recognized, during a prolonged quarrel with Hippolyte Bernheim (1837–1919) and the Nancy School, that *grand hypnotisme* (in hysterics) should be differentiated from *petit hypnotisme*, which corresponded to the hypnosis of ordinary people (Bogousslavsky, 2011). Although Charcot believed that hysteria was related to an organic illness and belonged to neurology rather than psychiatry, this opinion was questioned in his late years and after his death and this condition slowly took its place in a newly identified group of mental diseases, the psychoneuroses (Bogousslavsky and Moulin, 2011).

As explained above, by studying hysteria, Charcot's view on mental diseases gained growing interest in his late life. He had a strong influence when the decision was made to create for the first time in 1875 a chair of mental diseases at the Paris Faculty of Medicine, a few years before the founding of a chair of neurology for himself. Its first holder was Benjamin Ball (1833–1893), who was a pupil of Lasègue and had also worked with Charcot. His service was in Laënnec Hospital but the chair of mental diseases was based at Sainte-Anne Hospital, a new institution located in the southern part of Paris (Fig. 1). This *asile clinique* (clinical asylum) was built up under the direction of Emperor Napoleon III and Baron Haussmann and opened in 1867 (Bogousslavsky and Moulin, 2011; Tiberghien, 2011). Ball studied narcotics and mental diseases and described hallucinations in Parkinson's disease. In 1881, he founded the journal *l'Encéphale* with Jules Bernard Luys (1828–1897). In 1893, the year of Charcot's death, Alix Joffroy (1844–1908), another pupil of Charcot, who was heading the second service of neurology called 'Jacquart' at the Salpêtrière Hospital while

Charcot was in charge of 'Cazalis', succeeded Ball despite his little experience as an alienist. In 1909, the third holder of this chair was again another close pupil of Charcot, Gilbert Ballet (1853–1916), his former *chef de clinique* (Bogousslavsky and Moulin, 2011; Tiberghien, 2011). Sainte-Anne Hospital became (and is still) one of the most important places in France for the treatment, research and teaching of mental diseases.

While Charcot systematically claimed his disinterest in mental disorders, the influence of his work and teaching was critical in shaping the transformation of alienism into academic psychiatry as recently emphasized (Bogousslavsky and Moulin, 2011). Outside Paris, several chairs of mental diseases were founded in the late XIXth century in the Medical Faculties of France's major cities and most of them were held by physicians trained in internal medicine and therefore with more experience in neurology than in psychiatry, creating the discipline called 'neuropsychiatry' (Bogousslavsky and Moulin, 2011). Apart from the chair of neurology created for Charcot at the Salpêtrière Hospital, no other chair of this kind was built in France for a long time. Thus, another part of neurologists with initial training in internal medicine were appointed professor of Clinical Medicine or of Internal Pathology. In contrast, apart from the academic level, most of psychiatrists (formerly named alienists) were appointed after a special residency (internship) in asylums (later renamed Psychiatry hospitals) and learned mostly on their own. Outside the Psychiatry hospitals, and the academic level there were very few 'neuropsychiatrists'. This organization lasted for almost one century in France. In the late 1960s however, the French Universities created separate chairs and teaching courses for psychiatry and neurology and delivered distinct diplomas.

In parallel with the development of psychiatry, psychology finally acquired a scientific approach in France by the end of the XIXth century, thanks to Théodule Ribot (1838–1916), Alfred Binet (1857–1911) and Pierre Janet (1859–1947) (another student of Charcot), among others (Nicolas and Reuchlin, 2002). These scientists and their pupils had an important role in the creation of the PhD diploma in psychology and in the birth of new disciplines as clinical psychology and neuropsychology whereas the scientific basis of psychology established the French psychopathology model.

