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METAPHOR AND METAPHYSIC:
THE MATERIALS OF HENRI BERGSON'S PHILOSOPHY

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To my grandparents

金世柏
1925 – 2020

蔡秀敏
1926 – 2021

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ABSTRACT

This dissertation studies the making of Henri Bergson's philosophy in the contexts of pedagogy, psychology, and physiology in 1880s France. It examines the historical circumstances of Bergson's central preoccupation during these years with the mind-body problem. It uses Bergson's figurative language—a feature of his philosophical style—as clues to the objects he thought with. The dissertation shows how, through observing and reasoning in metaphor, Bergson transmuted the scientific experiences of his time into a psychology that preserved the mind's integrity and freedom.

INTRODUCTION

Language and Materials

> …All knowledge which has been conveyed by means of speech to the reason has travelled in metaphors taken from man's own activities and from the solid things which he handles.
>
> — Owen Barfield, *History in English Words*[1]

1. Enchanted Artifacts

My aim in this project is to show how the process of knowledge-gaining described above took place for one person, the philosopher Henri Bergson. This is not the project I first proposed, when I decided that Bergson could teach me something about the history of science. But time in his archive helped me understand the way he worked with language, and how central this work with language was to the way he did philosophy. I have long shared Bergson's obsession with metaphors. Seeing him at work, I've come to understand why I not only can but need to be concerned with metaphors as a historian of science, because science is a place where metaphors are born—and not, as I used to think, where they die.

Bergson wrote in metaphor—this is evident on any given page of his work—because he reasoned in metaphor, read in metaphor, perceived in metaphor. It's the work of perceiving, which his most important metaphors do, that make these metaphors historical artifacts. Artifacts do more than reflect the world they come from. They *are* objects of that world. Bergson's metaphors are his perceptions of certain objects —"activities" performed and "solid things" handled—in the *fin-de-siècle* world of French philosophy and experimental science. These objects entered his philosophy transmuted. As objects in the world they seemed to point one way; as metaphors, as things he thought with in his philosophy, they pointed a different

[1] Barfield, *History in English Words* (London: Faber and Faber, 1926), pp. 183-4.

way. Such was the case with the classical education of the late nineteenth-century lycée, which many contemporaries thought antiquated, useful only for producing adolescent machines of Latin rhetoric. Such was also the case with scientific findings in hypnotism, which researchers took to be proof of their subjects' mental weakness and the mind's general susceptibility to all manner of influence. Bergson saw these things differently. He described a certain "*souplesse de l'esprit*," that he believed was best cultivated by the study of Latin and Greek, and that best prepared the intellect for the modern world, especially the world of modern science. He paid close attention to the science of hypnotism and understood its phenomena not as symptoms of pathology, but as expressions of how the mind works, and as proof of the mind's fundamental ability to direct itself.

These two examples are the subject of the three chapters of this dissertation. They are testament against an earlier assessment of Bergson's philosophy as serenely detached from its historical moment, untouched by the great material and social changes of Bergson's time. Walter Benjamin wrote that Bergson's theory of memory "resists any historical determination," and that,

> He thus manages to stay clear of that experience from which his own philosophy evolved or, rather, in reaction to which it arose. It was the inhospitable, blinding age of big-scale industrialism. In shutting out this experience the eye perceives an experience of a complementary image in the form of its spontaneous after-image…Bergson's philosophy represents an attempt to give the details of this afterimage and to fix it as a permanent record.[2]

The chapters here show that Bergson did not stay clear. He took active part, as a state-employed teacher, in four decades of education reforms prompted by social change. He did not shut his eyes, but peered intently at the scientific work of his day, scrutinizing the parameters

[2] Benjamin, "On Some Motifs in Baudelaire," in *Illuminations*, ed. Hannah Arendt, tr. Harry Zohn (New York: Schocken, 1969), 156.

of experiment, disambiguating the meanings of words. These experiences were the occasions and the materials of his philosophy, and remain visible in it.

This is obvious if you look at the full record of Bergson's public remarks: the speeches given at lycée prize ceremonies, his contributions to the documented dicussions of the Société française de philosophie, the available summaries of his lecture courses at the Collège de France. That's not to mention the private records of students in Bergson's lycée philosophy courses. But Bergson's philosophy is already time-stamped by the extensive scientific references in every one of his monographs, and by his use of novel technologies, like the telephone exchange and the cinematograph, as didactic similes. Then there are the metaphors you don't see. Words like *suggérér*, *qualité*, and *mécanique* read to us like the plainest prose, because the figures they contain are no longer visible to the modern reader. But in Bergson's time these were words with objects and actions crowded into them, such that when they're used they invoke people, bodies, settings, dramas—and, in the case of *mécanique*, the particular mindlessness that comes with doing too many Latin translation exercises. Bergson's philosophy is built on his reimaginings of these words, on the new possibilities he saw in the objects and actions within them.

My work in this project is two-fold: to restore these operative words of Bergson's philosophy to their nineteenth-century scientific and social contexts, and to show how Bergson bends them to new meanings and divergent purposes. These three chapters are only a beginning and end before Bergson's philosophy really takes off. If this project were extended into a book, I would like it to be as full of objects as Balnibarbi, that continent in *Gulliver's Travels* where people speak an exclusively literal language of things, and must haul around enormous bundles containing all the objects of their speech. I know this scene is supposed to make a mockery of scientific aspirations for a universally transparent language. But that land is

not as far from our own world as I once thought. We think and speak in things, too; only, we are not limited to what we can carry. The epigraph above from Owen Barfield suggests that, if you compress the long past of our language into a single simultaneous present, our communication would look very much like that of Balnibarbi. And I think that is a good thing, especially for historians of science, who, thanks to this long past not being given all at once, have an enormous treasure hunt to return to in dull moments, and uncover all the things that people of different times, in different places, have heaved about in their thought and speech.

2. Bergson in Stereoscope

Henri Bergson was born in 1859, in Paris, to immigrant parents. His father, Michał Bergson, was a pianist and composer from Warsaw, known for performing the music of Chopin. His mother, Kate, was from Yorkshire, and spoke and wrote to her seven children in English. When Henri was four, the family moved to Switzerland, following his father's teaching appointment at the Geneva Conservatory. A few years later, they moved back. When Henri was nine, he received a scholarship to the Lycée Condorcet and a place at the Springer boarding house, about a mile away from school. His family then left France indefinitely, for London, while he stayed.[3]

Upon graduating from the École normale supérieure and obtaining his *agrégation* in philosophy, he was dispatched first to teach at the lycée of Angers, in 1881, and then to Clermont-Ferrand, in 1883. There he completed the two dissertations required for his doctorate, one in the requisite Latin, on Aristotle, and a monograph on psychology, *Essai sur les données immédiates de la conscience* (1889). The *Essai* presented a new reality of psychological life

[3] Biographical details are from Mossé-Bastide, *Bergson éducateur* (Paris: PUF, 1955), esp. 12-16.

as a continuum of qualitative change, which, Bergson argued, made the mind proof against physical and psychological determinism.[4] Bergson's esteemed performances as a teacher then propelled him to one of the best lycées in Paris, the Lycée Henri-IV, where he wrote his second monograph, *Matière et mémoire* (1896). This work presented a new dualism for psychology, resolving the old one between mind and body and replacing it with a new axis, between past and present. In 1898, after being twice refused for a philosophy chair at the Sorbonne, Bergson became *maître de conférence* at the École normale supérieure. In 1900, he obtained the newly vacant Chair of Greek and Latin Philosophy at the Collège de France, and in 1904, he traded this chair for the Chair of Modern Philosophy.

The publication of *L'évolution créatrice*, in 1907, made him internationally renowned.[5] By 1914, his three monographs to date would be translated into English and the other major European languages. Bergson went on lecture tours in Britain and the United States, giving about a third of the lectures in English.[6] Back in Paris, his five o'clock lecture course on Friday afternoons at the Collège de France drew an extraordinary cross-section of the general public.[7] On a given day in 1910—in winter, no less—the *Paris-Journal* reported that five hundred people could *not* get into the lecture hall. University students complained to the Collège that they could not get seats on account of the lackeys who were paid to go extremely early and

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[4] This work would be translated into English in 1910 as *Time and Free Will.*

[5] On Bergson's reception see Azouvi, *La gloire de Bergson* (Paris: Gallimard, 2007). Mossé-Bastide (*Bergson éducateur*, pp. 366-379) has a comprehensive list of translations of Bergson's works between 1909 and 1951.

[6] Bergson's lecture tour in England, May 1911: University College London, "On the Nature of the Soul"; Oxford, "La perception du changement"; Birmingham, "Life and Consciousness." 1913 tour dates in the U.S.: Columbia University, February 3-21, six lectures in French, "Esquisse d'une théorie de la connaissance"; and six in English, "Spirituality and Liberty." Additional one-day appearances at Princeton and Harvard. Of the 11 lectures of his 1914 Gifford Lectures, two were in English. Bergson, *Mélanges*, ed. André Robinet (Paris: PUF, 1972), 975; Mossé-Bastide, *Bergson éducateur*, 368-372.

[7] Bergson gave a second weekly course on Saturdays, this one dedicated to a single philosophical text, selected by him, for the whole semester. This course was less popular.

save seats for wealthy socialites. The economics professor who lectured in the same hall prior to Bergson found his own course attendance improved. The Collège de France received numerous petitions to construct an amphitheater expressly for Bergon's courses. This request was not granted.

Bergson stopped teaching at the Collège de France in 1914, to fulfill his mounting duties as a public intellectual.[8] He maintained an active public life through the early 1920s, until a severe attack of rheumatism rendered him temporarily immobile and forced him to retire. During the Great War, his stature was such that he was deployed on a secret diplomatic mission to the United States, to persuade Woodrow Wilson to join the war against Germany.[9] The mission was deemed successful and Bergson, once the effort became known, was regarded as a national hero—perhaps one of the rare times people have ever felt that their country had been saved by a philosopher.[10]

Bergson has been the subject of numerous studies since even before he stopped writing.[11] The vast majority of these works have been expositions of his philosophy, rather than efforts to understand its genesis from his life in a particular time and place.[12] Historical

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[8] For instance, as president of the Académie des sciences morales et politiques and, after the war, as president of the Intellectual Committee for Intellectual Cooperation. See Mossé-Bastide, *Bergson éducateur*, 119-150; and Jimena Canales, "Einstein, Bergson, and the Experiment that Failed: Intellectual Cooperation at the League of Nations," *MLN* 120, no. 5 (2005): 1168-91. At the Collège de France Bergson had a succession of *suppléants* (his chosen substitutes, to whom he had to give a portion of his salary) until 1920, when he formally retired from his chair.

[9] Geertz Somsen, "The Philosopher and the Rooster: Henri Bergson's French Diplomatic Missions, 1914-1925," *Historical Studies in the Natural Sciences* 50, no. 4 (2020): 364-383.

[10] Bergson's reflections on this diplomatic task, "Mes Missions," written in 1936 and published posthumously by his literary executor, is as moving a piece of writing as anything in his philosophy. Bergson, *Mélanges*, 1554-1570.

[11] Most importantly Vladimir Jankélévitch, *Henri Bergson*, tr. Nils F. Schott (Duke, 2015 [first edition 1930]).

[12] Major studies include Gilles Deleuze, *Bergsonism*, tr. Hugh Tomlinson and Barbara Habberjam (New York: Zone, 1991); Frédéric Worms, *Bergson ou les deux sens de la vie* (Paris: PUF, 2004); John Mullarkey, *Bergson and Philosophy* (Edinburgh: Edinburgh University Press, 1999); Camille Riquier, *Archéologie de Bergson* (Paris: PUF, 2009); Suzanne Guerlac, *Thinking in*

studies of Bergson, or involving him, have tended to take his thought as a totality, as though its last word were already implied in the first.[13] This seems to be a historian's bias that disproportionately affects philosophers, whose bodies of work are often made to represent a certain fixed position in a given historical landscape. Only recently have we begun to historicize Bergson's philosophy without assumptions about what it is from beginning to end, or to what side of our own mental world it belongs—science or humanities, materialist or phenomenological, reductive or non-reductive.[14]

Finally, Bergson scholarship has been set back as a result of certain actions of Bergson's. First, in 1903 Bergson gave an origin story for his own philosophy to the Italian pragmatist Giovanni Papini, an account that Papini published. Bergson told Papini that, when he began his doctoral thesis, he did not set out to do psychology or metaphysics, but philosophy of science, and that the thesis was to be a conceptual study of mechanics. "This is how I came to be interested in the idea of time. I realized, not without surprise, that in mechanics it is never a question of time [*durée*] properly speaking, nor in physics, even, and that the 'time' one speaks of there is something else entirely."[15] Bergson shared the same story with William James, when James asked him for a bit of intellectual biography to include in the Hibbert Lecture that James was about to give on Bergson's philosophy. This time, Bergson made the telling particularly dramatic:

Time (Cornell, 2006); Dominique Janicaud, *Une Généalogie du Spiritualisme Français* (La Haye: Nijhoff, 1969).

[13] Larry Sommer McGrath, *Making Spirit Matter* (University of Chicago, 2020); Robert Brain, *The Pulse of Modernism* (University of Washington, 2015); Jonathan Crary, *Suspensions of Perception* (MIT, 1999); R. C. Grogin, *The Bergsonian Controversy in France 1900-1914* (University of Calgary, 1988).

[14] Jimena Canales, *The Physicist and the Philosopher* (Princeton, 2015); Viktoria Tkaczyk, *Thinking with Sound* (University of Chicago, 2022, forthcoming).

[15] "C'est ainsi que je fus conduit à m'occuper de l'idée de temps. Je m'aperçus, non sans surprise, qu'il n'est jamais question de durée proprement dite en mécanique, ni même en physique, et que le 'temps' dont on y parle est tout autre chose." Bergson, letter to Papini, 21 October 1903, in Bergson, *Correspondances*, ed. André Robinet (Paris: PUF, 2002), 91.

> It was the analysis of the notion of time…that upended all my ideas. I realized, to my great surprise, that scientific time does not *last*, that it would change nothing of our scientific knowledge of things if the totality of the real were deployed all at once in an instant, and that positive science consists essentially in the elimination of time [*la durée*].[16]

And that sealed it for everyone since: the impetus for the *Essai sur les données immédiates de la conscience* was a huge epiphany about time. But Bergson only told the story this way because James had goaded him: "Any remarkable adventures, romantic or heroic, as well as philosophic, in which you have taken part (!), etc., etc.," James had written him from Oxford, "Details help interest!"[17] Bergson obliged by making the realization that changed his doctoral thesis as remarkable as possible.

Without denying Bergson's version of things, I think that the features of the psychology Bergson invented in the *Essai* are not fully accounted for by the one insight about time. I think hypnotism gave him something just as important: a new language for psychology, a language of possession and takeover that, he found, accurately expressed the full-bodied nature of intense qualitative experiences. The story of this discovery does not displace the realization about time, but complements it, for it shows how Bergson came to reconceive the nature of every *moment* of experience in time, to see the experience of every new instant as already unique: personal, incalculable, irreplicable. But to pursue this other discovery requires momentarily setting aside Bergson's own account and looking elsewhere—something Bergson scholars have not permitted themselves to do.

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[16] "Ce fut l'analyse de la notion de temps…qui bouleversa toutes mes idées. Je m'aperçus, à mon grand étonnement, que le temps scientifique ne *dure* pas, qu'il n'y aurait rien à changer à notre connaissance scientifique des choses si la totalité du réel était déployée tout d'un coup dans l'instantané, et que la science positive consiste essentiellement dans l'élimination de la durée." Bergson, letter to James, 9 May 1908, in Bergson, *Mélanges* (Paris: PUF, 1972), 766. Bergson's emphasis.

[17] James, letter to Bergson, 8 May 1908, quoted in Ralph Barton Perry, *The Thought and Character of William James*, vol. 2 (Boston: Little, Brown, 1935), 622.

Second: a remark that Bergson made, post-retirement, about how to survive as a beginning lycée teacher, has convinced scholars that the material he taught in lycée had no bearing on the philosophy he wrote. Bergson was advising his friend Jean Guitton, then a young philosophy teacher, not to spend too much time preparing his lycée courses, and instead to reserve his time for his personal work:

> You must not exhaust yourself doing your courses…You will tire yourself for no reason, and you will be a detriment to your courses. One only teaches well the material on which one is not doing any personal work of investigation and research, and where one delivers the traditional truths, those upon which, as Descartes says, most wise men agree. And I kept as a maxim, even at the Collège [de France], to not draw the direct subject of my courses from my present researches. All the more reason for boys of sixteen. Reserve for yourself as much time as possible, for your interior life, your reading, your personal reflections. Your pupils will profit from it without your telling them, from all that will emanate from you.[18]

This remark has helped justify the extreme position taken by Frédéric Worms, the leading Bergson scholar in France, that between Bergson's philosophy and his teaching is a strict distinction between the personal and impersonal: "personal research" and "impersonal teaching"; "*In the courses, nothing of his own* [*rien de personnel*]."[19] Worms does not look for Bergson's own thought in the classroom and does not consider the notes taken by Bergson's lycée students a legitimate source for understanding Bergson's philosophy. For Worms,

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[18] "Vous ne devez pas vous épuiser à faire votre cours…Vous vous fatiguerez sans motif, et vous leur serez dommageable. On n'enseigne bien que les matières sur lesquelles on ne fait pas travail personnel de prospection et de recherche, et où on livre les vérités traditionnelles, celles lesquelles, comme dit Descartes, s'accorde le gros des sages. Et j'avais comme maxime, même au Collège [de France], de ne pas tirer de mes recherches présentes le sujet direct de mes cours. À plus forte raison pour des garçons de seize ans. Réservez-vous le plus de temps possible pour votre vie intérieure, vos lectures, vos réflexions personnelles. Vos élèves en profiteront sans que vous le leur disiez, par tout ce qui émanera de vous." Guitton, *La Vocation de Bergson* (Paris: Gallimard, 1960), 67.

[19] "recherche personnelle," "enseignement impersonnel"; "*Dans les cours, rien de personnel.*" Worms, "Bergson professeur et la philosophie de Bergson: une différence de nature," in Panero, Matton, Delbraccio (eds.), *Bergson professeur* (Louvain-La-Neuve: Peeters, 2014), 29, 27. Original italics.

Bergson's teaching and his philosophy constitute "two poles, radically opposed."[20] Not everyone follows Worms to this extreme, but all—including the scholars who have undertaken to publish the classroom notes—have taken confirmation in Bergson's remarks to Guitton that what he taught in lycée was "*éloigné*"—far removed—from his own researches. Some scholars have sought to reposition this myth—not overturn it—by finding various continuities, thematic and bibliographic, between Bergson's teaching and his writing.[21] But this search for continuities has operated on the assumption that the differences between what Bergson taught and what he wrote do not need to be explained, because the differences are what made Bergson Bergsonian. The assumption beneath this assumption is that what it took for Bergson to become Bergsonian was one epiphany about time.

Setting aside the question of the reliability of Bergson's retrospective remarks to Guitton, I believe scholars have settled on an overly narrow reading of what Bergson said, and on the basis of an incomplete excerpt of Guitton's text. Bergson did not say, do not bring what's personal to you into the classroom. In fact he said the opposite: reserve your time for yourself so that you can bring a richer self to the classroom. And he went on:

> The teaching that has taught me the most…is that of the Philosophy class, because there one can impregnate the entire soul of a young man. But I did not prepare a long time for my courses. Just ten minutes before class. This because I had enough readings to propel [*animer*] my courses. And also, because I had observed that this freer exchange with the students interested them more than a lesson prepared at great length.[22]

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[20] "deux pôles, radicalement opposés," ibid., 20.
[21] Panero, Matton, Delbraccio (eds.), *Bergson professeur*.
[22] "L'enseignement qui m'a le plus enseigné…est celui de la classe de Philosophie, parce qu'on y peut imprégner l'âme entière d'un jeune homme. Mais je ne préparais pas longuement mes cours. Simplement dix minutes avant la classe. Cela, parce que j'avais assez de lectures pour animer mes cours. Et encore, parce que j'avais remarqué que cet entretien un peu libre intéressait davantage les élèves qu'une leçon longuement préparée." Guitton, *La Vocation de Bergson*, 67-68.

Bergson scholars have taken those ten minutes of preparation to indicate that Bergson was not personally invested in the material he taught. I think Bergson simply knew the philosophy course by heart. He began his teaching career within months of passing the *agrégation*, a national competition in which he came in second, despite offending the jury.[23] Actually, what's most revealing in the last passage is that Bergson preferred to talk freely in class. And since he spent most of his free time on his personal reflections, it is quite implausible to me that his own thinking on these topics did not appear in the classroom.

Lastly, upon Bergson's death it was discovered in his will that he wished to prohibit further publication of any manuscripts or notes—particularly those taken from his courses and lectures—that may be found after his death. The reason was that he felt he had already published everything he had to say "to the public."[24] This stricture has since been breached but not ignored, such that every use and publication of previously unpublished Bergson material has been done with excessive caution and reluctance about going against Bergson's wishes. Bergson's testament is the main reason behind the Wormsian view that recognizes only Bergson's published works as expressions of his philosophy. I, however, have no reservations on this point. This project is omnivorous with respect to Bergson's published and unpublished materials.

3. Close Writing

You know what close reading is; close writing is when you write with the scrupulousness of being simultaneously your own close reader. Bergson was such a writer.

[23] On the insult see Mossé-Bastide, *Bergson éducateur*, 24-25.
[24] The testament is reproduced in Mossé-Bastide, *Bergson éducateur*, 352.

He took immense care in the selection of every metaphor, and every word that might hint at a metaphor. We see this, for instance, in the two versions he gave of a speech on "la politesse," seven years apart. The first was at the year-end prize ceremony of the lycée in Clermont-Ferrand, where he was teaching, in 1885; the second was at the year-end prize ceremony of the Lycée Henri-IV, where he was teaching, in 1892. Across these two iterations, some changes are large and some—the more to my point here—are minute: a slight shuffling of images, the substitution of a single adjective for another, even where the words are synonyms. For instance, to describe a sudden change in a person's state of mind upon the perception of some slight antipathy from another (remember, the topic is "politesse"), in both versions Bergson draws upon an image of crystallization by supersaturation. But from one speech to the other, he changes two terms, to make the same image express something slightly different:

> [1885] And just as an infinitely small crystal, falling into a supersaturated solution, draws to itself an immense multitude of scattered molecules and makes the bubbling liquid transform suddenly into an inert and solid mass…
>
> [1892] And just as an infinitely small crystal, falling into a supersaturated solution, draws to itself an immense multitude of scattered molecules and makes the transparent liquid transform suddenly into an opaque and solid mass…[25]

I give this example to show the level of attention that Bergson gave to his word choices, even when they *didn't* make a substantial difference to his point. The sentences above are identical except for the words I've emphasized. In 1885, the perception of some rejection from another person changes one's state of mind from lively to immobile; in 1892, the mind changes from limpid to dark. There are more substantive changes elsewhere between these two texts; and,

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[25] 1885: "Et de même que le cristal infiniment petit, tombant dans une solution sursaturée, appelle à lui l'immense multitude des molécules éparses et fait que le liquide bouillonnant se transforme tout d'un coup en un masse inerte et solide…" 1892: "Et de même que le cristal infiniment petit, tombant dans une solution sursaturée, appelle à lui l'immense multitude des molécules éparses et fait que le liquide transparent se transforme tout d'un coup en un masse opaque et solide…" Bergson, "La Politesse,"*Écrits philosophique*, 53. My underlining.

since this text was spoken, Bergson had no reason to expect that any listener would be pausing to reflect on whether he had spoken *le mot juste* in that moment. And yet: he bothered to change *this* image, just this much, just because the old one no longer sat well with him.

Bergson's effort to make a change this small tells us at what level of detail we can acknowledge writerly intention in his work, and on what level to look for distinctions in his philosophy. This is a level that lies wholly beneath the analysis of studies that grasp Bergson's writing by its "key terms." There are a lot of such terms, too—Frédéric Worms made a list of them in his *Vocabulaire de Bergson* (2000)—but they only partially tell the story of Bergson's thought. For they are the terms that Bergson explicitly determined to redefine—words like *intuition*, *métaphysique*, *mémoire*, *perception*—but much philosophical action takes place elsewhere than in statements like, *What I call…* and *X means…*[26]

For instance: we also have direct evidence of Bergson revising metaphors that *do* make a difference to his argument. In a set of corrections Bergson gave to his two English translators in the proofs for his final monograph, *Les deux sources de la morale et de la religion* (1932), we see him working fastidiously at the figurative edges of words.[27] In a passage about the development of a "static religion," which takes place by the accumulation of habits, Bergson speaks of the way a mind can lose itself in an unreflected logic, "that logic which leads the mind ever further astray towards wilder and wilder consequences." At this point in the draft translation, which

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[26] Worms writes, "Le réseau des notions ainsi 'définies' est étroit…elles se renvoient strictement les unes aux autres" (*Le vocabulaire de Bergson* [Ellipses, 2000], 5). And perhaps the philosophy-critic's work ends there, when that network is identified and all the connections checked for contradictions. But understanding Bergson in terms of these crucible-words alone is a little like what Tolstoy objected to in traditional accounts of historical battles: that they were constructed solely from the reports of the commanders. Cf. Leo Tolstoy, « A Few Words Apropos of the Book War and Peace » (1868), in *War and Peace*, tr. Pevear and Volokhonsky (Knopf, 2007), 1219-1220.

[27] Bergson intensely supervised the English translations of all of his major works, beginning in 1909 with *L'evolution créatrice* (1907). The annotated proofs of *Les deux sources*, however, appear to be the only ones that remain.

had been done by Ashley Audra, her collaborator Cloudesley Brereton crossed out the typed phrase "further astray" and wrote in ink, "deeper." For this he received a direct rebuttal from Bergson, who crossed out the ink with pencil and wrote alongside, "impossible to put 'deeper.'"[28] The assertion is emphatic and unambiguous. The change Brereton suggested was not just less desirable, it was impossible. The reason is that Bergson conceived a particular architecture for the mind, and within this structure there were two possibilities for movement, lateral and vertical (see figure 6 in my conclusion). Lateral movement happened automatically, unconsciously, but it took effort to achieve vertical movement, to move through depths. What made a religion static was exactly the thoughtlessness with which it grew and endured, in a process "which no longer requires an effort."[29] (Neither *automatique* nor *effort* feature as key terms in Worms's *Vocabulaire de Bergson.*) Brereton's error was thus egregious, and here, too, Bergson might have written as he did a few pages later, in refuting another inked suggestion: "Mr. Brereton's version would change the meaning completely."[30]

This document is rife with such instances. From this we can establish two things about Bergson's writing: that his language is saturated with images, either explicit or latent; and that every image or hint of an image is the result of a choice and an intention. Repeatedly from the translation proofs we see that if a given word did not suit the image he sought, he would not tolerate it. So too would he reject figurative words that seemed to him factually inaccurate. In Audra's part of the translation, where she wrote that the anxiety Bergson identified as part of

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[28] "impossible de mettre 'deeper.'" Page 143 of the manuscript proofs, "'The Two Sources of Morality and Religion,' traduction par Ruth Ashley Audra," bgn 869, Bibliothèque Doucet. The final version reads, « that logic which leads the mind ever further and further astray towards wilder and wilder consequences…», Bergson, *The Two Sources of Morality and Religion,* tr. R. Ashley Audra and Cloudesley Brereton (Notre Dame, 1977 [1935]), 137). The symmetry of « further and further » and « wilder and wilder » is another feature of Bergson's style that he often insisted upon to Audra and Brereton in his corrections.

[29] Ibid.; and in Bergson (1977), 137.

[30] "la version de Mr. Brereton changerait complètement le sens." Ibid., 149.

the experience of religious ecstasy "descends and lingers…like a shadow," Bergson returned succinctly in pencil, "A shadow doesn't linger: it is or isn't."[31] Later in the same passage, this experience of ecstasy is described as a special state of preparation in the life of a mystic, rather than its culmination—like a steam engine idling at the station "until it is time to make a new leap forward." At this, Bergson's pencil sprang: "Steam engines don't leap!"[32] This long passage is a climactic one in the book. Bergson's idea of dynamic religion, as opposed to static, rests in large part on this account of the experience of spiritual breakthrough. At the top of one of these pages, a penciled note instructs the translators: "This whole description requires terms that form images."[33]

Why did it matter so much that these ideas be conveyed in images—and not only that, but that every word employed contribute to the image required, or at least not diverge from it in the slightest? I believe because Bergson philosophized in metaphor. His figurative language was not just a means of expressing a body of thought, but formed his very perceptions of things and the substance of what he understood. Bergson's most important metaphors belong to the class of figurative language that C. S. Lewis called "Pupil's metaphors." The pupil's metaphor, wrote Lewis, "is the unique expression of a meaning that *we cannot have on any other terms.*"[34] Bergson's philosophical insights and the solutions he devised for contemporary problems

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[31] Ibid., 245. Bergson's underlining.
[32] Ibid.
[33] "Dans toute cette description il faut des termes qui fassent image." Ibid., 246.
[34] C. S. Lewis, "Bluspels and Flalansferes," *Rehabilitations and Other Essays* (Oxford, 1939), 141. My emphasis. Lewis wrote that there are two kinds of metaphors: the Master's metaphor and the Pupil's metaphor. A Master's metaphor is a metaphor you use to teach something to someone else. It serves an entirely didactic purpose, and could have been substituted by an altogether different expression, for as master of whatever it illustrates you have many ways of expressing it at your disposal. The Pupil does not: the Pupil's metaphor is the metaphor by which you come to grasp something yourself. "The first [kind of metaphor] is freely chosen; it is one among many possible modes of expression; it does not at all hinder, and only very slightly helps, the thought of its maker. The second is not chosen at all; it is the unique expression of a meaning that we cannot have on any other terms."

exemplify what Lewis called "the truth we win by metaphor."[35] Metaphors of this kind bear epistemological weight. They are how Bergson picked up and rearranged pieces of his world. I believe that Bergson's immense popular reception is testament that these reconfigurations of the world once seemed possible. I would like my work here to show how.

[35] Ibid., 158.

Chapter 1

MACHINE-MADE MINDS

Metaphors of an Ideal Intellect

> There is less liking here than there was forty years ago for verbiage and eloquence, more for facts, thorough study, and scientific culture.
>
> — Théodule Ribot, "Philosophy in France" (1877)[1]

1. Pedantry

In August 1882, on the occasion of the annual distribution of prizes at the lycée of Angers, a very young philosophy professor steps up to give a speech. A similar event is taking place in towns and cities all over France. At these ceremonies it is customary for the task of giving the *discours d'usage* to fall to the youngest professor of the lycée or the most newly arrived.[2] This year it is Henri Bergson, who is twenty-two years old and has now taught for a year. In Angers, a city about 300 kilometers southwest of Paris, he teaches philosophy to boys in the lycée and literature to girls in the école supérieure.[3]

The girls that year, in particular, would remember Bergson for a certain fluid quickness, in the way he would enter the classroom with lowered eyes, empty a sack of books onto the table, and then, with a light bow, look up and begin: "*Mesdemoiselles.*"[4] The prize distribution is not so spare an occasion. His fellow teachers are now assembled before him, as are various local

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[1] Ribot, "Philosophy in France," *Mind* 2 (1877), 386.
[2] As another novice professor explained in his first speech, at the Lycée de Montauban. A. Mathiez, "Université de France Academié de Toulouse: Lycée de Montauban distribution solennelle des prix 31 juillet 1899," *Annales historiques de la Révolution française* 49, no. 227 (1977), 43.
[3] Rose-Marie Mossé-Bastide, *Bergson éducateur* (PUF, 1955), 25.
[4] Recollections of Mathilde Alanic, later published in the *Revue d'Anjou*, cited in ibid.

dignitaries—the mayor or perhaps the prefect, various presidents of associations.[5] Parents, too: it is the only time in the year that the lycée teachers find themselves together with the parents of their students, who have come to see their sons awarded prizes in various subjects and exercises: Latin, Greek, French, history, geography, sciences, mathematics, English, and German. The boys are recognized with first and second places, or, more modestly, *accessits*, or, more commonly, nothing at all. But even if they receive nothing that day, they are still given a reason to congratulate themselves, just for being there. Everything about the ceremony affirms their intellectual and social distinction, and to spell out just what this distinction consists of, there is the institution of the speech.[6]

Angers in the early 1880s is the kind of town where the arrival of a new lycée philosophy professor is an exciting prospect. In his first months here Bergson writes to his friend Albert Kahn, in Paris, that it is "the most tranquil city in the world…certainly the one in France where one sleeps the most."[7] The local newspaper immediately tries to recruit him ("it will wait a long time," he tells Kahn).[8] The city council charges him to give public lectures, which quickly overburden him and make him the resident of Angers who sleeps the least. "It's true that as compensation I see my name displayed in huge letters on all the city walls; but it's not enough."[9] It means, though, that when he takes the stage at the end of that first school year,

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[5] Viviane Isambert-Jamati, « La rigidité d'une institution : Structure scolaire et systèmes de valeurs », *Revue française de sociologie* 7, no. 3 (1966), 317.

