The Brain in the Third Republic: Science, Pedagogy, and National Regeneration

Larry S. McGrath

Before Parisian crowds overflowed his celebrated lectures at the Collège de France, Henri Bergson came to the provincial town of Clermont-Ferrand in 1883 to teach the philosophy course in a lycée (the French equivalent of high school). Bergson opened the first lesson on psychology, the centerpiece of the course, with a thorough introduction to human neurology, and proceeded to critique the reductionist implications of the nascent science: “If sadness were in the heart, if thought were in the head, it would occupy a place there, which by dissecting one could end up finding on the end of a scalpel…But thought does not reside in the brain.” Bergson was no materialist. The lesson reflected his philosophy of the mind’s creative powers advanced in Éssai sur les données immédiates de la conscience (1889) and Matière et mémoire (1896). But well before he won the Nobel Prize for literature in 1927, Bergson instructed his students using cerebral diagrams replete with anatomical descriptions and physiological localizations of the brain’s functions. The lesson also betrayed an ideological cleavage at the heart of philosophy’s public mission under the Third Republic: Bergson was both an independent thinker indebted to the nation’s rich spiritualist tradition, extending from René Descartes and Michel de Montaigne to Victor Cousin, and a civil servant tasked with inculcating laïque and scientific values in the classroom. Bergson belonged to a generation of lycée philosophy instructors entrusted as the public stewards of still-budding brain research.

During the late nineteenth century, education reformers in France mobilized the lycée philosophy course as a pedagogical vehicle to promulgate brain science and steer its cultural circulation. At a time before the radio and the television – modern conduits of ideology – education functioned as the state’s primary ideological mouthpiece. Philosophy’s contested public campaign, fraught with competing ambitions of national regeneration, technological advancement, and historical integrity, casts into stark relief the institutional contexts in which the early neurosciences shaped the intellectual and cultural history of the fin de siècle.

The textbook that Bergson used was Paul Janet’s Traité élémentaire de philosophie (1879), the first of its kind to feature brain diagrams and to acknowledge the cerebral foundations of consciousness [Figure 1]. Before the author’s nephew, Pierre Janet, became one of France’s leading clinical psychologists, the elder Janet was an architect of education policy who directed lycée philosophy professors, most of whom originally studied metaphysical methods, with the responsibility of learning and teaching new physiological

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methods. Bergson used Janet’s popular textbook for its novel visualizations of the brain’s functions as much as its explicit refutation of experimental psychologists who sought to reduce spirit [l’esprit] – understood in French philosophy as the immaterial domain of the mind – to effects of the nervous system. The textbook’s advisory was explicit: “leaving the body and the role it plays in our life out of the discussion would leave a dangerous weapon in the hands of materialism.” The Traité both reinforced and reflected Janet’s dictum that France ought to entrust neuro-psychological instruction to philosophy professors, trained as they were to shepherd the cultural reception of the emergent science. Janet’s Traité, which underwent six re-editions until its last in 1889, could be found across Parisian and provincial lycée classrooms. Yet its appearance in Bergson’s brings into view surprising connections between education policy and transnational aesthetic, literary, and philosophical modernisms, above all those fueled by the craze for Bergsonisme at the turn of the century.4

The philosophy class is an essential aspect of French education. Since it was inaugurated in 1809, the class has been mandatory for all students during the final year of lycée. Philo, as it is called, was designed to synthesize a scientific and humanistic education. It served as the couronnement of students’ studies, a term employed during the nineteenth century to signify philosophy’s exalted status atop secondary education. The official curriculum, or programme, was composed from on high by the Ministry of Public Instruction and comprised five sections: psychology, logic, metaphysics, ethics, and the history of philosophy. Psychology constituted the focal point of the curriculum since the spiritualist philosopher Victor Cousin introduced the section in 1832 while serving as the minister of education. In fact, psychology endures today as the first section of the terminal philosophy course under the title “the Subject,” which all lycée students study before sitting the baccalauréat, the degree-granting exit examination.5