7. The discovery of neuroleptics and birth of psychopharmacology in Paris in the 1950s

In 1952, a revolutionary event took place in Paris with the discovery of chlorpromazine, a phenothiazine structurally related to antihistamine agents, and derived from promethazine. This was the result initially of a collaboration between Pasteur Institute and Rhône-Poulenc pharmaceutical company (now Sanofi-Aventis) and subsequently of the involvement of three eminent scientists (Healy, 2002; Swazey, 1974). Henri Laborit (1914–1995), a Doctor from the *Val de Grâce* Hospital, was interested in creating a kind of artificial hibernation, which included lowering of body temperature, to lessen the danger of shock during and after surgical operation. He reported promising results with promethazine. This compound showed sedative effects. Chlorpromazine was

thereafter tested in rats and showed changes in their behaviour when submitted to stress. Laborit evaluated in 1952 chlorpromazine in patients not only during surgery, but also in other conditions (Laborit et al., 1952). He found that this compound caused a strangely disinterested state in patients. The same year, aware of these findings, Jean Delay (1907–1987) and Pierre Deniker (1917–1998) two psychiatrists at Sainte-Anne Hospital, asked Rhône-Poulenc to send chlorpromazine samples to test this drug in psychotic patients. They found a marked improvement in hallucinations and delusion (Delay et al., 1952a, 1952b). This was a major innovation in the field of psychiatry. Chlorpromazine was marketed within a short time in 1952 in Europe by Rhône-Poulenc under the name of Largactil and in 1954 in USA by Smith, Kline and French laboratories as Thorazine (Lehmann and Hanrahan, 1954). Within a few years, millions of patients were treated worldwide, and an important number could be relieved from hallucinations and delusion, leave their hospital and return to their home and work. Other phenothiazines were soon after discovered by Rhône-Poulenc, tested in Sainte Anne Hospital and in other places in Paris and France especially the *Vinatier* Hospital in Lyon and introduced in patients care. This new family of psychoactive drugs was called neuroleptics and changed the view that mental illness was not only a social and cultural but also a biochemical phenomenon.

The innovation of neuroleptics contributed to the development of new fields, biological psychiatry and psychopharmacology. Such revolution was thereafter counterbalanced by the antipsychiatry movement in the 1960s. Antipsychiatry was a radical crisis in self-conception between biological and psychoanalytic psychiatry, promoted through the efforts of its four seminal thinkers: Michel Foucault (1926–1984), a French philosopher in Paris, Ronald David Laing (1927–1989) in Great Britain, Thomas S. Szasz (born in 1920) in the United States, and Franco Basaglia (1924–1980) in Italy (Rissmiller and Rissmiller, 2006).

8. Biographical sketch of pioneers in psychiatry and psychology in Paris

We present below a short biography of the most important pioneers in psychiatry and psychology who worked in Paris between 1800 and 1950: Philippe Pinel, Jean-Étienne Esquirol, Théodule Armand Ribot, Pierre Janet, Henri Louis Charles Piéron, Henry Ey, Jean Delay, Henri Laborit and Henri Hécaen.

8.1. Philippe Pinel (1745–1826)

Pinel (Fig. 3) abandoned his initial religious vocation and got into medicine in Toulouse and then in Montpellier (Anonymous, 1967; Bendiner, 1981; Chazaud, 1996; Gibson, 1967; Haas, 1993; Juillet, 1976; Riese, 1951; Semelaigne, 1888; Weiner, 1991; Woods and Carlson, 1961). He was the medical student of Paul Joseph Barthez (1734–1806), a defender of the vitalism theory and the disciple of Étienne Bonnot de Condillac (1715–1780) in philosophy. Pinel was also influenced in his early carrier by the nosological work of Cullen and did a French translation of his book (Cullen, 1785). Under the French *Ancien Régime* (Old Order, i.e. the system established in France under



Fig. 3 – Picture of Pinel.

Portrait de Pinel.