[6] For an evolution of the self-affirming rhetoric in these speeches from 1860-1965, see Isambert-Jamati, « Permanence ou variations des objectifs poursuivis par les lycées depuis cent ans », *Revue française de sociologie* 8 (1967), 57-79.

[7] "…la ville la plus tranquille du monde. C'est certainement celle de France où on dort le plus." Letter of 26 November 1881, in Henri Bergson and Albert Kahn, *Correspondances*, ed. Sophie Cœuré et Frédéric Worms (Desmaret, 2003), 61.

[8] "Il attendra longtemps." Ibid.

[9] ""Il est vrai que comme compensation je vois mon nom affiché en gros caractères sur tous les murs de la ville; mais cela n'est pas suffisant." Just two days after he reports the slowness of life in Angers, he starts complaining of being overworked, a hardship that comes to characterize his entire stay. "Je ne sais où donner de la tête," he writes to Kahn more than once. A year and a

he is already a familiar figure, even a local celebrity. The next day, the complete text of his speech will appear in the *Journal de Maine-et-Loire*.

Bergson has chosen to speak about "the abuse of special study [*l'abus d'une étude spéciale*]," a subject so "morose," he assures his audience, that in dwelling on it he is also punishing himself.[10] The congratulatory note will be delayed until the end, after a nightmarish account of the consequences of pursuing a specialty. Here, in the earliest of Bergson's works that we have, we already find him speaking and reasoning with mechanical imagery. But it's important to consider just what he takes "mechanical" to mean in this instance, and to what he directs the charge.

In the context of contemporary pedagogy, "mechanical" was prevalent as a term of abuse, but the variety of things denigrated by that term is not at all self-evident. Bergson, on his provincial stage, uses the language of machinery to caution lycée students against being educated in the manner of a specialist. This usage amounts to a hijacking of an extremely loaded set of terms, in light of the reforms that have just changed the structure of the lycée curriculum and that sought to remake the character of French secondary education.

In the language of these reforms, the words *mécanique* and *machinale* were used to malign the traditional lycée education in rhetoric, which predominately consisted of learning classical Greek and Latin. Reformers considered these studies inadequate preparation for modern lycée graduates and, worse, actually deleterious to young minds. The teaching of classical languages, these critics argued, relied exclusively on memorization. It thus made thinking rote, and created the kind of mind least equipped for a swiftly changing world of industrial and commercial opportunity. The mind best adapted to this world, in contrast, had a

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half into his stay, he is still "accablé de travail…j'en ai par-dessus la tête." Letter of 28 November 1881, undated letter of 1882, and letter of 4 March 1883, in ibid. 61-64.

[10] Bergson, « La Spécialité », in *Ecrits philosophiques*, ed. Frédéric Worms (PUF, 2011), 39-40.

scientific education — "science" in the sense of *Wissenschaft*: educated in history and the natural sciences, as well as in the philological approach to textual criticism, it possessed a well developed and highly versatile ability to reason from empirical observation.

In attacking specialization Bergson was attacking a hallmark of *Wissenschaft*. And he did so by co-opting the language of machinery, portraying the specialization of knowledge as a grotesque mechanization of the mind. Bergson did not dispute the objective to produce minds that would meet the moment. He even agreed that what the current moment required was a kind of infinite adaptability. He called this idea *la souplesse de l'esprit*, and argued that the best way to cultivate it was to study Greek and Latin.

"The saddest figure of all is he whom you observe today," Bergson says his speech, "The man of a single occupation much resembles the man of a single book: he is incapable of talking to you about anything else."[11] There follows a nasty portrait of a self-satisfied but ignorant man, a portrait remarkable for its pettiness. The specialist is unpleasant to talk to; a banal conversationalist in all subjects other than his own, he is positively repugnant when you broach his specialty, for he prefers to withhold what he knows and let *you* run on, displaying your ignorance. "*Rusticus exspectat dum defluat amnis*," mocks the young philosophy professor at this point, quoting Horace as casually as taking a handkerchief from his pocket—*the peasant waits for the river to stop flowing*. It is one of two flourishes of Latin in this short speech—he will end with another—and it is so gratuitous here, it doesn't even make sense. But it makes the opposing sides of Bergson's polemic clear: it is humanism versus—not science *per se*, but a deformed kind of science: "Here is what is more serious. *La spécialité*, which makes the *savant* insipid, makes

[11] "Le plus triste est celui que vous constatez aujourd'hui. L'homme d'une seule occupation ressemble beaucoup à l'homme d'un seul livre." Ibid., 40.

science sterile."[12] The problem went further than pedagogy. The *études spéciales* of the lycée student were vicious because they reinforced the pursuit of *sciences spéciales* by *savants*, a pitfall of modern science that would present a new imperative for philosophy by the turn of the century.

2. Monstrosity

One piece of the history of learning in the nineteenth century is a story of professionalization and specialization. The scientist of the nineteenth century was not the natural philosopher of the eighteenth; the late nineteenth-century academic was not the man of letters or the gentleman-scholar.[13] One of the marks that distinguished the later figure was his identification with one or another scientific or scholarly discipline. Less often told within this narrative are stories of the resistance to this transformation, and resistance from some of the very people who have been credited (or held responsible) for contributing to this process.[14] Auguste Comte himself believed that scientific specialization had become pernicious, had become an affair of "merchants of detail."[15] *L'âge de la spécialité*, wrote Comte, was only a necessary antecedent to the final, "fully positive" *l'âge de la généralité*, and positive philosophy

[12] "Mais voici ce qui est plus grave. La spécialité, qui rend le savant maussade, rend la science stérile." Ibid.
[13] James Turner, *Philology* (Princeton, 2014); William Clark, *Academic Charisma* (Chicago, 2006); David Cahan (ed.), *From Natural Philosophy to the Sciences: Writing the History of Nineteenth-Century Science* (Chicago, 2003); Christopher Stray, *Classics Transformed* (Oxford, 1998); Robert Fox, « Science, the University, and the State », in Gerald Geison (ed.), *Professions and the French State, 1700-1900* (Pennsylvania, 1984) ; Robert Fox and George Weisz (eds.), *The Organization of Science and Technology in France, 1808-1914* (Cambridge, 1980).
[14] Theodore Porter, « How Science Became Technical », *Isis* 100 (2009): 292-309; and « Statistical Utopianism in an Age of Aristocratic Efficiency », *Osiris* 17 (2002): 210-227.
[15] Quoted in Mary Pickering, *Auguste Comte: An Intellectual Biography*, vol. 1 (Cambridge, 1993), 502.

was the generalizing work to be done.[16] When André Lalande invoked Comte at the turn of the century to rally the philosophical readership of the *Revue de Métaphysique et de Morale* against the fragmentation of scientific knowledge, he too spoke of the pecuniary rewards of specialization that made this process difficult to temper: "The parcelling can but increase with the expansion of scientific questions and the material advantages that specialization affords the *savant*."[17] In Lalande's description the creation of new specialties inevitably attended the expansion of scientific knowledge, but specialization was not itself synonymous with progress. In fact, it was a process that seemed natural, autonomous, and blind. Lalande warned, "Science is lost if philosophy is detached from it."[18] Bergson is more macabre in 1882: "Upon contact with the specialist, everything turns dry and sterile…Science loses its life little by little, as it decomposes."[19]

Now, before the lycée assembly, Bergson recognizes that "certainly, the division of the sciences is a natural thing."[20] But, like Comte, he characterizes the work of scientific specialities as a pursuit of details: "One can, if necessary, confine oneself to a special science if one seeks only particular facts or truths of detail; but to pose new problems for this science, to renew its methods, one must rise above it."[21] He gives a crisp depiction of what science would amount to if it never rose above the level of fact-checking and fact-mongering: "If we listened to the

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[16] Comte, « Leçon 56: L'Age de Spécialité », p. 273; and « Leçon 57: L'Age de Généralité », *Cours de philosophie*, 2nd ed., vol. 6 (Baillière, 1864). See also Pickering, 564.
[17] "Le morcellement ne peut qu'y croître par le développement des questions et par les avantages matériels que la spécialisation apporte au savant." André Lalande, « La langage philosophique et l'unité de la philosophie », *Revue de métaphysique et de morale* 6, no. 5 (September 1898), 567.
[18] "La science est perdue si la philosophie s'en détache." Ibid., 566.
[19] "Au contact du spécialiste, tout devient sec et stérile…La science perde peu à peu la vie en se décomposant." Bergson, « La Spécialité », 44.
[20] "Certes, la division des sciences est chose naturelle." Ibid., 40.
[21] "C'est qu'on peut, à la rigueur, s'en tenir à une science spéciale si l'on ne vise qu'à des faits particuliers ou à des vérités de détail ; mais pour poser à cette science des problèmes nouveaux, pour en renouveler des méthodes, il faut s'élever au-dessus d'elle." Ibid., 43.

specialist, physics would greatly risk becoming a simple catalogue of phenomena, and chemistry a compendium of pharmaceutical formulas. In the great journal of science, he [the specialist] only fills the column for trivia."[22] But Bergson's warning about specialization has a different emphasis from Comte's, because of where he is giving it, and also because in his scheme the trajectory of scientific progress is inverted. The pursuit of knowledge may be necessarily piecemeal and require specialization, but, he says, we must delay this stage of our learning for as long as we can: "We can never resign ourselves to it too late."[23] We must all *begin* as generalists, and only thereafter fall to the pursuit of something more particular: "We should only descend to a special science once we have considered all the others, in their general contours, from above."[24] Specializing too soon is like looking directly into the microscope, without first seeing what object is on the slide; it is like thoroughly knowing a single stone, while ignoring the edifice it comprises: "The whole art is in the arrangement, and what matters is not to know a single stone, but the place that it occupies."[25] Naturally, before a lycée audience Bergson would be more concerned with the risks of specialization to education, rather than to scientific progress, and so appear simply to be emphasizing a different stage, a preliminary generalism, to be followed by the stage of analyzing stones and slides. But Bergson's whole text suggests otherwise: that the day we specialize is the day our thinking is done, and we can settle into being mere recorders of facts; that, in any scientific pursuit, we are never not in need of every other science. Our greatest *savants*, he tells the *lycéens*, have been life-long generalists:

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[22] "Si l'on écoutait le spécialiste, la physique risquerait fort de devenir un simple catalogue de phénomènes, et la chimie un recueil de formules pharmaceutiques. Dans le grand journal de la science, il ne remplit que la colonne des faits divers." Ibid., 42.
[23] "On ne saurait s'y résigner trop tard." Ibid., 41.
[24] "On ne devrait descendre à une science spéciale qu'après avoir considéré d'en haut, dans leurs contours généraux, toutes les autres." Ibid.
[25] "C'est que tout l'art est dans l'arrangement, et que l'important n'est pas de connaître la pierre, mais la place qu'elle occupera." Ibid.

Descartes studied everything, and was often led to a discovery in one science by an insight in another; Pasteur was not coincidentally "at once a philosopher and a man of letters."[26]

See how Bergson pivots from merciless sarcasm to seriousness. The smug specialist, that "simple collector of facts," who stifles conversation, turns out to pose a threat to science itself. And not just natural science but all thinking enterprises, of which Bergson singles out two more for particular mention: literary criticism and classical studies. Both the literary critic and the classicist, in the specialist mode, are relentless pursuers of facts at the expense of ideas and nuance. The critic, says Bergson,

> will cite facts which are insignificant, but unpublished; he is the first to speak of them, that's what makes them important. He will collect papers and documents, forgetting that the unpublished is really to be found in the mind, not in old parchments. The style and the manner of the author won't concern him at all: speak to me about his birth certificate.[27]

The specialist of ancient Greek and Latin is "even more petty":

> There was a time when one read the ancient authors to know them, when one sought from them great philosophical and moral instruction. Today the specialist reads them only to correct them. Pencil in hand, with a feverish eye, he's on the lookout for errors in the manuscript. He would be sorry if the text of the ancient authors reached us intact, or if a correct manuscript saved us from his conjectures.[28]

You can't mistake Bergson's relish in sketching these portraits: this is how, tucked away in a provincial lycée, a rookie philosophy professor thumbs his nose at the latest agitations of the pedagogical establishment in Paris. There, a movement to change the methods and content of lycée education has just led to the dramatic curricular reforms of Jules Ferry's education

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[26] "…en même temps un philosophe et un lettré." Ibid., 43.
[27] "Il citera des faits insignifiants, mais inédits ; il est le premier à les raconter, de là leur importance. Il collectionnera les papiers et les documents, oubliant que l'inédit doit se trouver dans l'esprit, non dans les vieux parchemins. Le style et la manière d'un auteur ne le préoccuperont guère : parlez-moi de son acte de naissance." Ibid., 43.
[28] "…plus mesquine encore. Il fut un temps où on lisait les auteurs anciens pour les connaître, où on leur demandait de grands enseignements philosophiques et moraux. Le spécialiste ne les lit aujourd'hui que pour les corriger. Le crayon à la main, le regard fiévreux, il guette au passage les erreurs du manuscrit. Il serait désolé que le texte des auteurs anciens nous fût parvenu intact, ou qu'un manuscrit correct nous dispensât de ses conjectures." Ibid., 43-44.

ministry. It is a movement away from the traditional humanistic pedagogy of the lycée, which taught ancient authors as exemplars of eloquence and high-mindedness, and toward textual criticism on the model of nineteenth-century German philology—a research enterprise that was indeed dominated by efforts to correct errors of textual transcription.[29] Of the specialist of ancient literature Bergson says, "He does not wonder what the author thought in writing a phrase, but of what the copyist thought in transcribing it."[30]

The last turn of the screw in this speech contains no levity at all. Given all that's inimical to learning in specialized study, Bergson asks how it is everyone still specializes in good faith, believing specialization to be an aid to the pursuit of knowledge. It is a case, he says, of a mistaken analogy. "We are dupes, if I'm not mistaken, of a grand illusion. Without realizing it, we are assimilating the work of the mind to manual labor."[31] He cites Adam Smith, who demonstrated the superior efficacy of specialization in the factory. "Industry achieves marvelous results," Bergson says, "by the division of labor. It demands that each worker have a 'speciality,' and he will be all the more adept at it the earlier he has chosen it."[32] But you cannot extend the same principle to the production of knowledge. Specialization, the operating principle of the machine, applies to human labors only where we, too, aspire to be machine-like:

> Why does the machine work faster than man? because it divides the work, because a special mechanism corresponds to each part of the task. And we, who take the machine as our model when we work with our hands, we cannot do better than to divide the task

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[29] In the practice of the new philology Anthony Grafton has observed « *a preference for error over truth* » (« Polyhistor into Philolog », *History of Universities* 3 (1983), 181, Grafton's emphasis). In Germany too philology was critiqued as « an education geared to the needs of specialists rather than citizens ». Grafton has identified this as the playing out of a contradiction between Humboldtian ideals of research and Humboldtian ideals of *Bildung*, where the "concentration on fine points of technique…inevitably pushed questions of content into the background" (168).
[30] "Il ne se demande pas ce que pensait l'auteur en écrivant sa phrase, mais à quoi pensait le copiste en la transcrivant." Bergson, « La Spécialité », 44.
[31] "Nous sommes dupes, si je ne me trompe, d'une grande illusion. Sans nous en rendre compte, nous assimilons le travail de l'esprit au travail manuel." Ibid., 44.
[32] "L'industrie arrive à de merveilleux résultats par la division du travail. Il faut que chaque ouvrier ait une 'spécialité,' et il sera d'autant plus habile qu'il l'aura choisie plus tôt." Ibid., 45.

> as the machine does; and we will work as well and as quickly when we, in turn, become machines ourselves.[33]

The last image to be taken away from this school year is the specter of a man being turned into a machine. But it is the way Bergson expresses the character of machinery that makes it particularly horrifying to assimilate to the intellect: "While we acquire a manual skill [*habileté manuelle*] only on condition of choosing a special occupation and of *contracting our muscles into a single attitude*, on the contrary we perfect one of our mental faculties only on condition of developing all the others."[34] Oddly, there is something *stiff* about "habileté" in his usage here, though it is a word synonymous with dexterity—a deftness of hand or quickness of eye: a good surgeon possesses an "habileté de main"; a person with *habileté*, says the contemporary *Dictionnaire de l'Académie*, is not easily fooled.[35] Yet Bergson would have you see the movements of the specialist as an unvarying contraction of muscles, such that the analogy for the mind instantly appears grotesque. The suggestion is that the mind of a specialist suffers from a kind of cramp.

It is here, in the language of *movement contracted into habit*, that Bergson's particular animus toward specialization begins to reveal his larger, life-long preoccupations. Throughout his later work, he will reason in these terms. In his psychological theories, in his understanding of biological development and of the evolution of societies, he will continually observe the

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[33] "Pourquoi la machine travaille-t-elle plus vite que l'homme? parce qu'elle divise le travail, parce qu'un mécanisme spécial correspond à chaque partie de la tâche. Et nous, qui prenons modèle sur la machine quand nous travaillons de nos mains, nous ne pouvons mieux faire que de diviser la tâche comme elle la divise; et nous travaillerons aussi vite et aussi bien quand nous serons machines à notre tour." Ibid., 45.

[34] "Tandis que nous n'acquerons l'habileté manuelle qu'à la condition de choisir un métier spécial et de *faire contracter à nos muscles une seule habitude*, au contraire nous ne perfectionnons une de nos facultés qu'à la condition de développer toutes les autres." Ibid. My emphasis.

[35] "Habileté et aptitude, Dexteritas, Industria. Habileté de se mouvoir, Mobilitas," *Thresor de la langue francoyse tant ancienne que moderne* t. 1 (1606). "Habileté de main," Littré (1873). "HABILETÉ…capacité, intelligence…Avec toute son habileté, il a été pris pour dupe," *Dictionnaire de l'Académie française* 6ème éd. (1835). See ARTFL historical dictionaries, http://artfl-project.uchicago.edu/content/dictionnaires-dautrefois

dynamics of contraction—both in the sense of stiffening, as in the contraction of a muscle, and in the sense of narrowing, of constriction. Both senses are operative in Bergson's condemnation of the specialist. In another chilling image, he shows how these two senses reinforce each other, how the hardening of a habit also entails a restriction of the domain of thought and action. Specialization, he says,

> …is precisely, young pupils, what distinguishes the intellect from instinct, and man from beast. All the inferiority of the animal lies in this: it is a specialist. It does very well what it does but knows not how to do anything else. The bee, to construct its honeycomb, has solved a difficult problem of trigonometry: can it solve others? …Our intelligence has become what it has by various habits contracted in succession, whereas that of the animal has shrunk little by little and atrophied within the narrow limits of a specialty….[36]

Bergson had a Cartesian notion of animals as machines, but with an evolutionary and industrial twist: they were machines that were so functionally adapted as to be largely functionally defined. Two comparisons here can help clarify Bergson's particular view: with Descartes and with Durkheim's work-to-come.[37] As Jessica Riskin has shown, Descartes's view of animals was based on his fascination with mechanical sophistication: to him, animals were mechanical *marvels.*[38] Bergson, in contrast, seized upon the *rote* aspect of machinery. The difference can be seen in their operative images: for Descartes, the machinery of the body was a complex system of hydraulics; for Bergson, the mechanical evoked not the intricacy of a whole

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[36] "C'est précisément, jeunes élèves, ce qui distingue l'intelligence de l'instinct, et l'homme de la bête. Toute l'infériorité de l'animal est là: c'est un spécialiste. Il fait très bien ce qu'il fait mais ne saurait faire autre chose. L'abeille a résolu, pour construire son alvéole, un problème de trigonométrie difficile: en résoudra-t-elle d'autres ? …Notre intelligence est devenue ce qu'elle est par les habitudes variées qu'elle a contractées successivement, au lieu que celle de l'animal s'est peu à peu rétrécie et atrophiée dans les limites étroites d'une spécialité…" Bergson, « La Spécialité », 45.

[37] Bergson and Durkheim's parallel careers began together at l'École normale supérieure, where Bergson was one year ahead.

[38] Riskin, *The Restless Clock* (Chicago, 2016), 44-76. For other recent histories showing why modern associations of the « mechanical » should not be taken for granted, see Riskin, « The Defecating Duck; or, The Ambiguous Origins of Artificial Life », *Critical Inquiry* 29, no. 4 (2003): 599-633; and John Tresch, *The Romantic Machine* (Chicago, 2012).

system of movements but the repetition of a single movement, or a sequence of movements repeated to carry out a single function. What set animals and humans apart, for Bergson, was not the absence or presence of a soul, but repetitive or non-repetitive action.[39] This is how he could both credit and disparage bees for solving "a difficult problem of trigonometry." No matter how complicated the achievement, your mind is "atrophied" if you can't do anything else.

Durkheim, ten years later, would expressly defend his theory of the division of labor against the nightmare scenario of people coming to resemble machinery. He saw this as "one of the most serious charges brought against the division of labor":

> It has often been accused of degrading the individual by making him a machine. And truly, if he does not know whither the operations he performs are tending, if he relates them to no end, he can only continue to work through routine. Every day he repeats the same movements with monotonous regularity, but without being interested in them, and without understanding them. He is no longer a living cell of a living organism which unceasingly vibrates with neighboring cells, which acts upon them, and to whose action he responds and with whose needs and circumstances he changes. He is no longer anything but an inert piece of machinery…[40]

But Durkheim maintained that this was an exceptional, pathological outcome of the division of labor, where the process of specialization has been "denatured" by "abnormal circumstances," resulting in a state of *anomie*.

> For, normally, the role of each special function does not require that the individual close himself in, but that he keep himself in constant relations with neighboring functions, take conscience of their needs, of the changes which they undergo, etc.… He is, then, not a machine who repeats his movements without knowing their meaning, but he

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[39] This comparison is one of several in this dissertation that should complicate the view that Bergson scholars have taken for granted, that Bergson's philosophy was the antithesis of Descartes's. I do not believe Bergson and Descartes constituted philosophical antipodes, but rather that it was the uses made of Cartesianism and Bergsonism by turn-of-the-century social and political movements that made them opposing doctrines. On these antagonizing appropriations, see François Azouvi, *Descartes et la France* (Fayard, 2002) and *La gloire de Bergson* (Gallimard, 2007).

[40] Durkheim, *The Division of Labor in Society*, tr. George Simpson (Free Press, 1933), 371. I have slightly modified the translation for consistency.

> knows that they tend, in some way, towards an end that he conceives more or less distinctly.[41]

But I think even the idea of a *conscientious* specialist would not have been enough for Bergson to see the division of labor as something other than machine-like, and certainly not by 1893, when *De la division du travail social* was published. It's important to note that Bergson and Durkheim had identical views of what specialization entailed for society, and both identified the potentially problematic state of things as the "mechanical" one. But Durkheim had a different criterion for what would constitute the alternative, the condition of "organic solidarity." This required a particular kind of organization, the "social elements…co-ordinated and subordinated one to another," just as the organs of the body.[42] For Bergson, though, the category of the mechanical came to be much, much larger. To him organization was not what got you out of the realm of the mechanical. A society organized exactly as Durkheim described it would be just a more complicated machine.

But we are decades away from the final line of Bergson's final work, *Les deux sources de la morale et de la religion*, where he called the entire universe "a machine for the making of gods."[43] For now, what the speech on "La Spécialité" allows us to see is how Bergson *would* be unpersuaded by Durkheim's characterization of the division of labor, even in its most robust form. Durkheim would write that what the division of labor "brings together are functions, that is to say well-defined ways of acting, which repeat identically in given circumstances, for they stem from general and constant conditions of social life."[44] As these ways of acting get repeated,

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[41] Ibid., 373.
[42] Ibid., 181.
[43] Bergson, *The Two Sources of Morality and Religion*, tr. Audra and Brereton, 317.
[44] "…ce qu'elle met en présence, ce sont des fonctions, c'est-à-dire des manières d'agir définies, qui se répètent, identiques à elle-mêmes, dans des circonstances données, puisqu'elles tiennent aux conditions générales et constantes de la vie sociale." Durkheim, *De la division du travail social* (Alcan, 1922), 357. I thank Nicolas Michel for help with this translation, which departs from Simpson's.

they become habits, and habits become rules of conduct. Bergson would find nothing in this to dispute: he said the same thing himself, in his characterization of machinery in "La Spécialité." This is how what Durkheim would see as the natural solution to a growing society would appear to Bergson as an intensification of the problem.

Bergson had an altogether different solution to the social isolation that Durkheim expressed as *anomie*. This was what he would speak about, in his next prize distribution address, as "la politesse." But before we get there in the next chapter, we need to appreciate how the speech on *spécialité* sounded in 1882.

3. Science and Vocations

Let's pay attention to that slight idiosyncrasy of language in the phrase, "une étude spéciale." The word *spécialiser* appears in the Littré dictionary as a neologism in 1873, with a definition that is devoid of content.[45] The word *spécial* has a longer history. From its legal and theological contexts in the seventeenth and eighteenth centuries—in usages like "special power," "special procuration," "special grace"—it begins to refer, in the 1830s, to domains or objects of knowledge.[46] "Special studies," "special knowledge [*connaissances spéciales*]," "the special object of my studies" all appear as examples in the 1835 dictionary of the Académie française.[47] One domain of knowledge in which this vocabulary gains particular currency in the

[45] "Néologisme. Indiquer d'une manière spéciale." Littré, *Dictionnaire de la langue française*, t. 4 (1873). The modern definition is not canonized until the 1932 edition of the *Dictionnaire de l'Académie française*: « Spécialiser. Se cantonner dans une branche spéciale d'études. » In ARTFL historical dictionaries.
[46] "pouvoir spécial," "procuration spécial," "grâce spécial," in the definition of SPÉCIAL, *Dictionnaire de l'Académie française*, 1st ed. (1694), in ibid.
[47] "études spéciales," "connaissances spéciales," "l'objet spécial de mes études," *Dictionnaire de l'Academie française*, 6th ed. (1835), in ibid.

1830s and 1840s is medical practice, and this is where *spécialiste* itself originates.[48] The case made by advocates of the division of medical practice in the eighteenth century makes an instructive comparison to the cases for and against "special study" a century later. Diderot believed that physicians should "divide the various diseases amongst themselves," so as to master some particular "branch of medicine," as surgeons had already divided the various operations. For the prominent Lyonnais physician Jean Emmanuel Gilibert, author of a sweeping critique of contemporary medicine, the "universality of practice" was what led to routine and the loss of the observational instinct necessary for practicing medicine as an art.[49] Advocates of division in medicine found a salutary association with the separation of skills in craft production, an analogy likely aided by Diderot, inveterate champion of the mechanical arts. But the analogy was a tricky one to adopt, as Jan Goldstein has written, for medicine was still to be conceived as a liberal art, rather than a craft. And another, unequivocally damaging association attended the eighteenth-century medical specialist: physicians who devoted their practice to a single organ were unaccredited "dentists, oculists, hernia surgeons," as a foreign physician observed in Paris in 1841, "and they were despised."[50] A linguistic style book from 1845 records this new designation in its entry on "spécial, spécialité":

> Over the last few years, these words have become subject to a rather amusing misuse. Certain adept scientific industrialists, oculists, phrenologists, homœopathes, dentists, pedicurists, etc…, distinguish themselves as *specialists* [*hommes spéciaux*].

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[48] This and the following account of eighteenth-century advocacy for medical specialties comes from Jan Goldstein, *Console and Classify* (Cambridge, 1987), 55-63. *Spécialiste* remains a neologism in the 1873 Littré, though Littré makes particular mention of the medical usage: "SPÉCIALISTE…Néologisme. Se dit d'un écrivain, d'un savant qui s'occupe de telle ou telle science en particulier, ou de telle branche spéciale d'une science…Particulièrement. Médecin qui se consacre principalement, ou même d'une manière exclusive, au traitement de certaines maladies, telles que les maladies des yeux, des oreilles, des dents, ou de la peau, les affections de l'appareil urinaire, l'aliénation mentale, etc."

[49] Gilibert, *l'Anarchie médicinale* (Neuchâtel, 1772).

[50] The German physician Wunderlich, cited in Toby Gelfand, « The Origins of a Modern Concept of Medical Specialization: John Morgan's Discourse of 1765 », *Bull. Hist. Med.* 50 (1976), 511.

> "— B., afflicted with a neuralgic disease, placed herself in the hands of a specialist [*homme spécial*]."[51]

In fact, it had become fashionable to speak of one's *spécialité* in place of whatever one did for a living. The word had a way of instantly elevating your run-of-the-mill *métier*, and the author of the style book found people of all manner of trades affecting "an entirely odd scientific air": "We have tailors, bootmakers, who are specialists [*hommes spéciaux*] …with respect to boots or to waistcoats."[52]

But where you could once mock a bootmaker for putting on scientific airs as an *homme spécial* with respect to boots, at the turn of the century you could disdain a *savant* for being an *homme spécial*. In the *Vocabulaire technique et critique de la philosophie*, a collective enterprise by France's leading philosophers that began in 1901, with the founding of the Société Française de Philosophie, the word "spécial" is defined in two senses: that which pertains to a *species* (as a term of logic), as opposed to a *genre*; and "**B**. Limited, restricted." A citation is provided from the mid-century philosopher of mathematics Antoine-Augustin Cournot: "*Savants* shut up in their professional studies, patient, *spéciales*."[53] The *Vocabulaire* was part of an effort to unify philosophy as a bulwark against an ever-fracturing science. Lalande was its editor, and Bergson, one of the forty-four founding members of the Société, was one of the *Vocabulaire*'s regular contributors. The Société sought to coordinate philosophy after the manner of scientific societies, and with the collaboration of scientists: it convened a mixed group of philosophers

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[51] "Depuis quelques années, ces mots deviennent l'objet d'un abus assez plaisant. Certains adeptes industriels de la science, oculistes, phrénologistes, homœopathes, dentistes, pédicures, etc…, se qualifient d'hommes *spéciaux*. '— B. , atteint d'une affection névralgique, se mit entre les mains d'un homme *spécial*.'" Francis Wey, *Remarques sur la langue française au dix-neuvième siècle* (Didot Frères, 1845), 255. Italics in original.

[52] "un air scientifique tout à fait curieux": "Nous avons des tailleurs, des bottiers, qui sont des hommes *spéciaux*…relativement aux bottes ou aux gilets." Ibid. Italics in original.

[53] "B. Limité, restreint. 'Des savants renfermés dans leurs études professionnelles, patientes, spéciales…' Cournot, *Traité de l'Enchaînement*, v. 2 ; §548." Lalande, *Vocabulaire technique et critique de la philosophie* (PUF, 1947 [1923]), 995.

and *savants* in the hope of creating a forum where the latter could work against the "parcelling" tendency in their own fields.[54] So the malicious definition of "spécial" in the *Vocabulaire* was not an instance of philosophers insulting a competing class of thinkers; it was an opinion common to philosophers and *savants* alike.

But—why is this word even here? The scope of the *Vocabulaire* was supposed to be limited to the philosophical meanings of words. *Spécial*, aside from its application in logic, would not seem to suggest itself for inclusion in a technical (specialist) vocabulary. Another philosophical dictionary from this time, Edmond Goblot's *Vocabulaire philosophique* (1901), to which Lalande's *Vocabulaire* sometimes referred, only has *spécial* in the logic sense.[55] The word does not appear at all in Alexis Bertrand's *Lexique de philosophie* (1892). And, most conspicuously, it is absent from the six-volume *Dictionnaire des sciences philosophiques* (1844-1852), which was the collective work of many illustrious mid-century "professeurs et savants," including Cournot.[56] One proof of the unphilosophical nature of this word is that none of these philosophical lexicons bothered to include its derivatives: *spécialité*, *spécialisation*, *spécialiste*. But in the late nineteenth century, *spécial* was an ordinary word with a partisan meaning.