Beginning with curricular reforms in 1874, the lycée philosophy class came to serve as a social laboratory for disseminating advancements in the brain sciences while setting them in a moral framework sensitive to the imperatives of a fragile democracy. Modern psychology lessons took form during a period of national rebuilding following France’s humiliating defeat in the Franco-Prussian War of 1870. In the face of the technologically advanced and newly unified German Empire, French Republicans looked to education as the key to surpassing their perpetual foe across the Rhine. Jules Simon initially consolidated the universities and lycées to mend regional divisions in France. And as minister of education, Jules Ferry organized primary and secondary education to instill Republican patriotism and, above all, laïcité. Reforms in 1881 abolished fees and tuition for elementary schools; and in 1882, enrollment in a public or free

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3 Paul Janet, Traité élémentaire de philosophie à l’usage des classes (Paris: Delgrave, 1879), 6.
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Figure 1  Diagrams of the brain's dual hemispheres

6 Ibid., 21-22.
(religious) school became compulsory. President Jules Grévy formally inscribed the separation of church and state into law on March 28, 1882, a decree that barred religious instruction in state schools, leaving it up to families and private schools to inculcate religion. Teachers promoted hygiene, expanded literacy, and homogenized French language instruction – elements integral to France’s modernization.7 But education reformers also looked abroad. As Paul Janet reflected, “Germany has become our idol since it humiliated us.”8 Fittingly, the lycée philosophy course channeled what was then cutting-edge neurophysiological research, which trickled into French psychology textbooks such as Janet’s, published the same year that Wilhelm Wundt opened the first European laboratory of experimental psychology in Leipzig. By 1907, the psychologist Alfred Binet surveyed three hundred lycée philosophy professors to measure the influence of experimental psychology in the classroom. He concluded that philosophy instruction had become more scientific and less metaphysical since the first curricular reform of 1874. “In psychology, the preferences favor experimental psychology, which has replaced the study of the soul’s faculties... psychology has moved closer to biology and medicine: less introspection, in short, and more objectivity.”9

A wealth of scholarship has addressed the ascendance of the natural and human sciences in the Third Republic generally, and Ferry’s laïcizing educational reforms in particular.10 Yet the formative role played by brain science therein has passed beneath the notice of social historians and historians of science alike. The psychology section of the philosophy course lent critical epistemological support to Republicans’ aspirations to cultivate new rational citizens. And by focusing on textbooks – educational materials that were not mere “repositories of settled knowledge,” but, following Anthony Grafton, “active agents in their own right”11 – my aim is to cast light on the oft-elided intersections between conflicting historiographical narratives of modern France.

On the one hand, historians have construed the ideology of the early Third Republic as positivist.12 Ferry himself was a devotee of Auguste Comte’s positivism,13 a secular philosophy that undergirded Republican reforms and filled the moral abyss left by the diminished authority of the Catholic Church in public life. Although laïcité was defined negatively as the abolition of religious influences over education, the principle found its positive content in scientific instruction. Education “passed on first and foremost a cult of science,” Philip Nord suggests, “and the republic elevated that cult into a secular religion, reverencing

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scientists as men of progress, raising statues to them and extolling their virtues to the young." Scientific instruction served to expunge religious doctrine and its metaphysical residue from the classroom, rendering the orthodoxy of positivism, as Fritz Ringer argues, "an ally of the Radical Republic."

On the other hand, historians have drawn renewed attention to the persistence of Victor Cousin’s spiritualism in the lycée philosophy course. Spiritualism should be differentiated from “spiritism,” understood as a mystical “spirit” world, which also attracted wide interest in France. Rather, as Jan Goldstein contends, spiritualism was a philosophically robust doctrine whose disciples “constructed their psychology around an immaterial self, or moi, that (they insisted) was given to its possessor whole and a priori,” a notion which, as Goldstein suggests, underwrote the bourgeois masculine ideology of post-Revolutionary France. Spiritualism reigned as the official philosophy from 1830, when Cousin reorganized the philosophy curriculum, until after his death in 1867. Although Goldstein has justly undermined facile historiographical identifications of Republicanism and positivism, her own work remains in the grips of a false dichotomy between positivism and spiritualism. In a recent article, Goldstein argues, “As a régime that embraced scientific positivism and an active anticlerical policy once it became fully ‘republicanized’ around 1880, the early Third Republic would seem to have had every reason to unseat the old Cousinian philosophy.” But it did not, she concludes, because “Psychology, still presented as the first and foundational branch of philosophy, still operated with a tripartite consciousness comprised of sensation, reason, and will—the metaphysical taxonomy of the mind’s faculties central to France’s spiritualist legacy.”