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the Valois and Bourbon dynasties between the XIVth and the XVIIIth centuries), incurable insane patients of the Paris metropolitan area were locked up at the Bicêtre and Salpêtrière hospitals and at the Petites Maisons asylum whereas curable insane patients were crammed in at the Hôtel-Dieu hospital. Pinel came to Paris and was appointed chief resident at the Bicêtre hospital in 1792 then at the Salpêtrière hospital in 1795 (Caire, 1995, Vidart and Juglard, 1976) With his student Jean-Étienne Esquirol who succeeded him, he established the moral treatment of folly, namely life rules, respect and occupation (Anonymous, 1967; Baruk, 1971; Harris, 2003; Houillon and Houillon, 1976; Levine, 1996; Pinel, 1797; Pinel, 1798a, 1798b; Tan and Yeow, 2004). The treatise of Pinel, *Traité médico-philosophique sur l'aliénation mentale ou la manie* (Medico-Philosophical Treatise on Mental Alienation or Mania), was published in 1801 (Pinel et al., 1801). The insane or foolish became the alienated that is to say patients pertaining to medicine, and no longer to be locked up among the prisoners, disabled, destitute, but on the contrary to be treated in specialized institutions such as public asylums or private Maisons de Santé (private asylums). With Esquirol, Pinel identified four main nosological entities among mental diseases, mania, melancholia, dementia and idiocy. The myth of Pinel single-handedly liberating the insane from their chains with the help of his superintendent Jean-Baptiste Pussin (1746–1811) grew up (Fig. 2), but this story is closer to the hagiographies written by his descendants than from the historical truth (Woods and Carlson, 1960). Nevertheless, Pinel inventive contribution was to use the medical observation so as to analyse the signs and symptoms of the mentally ill. He made with Esquirol several uncontested major advances: the first nosological classification of mental diseases, the recognition of human rights for the mentally ill patients and the therapeutic proposal of the moral treatment.

8.2. Jean-Étienne Esquirol (1782–1840)

After having studied in Toulouse, Esquirol (Fig. 4) arrived in Paris in 1799, where he was the student of Jean Nicolas



Fig. 4 – Picture of Esquirol.
Portrait d' Esquirol (Académie nationale de médecine).

Corvisart (1755–1821) at the *Charité* hospital and of Pinel at the Salpêtrière hospital from 1801 onwards (Baruk, 1971; Caire, 1997; Dubois, 1988; Huertas, 2008; Mora, 1972; Szapiro, 1976). Esquirol work was the basis of the famous 1838 French law on the special care of alienated patients which required the creation of asylums in all French *Départements* (Counties). In 1805, he wrote his thesis entitled *Les Passions considérées comme cause, symptôme, et moyen de la maladie mentale* (The Passions Considered as Causes, Symptoms and Means of Cure in Cases of Insanity) (Esquirol, 1805). He thereafter invested his time in the nosographic delineation of mental illnesses (Esquirol, 1816, 1818; Rud, 1965). Esquirol then succeeded Pinel at the Salpêtrière hospital as chief resident where he founded the first ever teaching course in France on mental illnesses. Although this teaching course was not included in the official programme of Paris Faculty of Medicine, it helped Esquirol to establish his own school and had a great influence among medical circles. Esquirol defended the idea that the care of alienated was a new medical discipline and folly required specific therapy in specialized hospitals with a distinct medical training. He showed by a survey in all parts of France that mentally ill patients were poor, miserable and abandoned and subsequently proposed to build or to improve asylums throughout the country. Esquirol specifically founded two *Maisons de Santé* for the insane in the Paris area; one located Rue de Buffon in Paris and the other one near Ivry. He succeeded Anthoine Athanase Royer-Collard (1768–1825) after his death as chief resident at the *Maison Royale de Charenton* (Charenton Royal Hospice), today named after him Esquirol hospital. In 1838 he wrote his famous treatise entitled: *Des Maladies mentales considérées sous le rapport médical, hygiénique et médico-légal* (On Mental Diseases Considered under the Medical, Hygienic and Medical-Legal Aspects) (Ellis and Esquirol, 1840; Esquirol, 1838). He tried to define dementia by classifying it into three types (acute, chronic and senile dementia). He also established for the first time the distinction between hallucinations and illusions which had major forensic consequences (Esquirol, 1838). In the same treatise he defined a specific category of patients with almond-shaped