Since the early 1860s, *spécial* had been a watchword in French secondary education. In 1863, education minister Victor Duruy introduced a new program of study for the lycée, which he called *l'enseignement secondaire spécial*. It was to be an alternative to the traditional classical curriculum, and it would open the lycée to a different class of students and prepare them for a

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[54] Among the most august names at the founding of the Société were Émile Boutroux, Jules Lachelier, Henri Poincaré, Gabriel Séailles, Alfred Fouillée, Louis Liard, Alphonse Darlu, Paul Painlevé, Henri Bergson. The younger members included Léon Brunschvicg, Pierre Janet, Jacques Hadamard, Frédéric Rauh, Victor Delbos. After the initial group was formed, new members could only be presented annually and elected by a majority. Emile Durkheim was among those elected in1902; Jean Perrin in 1903. (SFP 1.1.1, Archives de la Société française de Philosophie, Centre documentaire, École Normale Supérieure.)

[55] Goblot's work went through at least seven editions, but it always hovered at around 500 pages and was entirely the work of Goblot, and he did not work in Paris.

[56] Adolphe Franck (ed.), *Dictionnaire des Sciences philosophiques*, 2nd ed. (Hachette, 1875).

different set of professions. The classical curriculum, crowned by the baccalaureate, would remain the road to careers in law, medicine, and the civil service—the liberal professions; the new "special" curriculum would lead to careers in commerce, industry, and agriculture. It would be a shorter course—four years of secondary schooling instead of the traditional seven—and, initially, it was to be taught "concentrically," each year forming a viable whole, each following year reprising and enlarging upon the previous, so that students could more conveniently withdraw part-way through.[57] Its subjects were French; two modern languages, German and English; history and geography, which comprised a single course; and, predominantly—in terms of the number of hours allotted per week—arithmetic, applied mathematics, and applied sciences.[58]

Duruy liked to give statistical justifications for his initiative: he would say, in the mid-1860s, that there were 44,000 students attending lycées and collèges throughout the country, but five *million* students enrolled in primary schools.[59] Most of the 44,000 did not come from the five million, for lycées had their own preparatory classes for the lower grades, in which the sons of bourgeois families began their studies of Latin and Greek. Prior to the Third Republic's revival of écoles primaires supérieures and expansion of technical and trade schools, the école primaire was a terminal education.[60] Between primary and secondary education, then, there was

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[57] The history of *l'enseignement spécial* is discussed in detail in Clément Falcucci, *L'Humanisme dans l'enseignement secondaire en France* (Toulouse, 1939); and C. R. Day, "Technical and Professional Education in France: The Rise and Fall of l'Enseignement Secondaire Spécial, 1865-1902," *Journal of Social History* 6, no. 2 (1972-1973): 177-201. Fritz Ringer discusses it in the context of social change in *Fields of Knowledge* (Cambridge, 1992).

[58] Falcucci, 273. The course in math and science grows ever more disproportionally to the other subjects across the four years. It begins as arithmetic and bookkeeping in the first year and ends as mathematical and natural sciences without the designation "applied" in the fourth year.

[59] Duruy, "Discours de Mont-de-Marsan," 15 October 1866, cited in Falcucci, 276.

[60] On the history of technical education in this period, see C. R. Day, « Education for the Industrial World: Technical and Modern Instruction in France Under the Third Republic, 1870-1914 », in Fox and Weisz (1980); and « The Making of Mechanical Engineers in France:

"an abyss," said Duruy, "which only a few, exceptionnally gifted, manage to cross." He was speaking at the inauguration of the Lycée de Mont-de-Marsan, the first institution to feature the new curriculum, in the rural southwest of France, closer to Spain than to Toulouse: "Over this abyss, we must cast a bridge: *l'enseignement spécial* will give us the means."[61] Duruy moved quickly, creating a new Ecole Normale, at Cluny, and a new *agrégation de l'enseignement spécial*, for training and credentialing a new corps of teachers. *L'enseignement spécial* was to be a separate but equal institution within the lycée.

But the program took time to gain acceptance. Duruy's proposals were approved by the legislature but given no funding, so that he had to raise the money himself.[62] Perhaps that contributed to the *spécial* professors being paid less: a *spécial* professor in Paris made about as much as a classical one in the provinces.[63] In fact, until the 1880s, there was only place in Paris where *spécial* professors could teach: the lycée Charlemagne.[64] Duruy had hoped that having students of different "destinations" in the same schoolyard would be mutually salutary, but the *spécial* students were mocked by the classical ones during recreation hours, and called "cattle" and "cheese-hunks"; *spécial* professors, too, felt "misunderstood."[65]

The Ecoles d'Arts et Métiers, 1803-1914 », *French Historical Studies* 10: 439-460; Terry Shinn, « From 'Corps' to 'Profession': the Emergence and Definition of Industrial Engineering in Modern France », in Fox and Weisz (1980); and Ulrich Wengenroth, « Science, Technology, and Industry », in Cahan (2003).

[61] "Sur cet abîme, il faut jeter un pont : l'enseignement spécial nous en donnera le moyen." Duruy, "Discours de Mont-de-Marsan," in Falcucci, 276.

[62] Falcucci, 275.

[63] Matthew Arnold, *Schools and Universities on the Continent* (University of Michigan, 1964), 123; Day, « Technical and Professional Education in France », 185. In 1881 the Ferry ministry issued a *décret* to make the salaries of *spécial* and *classique* professors more comparable, but even then, a *spécial* professor had to be *agrégé* to earn the same amount as a *classique* professor *non-agrégé*. *Bulletin administratif du Ministère de l'Instruction Publique* 24 (1881), 1345-1346.

[64] Octave Gréard, *Education et instruction*, vol. 1 (Hachette, 1887), 46.

[65] Falcucci, 271; Day, "Technical and Professional Education in France,"185; Antoine Prost, *Histoire de l'enseignement en France 1800-1967* (Colin, 1968), 256.

The stigma is expressed succinctly in the fact that *l'enseignement secondaire spécial* was commonly considered a contradiction in terms. The traditional form of "secondary" education styled itself as intellectual cultivation, pursued independently of particular professions—in the coming decades, its defenders would call it "disinterested"; its detractors, "useless."[66] The word *spécial* in education, by contrast, was synonymous with "applied." The original *écoles spéciales* were the *grandes écoles*—the military and naval schools, the Ecole Polytechnique, Ecole des Ponts et Chaussés, Ecole de Mines—schools of high prestige, but also channels to specific functions of the state. "Strictly professional and practical," Hippolyte Taine had written of them, for that was how Napoleon, in his crassness, had wanted them.[67] Though the baccalaureate was a prerequisite for admission to any one of them, Taine disdained them—along with the Faculty of Law—for their "subordination of science to art"—that is, the subordination of knowledge to practice—their "concern for immediate or imminent application," their "utilitarian course in view of a public function or private career," their "*constriction of studies.*"[68] Taine was exceptional in referring to the *grandes écoles* as *écoles spéciales* late in the century; it's telling that he did so in an expression of contempt.[69] Clément Falcucci, whose history of humanist education in France closely tracked the pedagogical tracts and documents of ministerial commissions during this period, wrote: "*L'enseignement spécial*, to justify its name, pursued definite ends, suited to the practice of a professional life in industry,

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[66] In this respect it was analogous to the German ideal of *Bildung* and to Matthew Arnold's idea of « culture »—but it was also interestingly disanalogous, as discussed in Fritz Ringer, *Decline of the German Mandarins* (Harvard, 1969).
[67] "Strictement professionnels et pratiques," Hippolyte Taine, *Les origines de la France contemporaine* vol. 6 (Hachette, 1887), 204.
[68] "subordination de la science à l'art"; "souci de l'application immédiate ou prochaine"; "direction utilitaire en vue d'une fonction publique et d'une carrière privée"; "*reserrement des études.*" Ibid. My emphasis.
[69] Although Louis Liard did so without derision in his historical chronicle, *L'enseignement supérieur en France 1789-1893* (Colin, 1888-1894).

commerce and agriculture."[70] The terms *secondaire* and *spécial*, then, seemed to cancel each other. Even a foreign observer, while admiring the program's intention, found its name perplexing. "The name of the new instruction was rather a matter of difficulty," Matthew Arnold wrote, after visiting in his capacity as inspector of schools in England:

> It had got that of 'professional,' but this word gives the idea of a school where particular trades and businesses are learnt, and this is not the design of the new schools. 'We do not,' say their promotors, 'put the workshop in the school; in these new establishments the teaching is still a means, not an end, and when the pupil leaves them, the knowledge he possesses will be general knowledge.' …Others proposed the name 'French;' we in England have inclined to that of 'modern;' but the name actually adopted is that of 'special,' not a very good one as it seems to me.[71]

It was true that, despite settling on a name that pleased no one, Duruy had intended *l'enseignement spécial* to be a new kind of general education. It was not to produce "mechanics, miners, foremen,

> but, because industry, commerce, and agriculture demands more intelligence, more knowledge [*savoir*] and more skill [*art*] each day…the University has a role in this education of the mind which must precede that of the hand. If this education does not teach a specific profession, it prepares for all the professions.[72]

L'enseignement spécial was meant to supply a work force. Duruy had ended up calling it "spécial" to emphasize its character of local specificity, which he prized: "…If classical instruction is the same everywhere, *l'enseignement spécial* should *vary* in many localities, according to the character

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[70] "L'enseignement spécial, pour porter valablement son nom, poursuivait des fins déterminées, appropriées à l'exercice d'une vie professionnelle dans l'industrie, le commerce et l'agriculture." Falcucci, 268.

[71] Arnold, *Schools and Universities on the Continent*, 124.

[72] "…des mécaniciens, des mineurs, des contremaîtres, mais, puisque l'industrie, le commerce et l'agriculture exigent chaque jour plus d'intelligence, de savoir et d'art…l'Université a son rôle dans cette éducation d'esprit qui doit précéder celle de la main. Si elle n'enseigne pas un profession déterminée, elle préparera à toutes les professions." Cited in Falcucci, 271. Duruy is using « l'Université » in its contemporary sense, as the system of secondary schools and faculties administered by the Ministère de l'Instruction Publique. This is before the organization of the disparate faculties into universities in the modern sense, in 1896.

of the dominant industry."[73] In Chartres, a center of agriculture, applied chemistry and physics would be taught in the interests of the "proper maintenance of fields"; in the mining community of Saint-Etienne, metallurgy and dyes; for the textile industry of Lyon, studies in silk.[74] The program was expressly designed for students to quit early and take jobs. And yet it held on to an ideal of generalism: it would be a professional education that prepared for "all the professions." This ideal would be echoed by education reformers for the rest of the century. New echelons of technical schools appeared under the Third Republic, but even with the *écoles nationales professionnelles* and the *écoles pratiques de commerce et d'industrie*, the education ministry sought to avoid producing specialists and instead to cultivate a "general industrial culture."[75] Likewise for the newly extended primary school system under Jules Ferry (education minister from 1879-1885) and Ferdinand Buisson (director of primary education from 1879-1896). C. R. Day has written that this system "was not to produce specialists so much as 'intelligent' workers, artisans, farmers, etc., capable of learning on the job, of adapting to technological change, of advancing themselves according to their lights."[76] When Buisson edited the massive *Dictionnaire de pédagogie et d'instruction primaire*, a particular sternness was given to the definition of "professionnel":

> The name *professional school* is henceforth reserved only for establishments that prepare for the practical exercise of a profession…As for this education that is not technical in the least…the law, in attaching it to secondary education, in calling it *special secondary education*, has shown that it is considered one of the forms of general education. When the third Republic came to constitute, next to this *special secondary education*, another education of more modest character, more immediately practical, more within reach of the population of laborers and agricultural workers to whom it is aimed, this was still not baptised *professional education*; it reprised the name of *superior primary education*, in

[73] "…Si l'enseignement classique est le même partout, l'enseignement spécial doit *varier* dans beaucoup de localités, selon le caractère de l'industrie dominante." Duruy, *Notes et souvenirs*, t. 2 (Paleo, 2005), 30-31. Original emphasis.
[74] "bon ménage des champs," ibid.
[75] "Rapport présenté à la Commission mixte des écoles manuelles d'apprentissage le 14 octobre 1887," quoted in C. R. Day, « Education for the Industrial World », 131.
[76] Day, « Education for the Industrial World », 131.

> order to show clearly that, here too, it was a question of an education designed to impart a general scientific culture, and not a technical apprenticeship.[77]

In sum, Duruy sought to cultivate generalists to uphold *l'enseignement secondaire spécial* as a legitimate form of secondary education, not primary; primary educators sought to cultivate generalists to distinguish *primaire* from *professionnel.* It is clear that the quality opposite of "general"—whatever you chose to call it—was everyone's least desired virtue.

What was the character of the general, and what recommended it in this period to educators of all kinds? Bergson's lycée speeches from 1885 onward offer four successive portraits of the generalist intellect. But we should pause first over another account, given three years prior to Bergson's speech in Angers, on a different occasion for self-congratulation. This was the celebration of the fiftieth anniversary of the Ecole Centrale des Arts et Manufactures, the institution that complemented (its own people would say rivaled) the Ecole Polytechnique in training civil engineers.[78] The speaker was Charles De Comberousse '59, professor of mechanics and recent historian of his alma mater.[79] We should keep in mind that the virtues De Comberousse extolled of his institution were virtues by the standards of 1879, and not necessarily those sought at the founding of the school in 1829, or even those that he was meant

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[77] "Le nom d'*école professionnelle* est désormais réservé uniquement aux établissements qui préparent à l'exercice pratique d'une profession…Quant à cet enseignement qui n'a rien de technique…la loi, en le rattachant à l'enseignement secondaire, en l'appelant *enseignement secondaire spécial*, a montré qu'elle le considérait comme une des formes de l'enseignement général. Lorsque plus tard la troisième République a constitué, à côté de cet enseignement secondaire spécial, un autre enseignement d'un caractère plus modeste, plus immédiatement pratique, plus à la portée de la population ouvrière et agricole à laquelle il est déstiné, elle ne l'a point baptisé non plus du nom d'*enseignement professionnel* ; elle a repris le nom d'*enseignement primaire supérieur*, pour bien montrer que, là aussi, il s'agissait d'un enseignement fait pour donner une culture scientifique générale, et non d'un apprentissage technique." Buisson, *Dictionnaire de pédagogie et d'instruction primaire*, 1er partie, t. 2 (Hachette, 1888), 2452. Italics in original; my underlining.

[78] John Weiss, *The Making of Technological Man* (MIT, 1982) gives a history of this institution and is also the source for the archival material in this discussion.

[79] De Comberousse's *L'histoire de l'école centrale* was published in the same year (Gauthier-Villars, 1879).

to cultivate as a student.[80] In his speech De Comberousse spoke of what gave Centrale graduates their "distinctive mark": the teaching of a unity of principles within a diversity of subjects, and a certain preparation for contingency. The historian John Weiss, who reported this manuscript, has observed how much of a stretch it was for De Comberousse to describe the extensive Centrale curriculum as organized around three unifying principles. In 1879, the courses ranged from Architecture and Public Works to Metallurgy, Industrial Physics, and Natural History, to take but a small cut of the program, and yet De Comberousse stressed repeatedly that everything was of a piece. To me, though, it does not matter how well his scheme held up: in fact, the more desperate the attempt to portray unity, the more revealing his testimony becomes of contemporary values and antipathies.

Fifty years ago, De Comberousse said, Centrale students took nine courses to complete their training. Today, they took thirty. The curriculum had become decidedly "encyclopedic," but—not to worry—it was an "encyclopédie raisonnée," for "the same philosophical principles illuminate the different questions treated," guiding the student, over the three years of study, "to the heights necessary to understand the connection of all the parts he has been taught."[81] To see this pedagogical method at work you needed only to look at one of the Ecole's most successful courses: Construction and Establishment of Machines.[82] This course had found a way to deal with the problem of being continually "invaded by descriptions of new inventions": it had come to rely on giving students lithographed sketches of machine variations—"all the derivations and transformations"—so that lectures could be "confined to describing the

[80] The lag of decades is what makes Weiss consider this speech more of a secondary source for his account, which focuses on the first two decades of the Ecole Centrale's history. But this is precisely what makes it a primary source for my purpose.
[81] Quoted in Weiss, 151. All translations of De Comberousse's manuscript reproduced here are by Weiss.
[82] Weiss notes that this course had many imitators abroad. Ibid., 150.

principal types."[83] This solution then became the prototype for other Centrale courses faced with a similar challenge.

For, even as it was important to maintain that everything was in principle united, the *breadth* of the present curriculum could not be given up without peril, because no one could be sure anymore of what sort of work a graduate would be called to do. A Centrale education was now more than a key to a career, said De Comberousse; it was "a trousseau of keys."[84] And to possess it was to acquire a singular character:

> To pass through the Ecole Centrale is to undergo a special kind of tempering. One is now ready for all contingencies. One can leave tomorrow for Asia or America, Japan or Australia, Suez or Panama, sure of being able to face all difficulties, to fulfill all sorts of tasks. One may become a chemist or a mechanician, a constructor or a metallurgist, a farmer or a professor. No matter what point on the immense surface of the applied sciences a graduate of the Ecole Centrale is asked to occupy, he is already acquainted with it. He can, if necessary, deepen his knowledge to the point of becoming a master: none of the parts, either close or distant, is unfamiliar to him. In short, he is a generalist first and foremost; he only becomes a specialist by necessity. This is the most striking characteristic of his intellectual physiognomy.[85]

Notice what generalism is and what it isn't in this portrait. It isn't a preference for the theoretical over the practical; nor is it an abstention from specific occupations. It is versatility, adaptibility—and it actually requires possessing a wide array of practical skills. In 1879, it was the very contingency of new practicalities, of technological change and commercial opportunities, that created a pressing need for such a virtue. It is some irony, as we will come to see, that the figure deemed most capable of thriving in the untried circumstances of the late nineteenth century was a version of the Renaissance man.

Contrast him with the mere jacks of *one* trade: De Comberousse made clear, like Duruy and Buisson, what kind of education the Ecole Centrale was not. "The school," he said,

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[83] Ibid.
[84] Ibid., 153.
[85] Ibid., 225-226.

> is thus at the antipode to those technical institutes, so numerous abroad, where students can themselves choose the *cours* they wish to take, following no overall conception [*vue d'ensemble*], and becoming architects without the slightest knowledge of heating or ventilation, mechanicians innocent of metallurgy, chemists incapable of installing a boiler.[86]

That's the engineer's version of Bergson's caricature of the specialist. These portraits have more in common than we might have expected from a mechanical engineer and a philosopher suspicious of machinery. De Comberousse saw the very same perniciousness in specialization that Bergson would:

> What a bad thing specialization is! Of course, it facilitates work, which becomes a habit, a second nature, Aristotle would say. But such work is less attractive: one's intelligence, less exercised, less solicited for information, becomes stationary. It searches for other stimulations, sometimes damaging, outside the assigned task. What fatigues, what wears down, is not work itself, but the same work endlessly repeated. Man is not made for such a merry-go-round—one must correct the specialization of the profession with the generality of the education. Well, I would say that at the Ecole Centrale there are no specialist engineers [*ingénieurs spéciaux*] but only generalist engineers [*ingénieurs généraux*].[87]

It's striking to hear the Ecole Centrale lauded for the "generality" of its education— people came here expressly to become architects! The great majority of its students had already gone to lycée.[88] But here was its designated spokesman, on an occasion unsuited to controversy, pushing specialization out of pedagogy, deferring it to the professions—as though one's education and one's vocation were separate matters, even at an engineering school.

The same aspiration to generality drove the rapid changes to the curriculum of *l'enseignement spécial* throughout the 1880s. In 1881, the year before Bergson took the stage in Angers, the Ferry ministry lengthened the program by a year and divided it into lower and higher divisions, a three-year middle course followed by a two-year upper course. A pupil could

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[86] Ibid., 154.
[87] Ibid. My underlining.
[88] Over the course of the nineteenth century the combined percentage of students who entered the Ecole Centrale from écoles des arts et métiers and écoles primaires supérieures dropped from 11.7% to half a percent. Weiss, 64.

now leave the program with an important-sounding certificate once he completed the middle course, but if he left before that he received nothing. If he completed both cycles, he would receive no less than a baccalaureate: the *baccalauréat spécial*. Further discouraging early exits, the five years of instruction now formed a direct progression, rather than concentric circles. In 1886, the program gained another year and lost the two-cycle division, so that it offered only one, final diploma. The subjects taught also became less directed toward practical applications. A quick comparison between Duruy's curriculum of 1863 and the revised plan of 1886 makes this evolution clear. Duruy's program taught arithmetic, *mathématiques appliquées*, and *sciences appliqueés* successively in the first three years, and accounting in years 2 through 4. Only in the fourth and final year was the math and natural science course not designated as "applied." In 1886, no course was "applied"; a science was taught in the very first year (natural history), and the sciences were differentiated more finely throughout all six years, into natural history, physics, and chemistry. Beginning in the fourth year, the pupil took all three at once, plus mathematics. The hours given to accounting were halved.[89]

Historians Antoine Prost and C. R. Day believe that Duruy's original experiment in *l'enseignement spécial* was overrun in this decade by a desire of the teaching corps and the ministry to retain an ideal of secondary education as instruction in "general culture."[90] The reforms successively remade the special curriculum in the image of the classical one, and in 1890 education minister Léon Bourgeois pushed the program further toward parity. He dismantled the separate training and credentialing system for *spécial* teachers, so they would now be trained and licensed with their classical counterparts.[91] He also made a point of changing its confusing name: *l'enseignement secondaire spécial* became *l'enseignement secondaire*

[89] Falcucci, 293.
[90] Prost, 54-55.
[91] Day, "Technical and Professional Education in France," 192.

moderne. The story told from the perspective of the progress of modern technical education is one of missed opportunity and social retrenchment: an experimental, practical pedagogy that couldn't get free of an enduring prejudice about what secondary education ought to be, a prejudice motivated by social conservatism masking as intellectual conservatism.[92] But from the perspective of the ideal of generalism the story is different. For this ideal was also changing, and it was this that De Comberousse expressed when he insisted that the Ecole Centrale gave engineers a general education. In 1884, a powerful advocate for the expansion of *l'enseignement spécial* also spoke for a new kind of generalism: Octave Gréard, vice-rector of the Academy of Paris, declared to the ministry that, "*L'enseignement spécial*, in spite of its name, has nothing special about it; it's actually an *enseignement scientifique* that comprises an entire education."[93] In his position Gréard presided over the country's oldest and most prestigious lycées, yet he considered the traditional lycée curriculum but one "type" of education. Alongside it belonged "another type…in which the sciences have a greater part than the humanities [*lettres*]…the type that is *l'enseignement spécial*."[94] He envisioned it as a complete education in its own right. In fact, for Gréard, the whole question of curricular reform lycée-wide came down to figuring out how much of the "special" education really ought to be general: to what extent the various subjects taught in the alternate curriculum constituted a generalism of their own; to what extent *this* generalism was now more viable and more true.

So when we find Bergson heaping abuse, in 1882, on "the limits of a special science," and declaring outright that "what constitutes the merit and the force of the University, is that it

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[92] Prost, 257, 331-334; Day, "Technical and Professional Education in France,"191-194.
[93] "L'enseignement spécial, malgré son nom, n'a rien de spécial; c'est proprement un enseignement scientifique comportant toute une éducation." Gréard, "La question des programmes dans l'enseignement secondaire," *Bulletin Administratif du Ministère de l'Instruction Publique* 35, no. 628 (1884), 568.
[94] "un autre type…où les sciences ont plus de part que les lettres….le type de l'enseignement spécial." Ibid, 566.

excludes special studies from the lycée," it is not enough to understand that he, like most educators, preferred generalism to specialization.[95] He is in the middle of a contest over the meaning of "general," and it is the old "general" that appears to the new ministry to be overly narrow. Nor is it enough, in considering Bergson's language, to recognize that he was not unique in attributing mechanical roteness to uses of the intellect that he disliked. We also need to consider *what* he identified as rote and what he did not, in the midst of those employing a similar language. For even while Bergson viciously caricatured the ways of the new specialist, more prominent voices were discrediting the old ideal of generalism in the lycée. And they did so by calling its practices mechanical.

4. Words and Things

The new proportions that *l'enseignement spécial* took under the Ferry ministry were contingent upon two legislative changes that took place in 1880. The first was the reconstitution of the education ministry's Conseil Supérieur, a body that previously comprised a majority of statesmen, religious authorities, and high-ranking members of the judiciary. Under Ferry the council was recruited entirely from the various ranks of the professoriat: members of the Institut de France; professors of the Faculties and *grandes écoles*; chairs of the Collège de France; and—one constituency that had never been part of this council before—delegates from secondary and primary school faculty, who were chosen by election.

The election was a choice not just of people but of platforms. The positions took two poles: those for making radical changes to the traditional lycée curriculum, and those not. A lengthy report of events written at the end of this decade by a partisan of a heartily reformist

[95] "les limites d'une science spéciale"; "ce qui fait le mérite et la force de l'Université, c'est qu'elle exclut du lycée les études spéciales," Bergson, « La Spécialité », 46.

ministry recounted that, of 860 total *agrégés* in *l'enseignement classique*—that is, those who had obtained the highest credential for teaching, the *agrégation*—841 took part in the vote, and 625 of them took the side of reform.[96] The same report took care to mention that, of the 198 non-reformists, 144 of them were *agrégés de grammaire*. The point is significant because the teaching of grammar was seen by reformers as the embodiment of everything that was defective about the classical system.

Two of the delegates elected in the first round of ballots were Henri Marion, for philosophy, and Georges Morel, for *lettres*. Both were professors at elite Parisian lycées, and both would soon work in the ministerial commission charged with provisioning *l'enseignement spécial* so that it could be a more comparable alternative to the *classique*.[97] Marion would make pedagogy a university subject, in the first course on the "Science of Education" at the Sorbonne, in 1883.[98] Morel had the distinction, at the time of the election, of advancing the most radical reformist agenda, which he circulated among the electorate. Ten years later the chronicler of education reform appraised Morel's platform as a mission collectively accomplished. "Morel," explained the author, "wished to modify our classical system in the most liberal sense

> and make a greater place for studies hitherto considered of minor importance [*accessoires*]; at the same time he wished to develop a child's capacity for reflection, initiative, and taking responsibility to the highest degree, by freeing him from all mechanical [*machinal*] and as it were unconscious work.[99]

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[96] E. Zévort, « L'enseignement secondaire de 1880 à 1890 », part 3, *Revue de l'Enseignement Secondaire et de l'Enseignement Supérieur* 12 (1889), 354.

[97] Georges Morel, "Rapport présenté au Conseil supérieur de l'Instruction publique au nom de la Commission de l'Enseignement spécial," *Bulletin Administratif du Ministère de l'Instruction Publique* t. 24 (1881), 1247-1257.

[98] Marion, « Cours sur la science de l'éducation : leçon d'ouverture », 6 December 1883, *Revue Internationale de l'Enseignement* 6, 1259-1277.

[99] "…voulait modifier dans le sens le plus libéral notre système classique et faire une part plus large à des études considérées jusqu'alors comme accessoires ; il voulait en même temps développer au plus haut point chez l'enfant la réflexion, l'initiative, la responsabilité, en l'affranchissant de tout travail machinal et comme inconscient."
E. Zévort, « L'enseignement secondaire de 1880 à 1890 », part 3, 354-355. My underlining.

We will come to what was considered the plague of "mechanical work [*travail machinal*]." First, what were these "studies hitherto considered of minor importance"? If we look at the history of the lycée curriculum—a history that was constantly reprised in pedagogical treatises during this period—it's clear that the program had two mainstays throughout the nineteenth century: Latin and Greek.[100] All other subjects—history, geography, modern foreign languages, mathematics, various sciences—migrated around the curriculum over the decades, their places subject to change under different ministries. The teaching of French maintained a supporting role with respect to the ancient languages, with the constant practice of translation exercises. History and geography were similarly conscripted, often taught as Roman history and the geography of the ancient world. With regard to math and science, at one extreme, the education ministry under Victor Cousin (est. 1840) deferred all science and mathematics to the philosophy class, which did not begin until year seven of the lycée. At the other extreme, the ministry under Hippolyte Fortoul (est. 1851) implemented separate tracks for *lettres* and *sciences* beginning in *troisième* (that is, three years from the end in the French system).[101] But even under the more diversifying ministries, science was never taught earlier than *troisième*. By contrast, Latin began in *huitième*, at about the age of nine, two years before a student entered the lycée proper, and Greek began at the start of lycée, in *sixième*. Classical studies, and

[100] Major contemporary works on pedagogy include Antoine-Augustin Cournot, *Des Institutions d'instruction en France* (Hachette, 1864); V. de LaPrade, *L'éducation homicide* (1867) and *Le baccalauréat et les études classiques* (1869); Michel Bréal, *Quelques mots sur l'instruction publique* (Hachette, 1872); Th. Ferneuil, *La réforme de l'enseignement publique* (Hachette, 1879); F. Deltour, *L'enseignement secondaire classique en Allemagne et en France* (Hachette, 1880); Gréard, *Education et instruction* (Hachette, 1887); Durkheim's course on the history of education given annually at the Ecole Normale Supérieure beginning in 1904, published as *L'évolution pédagogique en France* (PUF, 1938); in addition to manifold journal articles, principally in the *Revue Internationale de l'Enseignement*, which began in 1881, and the *Revue des Deux Mondes*.
[101] This bifurcation of 1852 was unpopular and Duruy, upon taking the ministry, tried in vain to salvage it before creating *l'enseignement spécial*.

especially Latin, also consistently received the lion's share of class hours in all years through to the rhetoric class, the last year before philosophy.[102]

The curriculum that the Ferry ministry and its council of professors confronted was that of 1874, which Gréard considered essentially a replica of 1840.[103] Candidate Morel stood for two grand reforms: to bring the teaching of modern languages, science, history, and geography to the elementary levels of the lycée system—that is, grades prior to *sixième*; and to make professors of *lettres* (like himself) responsible for teaching only a single language or literature—that is, a specialty of their choosing—at different levels for different classes. Morel recognized that these reforms were ambitious, so he offered an alternative list of improvements that he considered the "minimum" of what needed to be done. Two items on that list were nonetheless radical departures from longstanding practice. One was to place a major emphasis on the study of French for its own sake, with abundant exercises in *explication de textes*, written and spoken. The radical part was the rider that went beyond what this emphasis would seem to require: the aim here, Morel took care to note, was to "to teach pupils to think and write exclusively in their mother tongue."[104] In case the reader missed his meaning, the next item on the list states the intention directly: "Thus total and definitive abolition of Latin compositions, in verse or prose."[105] This was the means by which he would eliminate "all mechanical work."

The association between Latin compositions and mechanical pedagogy did not begin with Morel. The work that had set the terms for the discourse of reform in this period was that of Michel Bréal, comparative linguist at the Collège de France. His *Quelques mots sur l'instruction*

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[102] Falcucci presents the various iterations of the curriculum from 1802-1902 with breakdowns of the weekly distribution of class time (pp. 629-630). See also Frederic Ernest Farrington, *French Secondary Schools* (Longmans, Green, 1910), 257-262.
[103] Gréard, « La Question des programmes », 512.
[104] "…apprendre aux élèves à penser et à écrire exclusivement dans leur langue maternelle." Zévort, « L'enseignement secondaire de 1880 à 1890 », part 3, 355-356. My underlining.
[105] "Donc suppression absolue et définitive de la composition en latin, vers ou prose." Ibid., 356.

publique (1872) was reprinted in 1879; a third edition followed in 1881. It was Bréal who wrote, in a phrase that would be reprised in Ferry ministry memos, that not only the content of the lycée curriculum needed to change, but the method of teaching, for: "The same spirit reigns from *huitième* up to Rhetoric, and the profit that [the pupils] could derive from this long and laborious study is anulled by a superficial and mechanical [*machinale*] method."[106]

Bréal's book was written in the wake of the 1870 war with Prussia. It gave all parts of the French education system a dressing-down, but its critique of the lycée, the least anticipated, struck a nerve. The Latinist Gaston Boissier, Bréal's colleague at the Collège de France, lauded the book in the *Revue des Deux Mondes* and emphasized that, while the defects of elementary education and of the university faculties were readily acknowledged by "nearly everyone," Bréal's severe judgment of secondary education "is not the ordinary view…not in keeping with general opinion."[107] The belief had been that the prestigious lycée system furnished all the general education necessary for adolescents entering the most distinguished careers—"the elite among our youth," wrote Bréal, future "magistrates, administrators, officers, diplomats, writers"—but a closer inspection of the methods of the lycée brought into question what this arduous formative process really accomplished.[108] Consider, wrote Bréal, what a boy had done by the time he reached *troisième*, having been "*sur les bancs*" since the preparatory classes:

> He has done *versions* and *thèmes*;[109] he has begun to string together Latin verses; he has glimpsed a speech of Cicero's and a song of the Aeneid; he has translated a few chapters of Xenophon: but he has never written a page of French on his own; if he has glanced at

[106] Bréal, *Quelques mots sur l'instruction publique* (Hachette, 1886 [1872]), 170.
[107] "…n'est pas l'opinion ordinaire…pas conforme au sentiment général." Gaston Boissier, « Les méthodes dans l'enseignement secondaire », *Revue des Deux Mondes* t. 100 (1872), 685-686.
[108] "…l'élite de notre jeunesse, magistrats, administrateurs, officiers, diplomates, écrivains…" Bréal, *Quelques mots sur l'instruction publique*, 157.
[109] Two translation exercises: in the *version*, a student translated a text in a foreign language into French; in the *thème*, he translated a French text into a foreign language.