Occluded by both of these narratives – that Republican educational reforms were either positivist or spiritualist – is the role of neuropsychology, whose place in the curriculum straddled experimental exploration and metaphysical, even religious tutelage. Such an amalgam, as Robert Fox has shown, was not uncommon. But neuropsychology lessons were distinctive for

17 On the popularity of spiritism in late nineteenth-century France, see M. Brady Brower, Unruly Spirits: The Science of Psychic Phenomena in Modern France (Champaign, IL: University of Illinois Press, 2010).
20 Ibid.
21 Many natural and physical scientists defended their Catholic faith against the Republic’s ascendant secularism, even if most tempered their hostility for the sake of protecting their academic positions – a threat made all the more palpable following the defeat of Patrice de Mac-Mahon’s Moral Order, and with it the prospect of a return to Catholic
having rejuvenated metaphysical methods on the basis of a scientific foundation. The new brain education trickled down from the directives of Ferry’s ministry, specifically the educational high council, which comprised fifty-nine members drawn from different branches of education, none of whom came from religious schools. Paul Janet headed the section on philosophy and letters, alongside Henri Marion, an instructor at Lycée Henri IV. The lessons they designed exposed predominantly male bourgeois students to neuropsychological research. Indeed, philosophical education remained a privilege reserved to an elite. There were only eighty-one fully operating lycées in 1876 with some 2,433 students enrolled in the philosophy course. These young men were the fodder of a philosophy curriculum meant to produce a rationalized corps of young Republican citizens, forged out of the nation’s spiritualist tradition and transnational advancements in the natural and human sciences.

As an analysis of the psychology sections in the official curricula makes clear, scientific methods gained a prominent place in the lycée philosophy course [Figure II]. Beginning with the curriculum of 1874, the psychology section expanded well beyond the scope of the antecedent Cousinian curriculum, last reformed in 1863 under the Second Empire. Particular lessons that I have emboldened represent scientific concepts. Notably, the 1874 curriculum commenced with the distinctions between psychological and physiological facts, a lesson that directly confronted the pertinence of cerebral physiology to the study of mental phenomena. Professors could no longer take the spiritualist heritage for granted, but instead had to situate the mind in relation to the nervous system. Also included was a lesson on the association of ideas, the doctrine that Théodule Ribot, Herbert Spencer, Wundt and other psychologists employed to correlate mental and neural activity. But it was the 1880 curriculum that fundamentally overhauled the psychology section. The third lesson grounded the field in “information” whose sources included comparative and experimental psychology. The lesson on associationism was expanded to set the mind with the evolutionary framework of heredity. And importantly, a new lesson was included on pathological states: sleep, dreams, somnambulism, hallucinations, and insanity. These scientific lessons appeared alongside spiritualist lessons on the faculties of consciousness – sensations, intelligence, and the will – a curricular arrangement that laid bare the epistemological bifurcation between introspective and physiological psychology in the nineteenth century.


a The educational high council hardly received universal support, as a notable pamphlet written by the former inspector general of the universities attests: Charles Jourdain, Les Conseils de l'instruction publique (Paris: Gervais, 1879).