eyes, a flat nose, a more or less thick tongue and obvious mental retardation. Édouard Seguin (1812–1880) refined this description in 1846 by adding numerous details and coined the term “cretinism”. John Langdon Down (1828–1896) described again such patients in 1862 and defined their condition as “mongolism”. The complete works of Esquirol were the basis of the famous 1838 French law on the special care of alienated patients and on the creation of asylums, which was applied in France for more than 150 years before its update in the 1990s.

8.3. Théodule Armand Ribot (1839–1916)

In 1864, Ribot (Fig. 5) entered the *École Normale Supérieure* (one of the most prestigious French *Grandes Écoles*, i.e. higher education establishments outside the framework of the public universities system), was *agrégé* in 1866, worked on heredity and defended his PhD thesis on this matter in 1875 (Delay, 1957; Faber, 1997; Nicolas and Charvillat, 2001; Ribot, 1873; Staum, 2007). He was professor of philosophy in a Public High School in Vesoul (eastern part of France) then in Laval (western part of France) after which he came back to Paris to carry out experimental psychology researches both in laboratories and alienated asylums. In 1876 he founded the journal *Revue Philosophique* and edited it nearly until his death. In 1885 he gave lectures of experimental psychology at the Sorbonne University, and was appointed holder of the chair of experimental and comparative psychology at the *Collège de France* in 1888, thanks to Ernest Renan (1823–1892). Thus, he was the first to establish the teaching of psychology as a new discipline in French Universities. In his first work, *La Psychologie anglaise contemporaine: école expérimentale* (Contemporary English Psychology: the experimental school) (Ribot, 1870), Ribot showed that, as all the positive sciences already did, it was now the time for psychology to separate itself from philosophy. Psychology should be a science of psychic facts consisting of two aspects of the mind: the conscious, internal aspect, completed by the physiological aspect. The observation and the assessment of nervous mechanisms should be added to the rather unscientific introspective method.

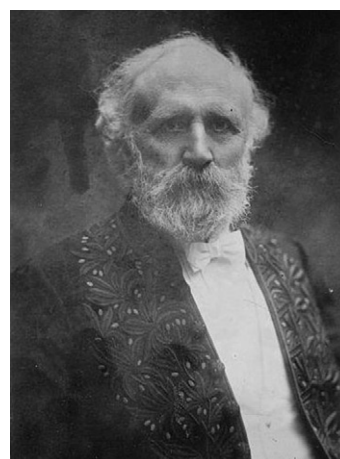


Fig. 5 – Picture of Ribot.
Photographie de Ribot.
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In *La Psychologie anglaise contemporaine : école expérimentale* (Ribot, 1870) and *La Psychologie allemande contemporaine, école expérimentale* (German Psychology of Today: the empirical school) (Ribot, 1879), Ribot presented the main results gained by the experimental psychology of John Stuart Mill (1806–1873), Herbert Spencer (1820–1903), Alexander Bain (1818–1903), Johann Friedrich Herbart (1776–1841), Gustav Fechner (1801–1887), Hermann Lotze (1817–1881), Wilhelm Wundt (1832–1920), and others to the French wider public.

In the following works, he gave models of psychology supported by rigorous physiological observations: *L' Hérédité psychologique* (Psychological Heredity) (Ribot, 1873, 1882), *Les Maladies de la mémoire* (diseases of memory, an essay in the positive psychology) (Ribot, 1881), *Les Maladies de la volonté* (diseases of the will) (Ribot, 1883), *Les Maladies de la personnalité* (diseases of personality) (Ribot, 1885) and *La Psychologie de l' attention* (the psychology of attention) (Ribot, 1889). Ribot's law on memory regression from the most recent to the oldest, from the more complex to the simplest and from the voluntary to the automatic was at his time very innovative by introducing the concept of a biological basis of memory.