> ancient or Roman history, modern history is unknown to him; he has not a single notion of physics, nor of chemistry, nor of natural history.[110]

And surely one of the criticisms that stung the most in Bréal's book was that, not only did German schoolchildren spend more time learning history, geography, sciences, and the history of their own language, while French children labored at Latin, the Germans also ended up better at Latin. How could this be? No one kept more constant company with Latin than the French schoolboy: Latin was "the foundation of the secondary education system. For eight or nine years, there is not a day in which pupils do not devote some hours to it."[111] The problem was how it was taught.

By the time a boy reached the Rhetoric class, he could render a given passage of French into Latin, and Latin into French, compose Latin verses, and write lengthy and lengthier Latin prose (the *narration* and the vaunted *discours*). Each of these exercises had a prize attached to it at the annual lycée prize ceremony. Bréal thought most of them pernicious. None of them, the way they were practiced, made a pupil properly acquainted with antiquity, for they could all be achieved by a kind of mental cut-and-paste. Grammar rules were distilled to be memorized and applied, never mind the reasons and the distinctions peculiar to either French or the ancient languages; Latin expressions were memorized and reproduced in translations; phrases of classical authors were memorized and quoted in compositions. These practices bred a strange sort of aptitude:

> We have produced in our children a level of occupational skill [*habileté de métier*] that is not at all commensurate with their level of knowledge [*savoir*] and judgement. Such a child knows how to choose between an expression of Cicero's and one of Seneca's; he

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[110] "Il a fait des versions et des thèmes; il a commencé à aligner des vers latins; il a vu un discours de Cicéron et un chant de l'Enéide; il a traduit quelques chapitres de Xénophone : mais il n'a jamais de lui-même écrit une page de français; s'il a vu l'histoire ancienne et romaine, l'histoire moderne lui est inconnue; il n'a aucune notion de physique, ni de chimie, ni d'histoire naturelle." Ibid., 158.

[111] "…le fonds de l'enseignement universitaire. Pendant huit ou neuf ans il n'y a point de jour que les élèves n'y emploient quelques heures." Ibid., 161-162.

> knows that one should avoid poetic terms when writing prose; he's good at changing all the words of a grammatical construction while still preserving the construction: yet the same pupil has read neither prose nor poetry, knows neither Seneca nor Cicero, and hardly understands the construction he employs. This resembles the work of our workmen at the Gobelins, when they have a painting to translate into a tapestry.[112]

"*Habileté de métier*"! "*Ouvriers des Gobelins*"! Our precocious Latinists! Nothing could be more unwelcome to an education ministry or a bourgeois parent of the Third Republic.[113]

But why should such a skill be ridiculous? It might have been prized, and it once was. The ability to choose well among different expressions, to apply in your own composition memorized phrases or passages you collected in a notebook—four centuries ago, a humanist pedagogue did not ask for more. In their study of pedagogical innovators of the Renaissance, Anthony Grafton and Lisa Jardine have written that the ideal pupil of humanist schools were trained in precisely this: to memorize rules of grammar and of appropriate expression, to know what protocol to follow at every turn of a composition. Cutting and pasting *was* the skill to master: with a memorized stock of rhetorical *loci*, a Renaissance pupil learned "to execute a stylised set-piece in a stylish way," until he became "a virtuoso at writing by numbers."[114] But

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[112] "On a provoqué un habileté de métier qui n'est nullement en rapport avec le savoir et le jugement des enfants. Tel élève sait déjà faire son choix entre une expression de Cicéron et une autre de Sénèque ; il sait qu'on doit éviter en prose les termes poétiques ; il s'entend à changer tous les mots d'une construction tout en conservant la construction : et ce même élève n'a lu ni prose ni poésie, ne connaît ni Sénèque ni Cicéron, et saurait à peine rendre compte de la construction qu'il emploie. Cela rappelle le travail de nos ouvriers des Gobelins, quand ils ont un tableau à traduire en tapisserie." Bréal, *Quelques mots*, 204-205.

[113] On bourgeois disdain of manual work, see for instance Régine Pernoud, *Histoire de la bourgeoisie on France*, vol. 2 (Seuil, 1960).

[114] Grafton and Jardine, *From Humanism to the Humanities* (Harvard, 1986), 17-18. A query about the history of roteness: we routinely call humanist teaching practices "rote," but has the concept of the rote always been the same? Can the nineteenth-century sense of rote really apply to sixteenth-century practices? Pierre Hadot has described a meditation practice of the Stoics, the praemeditatio malorum, as a repeatedly rehearsed defense against misfortune: "We must engrave striking maxims on our memory," Hadot wrote, "so that, when the time comes, they can help us accept such events…we will thus have these maxims and sentences 'at hand'" (Hadot, *Philosophy as a Way of Life*, 85). Were the Stoics, too, rote?

what was considered a form of virtuosity in the fifteenth century became, in France in the late nineteenth, an "habileté de métier"—a phrase in which there is no trace of the scholar.

It is one thing to say that teaching methods needed to change because the times called for a different kind of intellect. It is another to reject the old means by calling them "mechanical." And consider that what Bréal derided as mechanical was a form of learning that involved no actual machines: it was the literary tradition, and the enduring practices of humanist pedagogy.

The way that the classical literary canon was disseminated and emulated in the nineteenth-century classroom was the same as it had been in the fifteenth: through exercises in written composition. Bréal believed that the importance given to writing was the source of all the defects of the modern lycée: "The lycée subordinates all knowledge to a single dominant idea: it reduces all instruction to the art of writing."[115] Granted, "the art of writing," he wrote, "is the art of thinking," but to teach this above all else was to remain committed to a long obsolete pedagogical ideal:

> The gentleman [*honnête homme*], as this figure was understood in the seventeenth century, one who knew how to steer his mind sensibly and justly, and always find the natural and correct expression for his ideas: that is the ideal that our professors have in view. But is there not another ideal, occasioned by the changes that have taken place in our society and the progress of science, to succeed the former, not to undo it, but to transform and enlarge it? Today another art is as necessary as that of logical thinking: it is the art of discovering and observing facts, the art of understanding and of verifying the truth.[116]

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[115] "C'est que le lycée subordonne toutes les connaissances à une idée dominante : il ramène l'instruction à l'art d'écrire." Bréal, *Quelques mots*, 158.

[116] "…l'art d'écrire, c'est l'art de penser. L'honnête homme, comme l'entendait le 17ème siècle, sachant diriger son esprit d'une manière sensée et droite, et trouvant pour ses idées une expression toujours naturelle et juste, voilà l'idéal que nos professeurs ont en vue. N'en est-il pas cependant un autre que les changements survenus dans notre société et les progrès de la science ont fait succéder au premier, non pour l'abroger, mais pour le transformer et l'agrandir? Il est un art aussi nécessaire aujourd'hui que celui de penser logiquement: c'est l'art de découvrir et d'observer les faits, l'art de comprendre et de contrôler la vérité." Ibid., 159. My underlining.

This was the salient opposition for education reformers for the rest of the century: on one hand, writing and the art of correct expression; on the other, discovery, observation, understanding, verification. In brief, it was rhetoric versus science, and rhetoric that was perceived to be rife with mechanical aspects.

"Armed with Lhomond's grammar, the schoolboy no longer needs to think," wrote Bréal, "he has a mechanism that works for him."[117] A grammar book was no more than a collection of "recipes" for doing your translation exercises: it gave ready-made grammatical constructions so that a French phrase could be readily "turned" into a Latin one. "Once one acquires the habit of 'turning,' one loses the faculty of directly observing the laws and organization of other languages."[118] A child's mind just ended up "stuffed" with "a stock of equivalent turns of phrase."[119] (The phrase "well-turned phrase" also comes from a craft analogy; here it too becomes something mechanically executed.) Dictionaries were accomplices to the grammar book, for they had become "far too well-stocked and too detailed."[120] Now, neither a recipe book nor a dictionary are obvious pieces of machinery—especially when the latter's machine-likeness comes from its richness of detail—and yet these were the objects that somehow called to mind the strength-saving devices of the machinist's shop: "As in those workshops where the most ingenious machines are placed in the service of man, it seems that everything has combined to allow the pupil to perform, without great trouble, tasks that are in reality beyond his abilities."[121]

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[117] "Armé de la grammaire de Lhomond, l'écolier n'a plus besoin de penser: il a un mécanisme qui travaille pour lui." Ibid., 172.
[118] "Quand une fois on prend l'habitude de 'tourner,' on perd la faculté d'observer directement les lois et l'organisme des autres idiomes." Ibid., 173.
[119] "…bourrer l'esprit des enfants d'une quantité de tournures équivalentes…" Ibid., 180.
[120] "Nos dictionnaires, beaucoup trop riches et trop détaillés…" Ibid., 181.
[121] "Comme dans ces ateliers où les machines les plus ingénieuses sont mises au service de l'homme, il semble que tout soit combiné pour permettre à l'élève de produire sans grande peine des devoirs qui sont en réalité au-dessus de ses forces." Ibid., 181.

When Bréal's book first appeared, in 1872, his critiques were quickly enlisted in the reform effort of Jules Simon, who was then minister of education. That year, Simon attempted to eliminate a significant portion of the Latin compositions that filled everyone's schooldays, reducing the number of *thèmes* and doing away altogether with the writing of Latin verses, an exercise he particularly detested.[122] (Of the constant versifying Bréal had written, "Here is an exercise in which we are at present without rivals and without imitators in Europe.")[123] The idea had been that making pupils write Latin verses of their own would help them better understand the ancient poetry they read. In practice this meant they learned a great deal of ancient poetry by heart and forewent the distinction between artful imitation and unrepentent mimicry. Simon fumed: "Is it really the imagination that we're developing, in requiring Latin verses of young people? Isn't it rather the memory? Are their verses anything other than anthologies?"[124] "Our schoolboys of *troisième* fill their memories with entire songs of Virgil," wrote Bréal, "They have heads adorned with epithets, circumlocutions, enjambments, caesuras…But in reading Virgil or Lucian, are they doing anything other than composing a mental dictionary of poetry for their own use?"[125]

Yet, though Bréal and Simon spoke in concert and sought the same reforms for the lycée, they were motivated by different ideals of pedagogy. Simon was fine with teaching people to *read* Latin, but he saw no point at all in learning to write it—because there was no job for

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[122] Gréard, "La question des programmes," 511; Prost, 61.
[123] "Voici un exercice pour lequel nous sommes, à l'heure qu'il est, sans rivaux et sans imitateurs en Europe." Bréal, *Quelques mots*, 221.
[124] "Est-ce bien l'imagination qu'on développe, en demandant aux jeunes gens des vers latins? N'est-ce pas plutôt la mémoire? Leurs vers sont-ils autre chose que des centons?" Jules Simon, *La réforme de l'enseignement secondaire* (Hachette, 1874), 319.
[125] "Nos écoliers de troisième se remplissent la mémoire de chants entiers de Virgile," "Ils ont la tête garnie d'épithètes, de périphrases, de rejets, de coupes…Mais en lisant Virgile ou Lucain, font-ils autre chose que de se composer mentalement un dictionnaire poétique pour leur usage personnel?" Bréal, *Quelques mots*, 222-223.

that skill (whereas old books written in Latin still needed to be read). Simon asked the question of every modern parent skeptical of the liberal arts:

> Do we make speeches in Latin? For that one would have to be professor of rhetoric, and that in Paris, *and* obtain the designation from the minister to preside at the distribution of prizes at the *Concours général*; for in France there is but one Latin speech given per year, and it's that one.[126]

Bréal's view was not principally utilitarian. His criticisms had been spurred by France's military defeat, but along with the desire to achieve economic and technological parity with Prussia, he was equally concerned with achieving parity in his own scholarly field, a priority he shared with his colleague Boissier. That field was philology.

In his own set of objections to the teaching of Latin verse, Bréal disclaimed, "We have no intention of repeating the critiques directed against Latin verses by the adversaries of classical studies."[127] He said he would not speak against this exercise if it served its purpose—but it should not endure "if it is an accessory to this false classical education that has substituted the manipulation [*maniement*] of Latin for knowledge of antiquity."[128] Again, in a word like *maniement* we can see what was not counterintuitive for Bréal and his allies: the opposition to be drawn between the art of writing and "the art of understanding," an opposition made possible by associating classical eloquence with mechanical practices and, by extension, associating humanist pedagogy with the production of mechanical minds. The philologists believed that the aim of classical studies should not be to teach eloquence, but rather the techniques of textual criticism. This is what Bréal meant by cultivating "the art of discovering

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[126] "Ferons-nous des discours en latin? Il faudrait pour cela être professeur de rhétorique, l'être à Paris, et obtenir la désignation du ministre pour pérorer à la distribution des prix du concours général; car il ne se fait en France qu'un seul discours latin par année, et c'est celui-là." Simon, *La réforme de l'enseignement secondaire*, 325.

[127] "Nous n'avons pas l'intention de renouveler les critiques dirigées contre le vers latin par les adversaires des études classiques." Bréal, *Quelques mots*, 221.

[128] "…s'il est un accessoire de ce faux enseignement classique qui a substitué le maniement du latin à la connaissance de l'antiquité." Ibid., 221-222.

and observing facts." In 1869, Gaston Boissier had also attacked opponents of classical studies in recent ministries for mistaking what was really outdated about the classics: "The tastes of aged civilizations—that's not erudition, it's rhetoric."[129] It was a mistake you might have expected of an education minister (he was talking about Fortoul), for "what has he to do with philology or epigraphy, of which he has never heard?"[130]

Minister Simon did make common cause with the philologists, and the force of his arguments relied much on the terms of their critique:

> A good grammar, slowly learned by heart, is no good for anything; a bad grammar learned by heart is more harmful than useful. A *thème* done by empirical means and looking up every word in the dictionary imparts no notion of philology. This exercise thus understood can have no effect but to train children quickly to write in Latin, which is rather useless, and to adorn their style with borrowed graces, which is an apprenticeship in poor taste. One has only to look closely at our Latin instruction, to read the composition books and the corrections, to be convinced that we teach children to speak, and not to reason.[131]

This was Simon's rearguard fight, though, for when he wrote it he had already been deposed. Faced with a hostile Conseil Supérieur, his reforms were quickly cancelled. But in 1880 that body was different, and Simon returned to the ministry: his 1872 *circulaire* on reforming the classical lycée served as prototype for Ferry's reforms, and later in the 1880s Simon — "that

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[129] "Le goût des peuples vieillis, ce n'est pas l'érudition, c'est la rhétorique." Boissier, « Les réformes de l'enseignement », *Revue des Deux Mondes* (1869), 933.

[130] "…que lui fait la philologie ou l'épigraphie, dont il n'a jamais entendu parler?" Ibid. Boissier complained that even the Normalien was a stranger to the new disciplines: "Il ne sait rien en dehors de ce qu'il doit enseigner dans les lycées. C'est à peine s'il a entendu parler de la philologie, de la grammaire, de la mythologie comparées." Ibid., 932.

[131] "Une bonne grammaire, apprise lentement par cœur, ne sert à rien; une mauvaise grammaire apprise par cœur, est plus nuisible qu'utile; un thème fait par des moyens empiriques et à coups de dictionnaires ne donne aucune notion de la philologie. Cet exercice ainsi entendu ne peut avoir pour effet que d'habituer vite les enfants à écrire en latin, ce qui leur est assez inutile, et à parer leur style de grâces empruntées, ce qui est une école de mauvais goût. Il n'y a qu'à regarder de près l'enseignement du latin chez nous, à lire les *cahiers d'élégance*, les *corrigés*, pour se convaincre que nous enseignons à parler, et non à raisonner." Simon, 322-323. Italics in original.

luminous intellect"[132]—presided over a major reform commission. Bréal, too, was active in the ministry: along with Morel, Marion, and Octave Gréard, he served on the commission to enlarge *l'enseignement spécial.*

The confluence of practical and scholarly interests was key to the dramatic curricular changes of 1880. But it's worth distinguishing between them to see why the changes took the form that they did; how reductions and a suite of methodological changes to the classical program could be put forward by classics professors and endorsed by their classically educated peers; and what Henri Bergson's strident position amounted to, and how he must have looked, in the midst of it all in 1882. For Bergson's speech against *la spécialité* set him in his own position with respect to the two motivations propelling education reform in this period. There in Angers, the new philosophy professor embraced the lycée ideal that was felt to be no longer germane: the cultivated gentleman, the seventeenth-century *honnête homme.* An ideal whose efficacy people no longer wanted to believe in—and yet Bergson unabashedly performed it, gesturing with Horace and closing with Seneca, while both utility-minded politicians and philology-minded classicists were seeking to change the place of Latin in pedagogy and, in fact, considered the learning of Latin verses particularly beside the point. To argue, as Bergson did, against likening the work of the mind to the workings of a factory was to defend the intellect against the proponents of utility. And to argue that it was the specialist, rather than the industrialist, who committed this error was to defend education against a new form of scholarship.

Latin teaching took the brunt of the 1880 reforms. The Latin composition was dropped from the baccalaureate exam, with the express intention to cease validating an exercise that

[132] "cette lumineuse intelligence," Zévort, « L'enseignement secondaire de 1880 à 1890 », part 5, *Revue de l'Enseignement Secondaire et de l'Enseignement Supérieur* 12, no. 10 (1889), 468.

was, in Ferry's words, "mnemonic and mechanical."[133] The two most elaborate exercises in composition, the Latin *narration* and the *discours*, formerly the rites of passage that marked the *seconde* and Rhetoric years, were eliminated. The tradition of the one speech given in Latin each year, at the Concours Général, was discontinued.[134] Latin and Greek each lost two years of study in the program overall: now Latin would not begin until *sixième*, and Greek not until *quatrième*, meaning that, for the first time in the nineteenth century, no Latin would be taught in the elementary grades. Taking its place was a mosaic of other subjects: history, geography, modern languages, and science.

The new program was issued with a memorandum specifying the changes to pedagogical practices that would accompany the new distribution of subjects. This prescriptive list was the consensus of the new Conseil Supérieur, and much of it recapitulated the platform of Georges Morel. More than that, it was a document saturated with Bréal's book. It consisted of fifteen articles: none of them specifically addressed the methods for teaching sciences; most of them were particular instructions for how to keep literary studies from being mechanical. The first item stated the importance of developing students' judgment along with their memory. Item 3 prescribed minimizing the study of rules, on the basis that "one must learn grammar from language and not language from grammar."[135] This principle came to supply the catch-phrase of the whole set of the ministry's reforms that would be repeated in contemporary articles and later historical accounts: "We will proceed from texts to rules, from the example to

[133] "mnémonique et mécanique," quoted in Falcucci, 341.
[134] Ferry himself marked the occasion of the last Latin speech with a certain relish, declaring to the audience at the Concours Général of 1880 : « Vous venez de recevoir, dans un savant langage, les derniers adieux du discours Latin…Pour la dernière fois, la période cicéronienne a retenti sous les voûtes de la vieille Sorbonne. Le discours Latin a dit son dernier mot. » Quoted in Falcucci, 351.
[135] "Il faut apprendre la grammaire par la langue et non la langue par la grammaire." This document is quoted in full in Falcucci, 351-355.

the formula, from the concrete to the abstract."[136] Item 5 justified the delay to the start of Latin studies, with the belief that, with older students, conditions would be "more favorable for the intellect and the translation of texts."[137] Item 9 proscribed the practice that they believed younger students too readily fell into: word-for-word translations—"*le mot-à-mot écrit*"—a perennial hallmark of thoughtless composing, believed to be much abetted by dictionaries. Item 10 struck a blow at dictionaries, "far too detailed and too comprehensive."[138] Item 6 prescribed the correct use of the grammar book, which "can no longer be a compendium of recipes."[139] Item 11 discontinued the exercises in Latin verse, giving precisely the reason that Bréal did: that students have been reading ancient poetry in the interest of composing their own verses, instead of writing verses to become better readers. Item 8 marked the transition from Latin compositions to the exercise that was to be the new basis of literary studies: *l'explication de texte.* The last item of the list was the only one that mentioned the sciences by name: it stated the Conseil's wish that courses in history and the sciences be taught, as soon as there was sufficient personnel, "by special professors [*des professeurs spéciaux*]."[140]

A general measure for avoiding the pitfalls of writing was to substitute oral exercises for written work wherever possible. Item 4 prescribed classroom "interrogations," spoken commentaries on readings, exercises at the blackboard; item 7 stressed the importance of the

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[136] "On ira des textes aux règles, de l'exemple à la formule, du concret à l'abstrait."
[137] "…plus favorables pour l'intelligence et la traduction des textes."
[138] "…beaucoup trop détaillés et trop complets."
[139] "ne saurait être plus longtemps un recueil de recettes."
[140] Before 1880, only the first rank of lycées had specially trained teachers in history and science; most schools did not. Ferry issued a set of instructions in October 1880 to provision all lycées with "maîtres spéciaux" for these subjects. Acknowledging that it would be a gradual process, he decided that history could remain provisionally with "ordinary professors," but recruiting special teachers for science was a necessity: « L'enseignement scientifique, au contraire, est entièrement nouveau; il exige des études préalables qui ne sauraient être imposées aux professeurs de grammaire. Il y a donc nécessité absolue de le confier partout aux professeurs de sciences… » Ferry, « Enseignement des sciences et de l'histoire dans les classes de grammaire, » *Bulletin Administratif du Ministère de l'Instruction Publique* no. 459 (1880), 1345.

thème oral, companion to the written one. This emphasis on the oral over the written was informed by Bréal's views, too—in particular, his observations of classroom practices in the German states. He recounted these experiences in print, in 1882—in one instance, of how he had witnessed the mastery of Greek grammar in a Berlin gymnasium in the course of a rapid-fire "interrogation." A boy, prompted with a question by the teacher, would shoot up from his bench and give the requisite response in Greek—sometimes a verb conjugation, or a translation from a word that had been given in German. The question-and-answer would continue on down the row, wrote Bréal, the pupils shooting up from the bench in turn "like artillery fire."[141] Key to the exercise was speed:

> All of these interrogations are conducted with great speed: the professor posing the questions and the schoolboy giving the response have something of the staccato movement that characterizes the manœuvers of the Prussian soldier.[142]

Somehow, Bréal did not observe anything mechanical about this practice.

That is not to suggest that he was unjust or undiscerning in his use of this word, "mechanical" (*machinale, mécanique*), only that its figurative bounds were not where we might have supposed: a caution not to take its meaning—or its opposites—for granted.

A final inversion of the meaning of "mechanical" can be seen in a form of primary school instruction that was taken to be the antidote to an education in rhetoric, called "instruction in things"—*l'enseignement des choses.* Under the Ferry plan this made up the elementary science classes, taught before *huitième.*[143] At the 1881 Concours Général—the first year this occasion was not marked by a Latin speech—Minister Ferry declared, "All of our reforms…aim to limit mechanical tasks [*tâches machinales*], by making the lessons of things the foundation of

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[141] "comme un feu roulant," Bréal, *Excursions pédagogiques* (Hachette, 1882), 25.
[142] "Toutes ces interrogations se font avec une grande rapidité : le professeur en posant les questions, l'écolier en donnant la réponse, ont quelque chose du mouvement saccadé qui caractérise les manœuvres du soldat prussien." Ibid., 25-26.
[143] "Plan d'études et programmes," *Bulletin Administratif du Ministère de l'Instruction Publique* no. 456 (1880), 891.

everything."[144] Though the lessons themselves were given only in the earliest grades, they were seen as embodying the desired methodological principle for all teaching in the lycée: that of proceeding, as stated in the ministry memo, "from the concrete to the abstract."

The teaching consisted of presentations of everyday objects: plants, animals, machines. Bréal had described it at length in 1872—it had then just begun to appear in primary schools—as a practice to be seriously promoted, because it furnished exactly what was missing from "an entirely verbal education." As everyone well knew, he wrote,

> The plague that we suffer from the most…at all levels of education, is verbalism. Too many words, not enough things: under the words we do not see the things that are covered over, and language, instead of helping us to discover reality, more often conceals it from us.[145]

In the present system, students did not actually learn notions of things, but only so many "turns of phrase" and "good expressions"; they met any given situation by selecting "one of the numerous phrases that they keep in reserve."[146] The solution to this was to teach straight from objects, as the great Swiss pedagogue Pestalozzi had done at the beginning of the century, drawing objects part by part on the blackboard for his pupils to copy. (Acknowledged as a disciple of Rousseau, Pestalozzi was a hero to many reformers in this period, from Octave Gréard to Durkheim. Bréal marveled, he didn't even use any books! Just slates and chalk, all around.) The belief about *l'enseignement des choses* was that teaching children to observe things in the world — "the art of discovering and observing facts," that art that was at antipodes with writing—would teach them to understand things rather than words. "Only in this way," wrote

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[144] « Distribution des prix au concours général », *Revue internationale de l'enseignement* (1881), 187.
[145] "La plaie dont nous souffrons le plus…à tous les degrés de l'enseignement, c'est le verbalisme. Trop de mots, pas assez de choses: sous les mots nous ne voyons pas les choses qu'ils recouvrent, et le langage, au lieu de nous servir à découvrir la réalité, le plus souvent nous la dérobe." Bréal, *Quelques mots*, 106-107.
[146] "one of the numerous phrases that they keep in reserve." Ibid., 108.

Bréal, "do we learn to place beneath a word a clearly conceived thing."[147] But written exercises need not be entirely dispensed with, for they, too, could be turned to this purpose:

> In place of these vague subjects that ordinarily supply the themes for written work, compositions should serve to develop the spirit of observation. Do not ask your pupil for a description of a house or a church: ask him to describe his familial home or the church in his village. The rendering of a storm is a subject of rhetoric, but the description of the storm that has taken place today, along with its effects, places the child in the domain of reality. Visits to neighboring farms and factories shall furnish other subjects of composition.[148]

Notice that what's being proscribed here is anything a child could imagine for himself. *Those* sorts of descriptions—invented details of a storm that has not happened, or of a house you have never seen for yourself—are regarded as rhetoric, not reality. *That* was verbal puffery, a practice so often derided as "*amplifications littéraires*"—sheer literary volumizing—a danger from which the exercise in *explication de texte* was somehow wholly exempt. It was puffed-up invention that was considered mechanical, not the straight reporting of observations: you ran no risk of mechanical thinking if you studiously recorded your visit to the farm or the factory and your observations of an actual piece of machinery. *Mécanique*, *machinale* were terms of derision, but what was detestable about them was that they meant the opposite of concrete.[149]

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[147] "De cette façon seulement, nous apprenons à mettre sous un mot une chose nettement conçue." Ibid., 109.

[148] "Au lieu de ces sujets vagues qui forment le thème ordinaire des devoirs d'école, les compositions écrites devraient servir à développer l'esprit d'observation. Ne demandez pas à votre élève la description d'une maison ou d'une église: demandez qu'il décrive la maison paternelle ou l'église du village. La peinture d'un orage est un sujet de rhétorique: mais la description de l'orage qui a eu lieu aujourd'hui, ainsi que de ses effets, mettra l'enfant sur le terrain de la réalité. Des visites aux fermes et aux usines du voisinage fourniront d'autres sujets de composition." Ibid., 110-111.

[149] Bréal was aware that *l'enseignement des choses* had its own dangers. Even Pestalozzi, he wrote, was rumored to have been seen, at the end of his career, pointing to various drawings of objects on a blackboard while "the children repeated mechanically [*machinalement*] the names that they knew by heart." Ibid., 112.

These are words whose contextual features in this period we have to get right.[150] For reading Bergson, it is important to be aware that, in his time, the trope of the mechanical was salient as the critique of an institution he steadfastly defended. When I come to Bergson's critique of science in later chapters, it will be important to remember that, in the context of pedagogy throughout the decades that Bergson was a teacher, what "mechanical" embodied was not everything that was wrong with science, but everything that was wrong with humanism. And it will matter for how Bergson will be received as a philosopher in this period that this critique of humanism entailed a distrust of eloquence—a belief that, in Jules Simon's words, "to speak a language with elegance…is all that is most chimerical and the most useless."[151] It was a belief that had all the force of progressives assailing a senescent establishment.

None of this deters the young philosophy professor in 1882. Bergson ends his speech against *la spécialité* with a defense of classical studies, addressing its critics directly and giving the last word to Juvenal:

> What constitutes the merit and the force of the University, is that it excludes special studies from the lycée…And to those who reproach it for not being practical, for teaching everything and preparing for nothing, let us respond that the best means of succeeding is not to aim for success too soon, that the study of the great classics, in developing the whole intellect, gives the mind sufficient breadth to contain everything, sufficient force to undertake everything, and that it would be puerile in any case, in preparing oneself more easily for life, to take away from life, in advance, what gives it its grandeur and its prize:

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[150] Histories of this period of change in French education are unreflective about the use of these terms. Prost's authoritative history recounts: "Les réformateurs adressaient deux reproches fondamentaux à l'ancienne pédagogie : elle visait trop sur la mémoire au lieu d'exercer l'intelligence ; elle s'attachait trop au maniement des mots et pas assez à l'analyse des faits ou à la réflexion. Le thème 'de règles' et le discours, latin ou français, mécaniques et verbaux, y tenaient une place caractéristique…" (Prost, 247; my underlining). But the protean nature of the word *mécanique* is apparent enough in that astonishingly matter-of-fact association between the mechanical and the verbal—as if there was nothing extraordinary in considering the manipulation of words a thoughtless skill, nor in disqualifying composition exercises as demonstrations of judgement.

[151] "…parler une langue avec élégance…est tout ce qu'il y a de plus chimérique et de plus inutile." Simon, 323-324.

Et propter vitam, vivendi perdere causas.[152]

How this long invective against scientific specialization can end by offering, as solution, the study of the classics is explicable only in the particular context of pedagogical reform that I've given here. The critics of classical studies Bergson refers to in these final lines would not have disputed him on the value of generalism. But they would have disagreed on the means of cultivating it. For Bergson it was the classics that prepared the intellect "to contain everything…to undertake everything"—that is, to be an able generalist

[152] "Ce qui fait le mérite et la force de l'Université, c'est qu'elle exclut du lycée des études spéciales…Et à ceux qui lui reprochent de n'être point pratique, d'enseigner tout et de ne préparer à rien, répondons que le meilleur moyen de réussir n'est pas de viser trop tôt au succès, que les grandes études classiques, en développant l'intelligence entière, lui donnent assez d'ampleur pour tout contenir, assez de force pour tout entreprendre, et qu'il serait en tout cas puéril, pour se préparer plus facilement à la vie, d'enlever d'avance à la vie ce qui en fait la grandeur et le prix:

Et propter vitam, vivendi perdere causas." Bergson, « La Spécialité », 46.

Chapter 2

PSYCHOLOGY AS PUPPET THEATER

The Mind-Body Problem in the Age of Hypnotism

> Literature does its best to maintain that its concern is with the mind; that the body is a sheet of plain glass through which the soul looks straight and clear…
>
> — Virginia Woolf, "On Being Ill"[1]

1. Keep Your Eyes Open
Clermont-Ferrand, 1886

In the summer after his fifth year of teaching lycée philosophy, from his outpost in Clermont-Ferrand, Bergson conducted a set of experiments on hypnotism that became the subject of his first philosophical publication. The article appeared later the same year in the *Revue philosophique*.[2] The story he relates there begins with his learning of some phenomena that had been achieved in his very city by one "Monsieur V." This gentleman had become practiced in soliciting, in hypnotized subjects, a form of telepathy lately known in French hypnotism circles as "*la suggestion mentale*."