**Figure II**  Psychology Sections of the Philosophy Curriculums

| 1863<sup>26</sup> | Psychological facts and consciousness  
| Faculties of the soul: sensation, intellectual faculties, activity  
| Sensation: sensations, sentiments, and feelings  
| Intellectual faculties: perception, consciousness, memory, imagination, judgment, reason  
| General ideas, their origin and character. Notion of first principles  
| Activity and its diverse characteristics: voluntary activity and freedom  
| Demonstration of freedom  
| Personality, spirituality of the soul. Distinction between the soul and body and their relations |
| 1874<sup>27</sup> | Psychological facts – consciousness – **Distinction between physiological and psychological facts**  
| Faculties of the soul – sensation, intelligence, will  
| Sensation – sensations – sentiments instincts, penchants, passions  
| Intelligence – external perception – internal perception – reason  
| Ideas in general – classification of ideas – origin of ideas – different theories proposed on this question  
| First principles, axioms, and ideas of reason  
| Intellectual operations – memory – **association of ideas** – imagination  
| Attention, abstraction – comparison – generalization  
| Judgment – reasoning  
| Signs and language – relations of language with thought  
| Will. Instinct. Habit  
| Moral liberty or free will. Demonstration of freedom – the principal systems that deny freedom  
| Harmony of the faculties of the soul – unity of the principle of these faculties – human personality  
| Spirituality of the soul [l'âme]. Distinction between body and soul; their union; laws of this union – different systems that deny the distinction between body and soul |
| 1880<sup>28</sup> | Object of psychology: distinctive character of the facts it studies – degrees and the limits of consciousness  
| **Distinction and relation of psychological and physiological facts**  
| **Sources of information in psychology**: consciousness, language, history, etc. – **utility of comparative psychology** – experimentation in psychology – classification of psychological facts  
| Sensation – emotions (pleasure and pain) – sensations and sentiments – inclinations and passions  
| Intelligence – acquisition, conservation, elaboration of knowledge  
| Acquisition: data of consciousness and of the senses  
| Conservation and combination: memory, association of ideas, imagination  
| Elaboration: formation of abstract and general ideas; judgment, reasoning  
| **Directing principles of knowledge: data of reason; can they be explained by experience, association of ideas, or by heredity?**  
| Results of intellectual activity: idea of the self, idea of the external world, idea of God  
| Aesthetic notions: beauty – art – principles and conditions of the fine arts – expression, imitation, fiction, and the ideal  
| Will – Analysis of the voluntary act: freedom  
| Various modes of psychological activity: instinct, voluntary activity, habit  
| Manifestations of psychological life: signs and language  
| **Relations of body and mind [moral]** – sleep, dreams, somnambulism, hallucinations, madness  
| Elements of comparative psychology |

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<sup>27</sup> Bulletin Administratif du Ministère de l'Instruction Publique (1874): 490-93.  
As an architect of the 1874 and 1880 psychology curricula, Paul Janet was well situated to distribute the most current textbook. In fact, Émile Durkheim used the book as a young philosophy instructor at Lycée de Sens. Janet’s *Traité* appeared amidst an era of newfound academic freedom. Between 1874 and 1879, following the first curricular reform, twenty new philosophy textbooks were published, and twenty-three more following the 1880 reform. Most were written by philosophy professors seeking to secure notoriety by publishing their course notes in place of more significant scholarship.

But *Traité élémentaire de philosophie* innovated French psychology instruction. It was the first textbook to include diagrams of the brain’s dual hemispheres, ear, eye, nervous system, and spinal cord. Acknowledging that advances in physiology demanded that metaphysical psychology be updated, Janet opened the textbook, following a brief introduction, with a significant neurology lesson: “All philosophy must depart from what really exists.” Janet wrote in clear and concise prose in order to familiarize young students and old professors alike who had not received formal training in neural anatomy. His textbook was divided into two classes of psychology: “on the one hand those aspects which immediately pertain to the body, and which we share in common with animals, and on the other hand those aspects which raise us higher and belong only to man.” It was along these lines that Janet distinguished physiological and metaphysical methods respectively; and it was a central commitment of the lyceé philosophy class to demonstrate to students that the former intractably led to problems of consciousness – notably the relation between mind and body, the possibility of free will, and unity of the self – that only France’s spiritualist tradition could address.

The appearance of Janet’s *Traité* marked a transformative moment both for the spiritualist stalwart and for lyceé philosophy instruction generally. Janet, who rode Cousin’s coattails to claim one of the three philosophy chairs of the Sorbonne in 1862, initially defended his master against mounting research in cerebral localization – what historians of science identify as the modern origins of the neurosciences. In 1861, Paul Pierre Broca associated motor speech capacities with the inferior frontal gyrus following his studies of aphasia. The disorder was also the basis of Carl Wernicke’s identification of the seat of language comprehension in the superior temporal gyrus a decade later. And Édouard Hitzig and Gustav Fritsch localized the motor regions of the brain in 1870 after their electrical stimulations of dogs’ cortices. In a series of polemic articles published in 1867 as *Le cerveau et la pensée*, Janet argued that advances in cerebral localization remained tethered to the phrenological picture of mind-brain relations originally espoused by Franz Gall, according to which mental characteristics originate in determinate cerebral organs. Janet contended, to the contrary, that thought is irreducible to the brain because the former depends on the self [moi]: “the internal force or thinking force, the principle of unity, lone