Ribot did not experiment himself but he laid the foundations of an actual physiological psychology. In 1889, he helped the establishment of the first laboratory of experimental psychology, initially headed by Henri Beaunis (1830–1921) and thereafter in 1894 by Alfred Binet (1847–1911), the inventor of the Binet-Simon test. Ribot applied pathology to his work as a way to understand the mechanisms of the healthy Man.

8.4. Pierre Janet (1859–1947)

Janet (Fig. 6) was a student of l' *École Normale Supérieure* and *agrégé* of philosophy (Fouks et al., 1990; Havens, 1966). His researches attracted the attention of the recently founded *Société de Psychologie Physiologique* (Society of Physiological Psychology) presided over by Charcot, and gave him a privileged place in the emerging French psychology. In his 1889 PhD thesis (*Doctorate ès lettres*), he explained his psychism theory: *L' Automatisme psychologique* (psychological automatism) (Janet, 1889). His conception was strongly influenced

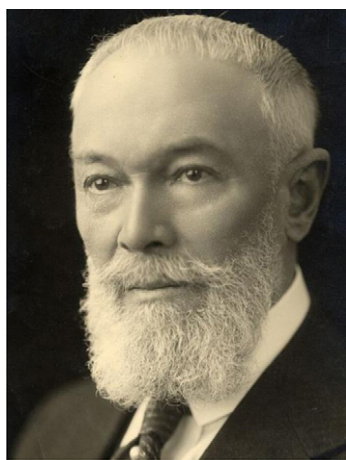


Fig. 6 – Picture of Janet.
Photographie de Janet.
From ©BIU Santé.

by Herbert Spencer (1820–1903)' s evolutionism and John Hughlings Jackson (1835–1911)' s ideas on pathologic degeneration in a hierarchical nervous system. From 1890 on, Janet worked at the Salpêtrière hospital and became director of a pathological psychology laboratory, where he studied patients suffering from hysterical neurosis, the very subject of his 1893 MD thesis, *Contribution à l' étude des accidents mentaux chez les hystériques* (Contribution to the study of mental accidents in hysterical patients) (Janet, 1893a, 1893b, 1894, 1920; Janet and Nicolas, 1911). He did an important contribution to the concept and delineation of psychopathology (Carroy and Plas, 2000; Fouks et al., 1986; Janet, 1893a, 1893b; Janet and Raymond, 1898; Van der Hart and Dorahy, 2006; Van der Kolk and Van der Hart, 1989) and to the use of hypnosis and psychotherapy in the treatment of mental illnesses (Bühler and Heim, 2001; Haule, 1986; Janet, 1919; Kissel and Barrucand, 1967; Sutter, 1978). With the support of his mentor Ribot, he obtained a chair of Experimental Psychology at the Sorbonne University in 1897, and later in 1902 a chair of Experimental and Comparative psychology at the *Collège de France*. He founded the *Journal de Psychologie Normale et Pathologique* with Georges Dumas (1866–1946). Although Pierre Janet' s influence was overshadowed by that of his great rival Sigmund Freud, he is largely considered as one of the founders of clinical psychology.

8.5. Henri Louis Charles Piéron (1881–1964)

Piéron (Fig. 7) did his PhD studies in philosophy at the Sorbonne University and provided a great contribution to the rise of French psychology during the first half of the XXth Century (Chauchard, 1964; Fessard, 1949; Fraise, 1965; Georgiade, 1970; Le Grand, 1966; Littman, 1971; Noizet, 1965; Piaget, 1966; Reuchlin, 1964). He is considered as one of the pioneers of the scientific approach of psychology in France, separating this discipline from philosophy (Piéron, 1934, 1945, 1959). He was the holder of the chair of physiology of the sensations at the *Collège de France* from 1923 to 1951. He was editor in chief of the journal *L' Année Psychologique* for 35 years, founded the *Institut National d' Orientation Professionnelle–INOP* (National Institute of Vocational Guidance) in 1928. After