The subjects were four young men, between fifteen and seventeen years old, in good health. Hypnotized by Monsieur V., they would face him as he perused a book and, when questioned, be able to report with near-perfect accuracy what the monsieur was reading—the number of the page, particular words and lines—though they could see nothing of the book but its cover. Bergson desired to witness this and brought a friend, Robinet, a young *préparateur* in

[1] Woolf, *Selected Essays*, ed. David Bradshaw (Oxford: Oxford University Press, 2008), 101.
[2] Bergson, "De la simulation inconsciente dans l'état d'hypnotisme," *Revue philosophique de la France et de l'étranger* 21 (November 1886): 525-531.

the Faculté des Sciences. They came away convinced of the monsieur's good faith but determined to repeat the experiment themselves. So they invited the young men to their homes.

Various people who knew Bergson later have remarked upon his eyes, how they were bright and very blue, set deep beneath an enormous forehead.[3] In these experiments in telepathy, Bergson's eyes were what the young subjects saw as they dropped into their hypnotic sleep. Without warning, Bergson would come very close to each of them and stare into their faces, his eyes wide. In the first session, they were hypnotized within seconds; thereafter, a single look into Bergson's eyes would suffice. This, approximately, was what stupefied them:

Fig. 1 Bergson in Clermont-Ferrand
Fonds Bergson, Bibliothèque Doucet, Paris.

Bergson's technique is somewhat peculiar. It does not quite match the standard methods for hypnotizing people that had lately been described in the scientific literature on "provoked somnnambulism." The physiologist Charles Richet, an instigator of the new scientific investigation of hypnotism who had quickly become a figure of reference, had presented two classes of techniques just a few years earlier in the pages of the *Revue philosophique*, in try-this-

[3] Jacques Chevalier recalled the sight of Bergson lecturing at the Collège de France at the turn of the century, "son front énorme, sous lequel le visage apparaissait comme en raccourci, ses yeux clairs pareils à deux lumières sous les sourcils touffus…" Chevalier, *Entretiens avec Bergson* (Paris: Plon, 1959), 2. See also Gaston Rageot, "Bergson," *Revue de Paris* (1918), quoted in Rose-Marie Mossé-Bastide, *Bergson éducateur* (Paris: PUF, 1955), 36; Gilbert Maire, *Bergson, mon maître* (Paris: Grasset, 1935), 91.

at-home detail.[4] You could induce somnambulism by holding a bright object close in front of a subject's eyes, thereby fixing the gaze (a practice adopted from James Braid, the mid-century Scottish physician of "nervous sleep"),[5] or by administering magnetic passes, making sweeps of the hand across the subject's upper body, just above the surface of the skin. Both procedures took at least several minutes to take effect, sometimes more than an hour. A faster variation of the eye fixation technique was to flash a bright light into the subject's eyes: this was the usual procedure for hypnotizing hysteria patients at the Salpêtrière hospital in Paris, under Jean-Martin Charcot, and its effect was usually immediate. In 1885, further variants were reported to the newly founded Société de Psychologie Physiologique, over which Charcot presided, and published in the *Revue philosophique* the following year. The report came from a young corresponding member of the Société, Pierre Janet, who wrote from Le Havre that he had found two methods for hypnotizing Madame B.: pressing her hand for about three minutes, or—rather sweetly—meeting her thumb with his.[6] Bergson makes a point of mentioning Janet's article in his own, but he made no use of Janet's methods.

What Bergson did instead suggests that he was familiar with a wider range of sources on somnambulism. Eye contact was part of the repertoire of an older generation of magnetists and remained, in the latter part of the century, a feature of public performances. These were given by the "*magnétiseurs de profession*" from whom Richet hastened to distinguish scientific practitioners. But physicians in Nancy, developing techniques of hypnosis during these years in a different clinical setting, were less averse to acknowledging the efficacy of a more

[4] Charles Richet, "Du somnambulisme provoqué (suite)," *Revue philosophique* 10 (1880): 462-484.
[5] Braid had believed this to work by straining the nerves of the eyes. See Alan Gauld, *A History of Hypnotism* (Cambridge, 1992), 279-288.
[6] Pierre Janet, "Note sur quelques phénomènes de somnambulisme," *Revue philosophique* 21 (1886), 192.

performative mode of hypnotism.[7] Ambroise-Auguste Liébault, the provincial doctor whose therapeutic practice of hypnotic suggestion inspired the Nancy "school" of hypnotism, described his early use of eye contact after the method of the baron du Potet, an extravagant figure of mid-century magnetism who was just the kind of precedent the Salpêtrière did not welcome.[8]

By the time of Bergson's writing, observations in Nancy had come to pose a grave challenge to the understanding of hypnotism at the Salpêtrière. Since 1878, Charcot had identified three states of hypnosis observable by distinct physiological characteristics. *Lethargy* and *catalepsy* were states that could be registered on various inscription devices, which meant that they could not be faked. (The characteristics of the third state, which Charcot called *l'état somnambulique*, were more complex and less amenable to capture by instruments.)[9] And as Charcot found these states to correspond exactly to the most marked phases of the hysterical attack, he understood hypnotism as the means of provoking the hysterical states: hypnotism made hysteria susceptible to experiment. This entailed that a person's susceptibility to hypnotism was itself an indication of pathology: provoked somnambulism was a symptom of

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[7] For an analysis of the contrasting clinical settings between Nancy and the Salpêtrière, see Andreas Mayer, *Sites of the Unconscious* (Chicago, 2013), 64-69; for the power of the stage magnetists' eyes, see Mayer, 94-96.

[8] Liébault, "Confession d'un médécin hypnotiseur," *Revue de l'hypnotisme* 1 (1886-1887), 106. Alfred Binet and Charles Féré, conducting experiments at the Salpêtrière, called Du Potet "a sincere enthusiast, incapable of any scientific research" (Binet and Féré, *Animal Magnetism* [New York: Appleton, 1888], 54). But even Jacqueline Carroy calls Du Potet a "megalomaniac" (Carroy, *Hypnose, suggestion et psychologie : l'invention de sujets* [Paris: PUF, 1991], 50). Charcot himself was a showman, and lo, he found *he* could hypnotize a hysteric with a mere glance: see Charcot, lesson of 10 November 1878, reported in *La Gazette des Hôpitaux*, 21 November 1878. In *Œuvres complètes de J.-M. Charcot*, vol. 9 (Paris: Bureaux du Progrès Médical, 1887), 285-286; also cited in Carroy, *Hypnose, suggestion et psychologie*, 160. Eye contact was also used by physicians in the eighteenth and early nineteeth centuries in the moral treatment of the insane. On Philippe Pinel's study of Francis Willis's commanding eye, see Jan Goldstein, *Console and Classify* (Cambridge, 1987), 86.

[9] In his famous clinical lectures Charcot had said of the third state: "Les phénomènes très complexes qu'on peut observer dans cette forme se soumettent difficilement à l'analyse," and that the researches at the Salpêtrière focused on the characteristics of other two, studying the third chiefly as it related to the others (Charcot, *Œuvres complètes*, vol. 9, 303).

hysteria. The Nancy School, led by the physician Hippolyte Bernheim, of the Faculty of Medicine, believed in contrast that the mechanism at the basis of hypnotism—suggestion—was general, and operable, to some degree, in everyone. They argued—and largely demonstrated—that suggestion was sufficient to produce all the hypnotic phenomena observable at the Salpêtrière, even when the required props, like anesthetizing magnets, were fake.[10]

No one concerned with hypnotism in the 1880s could avoid this dispute, which, if you were not present for the discussions at the Société de Biologie or the Société de Psychologie Physiologique in Paris, you could follow in the pages of the *Revue philosophique*, where each side published empirical challenges and rebuttals to the other.[11] The resolution of this controversy by the end of the decade would be significant for the philosophy Bergson came to develop. In

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[10] For detailed histories of scientific hypnotism in France during this period, see Andreas Mayer, *Sites of the Unconscious*; Jacqueline Carroy, *Hypnose, suggestion et psychologie* and *Les personnalités doubles et multiples: Entre science et fiction* (Paris: PUF, 1993); Jacqueline Carroy and Régine Plas, "The Origins of French Experimental Psychology. Experiment and Experimentalism," *History of the Human Sciences* 9 (1996): 73-84; Mark S. Micale, *Approaching Hysteria: Disease and Its Interpretation* (Princeton, 1995); Anne Harrington, "Metals and magnets in medicine: hysteria, hypnosis and medical culture in fin-de-siècle Paris," *Psychological Medicine* 18 (1988): 21-38. For a lively overview of many of the principle figures here, see Edwin G. Boring, *A History of Experimental Psychology* (New York: Century), 665-670. For discussions of these investigations within *longue-durée* histories, see the comprehensive Gauld, *A History of Hypnotism*; and Henri F. Ellenberger, *The Discovery of the Unconscious* (New York: Basic, 1970), 85-109. For the significance of this interest in somnambulism to the scientific study of memory and the medical history of the multiple personality, see Hacking, *Rewriting the Soul: Multiple Personality and the Sciences of Memory* (Princeton, 1995), and Hacking, *Mad Travelers: Reflections on the Reality of Transient Mental Illnesses* (London: Free Association, 1998).

[11] "Tous ceux qui s'occupent du somnambulisme provoqué connaissent le curieux débat qu'il a fait naître entre l'école de la Salpêtrière et celle de Nancy," wrote Joseph Delboeuf, the Belgian psychologist and philosopher. "L'antagonisme entre les deux écoles est complet et porte sur tous les points" (Delboeuf, "De l'influence de l'éducation et de l'imitation dans le somnambulisme provoqué," *Revue philosophique* 22 [1886], 148). For the debate in the *Revue philosophique* see Alfred Binet and Charles Féré, "L'hypnotisme chez les hystériques: I. Le transfert psychique," *Revue philosophique* 19 (1885), 1-25; Hippolyte Bernheim, "L'hypnotisme chez les hystériques," ibid., 311-316; Henri Beaunis, "L'expérimentation en psychologie par le somnambulisme provoqué," *Revue philosophique* 20 (1885): 1-36, 113-135. On the *Revue philosophique* as a chief platform for this dispute, see Carroy, "La fondation de la Revue philosophique," *Revue philosophique* (1976), 406-407.

this first article of his, beginning with his method of hypnotizing, we can already begin to see what he took from the two schools and where his own position might have been between them.

Right at the start Bergson announced that his subjects were healthy.[12] Then he confirmed that they were hypnotized according to the classic indications of catalepsy. Unmistakeably, he wrote, the subjects had fallen into "that state of stupor that characterizes the most pronounced hypnotism":

> the eyes remain excessively open and fixed, the physiognomy loses all intelligent expression; in short one observes all the usual cataleptic phenomena: general insensibility, the stubborn, indefinite persistence of postures suggested by the magnetiser, etc.[13]

His observation of catalepsy appears to take the Salpêtrière theories for granted (although that "etc." is both familiar and dismissive). But as the experiment proceeds, his cataleptics don't seem to resemble Charcot's cataleptics at all. Charcotian catalepsy was a simpler state of automatism, not the state in which a subject might acquire special powers of perception. It was the third state, somnambulism proper, that exhibited phenomena that were difficult to classify.

Yet, if Bergson thoroughly ascribed to the Nancy School's notion of hypnotism, it's not clear why he *snuck up* on his subjects. For the variety of practices that came to be identified with Nancy rested on the efficacy of commands—"suggestions"—given and *perceived*. Practitioners made a point of giving their subjects explicit instructions—for instance, "Look at me," or "You

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[12] With the interesting exception of one youth who had a history of headache (but not hysteria) and who also subsequently outperformed the others in the experiment. Bergson, "De la simulation inconsciente," in *Ecrits philosophiques* (PUF, 2011), 59.

[13] Ibid., 60. Preferences seemed to vary between the terms "magnetism" and "hypnotism" in this scientific discourse. Richet had distinguished some different historical connotations of each, along with the word "somnambulism," in his early article of 1880, but concluded that it didn't really matter at this point: "A la vérité le mot importe peu : qu'on dise magnétisme, hypnotisme, somnambulisme, les phénomènes sont les mêmes, et on s'entend très bien sur ce qu'on veut dire" (Richet, "Du somnambulisme provoqué," *Revue philosophique* 10 [1880], 337). For my purposes I think they can be read in the sources interchangeably. Bergson himself speaks of "l'hypnotisme" and "magnétiseur" here in the same paragraph.

will now go to sleep."[14] But then it was also known that with sufficiently experienced subjects, just about anything would work. The physiologist Henri Beaunis, partisan of Nancy, wrote that, once you have hypnotized a subject multiple times, "he is in your power and you can then provoke sleep *by any means whatsoever*."[15] Bergson's subjects were certainly practiced.

At first, the results of Bergson's experiment are unspectacular. A youth with a history of headache, whom Bergson calls "L…e," is the only one able to accurately read certain items on the page open before the hypnotizer: the page number, and any words surrounded by sufficient white space, such as chapter headings. (One other subject attains 50% accuracy; the other two do too poorly to mention.) On occasions when L…e does err, he speedily corrects himself if the hypnotizer moves the book slightly in one direction or another. Then Bergson asks the subjects to *point* to the things they claim to see. From this test he ascertains that they are not seeing through the cover of the book (he thought as much), but seeing the page as though it were actually open in front of them. This observation suddenly seems consistent with another: the way the subjects often get page numbers wrong simply by reversing the order of the numbers. A natural hypothesis arises: the subjects must be seeing an image of the page reflected somewhere, because "everything occurred as though the sleeping subject were really reading, but reading in a mirror."[16]

Reflected where? Naturally, in the eye of the hypnotist.

At once Bergson the mathematician goes to work. He calculates the maximum possible height of a printed letter as reflected on a cornea of a certain curvature. "A very simple calculation," he says, shows the height of such a reflected figure to be just under 0.1 millimeter.

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[14] Henri Beaunis, "L'expérimentation en psychologie par le somnambulisme provoqué"; Hippolyte Bernheim, *De la suggestion dans l'état hypnotique et dans l'état de veille* (Paris: Doin, 1884).
[15] Beaunis, "L'expérimentation en psychologie par le somnambulisme provoqué," 4. Original italics.
[16] Bergson, "De la simulation inconsciente," 61.

Smallness is no obstacle—for, after all, we are dealing with hypnosis: "Such a hypothesis was not at all implausible, given the extraordinary hyperesthesia that one can observe in the state of hypnotism, and that one provokes by suggestion in many cases."[17]

The experiment now veers to test this hypothesis. *Could* a subject see a letter 0.1 millimeter tall? The experimenters cannot print a letter that small, but they devise two equivalent tests. First, they show L…e a microscopic photograph, "representing the members of a scientific society in England."[18] The photograph measures two millimeters on its longer side and contains twelve persons. L…e succeeds in describing each individual, as well as in mimicking their postures. Next, colored cells in the tissue of an orchid, mounted on a histological slide. The cells, measuring no more than 0.06 millimeter in diameter, are invisible to the naked eye. As Bergson has done with the photograph, he gives L…e the command to look carefully and "to see it very big."[19] Then he asks him to draw the contents of the slide. The young man sufficiently reproduces the image that he would have seen under a microscope. Bergson concludes that these experiments "abundantly prove that reading a number of a height of about 0.1 mm is an act that presents no difficulty for someone in a hypnotic sleep."[20]

But demonstrating this effect of hypnosis was not Bergson's main concern. The vision experiments only confirmed for him that a more plausible explanation could be found for what had appeared to be the action of telepathy. The original phenomenon of the young men receiving a mental communication from the hypnotizer of the contents of a book should be understood, Bergson decides, as an act of "unconscious simulation": the subject believes, with the hypnotizer, that he is reading the hypnotizer's thought, when he is only identifying the very small object reflected in the hypnotizer's eyes. The entire burden of explanation for this

[17] Ibid.
[18] Ibid., 62.
[19] Ibid., 63.
[20] Ibid.

phenomenon comes to rest on the power of the hypnotic command: a subject under hypnotic compulsion will carry out the given task by any means necessary, even if he must resort to a physiologically remarkable workaround. "For him," writes Bergson, "all means are valid because he is incapable of disobeying."[21]

For the historian, this is a case of a dog that didn't bark in the night.[22] In the whole narrative of this experiment, what leaps to the modern eye is what does not merit further remark from Bergson: the idea that sheer hypnotic compulsion can give a person the visual powers of a microscope. The banality of this phenomenon is further borne out in the rather mild reception of Bergson's article: in subsequent issues of the *Revue philosophique*, Bergson is acknowledged for contributing the idea of "*la simulation inconsciente*," not for the demonstration of hyperacuity of vision in a hypnotized subject.[23] In 1886, no one found this acuity particularly impressive. The reason for this nonchalance is that scientific hypnotism was already equipped to bear the explanatory burden for this phenomenon. That was with the seemingly limitless power of suggestion as an agent of physiological change.

The year 1886 was also important for a more famous work of Bergson's, the *Essai sur les données immédiates de la conscience*, the doctoral thesis with which his philosophy career would really take off. The thesis was a defense of personal liberty against scientific determinism. Bergson completed it in 1888 before being summoned back to Paris to teach in prestigious lycées. So ended his journeyman period teaching in the provinces. It would have been on the

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[21] Ibid., 65.
[22] See Arthur Conan Doyle, "The Adventure of Silver Blaze," in *The Memoirs of Sherlock Holmes* (London: George Newnes, 1892).
[23] An acknowledgement appears the following year from Pierre Janet in "L'anesthésie systématisée et la dissociation des phénomènes psychologiques" (*Revue philosophique* 23 [1887], 452), and again in Janet's seminal medical thesis, *L'Automatisme psychologique* (Paris: Alcan, 1889, 325). Joseph Delboeuf would also cite Bergson's article in his own account of hypnotism as a phenomenon of multi-layered, bi-directional influence (Jacqueline Carroy, "Magnétisme, hypnose et philosophie," in Isabelle Stengers [ed.], *Importance de l'hypnose* [Synthélabo, 1993], 187). On Delboeuf's position, see Mayer, *Sites of the Unconscious*, 97-103.

basis of the *Essai* that, in 1893, the editor of the *Revue philosophique*, Théodule Ribot, privately remarked that Bergson, the "young juggler of concepts," was philosophy's "rising star."[24] It was not a compliment. At that time, Bergson was teaching at the Lycée Henri-IV, and following the template of the scientifically-informed philosophy curriculum designated by the education ministry under the Third Republic.[25] But Ribot implied that Bergson had something to do with the growing popularity among young people of a movement Ribot characterized as "antiscientific."[26]

In the *Essai*, Bergson argued for the philosophical significance of psychological experiences of time, which he called "*la durée réelle*." These experiences were susceptible neither to measurement nor to prediction. It was the reality of the *durée* that furnished, in the final chapter of the book, Bergson's proof of the existence of free will. We must understand that "psychological," for Bergson, did not mean "merely psychological." For Bergson the psyche could experience the world, directly. To see the physicality of psychological life that Bergson saw, we must look to the scientific studies of hypnotism and suggestion in the 1880s and the insights they yielded about the intimacy of the mind's connection to the material world. What we find will reveal the counterintuitiveness of the psychology of the *Essai*. For Bergson did not

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[24] Ribot, letter to Alfred Espinas, 8 February 1893, "Lettres de Théodule Ribot à Alfred Espinas (1876-1893)," ed. Raymond Lenoir, *Revue philosophique* 165, no. 2 (1975), 171.
[25] We can match student notes from Bergson's courses with the evolving national curriculum. For the curriculum, see Bruno Poucet, *Enseigner la philosophie : histoire d'une discipline scolaire, 1860-1990* (Paris: CNRS, 1999). Student notes from courses taught at Henri-IV are published in Bergson, *Cours*, ed. Henri Hude, vol. 2, 3 (Paris: PUF, 1990-2000) and *Cours de psychologie de 1892-1893 au lycée Henri-IV*, ed. Sylvain Matton (Paris: Séha, 2008). Larry McGrath has discussed Bergson's adherence to an official philosophy program that increasingly incorporated contemporary materialist explanations of the brain. McGrath wrongly interprets this as Bergson's willingness to carry out a ministry-sanctioned educational campaign and, illogically, invokes this participation to explain Bergson's eventual cultural celebrity (McGrath, "Confronting the Brain in the Classroom: Lycée Policy and Pedagogy in France 1874-1902," *History of the Human Sciences* 28 [2015]: 3-24). My dissertation makes an extended alternative argument for the significance of Bergson's engagement with contemporary physiology.
[26] Ibid.

make a choice between an autonomous, immaterial psyche and a material physiology, determined by reflexes. The *durée*, that province of liberty, was an experience of the body—the same body that French clinicians and physiologists subjected to measurement, prediction, and the compulsive force of suggestion.

It has been tempting for the modern reader to take the argument of the *Essai* as a necessary, even obvious corrective to the overreaching scientific ambitions of physiological psychology. The distinction between quantity and quality that Bergson goes to lengths to establish in the *Essai*'s first chapter has been widely understood as intuitively, even commonsensically anti-reductionist.[27] But "reductive" does not aptly characterize a physiological psychology that came to understand the mind and the body via investigations of hypnotic suggestion, and that generated alternative—but hardly less marvelous—explanations for what appeared to be the action of telepathy.

As you have begun to see, Bergson did not repudiate this science but made it his own. The full consequence of this alternative is that many of the essential terms of the *Essai* then demand to be reinterpreted. Some of these terms have thus far simply appeared unremarkable, being so commonplace that even what would appear to be overuse, on Bergson's part, passes unobserved. This is the case for the word *suggestion* itself, and its various verb forms. It is also the case for the word *organisation*, an otherwise inexplicable feature of the title of the third and

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[27] As most recently exemplifed by Robert Michael Brain (*The Pulse of Modernism* [Seattle: University of Washington, 2015], for whom Bergson presents a straightforward, intuitive critique of the assumptions of late nineteenth-century experimental physiology. But Brain readily takes Bergson's philosophy as given all at once, bringing arguments from later writings on philosophical method to explain how Bergson must have confronted the mind-body problem of the 1880s. Thus he conflates Bergson's method of intuition with the idea of the *durée réelle* and the critique of quantification in the *Essai*, though Bergson did not write about intuition until after 1900. My dissertation shows that the *durée réelle* has its own conceptual sources—in the experimental physiology of the 1880s—which should inform our reading of the later notion of intuition, not *vice versa*. A similarly prominent instance of the obvious-antidote reading of Bergson is Jonathan Crary, *Suspensions of Perception* (MIT, 1999).

climactic chapter of the *Essai*, "On the organization of states of consciousness: Liberty." Then there are words that are deceptively abstract, and thus easy for the modern reader to assimilate to his own idiom. But they lose their abstraction when we read them as part of a language that Bergson created from the contemporary sciences of the psyche. Two of the most important words of Bergson's philosophy are of this kind: *quality* and *change*.

This chapter will give us the story of the language we need for reading Bergson. It is a picture of the world of physiological complexity from which Bergson will develop a theory of psychological complexity, the subject of the next chapter. This history will also allow us to see the counterintuitiveness of the *Essai* in its own time. For it was the uncontainable reflexiveness of the physiological body that supplied Bergson's argument for a psychological experience of indissectable quality; it was the power of hypnotic suggestion that gave Bergson a proof of liberty.

2. Mind-reading

Both mind-reading and hyper-acute vision have been features of *somnambulisme provoqué* throughout its history, but as two distinct phenomena. In the late eighteenth century, when the marquis of Puységur, a studious follower of Anton Mesmer, accidentally put one of his peasants to sleep, he found that among the various prodigious abilities the young man acquired in this state was that of responding to Puységur's unspoken thoughts; he could also dance to tunes that Puységur sang in his head.[28] The peasant's visual powers were also so enhanced that he could see the insides of people's bodies; subsequently, he became a famous medical clairvoyant.

[28] Prosper Despine, *Le Somnambulisme*. (Paris: Savy, 1880), 219. Puységur had intended to induce a Mesmeric *crise*, a convulsive, not sleepy, form of therapy. See Jean-Pierre Peter, "De Mesmer à Puységur. Magnétisme animal et transe somnambulique, à l'origine des thérapies psychiques," *Revue d'histoire du XIXe siècle* 38 (2009), pp. 25-26; and Carroy, *Hypnose, suggestion et psychologie*, 26-27.

Over the next hundred years of magnetic sleep, *somnambules* were found to possess heightened senses of hearing, touch, and smell, as well as of vision.[29] "Communication of thought," however, was a new capacity that somnambulism could bring into being, not an enhancement of an existing sense; it served by turns as an object of demonstration, a useful explanation ("How did this illiterate woman know the meaning of this esoteric word? She must have read my thoughts"), and a testament to the power of the magnetizer's will, that could command by thought alone.[30] As late as Prosper Despine's *Le Somnambulisme* of 1880, communication of thought and "hyperesthesia of vision" were described as separate classes of phenomena.[31]

But when the British physiologist William Carpenter came to debunk various spiritist phenomena in the late 1870s, he used one power to discredit the other. "Thought-reading," said Carpenter, was really a communication by means of "muscular action," unconsciously given by one person and unconsciously perceived by another who, by dint of concentration, experienced "a temporary exaltation of other faculties."[32] It was out of dissatisfaction with Carpenter's too-ready dismissal of the possibility of a "supersensuous" form of perception that, around the same time, a committee within the newly founded Society for Psychical Research (SPR) undertook the investigation of what they called "thought-transference."[33] Their researches were followed

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[29] Binet and Féré, *Animal Magnetism*, 134-135; "Somnambulisme provoqué," *Dictionnaire encyclopédie des sciences médicales*, ed. A. Dechambre and L. Lereboullet, vol. 10 (Paris : P. Asselin, G. Masson, 1881), 369-370.
[30] Despine, 217-221.
[31] Despine readily supposed that the "impressionability" of the retina could be augmented a hundred times as an "hyperesthésie" of the retina's nervous membrane (ibid., 153). He and others also described other sensory hyperesthesias during somnambulism. "Hyperesthésie" appears for the first time in French in Littré's *Dictionnaire de la langue française* (1873), defined as "sensibilité excessive, et, par cela, douleureuse." The English word "telepathy" is introduced in 1882 in the Society for Psychical Research. See below.
[32] William Carpenter, *Mesmerism, Spiritualism, &c.* (New York: Appleton, 1877), 53-55. On the larger story of Carpenter's physiological accounts of "spiritualist" phenomena, see Alison Winter, *Mesmerized* (Chicago, 1998), 276-305.
[33] W. F. Barrett, Edmund Gurney, and F. W. H. Myers, "First Report on Thought-Reading," read on July 17, 1882. *Proceedings of the Society for Psychical Research* vol. 1 (1882): 13-34. On the

closely in Paris by Charles Richet, who led the discussions of *la suggestion mentale* at the Société de Biologie and in the pages of the *Revue philosophique*.[34]

Not all of the ensuing experiments involved hypnotism. The SPR committee tested the children of a family who—their father alleged—could name objects of other people's thoughts. Trials were made of the children identifying unseen playing cards and words designated in secret. Richet did the same playing card experiment with himself and his friends, but so many times that he obtained a statistically significant result for the number of correct responses, compared to the number that would have been correct by chance.[35] From this Richet concluded that mental suggestion was possible in unhypnotized adults of good health, and not only possible but "probable."[36] He implied that the probability would be higher with "truly sensitive people, hypnotized, hypnotizable, hysterical, nervous," or otherwise practiced in receiving suggestions.[37] In other words, the qualifications of "unhypnotized" and "of good health" given of himself and his friends were meant to define the low end of physiological possibility.

Richet's article drew a lively response from the readership. The *Revue philosophique* printed two letters in 1885, one from the engineer Georges Léchalas, objecting to Richet's math, and one from Paul Tannery, the historian of mathematics employed in the administration of the French tobacco industry. Tannery accepted Richet's results but excitedly proposed an alternative hypothesis and the experiment to test it. "It is clear that it is not a matter of a purely psychic phenomenon," he wrote, "and this is one of the clearest consequences of the

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history of the SPR, see Janet Oppenheimer, *The Other World: Spiritualism and Psychical Research in England* (Cambridge, 1985).

[34] Richet would serve as president of the SPR in 1905-06. Bergson, too, followed the work of the SPR from the society's inception in 1882, and would serve as its president in 1913-14.

[35] On the import of this work in the history of random representative sampling, see Ian Hacking, "Telepathy: Origins of Randomization in Experimental Design," *Isis* 79, no. 3 (1988): 427-451.

[36] He calculated this probability to be no greater than 1/16 in nonhypnotized, healthy subjects. Richet, "La suggestion mentale et le calcul des probabilités," *Revue philosophique* 18 (1884), 632.

[37] Ibid. 632. He regarded the children tested by SPR as "sujets sensibles."

work of Monsieur Richet: in this phenomenon, an action of muscular movements imperceptible to direct observation is produced without reaching the threshold of consciousness."[38] The muscular movements that Tannery had no doubt were occurring were those involved in the verbal formulation of thoughts, a notion that had been discussed in the *Revue philosophique* since 1879, with the speech studies of the Viennese physiologist Salomon Stricker. The idea was that the mere thought of words moved certain muscles—"muscles of articulation"—which was the only explanation for why, when thinking of words, one had the distinct impression that one was saying them to oneself, internally.[39] In France this impression and the involuntary muscle movements that produced it became known as *la parole intérieure*. "We know," wrote Tannery,

> that it is impossible to think clearly of a word without pronouncing it internally; I would go further and say, to have a vivid idea without unconsciously articulating a word…We also know that this internal speech is in certain cases perceived by the ear of the speaker; in other cases, it is only felt as a movement of the muscles; in still other cases, if one is intensely preoccupied, it is absolutely unconscious…in any case, it certainly always corresponds to a noise, though its intensity may be imperceptible to others under ordinary conditions.[40]

You might guess where this was going. For Richet's trials in mental suggestion, the "*experimentum crucis*," Tannery wrote, would be to "carefully plug the ears of the *medium* with cotton," to see if this would impede the reception of the unspoken suggestions.[41]

Tannery's conjecture rested on two conditions: one, that thinking engages the body of the thinker; and two, that thoughts thus manifest on the body could be perceptible to another

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[38] G. Léchalas, P. Tannery, and Ch. Richet, "La suggestion mentale et le calcul des probabilités," *Revue philosophique* 19 (1885), 113-114.
[39] Théodule Ribot, "Contributions à la psychologie des mouvements," *Revue philosophique* 16 (1883), 188-200.
[40] Léchalas, Tannery, and Richet, "La suggestion mentale et le calcul des probabilités," 114.
[41] Ibid., 114. Original italics.

person, even when imperceptible to oneself. Neither condition was far-fetched; in the 1880s, physiologists increasingly corroborated both.[42]

The work of Stricker to which Tannery alluded had been introduced to readers of the *Revue philosophique* by none other than the journal's founder and editor, Théodule Ribot, who had emerged as the chief impresario of a new scientific psychology in France. A self-relegated outsider *vis-à-vis* the French philosophical establishment, Ribot quickly gained a new institutional authority through his leadership of the journal.[43] In 1885 he would be recruited to the Sorbonne, and in 1888 the Chair of Experimental Psychology would be created for him at the Collège de France. The *Revue philosophique* was also a partner, in 1885, in the founding of the Société de Psychologie Physiologique—Ribot served as one of the society's vice-presidents, under Charcot—and would devote a recurring section to reporting the work presented at the society's meetings.[44] In this way Bergson, in Clermont-Ferrand, could keep abreast of the

[42] Experiments in auditory acuity were performed the very next year, 1885, by Henri Beaunis, the Nancy physiologist, and with more sophisticated instrumentation than what Tannery had proposed. Beaunis tested the hearing of somnambulist subjects with a Du Bois-Reymond electrical induction apparatus connected to a telephone. The volume of sounds produced in the receiver would vary with the intensity of the electrical current. Most of his subjects could hear much feebler sounds while in a state of somnambulism, compared to when they were awake; some became still more discerning when it was suggested to them during somnabulism that their hearing was very good. The same subjects tested for reaction times to sound yielded the same pattern of results: when given "la suggestion d'aller très vite," some of them reduced their reaction times by one- to two-thirds (Beaunis, *Le somnambulisme provoqué* [Paris: Baillière, 1887], 103).