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31 Paul Janet, *Traité élémentaire de philosophie à l’usage des classes*, vi.
32 Ibid.
possible center of the conscious individual."\textsuperscript{34} But with the Republican educational reforms in the aftermath of Cousin’s control over the philosophy curriculum, Janet pivoted his metaphysical stance in the \textit{Traité}. “Such an innovation, were it introduced some years before, would have been powerfully audacious, an individual revolt against academic traditions,” Serge Nicolas avers. “But introduced in 1879, [Janet’s textbook] indicated, on the one hand, that the academy began to open up to the new psychology… and on the other hand, that Janet himself had undergone a kind of conversion.”\textsuperscript{35} Indeed, the scientific turn in lycée philosophy instruction following the 1874 educational reform reflected the conceptual arc that Paul Janet’s \textit{œuvre} followed, from his acerbic anti-materialism toward his conciliation of physiological and metaphysical psychology. The \textit{Traité} was released in 1879, the same year that the neurological turn in psychology became a public spectacle as Jean-Martin Charcot began his public lectures at the Salpêtrière hospital. There, just down the hill from the Janet’s office in the Sorbonne, Charcot put hysterics on display, exhibited the stages of their seizures, and offered demonstrations of hypnosis before captivated audiences.\textsuperscript{36}

Janet’s newfound endeavor to steer the public reception of experimental psychology under the Third Republic was not limited to secondary education. He also published textbooks for primary schools. Rudimentary psychology became part of the two-year morals course for primary school students with the 1880 reform; and a subsequent 1888 reform dedicated the entire first year of the course to the subject.\textsuperscript{37} In 1891 Janet enlisted the help of Raymond Thamin to co-write \textit{Cours de psychologie et de morale}.\textsuperscript{38} Janet composed the first half on theoretical psychology, while Thamin, a young philosophy professor from Lyon, penned the second half on applied psychology, which he presented as a series of lessons in scientific pedagogy. What made the lessons “scientific,” Thamin posited, was their experimental basis. They dealt with social ethics, including physical education and hygiene, as well as personal ethics such as character, willpower, and discipline. The textbook took inspiration from the treatise that Thamin published the same year, \textit{Éducation et positivisme}, which promoted laïque ethics in schooling freed from reference to any deity.\textsuperscript{39} Well after the demise of Comte’s religion of humanity, Thamin took it as his task to make positivism serviceable again as a public philosophy. It thus came as little surprise, in light of Janet’s gradual embrace of philosophy’s scientific mission, that by 1891 the Catholic spiritualist would co-author a primary school textbook with a reconstructed positivist.

In another textbook, sensory-motor functions were represented in tables localizing nervous centers in the brain’s grey matter, including the centers of language control and comprehension (divided into the motor images of writing, vocal motor images, vocal auditory images, and visual images of words) as well as the centers of sight, taste, and smell. The author, Abel Rey, was hardly a spiritualist himself. He nonetheless organized the textbook around Janet’s

\textsuperscript{34} Paul Janet, \textit{Le Cerveau et la pensée} (Paris: Germer Ballière, 1867), 177.
\textsuperscript{35} Serge Nicolas, \textit{Études d’histoire de la psychologie} (Paris : L’Harmattan, 2009), 117.
\textsuperscript{36} Georges Didi-Huberman, \textit{L'invention de l'hystérie: Charcot et l'Iconographie photographique de la Salpêtrière} (Paris: Macula, 1982).
\textsuperscript{37} Bruno Poucet, \textit{Enseigner la philosophie}, 117.
epistemological distinction between physiological and metaphysical psychology in order to “avoid distorting the minds of young students, by carefully distinguishing what fits scientific study and what is the simple object of philosophical reflection.”