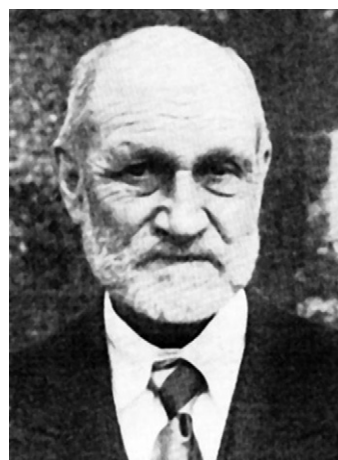


Fig. 7 – Picture of Piéron.
Photographie de Piéron.
From hmenf.free.fr/IMG/jpg/H._Pieron_.jpg.

having trained in this institute the first *Orienteurs Professionnels* (professional guidance councillors)–the institute which now depends of the *Conseil National des Arts et Métiers* (National Arts and Trades Conservatory)–he dealt with the teaching of the career advisor-psychologists and carried out researches in the field of orientation psychology (Piéron, 1957). Piéron was a very open-minded person and was interested in the comparative behavioural approach (Fraisse, 1970). He combined his observations of patients in the hospital and his laboratory experiments. He worked on the vestibular functions, reflexes and on the influence of stress on blood glucose levels. Piéron also participated to the description of the post-concussional syndrome in war-injured patients during World War I (Mairet and Piéron, 1915) and did a pioneering work on the study of sleep (Piéron, 1913). With Alfred Fessard (1900–1982) he contributed a lot to the development of psychophysiology and its teaching in Universities (Bloch et al., 1956; Fessard and Piéron, 1954). One of their pupils was Jacques Paillard (1920–2006) who was director of the Institute of neurophysiology and psychophysiology (INP) in Marseille between 1969 and 1985, which was one of the first laboratories of Neuroscience (Clarac et al., 2009).

8.6. Henri Ey (1900-1977)

Henri Ey (Fig. 8) was a renowned French psychiatrist (Brisset and Bernard, 1978; Cathala, 1955; Charlin, 1978). As from 1931, he worked in Bonneval hospital, where he did a lot of clinical observations, improved the daily condition of patients, and later fought against famine during World War II, a condition which unfortunately produced a lot of deaths during this time in French asylums. Thereafter, Henri Ey was appointed in Sainte-Anne Hospital in Paris. During his whole life, he tried to connect psychiatry and psychoanalysis. He published a lot of works, especially on hallucinations, delusions (Ey, 1973a, 1973b, 1975, 1977; Ey and Séglas, 1934), did a treatise on psychiatry (Ey et al., 1960) and was the editor-in-chief of the volumes on psychiatry of the handbook *Encyclopédie Médico-chirurgicale* for a long time. His lectures on clinical cases at Sainte-Anne hospital in Paris greatly influenced his students. He supported an “organo-dynamic” concept of psychiatry that



Fig. 8 – Picture of Henri Ey.
Photographie d’ Henri Ey.

aimed to be a synthesis between psychiatric symptoms and neurophysiological data, renewing the field of psychic and psychosomatic disorders (Kors, 1962). Henri Ey suggested that a declining function might cause the development of another function, and make it pathological. He is considered as the French scientist who was at his time one of the most supporters of the Jacksonian theory of hierarchical organisation of brain functions (Ey et al., 1939). He founded with others the World Psychiatry Organization in 1961 and was its secretary for several years.