[43] See Jacqueline Thirard, "La fondation de la 'Revue philosophique,'" *Revue philosophique* 166, no. 4 (1976): 401-413; and John I. Brooks III, *The Eclectic Legacy* (Newark: University of Delaware Press, 1998), 67-96. On Ribot's discipline-defining role in the history of French psychology, see Serge Nicolas, "'A Big Piece of News': Théodule Ribot and the Founding of the *Revue philosophique de la France et de l'étranger*," *J. Hist. Behav. Sci.* 49, no. 1 (2013): 1-17; and Serge Nicolas and Agnès Charvillat, "Introducing Psychology as an Academic Discipline in France: Théodule Ribot and the Collège de France (1888-1901)," *J. Hist. Behav. Sci.* 37, no. 2 (2001): 143-164.

[44] The other vice-president was the Sorbonne philosopher Paul Janet, Pierre Janet's uncle. Charles Richet served as general secretary. "Société de psychologie physiologique de Paris," *Revue philosophique* 19 (1885), 591.

questions discussed in Paris, which, in the latter 1880s, were primarily concerned with somnambulism and experiments in suggestion.

Ribot had a vision for psychology that work like Stricker's helped to realize: a "psychology of movements," which was a psychology whose phenomena would be entirely explained by physiology.[45] This did not mean that Stricker's theory went unchallenged in the *Revue philosophique*: based as it was on Stricker's observations of himself, it lay open to objections like those of the philosopher Frédéric Paulhan, who said that *he* experienced no such movements of articulation; *his* "inner speech" was actually a voice.[46] But this debate did not foreclose the possibility of some kind of motor accompaniment to thought. And very soon, proof of this phenomenon would be given in a more incontrovertible form.

In 1884 a young physiologist trained in the Collège de France laboratory of Étienne-Jules Marey deployed Marey's graphic inscription instruments in an experiment in thought-reading. Its report was one of the very first contributions of Eugène Gley to the Société de Biologie—he would eventually become its general secretary, and hold his own chair at the Collège de France—and it supplied graphic traces of the body in the act of betraying the mind.[47] The procedure of the experiment replicated a "thought-reading" demonstration lately

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[45] Ribot, "Contributions à la psychologie des mouvements," 188.

[46] An especially interesting objection given that Paulhan had a stutter, which was severe enough to warrant his exemption from military service (!) and exclude him from a teaching career. Paulhan, "Images et mouvements," *Revue philosophique* 16 (1883): 405-412; and continued in Paulhan, "Le langage intérieur et la pensée," *Revue philosophique* 21: 26-58.

[47] Marey had been developing graphic inscription devices since the late 1850s, beginning with a state-of-the-art sphygmograph (inscription of the pulse). His *La méthode graphique dans les sciences expérimentales* (Paris: Masson, 1878) contained a cumulative gallery of devices for inscribing voluntary, involuntary, and inanimate motions. It looks a bit like the Burgess Shale of scientific instruments. Eugène Gley (1857-1930) assisted in Marey's laboratory from 1880-1883. Gley became a member of the Société de Biologie in 1886 and was Chair of General Biology at the Collège de France from 1908-1930. E. Gley, *Notice sur les travaux scientifiques* (Paris: Masson, 1902). On Marey and the development of the graphical method, see François Dagognet, *Etienne-Jules Marey: A Passion for the Trace*, tr. Robert Galeta (Zone, 1992); Marta Braun, *Picturing Time: The Work of Etienne-Jules Marey* (Chicago, 1992); Soraya de Chadarevian,

made famous in England by Stuart Cumberland, who gave beguiling performances involving celebrity participants, including William Gladstone at the House of Commons.[48] Cumberland did not claim to be more than a brilliant muscle-reader, which was a letdown for those in the SPR who wished to find genuine instances of telepathy.[49] In France, however, after Charles Richet got over his initial disappointment, the psycho-physiological implications of muscle-reading opened another field of investigation.

The experiment involved two people: the subject, who would have hidden an object in the room, or who simply kept a particular object in mind during the experiment; and the experimenter, in the position of Cumberland, whose task was to discover the object while blindfolded, but while holding the subject's hand. With some subjects the result was more assured than with others: taking involuntary cues from the subject's hand, the experimenter could be led to the object despite the subject's best efforts not to give it away. Richet performed the experiment himself, without inscription devices, and reported to the Société de Biologie his experience of "little oscillations, involuntary trembles" in the subject's hand, "that betray her thought": "I was absolutely guided by the person whose hand I held," he concluded, "and at times with extraordinary precision, without her being conscious of guiding me, with her believing, to the contrary, that she was guided by me."[50] Six weeks later, Gley, who had sought

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"Graphical Method and Discipline: Self-Recording Instruments in Nineteenth-Century Physiology," *Stud. Hist. Phil. Sci.* 24 (1993), 267-291; Robert Michael Brain, *The Pulse of Modernism*, 5-36.

[48] He also made subjects of Oscar Wilde, Rudyard Kipling, Arthur Conan Doyle, and various members of European royal families. See Pamela Thurschwell, "George Eliot's Prophecies: Coercive Second Sight and Everyday Thought Reading," in Nicola Bown, Carolyn Burdett and Pamela Thurschwell (eds.), *The Victorian Supernatural* (Cambridge, 2004), 87-108.

[49] Barrett, Gurney, and Myers, "First Report on Thought-Reading," 14.

[50] Richet, "A propos de la suggestion mentale," séance du 31 mai, *Comptes rendus des séances de la Société de Biologie* série 8, t. 1 (1884), 366-367. Two of Richet's seven subjects were male. His rates of success with male and female subjects were about equal.

to record these tiny movements, presented "the traces that reveal them objectively."[51] He had registered his subjects' heartbeat with a double cardiograph attached to the subjects' palm; with some subjects he had also registered muscle contractions in the forearm, via myograph: these patterns concorded, he found, with the fluctuations of the heart. "As we can see on these graphs," he reported to the Société, "for the whole duration of the experiment, the subject's hand produces fibrillar contractions, small pressure movements, etc., that indicate, one readily comprehends, the direction to follow, and that in general augment in intensity when one arrives in front of the object."[52] The inscription instruments performed the reverse office of lie detectors—or perhaps we can say that lie detectors began as truth detectors.[53] Though the patterns themselves, Gley admitted, were difficult to interpret, he was satisfied that these involuntary movements had now been made apparent: "The essential thing was to show the reality of such movements…to furnish an objective and genuine proof of them."[54]

The experiment was not expected to work in all cases. Gley had begun with 25 subjects and gave no indications of histories of pathology among them, only that they were "of sufficiently diverse temperaments"; most, he said, were "of cultivated mind," "having received a liberal education."[55] That is, they were bourgeois and had gone to lycée. They were probably his friends—perhaps one of them was Charles Richet—just as Richet would conscript *his*

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[51] E. Gley, "Sur les mouvements musculaires inconscients en rapport avec les images ou représentations mentales," séance du 5 juillet, ibid., 450.
[52] Ibid., 451.
[53] For the later history of the lie detector, see Ken Alder, *The Lie Detectors: The History of an American Obsession* (New York: Free Press, 2007).
[54] "L'essentiel était de montrer la réalité des mouvements dont il s'agit et par conséquent d'en fournir une preuve objective et véritable." Gley, 450. And so even proof of mind-reading was held to a certain standard of mechanical objectivity. But it was a hybrid of mechanical objectivity and the archetypic thinking that has characterized truth-to-nature epistemologies (Lorraine Daston and Peter Galison, *Objectivity* [Zone, 2007]). Certain experimental extremes—the runaway successes—were understood as the purest instantiation of the phenomenon in question, the *type* rather than the outlier.
[55] Gley, 450.

friends in his interminable probabalistic card-guessing experiment that same year.[56] 16 of Gley's 25 yielded successful experiments (9 of the 16 were male), meaning they unwittingly divulged their objects, and with these—his "good subjects"—Gley did repeated trials, and abandoned the others. The subjects were good because they produced results like the following: with one of them, Gley reported, "as soon as I would approach the object, such emotion would be manifest, that the breathing would accelerate and take the rhythm well known of people who are considered *impressionable*; at the same time the pressure of the hand would become stronger."[57] For another subject, the experiment only succeeded with objects of personal significance, "like a letter or a document that interested him a great deal or that touched him deeply": then, "all during the search for the object and above all at the moment of discovery, there appeared remarkable modifications in the movements of his heart."[58]

And herein lies the physiological significance of this rather gimmicky procedure—the reason why a young physiologist would stake his entry into the Société de Biologie on the study of a parlor trick: the experiment showed with graphical evidence that ideas—"images or mental representations"—were correlated with bodily movements that the will could not

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[56] In this respect some of the experiments in *la suggestion mentale* bear a structural resemblance to German laboratory experiments in psychology during this period, in which Wundt and his students took turns being one another's subjects. Contemporary psychological experimentation in France, due to its basis in hypnotism, is known primarily in its clinical aspect. In the clinic and in hypnosis the experimental roles were plainly asymmetrical and, as Kurt Danziger has written, not reversible (see the comparison of "models of psychological investigation" in Danziger, *Constructing the Subject* [Cambridge, 1990], 52-59). But mental suggestion was an inquiry that went beyond hypnotism (though it was an important notion for investigating hypnotic phenomena, too), and shows how French experimental psychology was also driven by questions that did not originate in the clinic. And even though an asymmetry of roles is inherent in any hypnotic situation, those roles remained fluid from one instance to another. Richet himself wrote that the surest way to convince a scientific skeptic of the reality of somnambulism was to hypnotize him. And it was important, epistemologically, that the mechanisms that produced the pathological phenomena of the clinic were generalizable as fundamental psychological processes.

[57] Gley, 452.

[58] Ibid., 452-453.

control. Some people were conscious of making these movements, some were not. But no one could help making them. And the subjects whose bodies betrayed their thoughts more strongly than others, or with certain objects more dramatically than with others, indicated that the movements were a function of the *intensity* of an idea in an individual's experience. "These facts clearly show," wrote Gley, "the relation that exists between the intensity of the [mental] image and unconscious movements."[59]

Movements that seemed to report on events in the mind were the object of investigations at the frontier of French physiology in the late nineteenth century. This work explicitly built upon the studies of the physical expression of emotions from the last two decades: Duchenne de Boulogne's electro-physiological experiments, showing how various expressions were decomposable into contractions of specific muscles; the physiognomy studies of the anatomist Pierre Gratiolet; and Charles Darwin's *Expression of the Emotions in Man and Animals* (1872).[60] Readers of Darwin might remember Gratiolet as someone who offered more observations than explanations. To the young French physiologists who went back to these works in the 1880s, however, it was Gratiolet who offered more fruitful theoretical insights. What Gratiolet observed of the expression of emotions, said Gley, was an instance of the more general phenomenon that "all images are tied to movements."[61] In the 1880s, there was a deeper physiological explanation for this than Darwin's functional and evolutionary one.[62] That Gley found variabilities in the "intensity" of the mental object and in the degree of consciousness of the movements executed suggested to him that movements did not originate

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[59] Ibid., 453.
[60] Duchenne de Boulogne, *Mécanisme de la physionomie humaine* (1862); Gratiolet, *De la physionomie et des mouvements d'expression* (1865); Darwin's *Expression of the Emotions* appeared in French in 1874.
[61] Gley, 452.
[62] Darwin thought that many expressive movements in people and other animals came of associated habits that once served some purpose in the evolutionary past.

in utility, but were part of ideas themselves: "motor elements enter into the constitution of images themselves; that is the source of the centrifugal currents which result in movements related to various representations."[63]

This conclusion was a direct validation of Ribot's vision for a scientific study of the psyche, and Gley ended his report by quoting the editor of the *Revue philosophique* and citing the programmatic article on "the psychology of movements." This had appeared in the *Revue philosophique* in 1879 and concretized part of the philosophical mission that Ribot had laid out at the journal's founding three years before. In France, psychology had been the cornerstone of philosophy as this was taught to Ribot's generation and to Bergson's that followed—the lasting impact of the mid-century ideology and institutional authority of Victor Cousin.[64] Cousin's psychology-as-gateway-discipline to philosophy relied on a method of cultivated introspection. In the latter part of the century, the philosophical importance of psychology would be undiminished, but its introspective method would appear increasingly difficult to reconcile with new forms of psychological study—conducted, in Germany, in the laboratory; in France, in the clinic, the laboratory, and the drawing-room. Ribot was a dogged opponent of introspection, beginning his critical volleys in 1870, in his book on English psychology; in the manifesto for the *Revue philosophique*, he declared that psychology needed to be informed by "anatomy, physiology, mental pathology, history, anthropology"—basically, every branch of knowledge other than introspection; and in 1879, the same year that he published his monograph on German psychology, he advocated a single, specific alternative to introspection, which would be, "bizarre as the name may appear…a *psychology of mouvements*, or, to put it better, a

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[63] Ibid., 453.

[64] For the history of Cousin's brand of psychology as the vehicle of a political ideology, see Jan Goldstein, *The Post-Revolutionary Self* (Harvard, 2005). For a patient and fair look at Cousin's Eclecticism as a philosophy and its persistence in the late nineteenth-century sciences of psychology and sociology, see Brooks, *The Eclectic Legacy*.

psychophysiology."[65] This was to be the basis of the new *French* psychology, along with the close study of clinical phenomena, after the celebrated pathological method of Claude Bernard in physiology.[66]

The movements of this "psychology of movements" were those executed by the body as a result of its conscious life. Ribot regarded these as constituting another "moment of the psychic process," as completions of mental events, the inevitable outcomes of any thought or feeling.[67]

> The psychic life…forms a circuit which sets off from the external world in order to return to it. [...] This last phase—that of the reaction—was forgotten by the old psychologists. In the organism, they only considered the sensitive aspect; they neglected the motor aspect. According to them, the body, as long as it keeps silent, is either a stranger to the 'soul' or its servant. Inadmissible thesis: the facts show to the contrary that it is an indispensable co-operator. Movement is an element of the life of the psyche just as much as sensations or ideas.[68]

In a sense, this was to extend the action of the psyche across a fuller arc—formerly, said Ribot, "as soon as a movement began, the task of the psychologist ended"—but it was also to assimilate the role of the psyche to the most familiar of arcs, the law of reflex action, that class of physiological phenomena unfailingly demonstrated by brainless frogs.[69] Henceforth mental states would be understood as instigated by a physical antecedent and followed by a physical

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[65] Ribot, "Les mouvements et leur importance psychologique," *Revue philosophique* 8 (1879), 372. Original italics.
[66] Ribot's monographs of the 1880s, *Les maladies de la mémoire* (1881), *Les maladies de la volonté* (1883), and *Les maladies de la personnalité* (1885) would decisively orient French psychology toward the study of pathology, a characteristic feature that would also come to be important for Bergson's philosophy. See the overview of the pathological orientation in Jacqueline Carroy, Annick Ohayon, and Régine Plas, *Histoire de la psychologie en France* (Paris: La Découverte, 2006), 59-84; and Carroy and Plas, "La méthode pathologique et les origines de la psychologie française au XIXe siècle," *Revue internationale de psychopathologie* 12 (1993): 603-610.
[67] Ibid., 384.
[68] Ibid., 371.
[69] Ibid., 383.

outcome. Consciousness was the middle phase of a bounded circuit, or as William James would put it, "the bottom of a loop."[70] Ribot wrote:

> At the very basis of mental life *always and everywhere, there are movements.* In effect, the condition of all mental activity is the existence of a nervous system, and the classic type of nervous action—it's unnecessary to repeat—is the reflex act with its three constitutive moments. However complex the nervous organization may be, in its anatomical structure or in its physiological dynamism, the fundamental mechanism does not change; it consists, from start to finish, in a transmission of movement.[71]

The first "moment" was an incoming sensation; the third was an outgoing action; what happened in the middle remained in dispute. An "elaboration," in the nervous centers, of whatever had come in was as specific as Ribot was willing to be.[72] This allowed him to accommodate both sides of the question of how "centers" actually participated in this process, but especially the side to which he himself was partial. That was to say that, following the sensation, an additional sensibility took the measure of the muscular effort that would produce the movement—a sense distinct from the first in that it reported a centrifugal force, not centripetal. On this side Alexander Bain, Hermann von Helmholtz, and Wilhelm Wundt were prominently ranged; Wundt called this sense the "feeling of innervation," and believed that it constituted the "'moment' of activity which is the one essential characteristic of the will."[73]

The alternative was to understand sensations and the sense of muscle movement as alike centripetal, originating from the body's "periphery." In France, Claude Bernard and Charles Brown-Séquard were among those of this view, which received emphatic empirical support in 1874 from, indeed, dissected frogs. This was the work of the German physiologist Carl Sachs, a student of Emile du Bois-Reymond, showing that an isolated frog muscle connected to its body

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[70] W. James, "Reflex Action and Theism," *Unitarian Review and Religious Magazine* 16, no. 5 (1881), 391.
[71] Ibid., 384. Original italics.
[72] Ibid., 371.
[73] W. Wundt, *Grundzüge der physiologischen Psychologie*, quoted in Ward, "'Modern' Psychology: a Reflexion," *Mind* 2, no. 5 (1893), 57.

by a single nerve-fiber could be induced, with even the slightest provocation, to produce convulsions of the entire body.[74] For Ribot's present purpose, though, it did not matter where the sense of movement came from, the center or the periphery; it sufficed for him to establish that the "transmission of movement" was the essence of mental life.[75]

That Eugène Gley gave pride of place to Ribot in presenting his proofs of unconscious movement to the Société de Biologie testifies to how successfully Ribot had articulated contemporary ambitions in physiology, as well as to Ribot's scientific stature. But the works of Gley and Richet also reveal that Ribot had not anticipated the direction that psycho-physiology would take in France. In the 1870s, the extension of the law of reflex action to the brain had raised the vexing question of whether the *experience* of the psyche—feelings, thoughts—was in fact superfluous to the brain's physical operations. Thomas Huxley's hypothesis, of 1874, that consciousness was only a by-product of the body, as ineffectual upon physical processes as the steam-whistle upon the running of a locomotive, was sufficiently robust and sufficiently representative of a prominent contingent of British physiology—W. K. Clifford, John Tyndall, Henry Maudsley—that it remained a foil for Anglophone psychologists for the rest of the century.[76] Ribot, a non-partisan in this debate in the article of 1879, nevertheless took

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[74] This result is discussed in various overviews of the current state of muscle physiology in the late 1870s, for instance G. Stanley Hall, "The Muscular Perception of Space," *Mind* 3, no. 12 (1878): 433-450. It's telling of Ribot's position in this debate that his account of Sachs's experiment was wrong. Ribot wrote that Sachs was able to produce reflex movements in the isolated muscle by stimulating it, which would have been the least surprising physiological news of the decade (Ribot, "Les mouvements et leur importance psychologique," 376). Instead, what Sachs did was incite the frog's entire body to movement by provoking one minimally attached muscle.

[75] Ribot, "Les mouvements et leur importance psychologique," 386.

[76] For instance, George Henry Lewes, *The Physical Basis of Mind* (London: Trübner, 1877), 307-409; William James, "Are We Automata?" *Mind* 4 (1879): 1-22; and James Ward, "The Conscious Automata Theory," Gifford Lecture XII, in *Naturalism and Agnosticism* (London: Black, 1899). For analysis, see Lorraine Daston, "British Responses to Psycho-Physiology, 1860-1900," *Isis* 69 (1978): 192-208; and Daston, "The Theory of Will versus the Science of

epiphenomenalism as the premise of his theory of memory in 1880.[77] But in the 1880s, the live questions of French physiology, driven by the implications of hypnotic and non-hypnotic suggestion, came to preclude epiphenomenalism.

What the graphic traces of unconscious movement meant—what the very search for such movements presumed—was that any thought, even an unwanted and unwitting one, would make a difference in the body. The medical efficacy of a mere idea—provided the idea was administered by an able clinician—was also the premise of the suggestive therapies practiced in Nancy.[78] Both of these endeavors showed the naivety of Huxley's conviction that "there is no proof that any state of consciousness is the cause of change in the motion of the matter of the organism."[79] The belief that consciousness *was* efficacious gave French physiologists a different purchase on mental life, a way of enlisting the mind to act upon the body and enlisting the body to read the mind. This also yielded, as we will see, the possibility of a deeper physiological determinism. It was *this* physicalizing of the mind, whereby body and mind became alike reactive and alike intelligent, that Bergson confronted in the writing of the *Essai*, and with which he would think.

Mind," in William R. Woodward and Mitchell G. Ash (eds.), *The Problematic Science. Psychology in Nineteenth Century Thought* (Praeger, 1982), 88-115.

[77] Ribot, "La mémoire comme fait biologique," *Revue philosophique* 9 (1880), 516-547.

[78] In Nancy, Hippolyte Bernheim and his elder colleague Liébault ran busy clinics: Bernheim wrote in 1888 that he had hypnotized hundreds of patients, and that Liébault, over a twenty-five-year practice, had hypnotized thousands; they cured rheumatisms, sciaticas, hemi- and paraplegias, anaesthesias, sclerosis, epilepsy, hysteria, and various stomach troubles. Bernheim, *De la suggestion et de ses applications à la thérapeutique.*

[79] T. H. Huxley, "On the Hypothesis that Animals Are Automata and Its History," *Fortnightly Review* 22 (1874), 578. The paper was Huxley's Presidential Address to the British Association for the Advancement of Science and simultaneously published in *Nature.*

3. The Language of the Theater

The centrifugal versus centripetal debate about where the consciousness of movement came from, the center or the periphery, was a debate about which way the puppet strings went. Ribot's article promptly provoked a response from Charles Richet, who brought to bear on this issue the phenomena he had just then begun to observe among Charcot's patients at the Salpêtrière. "All is not said," wrote Richet,

> when one has explained the influence of nerves and nerve centers on movement, for muscles have sensitive nerves, which are centripetal, such that each muscular contraction provokes a nervous excitation that ascends to the centers and can produce either a reflex movement or a sensation, conscious…or unconscious.[80]

Richet thought that the *centripetal* transmission of feeling was ubiquitous, and that it led to three kinds of movement: the willed, the reflexive, and—what had been less discussed than these until now—the "communicated."[81] Everyone has had the experience of the latter—in the phenomenon, for instance, of someone taking your hand and pulling your arm, Richet wrote—but what was now apparent was that movements of this kind had *psychological* effects. This had been discovered through observations of certain pathological cases.

Among hysteria patients, Charcot and his interns had found their own confirmation of a phenomenon first documented by James Braid, in which a person under hypnosis exhibited a remarkable responsiveness to simple physical cues. They had known from Braid, wrote Richet, that "in hypnotized persons or somnambulists, it suffices to put their limbs into a certain posture for sensations corresponding to that attitude to arise immediately."[82] They knew that such sensations had been provoked because it was instantly writ upon the rest of the body. Making a fist of a somnambulist's hand would launch her whole body into an expression of

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[80] Richet, "De l'influence des mouvements sur les idées," *Revue philosophique* 8 (1879), 610.
[81] Ibid.
[82] Ibid., 611.

anger; joining her hands as in a gesture of prayer would make her kneel and become a very portrait of supplication. "These feelings are not solely internal," wrote Richet, "they are translated by the attitude of the body."[83]

The spectacular demonstrations of Charcot's "lessons of the clinic," well captured by historians of psychology and historians of art, were vivid expressions of a deeper theatricality in the experience of French scientific hypnotism.[84] We can see the thorough imbrication of this scientific investigation and contemporary theater in many ways: in the phenomena that traveled from the stage to the clinic and then back; in the common forms of spectacle; in the afterlives of some clinical subjects as theatrical performers; in the artistic double lives of the key scientific investigators.[85] For Bergson and for French psycho-physiology in the 1880s, the theater also had an epistemological significance. Before we come to Bergson's re-purposing of the language of the theater, let us first see what the theater offered for a physiological understanding of states of consciousness.

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[83] Ibid., 612.

[84] On Charcot's clinical spectacles see Georges Didi-Huberman, *Invention of Hysteria: Charcot and the Photographic Iconography of the Salpêtrière*, tr. Alisa Hartz (MIT, 2003); Mark S. Micale, "The Salpêtrière in the Age of Charcot: An Institutional Perspective on Medical History in the Late Nineteenth Century," *J. Contemp. Hist.* 20, no. 4 (1985): 703-731.

[85] On passages and parallels between the hypnotism clinic, the theater, and other forms of spectacle, see Carroy, *Hypnose, suggestion et psychologie*; and Jonathan Crary, *Suspensions of Perception*, 230-238. For a fascinating instance of the unforeseen effects of contemporary theater on a mesmeric subject, see Winter, *Mesmerized*, 85-93. On the scientific and artistic double lives of Charcot, Henri Beaunis, Charles Richet, and Alfred Binet, see Debora L. Silverman, *Art Nouveau in Fin-de-Siècle France* (University of California, 1989), 83-106; Jacqueline Carroy, *Les personnalités doubles et multiples* and "Playing with Signatures: The Young Charles Richet," in Mark S. Micale (ed.), *The Mind of Modernism* (Stanford, 2004). Beaunis, Richet, and Binet all wrote for the theater: Beaunis for the Odéon, before he became a physiologist; Richet, under a pseudonym, adapted one of his own novels for the stage; Binet collaborated on pieces staged at, among other places, the Grand-Guignol ("a puppet theater for grown-ups" [Carroy, *Les personnalités doubles et multiples*, 171]). Even Joseph Delboeuf is on record for comparing Salpêtrière hysterics favorably to Sarah Bernhardt (Delboeuf, "Une visite à la Salpêtrière," *Revue de Belgique* 54 [15 October 1886], 124).

Here is Richet's more extensive description of the phenomenon of movement "communicated" during somnambulism:

> When L*** is made to sleep…it is enough to make her make one gesture, before her whole attitude immediately conforms to the meaning of the gesture. So that, by putting her right hand to her mouth as one would send a kiss, she immediately begins to smile, and her face adopts a loving expression; if one raises her right index finger and places it horizontally at eye-level, she imagines that a bird has just come to perch there; she caresses it and lets herself be pecked. A gesture indicating distance makes her believe that the bird has flown away: she runs across the room and follows the imaginary object with her eyes, etc.[86]

Richet observed that this phenomenon varied with intellectual ability: the more intelligent the subject, the quicker and more lavishly she responded to her cues.[87] He believed that these extremes were due to a pathological condition. But he could not help admiring in them a peculiar beauty.

> …This excitation stirs her whole intelligence…The attitude is so expressive, the physiognomy so natural that all who have had the occasion—I would almost say the pleasure—of attending one of these scenes of somnambulist mimicry have been deeply impressed: no painter, no sculptor has been able to so truthfully realize the divers sentiments of the soul—anger, ecstasy, love, admiration, threat, contempt, disgust, fear—as these poor hysterical girls, when one provokes these sentiments in them during magnetic sleep.[88]

At one of these clinical spectacles at the Salpêtrière, Richet came across a famous actor, who told him that this had been the best lesson in expression he had ever had, and that he himself would probably never attain "such perfection."[89]

This phenomenon was understood as a form of "suggestion," by which ideas are "provoked by an exterior excitation, whether this excitation be a movement communicated to the muscles or a sensory impression."[90] Then, to explain how an idea thus introduced could instantly take possession of the body, Richet offered an analogy. A person in the waking state,

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[86] Ibid., 611. This very scene will appear in Bergson's essay *Laughter* (1900).
[87] Ibid., 611.
[88] Ibid., 613.
[89] Richet only identifies this person as "un acteur justement célèbre." Ibid.
[90] Ibid., 612.

he explained, was like an ordinary spectator at the theater. Surrounded by lights and sounds—the orchestra, the crowded audience—he is the recipient of "innumerable excitations," of which none, in the general commotion, can predominate.[91] By contrast, the somnambulist is an audience of one, in a dark and silent theater. All the lights are off; there is no orchestra. In this setting, the appearance of a single phenomenon becomes all-consuming. "An individual is entirely overcome by a single sensation," Richet wrote; "in a word, the sensation is strong because it is the only one."[92]

This particular analogy did not last. Subsequent findings, obtained in a roughly three-year study that Richet conducted in the early 1880s, led him to revise it. These results were first published in the *Revue philosophique*, then formed the centerpiece of Richet's *L'homme et l'intelligence* (1884), one of the first monographs of the new physiological psychology. So by the time the discussions began in earnest about mental suggestion among ordinary "bourgeois," this is where Richet was on the hypnotism front: in two subjects to whom he gave verbal suggestions, he had discovered responses so elaborate, they led him to deeper reflections about what the mind could retain and what it could be made to lose during somnambulism.