**Figure III** Diagram of nervous system

This foundational distinction was enshrined in the 1874 and 1880 philosophy curricula, as I have shown, namely in the first lesson on the relations between physiological and psychological facts. Lecture notes written by Bergson’s students at Clermont-Ferrand reveal that Janet’s *Traité* buoyed the framework of

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41 Ibid., 29.
the psychology lessons: “We define psychological facts in a precise manner by saying that these facts are distinctly characterized by their ability to be localized in duration [la durée], but not in space, occupying time but not extension.” The claim was central to Bergson’s novel account of lived duration in *Essai sur les données immédiates de la conscience*, but it was also alloyed to a pedagogy that apportioned the brain’s sensory-motor functions and the spiritual activity of consciousness to their respective domains. As Bergson forcefully staked out: “Our moral life consists of science, art, and religion, but we cannot at all see how nerve cells, if they existed alone, could coordinate themselves in a manner to bring about these great thoughts and beautiful feelings.” Students transcribed Bergson’s prescient words before the discovery and elaboration of the neuron doctrine by Santiago Ramon y Cajal in the early twentieth century. In the face of mounting scientific pressure to localize mental functions, the philosophy curriculum was structured around an epistemological division of labor between experimental and metaphysical concepts that situated neurology as psychology’s point of departure and the mind’s creativity as its point of arrival.

Janet’s textbook was not the only in circulation. Bergson also used Élie Rabier’s *Leçons de philosophie*. Originally published in 1884, *Leçons* underwent twelve re-editions until its last in 1912. (Although each reissue included little new content, it did give Hachette, the publishing house, an opportunity to insert new advertisements for other textbooks.) A weighty tome of some 676 pages, Rabier’s textbook was dedicated solely to psychology. Consistent with philosophy’s public mission in Republican France, Rabier, who became minister of secondary education in 1889, organized the textbook around his commitment that “Philosophy collaborates with scientific studies, in the sense that it must first of all better understand science, and appreciate it all the more.”

Bergson’s meteoric ascent up the academic ladder, from provincial lycée instructor to Nobel-prize winning professor at the Collège de France, illuminates the pedagogical tractive of the Third Republic’s curricular reforms in the classroom. In 1885, an inspector general for secondary education, François Evellin, was sent from the Ministry of Public Instruction to visit Bergson’s class at Clermont-Ferrand. Evellin wrote a glowing report. The evaluation was critical to Bergson’s ascent to a more prestigious Parisian lycée. In 1894, the inspector, Jules Lachelier, evaluated Bergson when he was a professor at Lycée Henri IV. Lachelier praised the “rigor of his method,” returning the next year to draft another positive report: “complete clarity compatible with his depth, and only here and there are some things a bit artificial for his thought and a bit thin on development.” Soon after, Bergson was invited to reach courses in Greek and Latin philosophy as a docent at the Collège de France, where he claimed a full professorship in 1900. Bergson was a remarkable orator. But he achieved celebrity-status as a thinker, I am suggesting, for having seized hold of a revamped lycée

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43 Ibid., 33.
46 The headmaster of Lycée Blaise Pascal reported: “Mr. Evellin, inspector general of philosophy classes, inspected Mr. Bergson’s class. He expressed to me his complete satisfaction that is was well managed and praised the professor, whose excellent lesson on the *Novum Organum* he listened to with interest.” Cited in Henri Bergson, *Leçons Clermontoises I*, ed. Renzo Ragghiani (Paris: L’Harmattan, 2003), 10-11.
psychology curriculum. Among a new generation of philosophy instructors exposed to experimental research, Bergson was a voracious reader who, like so many of his peers, guided students in a conversation between the physiological and metaphysical dimensions of the mind.

As new horizons opened for the natural and human sciences in late nineteenth-century Europe, the Third Republic set about enforcing a lycée philosophy curriculum designed both to promote and steer the public reception of the emergent brain sciences. The educational reforms of 1874 and 1880 endowed a generation of philosophy professors with the responsibility of promulgating physiological psychology while preserving France’s spiritualist heritage. These dual dimensions of philosophy’s public mission, as I have argued, reconciled competing pressures to advance the nation’s scientific prowess following its defeat in The War of 1870 without unmooring France’s distinct philosophical tradition. The official psychology curriculum and its paradigmatic textbooks reveal an educational campaign that traverses the historiographical opposition too often taken for granted between the positivist ideology of Republicans’ scientism and the endurance of Victor Cousin’s spiritualist pedagogy. And re-examining Bergson as a state functionary who occupied the confluence of these dual intellectual streams brings into focus the institutional contexts of fin-de-siècle thought. The lycée philosophy course promoted national regeneration in the late nineteenth century by lending a newfound justification to philosophical instruction, above all the nation’s spiritualist tradition, on the basis of scientific advancements in incipient psychological research.