8.7. Jean Delay (1907-1987)

Jean Delay (Fig. 9) was a psychiatrist and a neurologist. He studied philosophy, was a *docteur ès lettres* (PhD in humanities) and a writer (Anonymous, 1964; Deniker, 1988). During his MD thesis with Georges Guillain (1876–1961) he made an important contribution to the description of astereognosia (Delay, 1935). He became *médecin des hôpitaux de Paris* in 1938, *agrégé* (associate professor) in 1939, and presented his PhD thesis (*Doctorate es lettres*) in 1942 on memory disorders. He learned psychiatry under Henri Ey and was appointed professor of mental diseases in 1946. Most of his hospital time was spent in Sainte-Anne Hospital (Fig. 1). He headed the Institute of Psychology of the University of Paris, the *Société Française de Psychologie* (French Society of Psychology), and presided over the first World congress of psychiatry in 1950. He wrote numerous authoritative works in the field of psychiatry and also of neurology (Delay, 1942, 1946, 1949, 1954, 1955, 1958, 1961, 1966; Delay and Brion, 1962; Delay and Leriche, 1953). He published with Pierre Janet *Les Dissolutions de la Mémoire* (the dissolutions of memory) (Delay and Janet, 1942). Most importantly as described in the first part of the present essay, with Pierre Deniker (1917–1998) – who was his assistant – he initiated the clinical use of chlorpromazine in 1952 (marketed under the name of Largactil in Europe and Thorazine in USA) for the treatment of acute and chronic psychosis, and by doing so, he paved the way for the growing use of antipsychotic medication in psychiatry (Delay and Deniker, 1961; Delay et al., 1952a, 1952b, 1955, 1956a, 1956b). In parallel Delay was also a novelist and literary critic, did a biography of the novelist André Gide and became a member of



Fig. 9 – Picture of Delay.
Photographie de Delay.

the Académie Française (French Academy). When he was officially received by the French Academy on, January 21, 1960, Louis Pasteur Valléry-Radot (1886–1970) said in his speech: “Monsieur, votre œuvre littéraire est des plus originales. Elle a ouvert, par ce livre sur Gide, des voies nouvelles à l’ étude de l’ histoire naturelle d’ un esprit comme disait Sainte-Beuve. Est-ce donc elle qui vous a permis d’ accéder, très jeune encore à notre compagnie ? Non Monsieur, vous êtes parmi nous en tant que psychologue scientifique (“Sir, your literature work is particularly original. Your book on Gide opened new fields in the study of the natural history of a mind as Sainte-Beuve said. Is this the reason why you have entered the Academy at such a young age? No Sir, you are now one of us as a scientific psychologist”).

8.8. Henri Laborit (1914–1995)

Laborit (Fig. 10) was a surgeon early in his professional life, then became interested in anesthesiology and thereafter a renown biologist and a specialist of the animal and human behaviour and autonomic nervous system (Campan, 1988). He was a curious-minded person and an anti-conformist, and played a major role in the introduction of chlorpromazine (see above the introduction and the biography of Jean Delay) in the treatment of schizophrenia, a drug he had previously used to cause artificial hibernation (Coirault et al., 1956; Laborit, 1951a, 1951b; Laborit et al., 1952; Laborit and Huguenard, 1954; Laborit and Laborit, 1955). Henri Laborit also worked on the effects of drugs used in surgical anaesthesiology and recovery room. As such, he contributed to the development of psychopharmacology (Laborit, 1950, 1958, 1968, 1969, 1979a, 1979b, 1980). He was the first to experiment in humans the natural compound GHB (gamma-hydroxybutyric acid) which is metabolized to GABA (gamma aminobutyric acid) (Neumann, 2009). He did a pioneering work on the neurobiological basis of aggressive behaviour and stress, on the inhibition of action and of anxiety, studying both Humans and rats (Laborit, 1970, 1971, 1972, 1979b), taught psychosociology in Québec City, Canada and was the editor the journal *Revue d’ Agressologie* (Agressology review) between 1958 and



Fig. 10 – Picture of Laborit.
Photographie de Laborit.
From http://www.freebase.com/view/en/henri_laborit.