They were two women who never came to know each other: one who had been magnetized before but not for some years, and the other, newly arrived in the capital, who had never heard of this somnambulism business before. During somnambulism, both had a remarkable ability to assume various "types" that Richet suggested to them: a priest, a general, an actress, a pastry chef, various animals. They did not just pantomime these roles. They enacted scenes with improvised speeches, dramatic plots, other imagined characters. The general carries on a dialogue with his underlings (we do not hear their replies); the priest pays his respects to the President of the Republic; the actress complains that her director makes her

[91] Ibid., 613.
[92] Ibid.

wear her skirt too long. Richet reproduced these speeches as a series of short monologues, complete with the accompanying actions in parentheses, which made them read like stage directions. But even his detailed report, he wrote, was "lifeless and colorless" compared to the "surprising and sudden transformations" he witnessed.[93]

What he found remarkable about these transformations was that they were manifested with a profound integrity. The various personages who appeared before him had thoughts and sensations particular to each of them. The priest traversed a crowd, giving blessings. The rabbit actually tasted the cabbage she believed she was eating, and felt fear at a noise that she supposed was a dog.[94] The general demanded her spyglass, apparently in the midst of conducting a colonial expedition; she gave orders dispatching troops to meet the forces that she saw moving in her scope, while muttering opinions to herself about her officers: "This one doesn't know how to do anything"—asides that Richet observed with interest, noting that they were "spoken in a very low voice, but distinctly, with lips barely moving."[95] Each time, a personality was revealed in the midst of an ongoing story. And Richet observed how utterly these personalities could differ, in their tastes and dispositions, from the women he knew:

> A. is shy, but she becomes very bold, when she objectivizes a bold person. [...] B... is reticent. She becomes loquacious when she represents a loquacious person. The character has completely changed. The old tastes have disappeared and been replaced by new ones that the new, represented type is supposed to have.[96]

From this Richet became convinced that his subjects did not lose the sense of *a* self; they only lost the sense of their *own* selves. "Somnambulists who can change personalities and roles six to eight times in the course of an evening do not cease for an instant to possess a *self*; but this *self*

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[93] Richet, "La personnalité et la mémoire dans le somnambulisme," *Revue philosophique* 15 (1883), 228. This study was first published as an article before being incorporated into *L'homme et l'intelligence.*
[94] Ibid., 236.
[95] Ibid., 229.
[96] Ibid., 232.

belongs to different persons."[97] But the very integrity of the other personalities—these transformations "from bottom to top"[98]—demonstrated to Richet that mind and body were alike subject to a lawful order. He thus understood the changes manifested to be fundamentally passive, *undergone*. Despite their liveliness, their apparent improvisational flair, the performances of these subjects remained consistent with his notion of somnambulism as a psychological condition characterized by "torpor," "darkness," and "complete silence."[99]

The reason for this was that physiological psychology had a means of looping the mind into the causal laws of the body. The causal chain operative in the body was the reflex; its equivalent in the mind—in fact, its continuation—was the principle of the association of ideas. Psychologists in the latter part of the nineteenth century, whether they presided over a laboratory or an armchair, all recognized that mental events could be ordered by laws of association. There was a difference, however, between understanding mental processes as acts of association and the stronger view of association*ism*, which ascribed to these laws—generally taken to be two—a causal determinacy.[100] The foremost exponent of associationism in this period was Alexander Bain; his avatar in France was Ribot. As Ribot wrote in his chapter on Bain in *La psychologie anglaise*, "the different processes of intelligence… imagination, deduction, induction, perception, etc., are but so many determinate ways in which ideas may combine with each other."[101] Ribot was also the *fin-de-siècle* representative of the belief that the principle of association was as fundamental to the mind as the law of gravitation was to bodies, a

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[97] Ibid., 237. Original italics.
[98] Ibid.
[99] Richet, *L'homme et l'intelligence*, 2nd ed. (Paris: Alcan, 1887), 232.
[100] Association by resemblance and by contiguity were generally considered the two "irreducible principles." James, *The Principles of Psychology*, 2 vols. (Harvard, 1981 [1890]), vol. 1, 566. On the development of associationism since John Locke, and particularly the nineteenth-century synthesis of association psychology and sensori-motor physiology, see Robert M. Young, *Mind, Brain, and Adaptation in the Nineteenth Century* (Oxford, 1990 [1970]), 54-133. References to an extensive literature on associationist psychology can also be found here.
[101] Quoted in James, *The Principles of Psychology* vol. 1, 563.

comparison first made by Hume and upheld by generations of associationists thereafter.[102] For Ribot, as for Hume, the comparison did a double duty: it made association a theory that "*explains* all intellectual facts, certainly not after the manner of Metaphysics which demands the ultimate and absolute reason of things; but after the manner of Physics which seeks only their secondary and immediate cause."[103]

So Richet understood his somnambulists' transformations as the action of "an all-powerful association of ideas," and took the thoroughness of the changes of personality as "a proof of the preponderant influence of the association of ideas on the emotions and the will."[104] It was possible to apply the principle of association to the mind without deriving causal determinism—as William James did, writing in 1879 of the way thoughts can "shoot about in all the lawless revelry of similarity"—but associationism in the context of French experimental psychology bent another way.[105] It found, in sequences of thoughts and mental states, the very opposite of what James found: inevitability. Richet considered the performances of his somnambulists on the order of reflexes—"Just as there are spinal reflexes, there are also cerebral, psychic reflexes"—and what was salient to him about these actions, however elaborate, was that they could not be helped.[106]

> Instantly, by a brusque and sudden association of ideas, the emotions, the language, the tastes, the supposed habits of the person whom one believes oneself to be will appear, and with a very great force; there will be no means of escape; all will be imposed with absolutely imperiousness on the whole intellect.[107]

The language here shows us how this particular kind of association of ideas formed an easy harmony with an experimental psychology that was based on hypnotism—and particularly a

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[102] Ibid., 562.
[103] Ibid. Italics in original.
[104] Richet, "La personnalité et la mémoire dans le somnambulisme," 236, 238.
[105] James, *The Principles of Psychology*, vol. 1, 548-549. James first published the substance of the chapter on "Association" in 1880, in the *Popular Science Monthly*.
[106] Richet, *L'homme et l'intelligence*, 231.
[107] Richet, "La personnalité et la mémoire dans le somnambulisme," 234.

form of hypnotism that was conceived upon analogies with the theater. What would have been foreign to James's notion in this was the idea that the association formed independently of your own person. This was an association of ideas of which it was possible—indeed, very easy—to become a victim. Richet's subjects were not seen as creating the associations they enacted, as James would have seen them, but as being taken over. In fact, Richet expressly drew a comparison between his subjects' displays and the creative work of novelists and playwrights—only to reject it, on the grounds that real storytellers did not lose themselves in their fictions. Somnambulists, on the other hand, suffered a "partial amnesia," so that "under the influence of weak causes…they instantly lose the notion of their personality."[108]

> Instead of conceiving a type, they realize it…It is not in the manner of a hallucinating person, who attends, as a spectator, to images unrolling before him; it is like an actor, who, seized with madness, would imagine that the drama he plays is a reality, not a fiction, and that he has been transformed, body and soul, into the person he is charged to play.[109]

Here is the classic figure of Hume's philosophy of consciousness newly invigorated by late nineteenth-century experimental psychology. Hume, in *A Treatise of Human Nature*, had portrayed the mind as "a kind of theatre, where several perceptions successively make their appearance; pass, re-pass, glide away, and mingle in an infinite variety of postures and situations."[110] In 1893, this very passage seemed to the Cambridge philosopher James Ward to contain the basic error of "'modern' psychology," an association*ism* which continued to postulate a spectacle in the mind while declining to comment on the nature of the spectator.[111] Ward was a prominent critic of this theory in the *fin-de-siècle*—"the psychology of Hume

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[108] Ibid., 227.
[109] Ibid., 228.
[110] David Hume, *A Treatise of Human Nature*, vol. 1 (Oxford: Clarendon, 1888 [1739]), 253.
[111] Ward, "'Modern' Psychology: A Reflexion," 59. The theater metaphor exemplifies the problem of infinite regress in the Empiricist model of perception, as discussed in A. D. Nuttall, *A Common Sky* (London: Chatto & Windus, 1974).

reinstated…the triumph of Associationism"—along with William James.[112] Bergson, in the *Essai*, would offer a different critique of associationism's mental spectatorship which was no less dismantling than Ward's or James's. But we will see that Bergson's view depended on the very circumstance that Ward lamented: the way Hume's psychology was readily enlisted in current physiological investigations of the mind.[113] Bergson developed a rival psychology to Hume's from what late nineteenth-century physiologists made of Hume—a prime instance of dragon-slaying by means of the dragon's own claw. This was possible in part because physiological psychology in France assimilated Hume's account of the mind with a twist. For notice what has occurred in the last passage I quoted from Richet. The account of what suggestion does to the somnambulist has changed since Richet's initial statement of 1879: we are still in the same theater, but the somnambulist has changed positions. Observing her in the early 1880s, Richet can no longer consider her a spectator, but an actor.

It is a distinction that Bergson, too, will make, in the same terms, at the critical point of his argument for free will. The kind of actor who will give Bergson a way out of the problem of determinism is the very figure who now appears before the physiologist: a person capable of being "transformed, body and soul, into the person he is charged to play."[114]

4. The Theater of the Body

We can see what Richet's new comparison really captured about the nature of his somnambulists' transformations by observing that, in the course of the nineteenth century, what it meant to be an actor also changed. The most sensational actors of the *fin-de-siècle* acted with their bodies. The long prime of Sarah Bernhardt had begun in the late 1860s; for the next

[112] Ibid., 54. For James's critique, see *The Principles of Psychology*, vol. 1, 319-320.
[113] Ward, "'Modern' Psychology: A Reflexion," 59.
[114] Richet, "La personnalité et la mémoire dans le somnambulisme," 228.

half-century, audiences in Paris and abroad were captivated by the expressiveness of her body.[115] It did not deter her non-French-speaking audiences that, for over thirty years, she performed only in French.[116] It did not escape her French audiences and critics that she expressed a great deal even when mute.[117] "She does what none before her dared to do," wrote the drama critic Jules Lemaître in 1893, "She performs with her whole body."[118] Sigmund Freud, during the winter of 1885 that he spent as an observer in Charcot's clinic, also saw Sarah Bernhardt at the Théâtre de la Porte Saint-Martin, in the lavishly designed and costumed production of *Theodora.*[119] Afterward, what Freud tried to describe of the performance to his fiancée was an art of movements: "Every inch of this little figure was alive and enchanting [...] the postures she assumes, the way she wraps herself round a person, the way she acts with every limb, every joint—it's incredible."[120]

The language of hypnotism abounded in her praises, some of it quite scientifically exact: she "convulsed" audiences, administered "electric shocks" (proceedings direct from the Salpêtrière); even sophisticated theatergoers, men with literary reputations, felt that "she could

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[115] This part of my chapter owes much to Sharon Marcus's analysis of Sarah Bernhardt's performance techniques and their reception, "Sarah Bernhardt's Exteriority Effects," *Modern Drama* 60, no. 3 (2017), 296-321.

[116] "It is a sincere tribute to her artistry [...] that a theater public [...] should sit through four solid hours of dialogue they cannot understand with a rapt silence not untouched with awe." Eric Delamarter, *The Chicago Inter-Ocean* (1910), quoted in Marcus, 300.

[117] "Elle avait un don vraiment prodigieux et unique, celui de l'expression dans le mutisme," Etienne Ganderax, *La Revue de Paris* 5/6 (1930), quoted in Marcus, 314 n. 4.

[118] "Elle fait ce que nulle n'avait osé faire avant elle, elle joue avec tout son corps." Lemaître, *Revue Encyclopédique* (1893), quoted and translated by Marcus, 300.

[119] A smash hit about the Byzantine empress, by the *fin-de-siècle* playwright Victorien Sardou. On the material splendor of this production see Robert Gottlieb, *Sarah* (Yale, 2010), 137. Drawings of the costume and set designs have been digitized from the archives of the Association de la Régie Théatrale: http://www.regietheatrale.com/index/index/mises_en_scene/theodora-de-victorien-sardou.html

[120] Letter to Martha Bernays, translated by Marcus, p. 301. This passage of Freud's letter is quoted in several histories of theater and performance; Freud's period of study with Charcot is commonly acknowledged in histories of psychology.

seize and tear the nerves of her audience," that she "mesmerised one, awakening the senses and sending the intelligence to sleep."[121] Literature scholar Sharon Marcus, in her study of Bernhardt's physical virtuosity and the way audiences consistently described *their* physical experiences of watching her, has observed a direct relation between the two, writing: "contemporaries saw her ability to manage her own body as orchestrating theatregoers' corporeal responses."[122]

How did she do it? What did she do? What went into these performances and the way they were perceived will introduce us to the idea upon which the psychology of Bergson's *Essai* comes to be founded: the nature of qualitative experience. It is an experience Bergson will characterize by a particular dynamic of change. We will see that, for Bergson, this psychological dynamic emerges from a set of physiological phenomena and has physiological consequences. In the late nineteenth century this was a process you could witness, nightly, in the figures of Sarah Bernhardt and her contemporaries on the stage. In their approach to their art, these actors demonstrated how closely the body attended upon the mind's experiences, and the depth of physiological change involved in the psychological transformations they sought to effect. For our reading of Bergson this art will begin to indicate how a particular notion of psychological integrity could come from an experience of the body.

The word Bernhardt herself used to characterize her art was "exteriorization": as in "the exteriorization of love, of hate…of gentleness, of duplicity…of wit and of idiocy."[123] This is an ideal of aesthetic performance in which we can see the consummately expressive hand of the midcentury voice and acting teacher François Delsarte. From 1839 to shortly before his death

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[121] Quoted in Marcus, 308, 299, 312. The latter quotations belong to Lytton Strachey and Arthur Symons.
[122] Marcus, 309. On how this sense of the word "orchestrate" itself originates in the Mesmeric context of Victorian Britain, see Winter, *Mesmerized*, 309-320.
[123] Sarah Bernhardt, *L'Art du théâtre* (Paris: Editions Nilsson, 1923), 23. This work was dictated over several years late in Bernhardt's life and published posthumously.

in 1871, Delsarte taught a system of physical expression that made the body a precision instrument for conveying the states of the soul. Though he taught largely at home, in Paris, and published nothing, by reputation he came to draw some of Europe's leading performers, whose careers together spanned the rest of the nineteenth century.[124] The most famous of them were the English actor William Macready (1793-1873), the Prussian soprano Henriette Sontag (1806-1854), the French prima donna Caroline Carvalho (1827-1895), and the reigning actress of the Comédie Française at midcentury, Rachel (1821-1858).[125] Other kinds of public orators also came for lessons at Delsarte's home—government deputies, clergymen, lawyers—and in 1858 Delsarte began to address a larger public of artists and thinkers with a series of lectures on the aesthetic and scientific principles of expression, his "Cours d'ésthétique appliqué."[126] But the same system applied to everyone.

Delsarte taught that the meaning of words, spoken or sung, was really given by gestures and nuances of vocal inflection, not by the words themselves. "Gesture," he would say, "must precede speech…Every energetic passion, every deep feeling [*sentiment*], is thus

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[124] This reputation was also built upon his own performances as a singer. By 1840, he was one of the most famous singers in France, lauded as the "Talma of song" by the likes of Théophile Gautier (see for instance Charles Delaunay, *La Presse*, 6 December 1840; Gautier, *La Presse*, 28 October 1844).

[125] F. A. Durivage, "Delsarte," *The Atlantic Monthly*, May 1871: 613-620; Percy Mackaye, *Epoch: the Life of Steele Mackaye, Genius of the Theatre*, vol. 1 (New York: Boni & Liveright, 1927), 132-133; George Taylor, "François Delsarte: A Codification of Nineteenth-Century Acting," *Theatre Research International* 24, no. 1 (1999): 71-81. Historians of dance—for whom Delsarte became important—and some historians of theater also name Sarah Bernhardt as a pupil (eg. Helen Thomas, *Dance, Modernity and Culture* [Routledge, 1995], 48; Kenneth Pickering and Jayne Thompson, *Naturalism in Theatre* [Macmillan, 2018], 82), but I have not found a nineteenth-century source that does.

[126] Adolphe Guéroult, "Cours d'Esthétique Appliquée, par Delsarte," *La Presse* 18 May 1858; Arnaud, *François Del Sarte* (Paris: Delagrave, 1882), 229-234. On Delsarte's diverse clientele, see Alain Porte, "Four Reflections on François Delsarte," *Mime Journal* 23 (April 2005), 25-26. For a brief and dazzling account of what Delsarte's aesthetic inspired in twentieth-century America, including the development of modern dance, see Hillel Schwartz, "Torque: The New Kinaesthetic of the Twentieth Century," in Jonathan Crary and Sanford Kwinter (eds.), *Incorporations* (Zone, 1992), 71-126.

announced by an indication of the hand, of the head, of the gaze, before it is expressed in speech."[127] It was an aesthetic philosophy, as Hillel Schwartz has marvelously recounted, that rested on an essential harmoniousness among the activities of the body, the mind, and the soul.[128] But I think this was not what made Delsarte's teachings novel and sensational.[129] The strangeness of this aesthetic lies in its physiological suppositions and in how it was conceived to act upon the audience. There were two reasons why Delsarte gave precedence to gesture over speech. One, he found this to be true to the sequence of how people experienced things, great and small. The suspicion of a lover's betrayal, the revelation that one's enemy has murdered one's father—these experiences were felt first as a physical sensation, or impression; then as a deepening moral feeling, a "*sentiment*"; and only lastly as articulate thought.[130] The idea was that any situation evoked an immediate responsiveness of the person in the form of movement. This responsiveness Delsarte understood as given by nature. His aged pupils, relating his teachings after his death, would write of how "Nature incites a movement," and of "what nature imprints upon the gesture, the voice, the physiognomy—above all in extreme

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[127] "Le geste doit précéder la parole…Toute passion énergique, tout sentiment profond, s'annonce donc par un signe de la main, de la tête, du regard, avant que la parole ne l'exprime." Arnaud, *Francois Del Sarte*, 198.

[128] Schwartz, "Torque."

[129] The idea of harmoniousness of idea and physical expression is ancient; what changes is what's considered "harmonious." See, for instance, R. Darren Gobert, *The Mind-Body Stage: Passion and Interaction in the Cartesian Theater* (Stanford, 2013). For codified standards of physical eloquence in seventeenth- and eighteenth-century French theater, see for instance Benoît Gauthier, "François Delsarte et le jeu classique de l'acteur," *L'Annuaire Théâtral* 49 (2011), 175-187.

[130] These examples are taken from Delsarte's one-man enactments of *Othello* and *Guillaume Tell* in class, as told by his pupil Angelique Arnaud (Arnaud, *François Del Sarte*, 193, 97). *Othello* and other plays of Shakespeare were revivified in France in 1827, by a delegation of England's finest actors, including William Macready (F. W. J. Hemmings, *The Theatre Industry in Nineteenth-Century France* [Cambridge, 1993], 212). Rossini's *Guillaume Tell* premiered at the Paris Opera in 1829.

situations."[131] The way Delsarte sought to communicate the drama of each moment recapitulated this sequence from sensation to thought, for he wanted the audience to anticipate by feel all that was about to be expressed in words. A word his pupils transmitted to readers of the 1880s was "*pressentir*": "Make [the audience] *pressentir* (by attitude, gesture, physiognomy) what you want to make them feel."[132] The English approximation was "divine": "The basis of this art," reads an 1882 American translation of these teachings, "is to make the auditors divine what we would have them feel."[133] But the translation is inexact, unless you understood that it was the body that divined, not the mind: "Speech comes only to confirm what the audience already comprehends."[134]

This mute, seemingly indirect communicative process could be confirmed by watching Delsarte. In 1858, a few months after the public lecture course began, a rare account of the intimate "cours pratiques" that took place at Delsarte's home appeared in the newspaper *La Presse*. It was an excerpt from a pamphlet about to be published by Delsarte's pupil Angélique Arnaud, and it described how, often, in the course of instructing a pupil in a particular role, Delsarte could not help but launch into the part himself: "The student is brushed aside; Delsarte takes the role…And, before the artist has spoken a single word, he is transfigured."[135] Another observer, the wife of Delsarte's American protegé James Steele Mackaye, recalled of Delsarte in his last year of teaching:

> As he rose, there stood for a moment before you the figure of an old man, in a long, brown dressing-gown, a foulard kerchief carelessly tied about his neck, on his head a sort of house-cap like a biretta, on his feet the huge, shapeless, felt carpet-slippers so

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[131] Delaumosne, *Delsarte System of Oratory*, tr. Frances Shaw (New York: Werner, 1887 [1882]), 51; Arnaud, *François Del Sarte*, 156.
[132] Arnaud, *François Del Sarte*, 222.
[133] Delaumosne, *Delsarte System of Oratory*, 52.
[134] Ibid., 51.
[135] Arnaud, "Delsarte et son école. Cours pratiques," *La Presse*, 27 October 1858. Reproduced in Arnaud, *François Del Sarte*, 96.

> universally worn in France. In another instant there stood—whomsoever Delsarte chose to stand there.[136]

He changed wordlessly, and people seemed to understand him with their own bodies. Of his final class, given in July of 1870, as soldiers and munitions were moving across the city of Paris, a visitor recorded:

> He depicted the various passions and emotions of the human soul, by means of expression and gesture only, without uttering a single syllable; moving the spectators to tears, exciting them to enthusiasm, or thrilling them with terror at his will; in a word, completely magnetizing them.[137]

"Magnetize" is inexact, but it reminds us that there is, after all, a great difference between a fine actor and a sensitive somnambulist.[138] When Delsarte effected his metamorphoses, it was he who possessed command of himself and of his audience; it was the audience who felt themselves acted upon and who, at times, forgot that they were watching a demonstration. Arnaud reported in 1858:

> Del Sarte always remains master of himself, however impassioned he appears. Often, during his class, with all souls present hanging upon his every tone, he would abruptly interrupt himself, and give the role back to the student. Then, as though a magic wand had touched him, all the attributes of the character that had lived in him would vanish. His face, his height, his bearing would resume their normal manner. The artist had disappeared, and the professor calmly taken his place, without seeming to notice that the audience, — still agitated by the emotions that it just experienced, — reproached him for this too abrupt metamorphosis.[139]So we should not lose sight of Richet's qualification in the comparison he made: his somnambulists achieved transformations not in the usual way of actors, but in the way of an actor "seized with madness," who would forget that the play was not real.

Still—what the consummate Delsartean actor did have in common with the somnambulist subject of the last quarter of the century was in being conceived, first and

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[136] Quoted in Percy Mackaye, *Epoch*, 136-137. Also quoted in Thomas Leabhart, "Misunderstanding Delsarte (and Preserving the Cherries)," *Mime Journal* 23 (April 2005), 15.
[137] Durivage, "Delsarte," 614.
[138] His pupils reported that Delsarte called gesture "magnetic" (Delaumosne, *Delsarte System of Oratory*, 50), but that he was only an idle observer of the mid-century phenomena of magnetism and somnambulism (Arnaud, *François Del Sarte*, 70-71).
[139] Arnaud, "Delsarte et son école," reproduced in Arnaud, *François Del Sarte*, 100.

foremost, as a physiological entity. It was Delsarte who transmitted the word *organisation*, in the sense of the coordinated structure of a living body, into the language of the actor's art.[140] This was the essence of what made his teaching novel. The journalist Adolphe Guéroult, writing for the *Gazette musicale* when Delsarte's classes began in 1839, observed how Delsarte was taking the art of acting beyond its traditional aim—fidelity to the intention of the playwright—by asking his pupils a different question: "It is…a new goal that Monsieur Delsarte has proposed. Without neglecting the comprehension of the written work, he says to the actor: That's what you must express. Now, how are you going to do it? [...] Do you know the laws of your organization?"[141] Thirty years later, this word was inherent to the conception of the somnambulist as a physiological subject. Ribot would write, in *Les maladies de la volonté* (1883), the second of his widely read, pocket-sized studies of mental pathology, "The hypnotised subject is an automaton that one plays [*que l'on fait jouer*] according to the nature of his organization."[142] The pun on acting was not intended, which we can infer from the fact that the official English translation of this work avoids it (and from the fact that Ribot distrusted rhetorical wit, hallmark of unscientific philosophers).[143] The omission is unfortunate, because the English reader misses the indication here of something that was taken for granted, an inadvertent juxtaposition of different senses of *jouer* that speaks of the deep conceptual unity between the science of somnambulism and the art of acting. In the late nineteenth century, the distinction almost disappears between *jouer*—to act; *jouer*—to play an instrument; and *faire*

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[140] This original meaning of the word *organisation*, in French and English, dates back to the fifteenth century. OED.
[141] Nineteen years later Guéroult reprinted a portion of this earlier article in *La Presse* ("Cours d'ésthétique appliquée par Delsarte," 15 May 1858), on the occasion of Delsarte's public lecture series.
[142] Ribot, *Les maladies de la volonté*, 5th ed. (Paris: Alcan, 1888), 138.
[143] The authorized translation has: "The hypnotised subject is an automaton which is made to move according to the nature of its organisation." *The Diseases of the Will*, tr. Merwin-Marie Snell, 3rd English ed. (Chicago: Open Court, 1903), 105.

jouer—to set in motion, as one would do with a puppet (*faire jouer un pantin*). Delsarte taught that acting *was* the playing of an instrument—the actor's body.[144] Henri Beaunis, physiologist of the Nancy School, extolled the experimental value of hypnotic suggestion as the means by which "one can play the human soul as one plays an instrument."[145] In Ribot's expression the "organization" of a hypnotized subject is an instrument placed in the hands of another; how it could be played differed not at all from the instrument that Delsarte enjoined performers to understand.

Puppet, too, was a term of art for the actor. Contemporaneous with Delsarte's teaching career was another ideal of acting that, though it was not Delsarte's, exactly described how he appeared. This was the ideal of the *grand comédien* that Denis Diderot had described in the 1770s, in a dialogue that remained unpublished until 1830. The *grand comédien* was an actor who kept absolute possession of himself in a performance, by executing his role entirely without feeling. Diderot believed this was the only way an actor could give the exact illusion of experience, because real feelings, paradoxically, would compromise the precision required for truthful depictions. Behind the passionate figure who appeared on stage, the actor was to be, secretly, "a spectator, cold and calm," "a marvelous puppet, whose string the poet holds."[146]

Diderot's *Paradoxe sur le comédien* became an enduring provocation for the nineteenth century. Does a great actor feel? Does this make his acting better or worse? In the latter part of the century, Diderot's vocal opponents included two kinds of people of importance to this introduction to Bergson's *Essai*: actors and psychologists. Alfred Binet, as director of the Sorbonne laboratory of physiological psychology in the mid-1890s, submitted Diderot's theory

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[144] "Il apprend au comédien," wrote Guéroult in 1839, "…à manier avec art cet inimitable instrument qui est l'homme lui-même" (Guéroult, "Cours d'ésthétique appliquée par Delsarte").
[145] Beaunis, "L'expérimentation en psychologie par le somnambulisme provoqué," 24.
[146] Diderot, *Paradoxe sur le comédien*, in *Mémoires, correspondances et ouvrages inédits de Diderot*, vol. 4 (Paris: Paulin, 1831), 7, 58.

to an empirical investigation at the Comédie Française, believing that it "does not appear to rest on serious observation…The substance of his paradox is of astonishing paucity."[147] The physiologist and essayist George Henry Lewes, pausing in the middle of his magisterial work of physiology and psychology, *Problems of Life and Mind*, to make a volume of his disparate writings about actors, reserved his highest judgment for actors whom he believed acted with feeling. Two whom he found exemplary in this way were William Macready and Rachel. The same criterion marked others, like the Italian actress Adelaide Ristori (1822-1906), as essentially conventional and second-rate: "With great art," Lewes wrote of Ristori, "she employs the traditional conventions of the stage…but does not deeply move us, because not herself deeply moved."[148]

Importantly, on both sides of the question the test of truth was the same. It was the effect on the audience. What Diderot envisioned for the audience was a physical experience as powerful as what people later reported feeling after watching Sarah Bernhardt—only, Diderot believed these effects were not won by an actor actually undergoing the experience being portrayed. "Will one say," Diderot asked, "of such plaintive, dolorous tones, which this mother tears from the depths of her entrails, and which make mine quake so violently, that they are not produced by an actual emotion, that they are not inspired by despair? [Yes], not at all."[149] Diderot was convinced that the audience was moved only if the actor, in any given expression, struck the right "twentieth part of a quarter-tone"—something only an unperturbed intellect could achieve.[150] It was the actor who felt least who could make an audience feel most.[151] When

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[147] Alfred Binet, "Réflexions sur le paradoxe de Diderot," *L'Année psychologique* 3 (1896), 279.
[148] George Henry Lewes, *On Actors and the Art of Acting* (Leipzig: Bernhard Tauchnitz, 1875), 177. Others would likely have disagreed about the merits of Ristori, who was extremely popular, but what's important here is the criterion of Lewes's judgment.
[149] Diderot, *Paradoxe sur le comédien*, 14.
[150] Ibid., 14.
[151] Ibid., 11.

the British drama critic William Archer, attempting to settle this question in the late 1880s, canvassed the leading actors of the day, he pointedly defined "the great actor as 'he who powerfully affects his audiences'":

> …If we learn that many of the greatest actors (in this sense) confess to feeling acutely, and are observed by themselves and others to exhibit many symptoms of acute feeling, some of which are quite involuntary…if we discover that…the majority of players find by experience that they tend to produce a better effect when they play from the heart than when they play from the head alone…then, surely, we shall have made a considerable breach even in the irregular and baffling bastions of Diderot's position.[152]

For one effect, two exactly opposing causes. But if the disagreement appears unadjudicable—for, as William James remarked on a similar and related occasion, "Clearly such arguments as these may mutually eat each other up to all eternity"[153]—the contrast also reveals what was distinctive about the physiological body in the late nineteenth century. That is: those who were convinced that actors did and ought to feel believed that the internal experience of the actor made a difference on the performance, and that this difference was detectable. Their assumption was that the body would betray the mind—just not in the way that Diderot had imagined. Where Diderot perceived a constant threat of riot, the mind always called to attend to the body's volatility, his late nineteenth-century dissenters perceived a body that partook of, that even constituted, the mind's intelligence.[154] This body was a truth-teller, and acted in its own intelligible ways.

In the passage quoted from Archer above, the phrase that announces the kind of body we are dealing with is "symptoms of acute feeling, some of which are quite involuntary." These were the overt signs by which you could determine that an emotion was felt, rather than

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[152] William Archer, *Masks or Faces? A Study in the Psychology of Acting* (London: Longmans, 1888), 4-5.
[153] James, "Are We Automata?," 2.
[154] *Le rêve de d'Alembert*, composed concurrently as the first iteration of the paradox of acting, contains a vivid picture of Diderot's conception of mind-body relations. Diderot, *Œuvres complètes* t. 17 (Paris: Hermann, 1987).

merely displayed. "Symptoms" is itself a word in the language of detection: what certified their involuntary nature was the depth of bodily change they were understood to involve. On this Archer cited no less an authority than Charles Darwin. Darwin's 1872 *Expression of the Emotions in Man and Animals*, in addition to being an evolutionary argument, was a comprehensive catalogue of the visible signs of emotion and the interior mechanics that produced them.[155] Darwin was also more than a scientific reference for the physiology of emotions. For Archer and other, scientific investigators of emotions in the body, he supplied a way of seeing.

When Archer describes an exemplary actor's "passion-quivering" figure, noting the trembling lip, the contracted muscles of the throat, he shows how aptly the naturalist's eye befitted the current concerns of the theater.[156] In France, *The Expression of the Emotions* had an effect entirely unlike that of *The Origin of Species*: it incited immediate interest—a translation appeared in 1874—and afforded descriptions of lasting empirical value for psycho-physiology for the rest of the century.[157] Ribot would rely on Darwin's observations in his own *Psychologie des sentiments* (1896), and so would the physiologist Charles Féré, in his *Pathologie des émotions* (1892).[158] So, too, would Bergson, for the psychology of the *Essai*. Darwin's minute observations of the effects of emotions will form part of the empirical basis for Bergson's idea of quality and qualitative experience. And, by the time Bergson comes to write, experimental

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[155] See Janet Browne, "Darwin and the Expression of the Emotions," in David Kohn (ed.), *The Darwinian Heritage* (Princeton, 1985), 307-326; and Robert J. Richards, *Darwin and the Emergence of Evolutionary Theories of Mind and Behavior* (Chicago, 1987).

[156] Darwin discusses blushing, pallor, perspiration, and trembling as features of a variety of emotions in *The Expression of Emotions*, *The Works of Charles Darwin* ed. Paul H. Barrett and R. B. Freeman, vol. 23 (New York University Press, 1989).

[157] See Yvette Conry, *L'Introduction du Darwinisme en France au xixème siècle* (Paris: Vrin, 1974), 377-381.

[158] "Enfin parut l'ouvrage de Darwin qui fait époque," Ribot would write in *La Psychologie des sentiments*, "…Darwin le premier pose la question fondamentale : pourquoi et comment telle émotion est-elle liée à tel mouvement et non à tel autre." Quoted in Conry, 379.

developments in psycho-physiology—chiefly the work of Féré—will have deepened the picture of how emotions manifest in the body's interior.

But let us first see them manifest on the stage. Blushing, pallor, and perspiration were the chief "symptoms" for which William Archer sought testimony from actors. "Changes of colour," Archer wrote, were "utterly beyond the control of the will, and cannot possibly be simulated"; likewise perspiration, an activity that occurred at the discretion of skin pores. Yet good Hamlets have turned white, at the sight of his father's ghost; good Juliets have turned red. Archer reported that "at least three-fourths" of his respondents declared that "they themselves involuntarily change colour, or that they have seen others do so."[159] Perspiration was understood as a sign of emotional exertion where no physical effort was required or apparent. (Archer took as given that one did not perspire from "mere intellectual exertion.")[160] On this point his "informants" were "absolutely unanimous"—which is illuminating not for the statistical agreement (for the question was extremely leading)[161] but for the readiness with which all the actors queried believed their perspiring to be the consequence of an emotional effort, rather than some other action or preoccupation of the stage.[162] "'Emotion and perspiration go together,'" the Italian actor Tommaso Salvini was quoted replying, "'There are characters which call for scarcely any physical exertion, and which are nevertheless most fatiguing.'"[163]

[159] Archer, *Masks or Faces?*, 118.
[160] Ibid., 127.
[161] Archer essentially asked: A distinguished actor tells me that he perspires from the experience of emotion rather than physical exertion. Is this true for you? Ibid., 125.
[162] For instance, we today perhaps would just as readily say it was the effect of "adrenaline."
[163] Archer, *Masks or Faces?*, 129

By the 1880s, Salvini had become, by many lights, the preeminent actor in the world.[164] He, too, was famous for expressing his characters in every bearing of his body. The novelist Henry James, writing of Salvini's performances in Boston in 1883, returned again and again to descriptions of Salvini's "material powers," his "complete organization"; how, on simply appearing, the mere physical impression of him instantly gave "the assurance…that he holds the whole part in his hands."[165] At the same time, those who watched Salvini felt that what they read on his body and heard in his tones—whether or not they understood his speech, for of course he played everything in Italian—was indeed what transpired in his soul. The young Konstantin Stanislavski, seeing Salvini as Othello in 1882, was convinced that he had "not only made up his face and dressed his body, but also prepared his soul."[166] Of Salvini's Macbeth—for, his Italian notwithstanding, he was iconic for playing Shakespeare—Henry James wrote, "Salvini offers us a Macbeth whom we deeply pity, and whose delusions and crimes we understand, and almost forgive…He gives us a strange sense of being honest through it all."[167]

And Salvini did, before each performance, set about fashioning himself from the inside, a process he called "transmigration." He was famous for devoting hours to this task in his dressing room before appearing on stage, and sustaining the change into character for the full duration of a play, on- and off-stage.[168] This made him exactly the kind of actor George Henry Lewes most admired. It was seeing Salvini for the first time, in London in 1875, that prompted Lewes to return to his writing on acting. At this moment Lewes, an early contributor to the

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[164] Archer's sample comprised numerous British actors and some of international reputation, like Salvini. He explains that he was prevented from querying French actors by hostile French theater critics, who would not help him disseminate his questionnaire, so all the information about French actors in the book was researched (ibid., 10).
[165] Henry James, "Tommaso Salvini," *The Atlantic Monthly* (March 1883), 379.
[166] Konstantin Stanislavsky, *My Life in Art*, tr. J. J. Robbins (Boston: Little, Brown, 1924), quoted in Joseph Roach, "G. H. Lewes's Performance Theory: Towards a 'Science of Acting,'" *Theatre Journal* 32, no. 3 (1980), 319.
[167] H. James, "Tommaso Salvini," 381.
[168] Archer, *Masks or Faces?*, 145.