1983. He received the Albert Lasker Award for Clinical Medical Research (today known as Lasker-DeBakey Clinical Medical Research Award) in 1957 and was awarded the World Health Organisation (W.H.O.) medal in 1972. His ideas on behavioral biology gained wide recognition, thanks to his book *La Nouvelle Grille* (The New Framework) (Laborit, 1974), in a very “post-1968” western world social revolutionary context. His works on conditioning provided a basis for Alain Resnais’ s movie *L* (My American Uncle, 1980). Laborit received the Anokhin (USSR) Prize in 1981. Despite the prestigious awards mentioned above, Laborit never belonged in France to any official functions and any major Institute or research center.

8.9. Henri Hécaen (1912–1983)

Native of Brest in Brittany in the western part of France, Hécaen (Fig. 11) went to Paris and decided to join Sainte-Anne hospital in order to become a psychiatrist (Albert, 1984, Benton, 1983, Boller, 2006, Galtier, 1984; Lhermitte et al., 1985). There he came to know Julian de Ajuriaguerra (1911–1993), and their careers developed in parallel for a while. They were both trained in psychiatry by Henri Ey, and received special teaching and inspiration in neurology from Jean Lhermitte (1877–1959) with whom they published *Le Cortex cérébral* (The Cerebral Cortex), the very first textbook of neuropsychology (Hécaen et al., 1949).

Hécaen was actually more interested in neurology than psychiatry. In 1947, he published with Ey and de Ajuriaguerra a book on the relations between neurology and psychiatry (Ey et al., 1947). In 1952, he spent several months at the McGill’ s Montreal Neurological Institute, where he worked with the famous neurosurgeon Wilder Penfield (1891–1976) and with Brenda Milner, a pioneer in neuropsychology. Two papers established him on the international scene during the 1950s. The first was written with de Ajuriaguerra on Balint’ s syndrome (Hécaen and de Ajuriaguerra, 1954). Even more important was the second article entitled “The Syndrome of Apractognosia due to Lesions of the Minor Cerebral Hemisphere published with Penfield (Hécaen et al., 1956). This paper was a real eye-opener



Fig. 11 – Picture of Hécaen.
Photographie de Hécaen.
From www.neuro-cog.com/nc_especialidades.htm.
Bibliothèque Sainte-Anne.

on the role of the right hemisphere, which was not getting enough attention at that time. Hécaen went back to Sainte-Anne hospital in Paris and his team moved to the newly opened Centre Paul Broca (Paul Broca Centre) in 1968. Over the years, Hécaen and his group steadily grew both in size and influence, and his INSERM Unit 111 laboratory became renowned all over the world as one of the leading facilities in the field of neuropsychiatry.

In 1962, Hécaen founded the Groupe de Neuropsychologie et Neurolinguistique (Neuropsychology and Neurolinguistics Club). He defined neuropsychology as “la discipline qui traite des fonctions mentales supérieures dans leur rapport avec les structures cérébrales” (“the discipline dealing with higher cortical functions and their relationship to cerebral structures”). Hécaen founded the internationally well-known scientific journal, *Neuropsychologia* (Zangwill, 1984). His research works dealt with almost every aspects of neuropsychology, with major emphasis on hemispheric cerebral dominance and aphasia (Dubois et al., 1969; Hécaen, 1960, 1972; Hécaen and Albert, 1978; Hécaen and Dubois, 1969; Hécaen and Gimeno Alava, 1960; Hécaen and Lanteri-Laura, 1978, 1983; Hécaen et al., 1960). He was among the first in Europe to carry out carefully planned group studies. He investigated agraphia, acalculia, dressing apraxia, and visual agnosia, aphasia, and left-handed people among others. In 1965 Hécaen was named Directeur d' Études (Academic Director) of the École Pratique des Hautes Études, currently known as École des Hautes Études en Sciences Sociales (School for Advanced Studies in Social Sciences). He promoted the new discipline of speech therapist and the care of aphasic patients by these professionals and created a school on rehabilitation of aphasia.

Disclosure of interest

The authors declare that they have no conflicts of interest concerning this article.

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