Revue philosophique on matters of physiology and to the *Pall Mall Gazette* on matters of modern drama, was in the midst of disagreeing with Thomas Huxley, who had declared his infamous hypothesis, in 1874, that consciousness was but an epiphenomenon of the body's machinery. Lewes's detailed refutation of Huxley, in *The Physical Basis of Mind*, did not appear until 1877. In the meantime, his *Actors and the Art of Acting* (1875) made an argument of its own about the indispensable causal efficacy of feelings.

Salvini was, in Lewes's terms, an actor who "personated"—identified himself so completely with his character that he took its place, and felt everything the character felt. The feelings to which he gave expression were thus his own, and this changed how he expressed them. By "the vividness of his sympathy and the plasticity of his organisation," Lewes wrote, the actor who personated could actually "*be* the part," rather than merely "*act* it."[169] It was because Salvini succeeded in this that Lewes felt, with such surety, that he could read in his face "the subtle and varied expression of uneasiness growing into haggard grief," as Othello was tempted by Iago; that Lewes perceived the import of a single dramatic gesture as "a gesture which *explained* the words 'chaos is come again'"; that Lewes could feel the way

> the whole house was swept along by the intense and finely graduated culmination of passion in the outburst, "Villain, be sure you prove, &c.," when seizing Iago and shaking him as a lion might shake a wolf, he finishes by flinging him on the ground, raises his foot to trample on the wretch—and then a sudden revulsion of feeling checks the brutality of the act, the *gentleman* masters the *animal*, and with mingled remorse and disgust he stretches forth a hand to raise him up.[170]

About a decade after this, to Archer's questioning, Salvini said,

> If you do not weep in the agony of grief, if you do not blush with shame, if you do not glow with love, if you do not tremble with terror, if your eyes do not become bloodshot with rage, if, in short, you yourself do not intimately experience whatever befits the diverse characters and passions you represent, you can never thoroughly transfuse into the hearts of your audience the sentiment of the situation.[171]

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[169] Lewes, *On Actors and the Art of Acting*, 175. Original italics.
[170] Ibid., 270-271.
[171] Archer, *Masks or Faces?*, 51.

Archer's questionnaire contained seventeen parts; none of them asked actors about forgetting. One question—directed at Diderot's premise that, once real feelings arise, all control is lost—asked actors if they maintained multiple "strata of consciousness" during a performance.[172] But this was a question about whether the mind could be preoccupied with several things at the same time, not a question about what an emotional experience of a role might compel you to forget. To French actors, however, Alfred Binet's investigation posed a different question.[173]

Binet, a pioneer in the scientific use of the questionnaire, conducted this study in person, among the *sociétaires*—the elite company—of the Comédie Française, in the early 1890s. Though its results were obtained and published after Bergson's *Essai*, Binet's study is instructive for understanding how the actor's art was seen during this period, especially by a fellow investigator of psycho-physiological phenomena. The nine actors Binet spoke to were "unanimous," he reported, "that Diderot's thesis is untenable."[174] That was the first question, and the investigation could have been very short. But then Binet took the inquiry beyond Diderot's terms. "The emotion of a role does not make up the whole role," he wrote, "A character in a play lives…it has its interests, its ideas, its character, in brief, a personality":

> …The actor who plays a role, and above all he who creates a role, must undergo a metamorphosis, forget for some hours his true personality in order to don a borrowed

[172] Again an extremely leading question. Ibid., 216.
[173] This is consistent with Ian Hacking's observation that the preoccupation with memory in any discussion of personality is uniquely Continental, owing to the Continental history of somnambulism. In the history of personality disorder, Hacking notes that questions about memory loss are absent in the Anglophone medical literature on the notion of double consciousness. See Hacking, "Double Consciousness in Britain, 1815-1875," *Dissociation* 4 (1991): 134-146; and *Rewriting the Soul*, esp. 150. Binet learned of Archer's work belatedly, through its inclusion in James's *Principles of Psychology*. Binet felt that they had reached the same conclusions and did not bother to look into Archer's work further, so he did not have a chance to realize that on the memory question they went in different directions (Binet, "Réflexions sur le paradoxe de Diderot," 279).
[174] Binet, "Réflexions sur le paradoxe de Diderot," 284.

> personality. Let us interrogate the actors on this point, without asking them to give anecdotes, but gathering their impressions with as much care as possible.[175]

Notice that forgetting is built in, and that there is no question here. Binet put before his actors a matter that was already decided: not even a hypothesis to be tested, but a request for examples.

From the actor Edmond Got, who had just capped a career of half a century at the Comédie Française, Binet reported:

> Monsieur Got, who has pushed so far the art of the plastic rendering of characters, tells us that the actor's greatest pleasure is the pleasure of metamorphosis. What he enjoys in his art is not to make the same grimace every night, it's to become another, to live for a while as a notary, a country curate, a lawyer, with other ideas than those familiar to himself.[176]

Got's younger colleague Jules Truffier also affirmed "'the gift of metamorphosis'" as the chief interest of his profession: "To forget oneself, one's habits, one's name, one's personality, that's what he loves about the theater," Binet recounted.[177]

In reporting these responses Binet did not always use quotation marks. Sometimes the actors are quoted directly; more often they are spoken for in Binet's exposition. The word *forgetting*, we have seen, was handed to the actors in the prompt, in the very definition of what goes into acquiring a different personality. The response to this question from the actor Paul Mounet shows the difficulty most starkly: we cannot tell what words came from the actor explaining his art and what from the psychologist explaining what he thought was going on. What *is* certain is that, to this question about the depth of the transformation desired, the psychologist found what he was looking for.

> Monsieur Paul Mounet says that one does not fully possess a part until one possesses its reflex actions, meaning that not only does one speak one's lines in the desired manner, but that the least acts, the unconscious movements, the manner of walking, of holding

[175] Ibid., 286. My underlining.
[176] Ibid., 287.
[177] Ibid.

> one's head, etc., are those of the character of the part. There is a whole unconscious adaptation here, which occurs progressively without one's reflection.[178]

We have seen William Archer ask actors to report on what they did that was *involuntary*; here, Binet received an actor's testimony—in all its paradox—of his own *unconscious* actions. It speaks to Binet's fixedness on his own objective, or to what he took to be self-evident, that he let these comments stand without a single reflection about how Paul Mounet could effect this adaptation if its progress was unconscious—how the actor could know that he had achieved the unconsciousness that he sought. It sufficed for Binet that the response so amply bore out the premise of his question about what constitutes a "personality." For us, it shows the extent to which these vigorous objections to Diderot were made in terms that would have been unintelligible to Diderot—for whom every theatrical illusion was willfully executed, for whom nothing involuntary could be expressive. Chief among these terms was the notion that the distinctiveness of a personality is apparent even in the manners of a person's reflexive behavior. And what went without saying for Binet and Paul Mounet was that, even though these actions are unconscious, it makes a difference *for the actor* if they are not performed: it changes how the role feels. We will see that Bergson's notion of what makes an experience *qualitative* depends on exactly the same assumption about the conscious effects of unconscious experience.

Paul Mounet was the brother of Jean Mounet-Sully, the star tragedien of the Comédie Française, as celebrated in France as his former stage partner, Sarah Bernhardt.[179] The Mounet brothers were known for a particularly stringent, self-eliminating ideal of acting. Binet reported without quotation marks:

> Mounet-Sully tells us: the composition of a character [*personnage*] consists not, as the expression goes, in putting oneself in the other fellow's skin. It's exactly the opposite: one evokes, one constructs, from historical study, from reflections, etc., a character, and

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[178] Ibid., 287.

[179] Mounet-Sully and Sarah Bernhardt were the great stage partnership of the 1870s, when Bernhardt was part of the Comédie Française.

> one makes this character enter oneself, one lets oneself be haunted by him⌜*on se fait hanter par lui*⌝; one surrenders to him one's body and soul, while trying to abolish, as much as possible, one's own personality.[180]

The paradox of this active surrender makes this passage difficult even to translate. I can only try to preserve the ambiguity that the sources themselves do not resolve. Mounet-Sully actively sought to be taken over. From this at least we can observe two things: that on the stage he gave an idea of what such takeovers looked like; and that this effort, however peculiarly directed, was enough to persuade Binet that the same phenomena occurred in acting as in hypnotic suggestion.

We have seen that, as a refutation of Diderot, Binet's "Réflexions sur le paradoxe de Diderot" dispensed with its opponent rather quickly. From the moment Binet announced that "the emotion of a role does not make up the whole role," the investigation moved onto another terrain, in which the terms of the query—*personnalité*, *mémoire*, *autre*—had no part in Diderot's thesis. It was still a question of *sensibilité*, feeling or not feeling, but now feeling had become synonymous—in a way even Archer had not seen—with transformation. "Monsieur Mounet-Sully is of the opinion that the emotion is felt and lived as though it were real," Binet wrote, and quoted the great actor: "'I have known, he says, the furors of parricide, at times on stage I have had the hallucination of the dagger plunged into the wound.' One reaches this state once out of a hundred tries; one's merit lies in getting close to it."[181] You got to this point by forgetting yourself, and you forgot yourself by getting to this point. Without a sense of your own self, you could experience not only the emotions but even the *sensations* of another person. "The circumstances evidently need to be exceptional for an actor to completely forget his personality," wrote Binet, "It's an ideal that some pursue, and those that desire it most, attain it

[180] Binet, "Réflexions sur le paradoxe de Diderot," 288. My underlining.
[181] Ibid., 290.

only once in a hundred attempts. Monsieur Mounet-Sully and his brother Monsieur Paul Mounet are those who seek this with the greatest intensity."[182]

You get the sense that Binet was searching, that he pressed this point. He wanted to hear the actors say that they routinely forgot themselves; he had to settle for an aspiration. But it sufficed. The final point of Binet's study was directed at Charles Richet. It was once believed, Binet wrote, that hypnotized subjects acting upon suggestion could effect more complete transformations of their persons than actors ever could, because "they believed in their role, while the actor knows he is an actor."[183] Whence Richet's qualification that his subjects were like actors who had lost their grip. Binet believed he had now revealed this to be an *a priori* assumption. "Our little inquiry in the world of acting has not confirmed these theoretical views," he wrote, "One cannot affirm that an actor plays without believing."[184] This meant that there was no essential difference between what you saw at the theater and what was producible by suggestion. "We think that between the actor and the subject of suggestion there is no radical difference, but simply a difference of nuance."[185]

The now-perfect analogy between the phenomena of acting and the phenomena of suggestion gives us a deeper sense of how each was perceived and understood. We notice the details that made the analogy apparent: the manifestation of involuntary physiological changes; the assimilation of one's own person to another, imagined one, to the point of being conscious of the other's sensations, of adopting the other's *unconscious* reflexes. These details also show what it meant to be, as Richet put it, "transformed, body and soul."[186] For the actor, this involved more than a sympathy of emotion; for the somnambulist, more than a change of

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[182] Ibid., 292.
[183] Ibid., 295.
[184] Ibid.
[185] Ibid.
[186] Richet, "La personnalité et la mémoire dans le somnambulisme," 228.

posture or expression. It was a wholesale takeover of a person, which could begin from a single idea: the notion of a character, for an actor; a suggestion, for a somnambulist.

Much later in his life, post-Nobel Prize, Richet would refer to the scientific interest in hypnotism during these years as "a singular story, and one that demonstrates better than any theory how bizarre and inextricable is the entanglement of effects and causes."[187] The analogy with actors did not improve this causal muddle. It was an entanglement that Bergson would exploit, in arguing for an autonomous preserve of the psyche on the very basis of the kind of change producible by suggestion. The totalizing dynamic of this change, from a single seed to wholesale takeover, is precisely what Bergson will generalize for all psychological experience. Improbably, in the very thoroughness of the psycho-physiological transformation that suggestion could effect, he will find an unimpeachable defense of the psyche *against* causal determinism.

Two kilometers away from the Mounet brothers, at the Théâtre de la Porte Saint-Martin, Sarah Bernardt would begin her evening like this: "Little by little, I would identify myself with my character. I would dress her with care; I would relegate my Sarah Bernhardt to a corner. I would make her spectator to my new 'self'; and I would take the stage ready to suffer, to cry, to laugh, to love."[188] Also to die. She was famous for her deaths, and her playwrights made the most of it, contriving spectacular scenes from which she would sometimes take more than an hour to recover. "I brushed against real death in my various deaths," she recalled, "My head became faint, my heart almost stopped beating, my chest was without air."[189] But she believed this was as it should be, for: "we must live our characters."[190]

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[187] Richet, *Mémoires sur moi et les autres*, manuscript at the Bibliothèque de l'Académie de médecine, dated by Jacqueline Carroy to ca. 1916 and quoted in her "Playing with Signatures," 407.
[188] Bernhardt, *L'Art du théâtre*, 204.
[189] Ibid., 74.

She knew of the method by which an actor professed to act without feeling. One of her favorite stage partners had long made his commitment to this practice known. This was the great comedic actor Constant Coquelin, who, in 1880, had unapologetically declared Diderot's paradox to be "the very truth":

> The actor is within his creation, that is all. It is from within that he pulls the strings that make his characters express the whole range of human emotions; and these strings, which are the nerves, he must have all in hand and play upon as best he can.[191]

To this Sarah Bernhardt had a succinct answer: And you wonder why he never succeeded at tragedy? Coquelin was internationally beloved as a comedic performer and, in 1897, the first, triumphant Cyrano de Bergerac. But, wrote Bernhardt after his death, "he was never able to stir the enthusiasm of his audience in the tragic scenes that he liked so much…The public remained cold before the despair that he expressed without feeling, faithful to his method."[192]

There was more here than a belief in the audience's discernment. The question was not lost on the anti-Diderots that much of the difference made on the stage by the genuine experience of emotion was not strictly visible to the audience. "Changes of colour" had to be seen through a great deal of make-up; how much Hamlet perspired on a given night was not fully apparent until he took off his damp costume; and from what seat could you perceive Sarah Bernhardt's slowing heartbeat and faintness of head? Yet actors swore by the effectiveness of "the genuine lump in the throat," and of not just tears but the tear-welled eye.[193] We hear from William Archer that Madge Kendal, the famous English actress, would prepare to play the wounded heroine of a popular *fin-de-siècle* drama by reflecting on the pains of her own past, "in order to induce in the lines of her face, and in her whole person, the stony rigidity" of the

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[190] Ibid., 203.
[191] C. Coquelin, *L'Art et le comédien* (Paris: Ollendorff, 1880), 24.
[192] Bernhardt, *L'Art du théâtre,* 72, 73.
[193] The British actor J. H. Clynds, quoted in Archer, *Masks or Faces?*, 90.

part.[194] In his conclusion Archer wrote, "It must not be supposed that these minute changes do not contribute appreciably to the illusion. We may not consciously note a blush, a sudden pallor, a particular quiver of the lip, distension of the nostril, or corrugation of the brow; but they produce their effect nevertheless."[195] Sarah Bernhardt believed that such effects were also inescapable: that not only did the audience perceive minute changes, but that it *could not help* perceiving. If the actor's art was complete, the actor was consigned to the full experience of the play—and so was the audience. "The audience," she wrote, "breathless, overcome, must, like the artist, not regain its free will until the fall of the curtain."[196] This would appear to make the late nineteenth-century theater the last place to look for a notion of liberty.

5. The Captive Audience

Already in 1879 Charles Richet had observed two far-reaching consequences of the centripetal sensation of movement. These constituted the centripetal phenomenon's considerable psychological import. The first was that here, as everywhere in the extended Claude Bernard universe, a process that became observable under pathological conditions—in this case, in somnambulating subjects—must also be considered operative under normal conditions. ("One is almost forced to admit it," wrote Richet.)[197] This gave his study's conclusion an impressive generality. Recall that a single gesture imparted to a somnambulating hysteria patient would flower into a full-body pantomime, from which Richet inferred that the initial gesture must have given rise to a particular idea. In a waking person, you would not observe this idea's irresistable realization in the person's countenance, posture, behavior—but

[194] Ibid., 142.
[195] Ibid., 208-209.
[196] Bernhardt, *L'Art du théâtre*, 75.
[197] Richet, "De l'influence des mouvements sur les idées," 614.

that did not mean that the communicated gesture was entirely without effect on the psyche. "It is…very likely," Richet wrote, "that, in individuals in the waking state, each movement provokes ideas and emotions just as in somnambulists…*Each movement, whether voluntary, reflex or communicated has an effect on the nervous centers and modifies the course of our ideas and emotions.*"[198] Some of these effects become evident to us, as when a movement of ours, proceeding automatically, apprises us of some perception or state of mind of which we had been unaware, but to which our body is already in the act of responding. "*The muscular sense,*" Richet wrote, "*is the route by which a great number of unconscious phenomena become conscious.*"[199] But our muscles also move in ways that we never perceive: these movements, too, Richet surmised, must have effects on the mind, which are then even more difficult to ascertain.

> We must further admit that, among muscular sensations, there are many that are not perceived and that, upon reaching the nervous centers, do not penetrate our consciousness. These unconscious sensations modify our thoughts and our emotions without our realizing. Ultimately, the state of the mind is (at least in large part) the result of exterior excitations.[200]

Richet spoke here of "muscular sensations" in general, without specifying at what depth in the body these might occur. But physiologists deploying inscription instruments soon documented a wealth of reactive movements in the body's interior. In the early 1880s, the plethysmograph, devised by the Italian physiologist Angelo Mosso, became an important addition to the experimental armory, measuring changes in the volume of blood in different parts of the body. These ebbs and flows attended—and divulged—intellectual activity, emotions, perceptions. The head, Mosso found, indeed swelled with thoughts; the limbs correspondingly diminished; the hands never maintained a constant size; and the internal

[198] Ibid., 614. Original italics.
[199] Ibid. Original italics.
[200] Ibid., 615.

organs appeared likely to be the most reactive of all.[201] When Mosso applied the plethysmograph to the bladder (of dogs), he found this organ responsive to *any* nervous excitation at the body's periphery: the bladder, he wrote, was "as good an aesthesiometer as the iris."[202]

The discovery that emotions manifested in the byways of the circulatory system contributed greatly to an 1884 theory of emotion that took the implications of the centripetal view of sensation to a logical extreme. "The researches of Mosso with the plethysmograph," wrote William James, "have shown that not only the heart, but the entire circulatory system, forms a sort of sounding-board, which every change of our consciousness, however slight, may make reverberate."[203] James had come to believe that feelings of emotion were no more than the aggregate of these reverberations in the body:

> Every one of the bodily changes, whatsoever it be, is *felt*, acutely or obscurely, the moment it occurs. [...] Our whole cubic capacity is sensibly alive; and each morsel of it contributes its pulsations of feeling, dim or sharp, pleasant, painful, or dubious, to that sense of personality that every one of us unfailingly carries with him.[204]

We will see, in the next chapter, how this uncompromisingly materialist thesis would enrich the introspective psychology of Bergson's *Essai*. The body in all of its sensitive depths will offer

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[201] William James reports a classic experimental result from the early days of plethysmography: "So slight an emotion as that produced by the entrance of Professor Ludwig into the laboratory was instantly followed by a shrinkage of the arms." James, *The Principles of Psychology*, vol. 1, 103-104. On the importance of plethysmography for late nineteenth-century studies of cerebral activity and the development of electroencephalography (EEG) in the twentieth century, see Cornelius Borck, "Writing Brains: Tracing the Psyche with the Graphical Method," *History of Psychology* 8, no. 1 (2005): 79-94.

[202] Angelo Mosso, *La Paura* (1884), quoted and translated in James, *The Principles of Psychology*, vol. 2, 1000.

[203] James, "What is an Emotion?" *Mind* 9, no. 34 (April 1884), 191. Original italics.

[204] Ibid., 192. And James believed this was why emotions were difficult to fake: their "total and integral expression" eluded anyone trying to conjure them "in cold blood." "We may catch the trick with the voluntary muscles, but fail with the skin, glands, heart, and other viscera. Just as an artifically instigated sneeze lacks something of the reality, so the attempt to imitate an emotion in the absence of its normal instigating cause is apt to be rather 'hollow'" (ibid.). This article was written prior to William Archer's investigation, but James would incorporate excerpts from Archer in the chapter on emotions in *The Principles of Psychology*.

Bergson a precise and novel critique of the notion of intensity, a key piece of his argument for the qualitativeness of psychological experience.

But a psyche that would come to appear decidedly underdetermined, for Bergson, first appeared thoroughly determined for physiologists. Plethysmography was taken up prominently in France by Charles Féré, personal secretary to Charcot at the Salpêtrière and experimental collaborator, with Alfred Binet, in efforts to defend Charcot's theory of hypnotism against the Nancy School.[205] In Féré's own researches, aided by the plethysmograph, the cardiograph, and most of all the dynamograph, which measured the strength of flexion of the hand, he sought to register some of the manifold psycho-physiological effects produced by "peripheral excitations."[206] In experiment, these excitations consisted of a range of colored lights, music, tastes, smells, various sights, and—significantly—"mental representations," all of which, Féré found, incurred changes in muscular force, which he could specify with a certain quantitative

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[205] The experiments I discuss here were done while Féré was at the Salpêtrière. In 1887 he became head of the physiological laboratory at the Hôpital Bicêtre in Paris. For details of the Binet-Féré experiments, see Mayer, *Sites of the Unconscious*, 70-92. For the longer arc of Féré's experimental practice see Dianne F. Sadoff, *Sciences of the Flesh: Representing Body and Subject in Psychoanalysis* (Stanford, 1998). Jonathan Crary discusses Féré's work in the context of the nineteenth-century "reform of vision" (Crary, *Suspensions of Perception*, 167-169).

[206] Charles Féré, "Sensation et mouvement," *Revue philosophique* 20 (1885): 337-368. Féré conducted many experiments on himself and fellow physicians, but he used hysteria patients—"the frogs of experimental psychology"—to obtain more dramatic dynamographic differences (ibid., 347). In hysterics he found a "grossissement considérable" of dynamic phenomena that would otherwise be "difficilement saisissables sur des sujets normaux" (ibid., 372). Dynamometers had been used to measure human effort since the eighteenth century—for this history see Anson Rabinbach, *The Human Motor: Energy, Fatigue, and the Origins of Modernity* [New York: Basic, 1990], esp. 30. Their designs were modified throughout the nineteenth century, and they were also made self-registering (eg. Marey, *La méthode graphique*, 298-302). Different investigators relied on different models of dynamometers; Féré preferred one designed by Duchenne de Boulogne and adapted for inscription by Charles Verdin, former assistant to Marey and the best known commercial designer of precision scientific instruments in the French *fin-de-siècle* (Féré, "Sensation et mouvement," 340). For further detail on Verdin and collaborations between experimental psychologists and instrument firms in this period, see Serge Nicolas, "The Importance of Instrument Makers for the Development of Experimental Psychology: The Case of Alfred Binet at the Sorbonne Laboratory," *J. Hist. Behav. Sci.* 52, no. 3 (2016): 231-257.

precision.[207] Such "dynamic effects" were manifest even in the body's viscera, as demonstrated by Féré's graphic depiction of an anal sphincter—

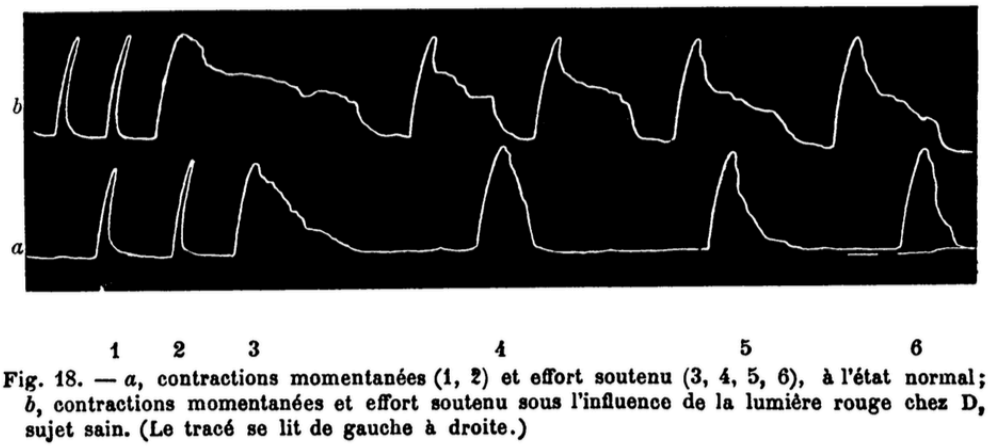

Fig. 18. — *a*, contractions momentanées (1, 2) et effort soutenu (3, 4, 5, 6), à l'état normal; *b*, contractions momentanées et effort soutenu sous l'influence de la lumière rouge chez D, sujet sain. (Le tracé se lit de gauche à droite.)

Fig. 2 Variations in contractions of the anal sphincter
Charles Féré, "Sensation et mouvement," *Revue philosophique* 20 (1885), p. 362.

—contracting with greater force under the influence of a red light (curve *b*).[208] He also found that a slight provocation of an organ considered insensitive—he gave a "weak pinch" to one of the lips of the cervix—increased the flexion force of a subject's hand, a phenomenon that persuaded him that peripheral excitations acted upon the body regardless of whether they were consciously perceived.[209] "All excitations," he wrote, "even unperceived, all *latent perception*, determine a dynamic effect."[210]

Féré's accumulating findings were presented at the Société de Biologie and the Société de Psychologie Physiologique, where Féré served as co-secretary, with Eugène Gley. The studies were published in long increments in the *Revue philosophique* beginning in 1885, which

[207] I will say more about the wide category of "mental representations" below. They included memories of movement and hallucinations induced under hypnotism.
[208] Féré, "Sensation et mouvement," 362.
[209] He does not specify, though, by what means he *reached* the cervix, a process to which a subject would not be insensible.
[210] Féré, "Sensation et mouvement," 361. Original italics.

Bergson would have been able to follow, and gathered in an 1887 monograph, which Bergson would cite in the *Essai*. What emerged from this series of experiments was a body reflexive to the core. Féré determined that the body's visible movements gave only a partial picture of a more profound reactivity.[211] "Each impression," he wrote, "sets the whole organism moving," and in mechanically determined ways.[212] Only the very high number of these movements, dispersed throughout the body, momentarily forestalled the formulation of a mathematical law of "psycho-mechanics."[213] But the first step toward such a law was a comprehensive recognition of inputs. "All *circumfusa* act upon man," Féré concluded in 1885, "even apart from any state of consciousness, by modifying the form and intensity of his energy…Every excitation, however weak it might be, necessarily determines a movement."[214]

The idea was extreme, but the discovery of such movements was not marginal. William James would give the same account of the body's ongoing and little detected responsiveness in *The Principles of Psychology* (1890):

> Every impression which impinges on the incoming nerves produces some discharge down the outgoing ones, whether we be aware of it or not. Using sweeping terms and ignoring exceptions, we might say that every possible feeling produces a movement, and that the movement is a movement of the entire organism, and of each and all its parts. What happens patently when an explosion or a flash of lightning startles us, or when we are tickled, happens latently with every sensation we receive. The only reason why we do not feel the startle or tickle in the case of insignificant sensations is partly its very small amount, partly our obtuseness.[215]

James went on to cite the experimental evidence of the last ten years, the largest portion of which came from Féré, accompanied by Féré's graphs. James took these developments to be confirmations of an old law, Bain's "Law of Diffusion," by which sensations and emotions were

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[211] Changes in facial expression, for example, "ne font que participer à un mouvement général, qui, lorsqu'il ne se traduit pas par un changement de forme extérieure, peut se manifester par des effets viscéraux," (ibid., 362).
[212] Ibid., 362, original italics.
[213] Ibid., 363.
[214] Ibid., 368.
[215] James, *The Principles of Psychology*, vol. 2, 994.

understood to "diffuse" through the body, starting from the "moving members"— the mobile parts of the face, in particular—and progressing through the glands, viscera, and sexual organs.[216] Féré, too, had acknowledged Bain, but his work refined this principle, and the refinement created a different view of the body's experience. For when Féré concluded that the body's visible movements comprised only a partial view of a mobile whole, he meant that the body's reactions were concerted and instantaneous. Any sense of a progression was merely the artifact of a lagging consciousness. In his monograph of 1887 Féré wrote:

> Every excitation, every mental representation makes the whole nervous system vibrate in unison…When red light impresses upon the eye, our whole body sees red, as shown by dynamometric reactions; when we pronounce a word all our muscles have the appropriate tension; and the same for all emotions.[217]

In 1886 he presented further evidence of the body's reflexive depths. He discovered that women, during pregnancy, developed a natural means of magnifying the imperceptible movements of the viscera. This means was the fetus, who comes to make perceptible movements in response—Féré surmised—to the unconscious movements of its mother's uterus impinging upon it. The fetus's movements were reflexes engendered by reflexes—the mother's—which, in turn, reported on the mother's conscious and unconscious experiences.[218] This was how Féré explained why a pregnant woman will feel her fetus stir, sometimes violently, when she receives a shock to her senses or during moments of emotional duress. It was her uterus, provoked to reflexive movement by her thoughts, whose actions were now divulged by a tiny truth-teller installed in the depths of the larger one.

This deep reflexivity of the body had another face: it indicated the body's equally deep capacity for perception. Again and again, the body proved sensitive to impressions to a degree

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[216] Bain, *The Emotions and the Will* (1859, last revised edition 1899), quoted in James, *The Principles of Psychology*, vol. 2, 995.
[217] Féré, *Sensation et mouvement* (Paris: Alcan, 1887), 146.
[218] Féré, "Sensation et mouvement. Contribution à la psychologie du fœtus," *Revue philosophique* 21 (1886), 257.

far surpassing the conscious range of the mind. To say "our whole body sees red" was to say that any given sensory perception really comprised a dispersed array of reflexes—and thus, to multiply the body's receptive surfaces, its levels of perception. This is what we will see Bergson turn to his own purpose, when he cites Féré in the *Essai.* Bergson will not follow Féré to a deterministic conclusion. But it is a body endowed with this depth of sentience that will yield the rich psychological experience of Bergson's *durée réelle.*[219]

The perceptiveness of the body was not what Féré emphasized in his own conclusions, and not what readers of the *Revue philosophique* were told to take away from his monograph. By 1887 Féré came to suspect that, if all movements were traceable to some provocation, a person's very ability to act could *depend* upon such provocation. "Every peripheral excitation determines an increase in potential energy": and if dynamometric force varied according to the intensity and duration of excitation—which Féré had found to be the case for exposures to light and sound, two sensory inputs that were themselves readily quantified—then, in the total absence of excitation, a person's dynamometric force might expire altogether.[220] And this was what he found, more or less, in hysterics, his privileged subjects, in whom ordinary physiological processes could be seen, he believed, in "exaggerated" form, as though under magnification.[221] Just as these subjects demonstrated the most dramatic increases in

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[219] Jonathan Crary takes Féré to epitomize a change in the scientific vision of the body that veered heavily into excesses of abstraction. Crary reads Féré's "the whole body sees red" as a statement of the shift to a "nonoptical" model of the human subject, and believes that Féré's work, "far from discovering any 'natural' functions," consisted of deconstructing the act of seeing (and other human experiences) into a sensori-motor process (Crary, *Suspensions of Perception*, 167). I think the body that Féré's work made apparent was more than "nonoptical," and that Crary's misreading here is what forces him to misread Bergson as an obvious antidote to a dehumanizing science. Crary writes, "For Bergson, such demonstrations [Féré's] are ultimately irrelevant" (ibid., 166, n. 35). This misses a significant part of the empirical basis of Bergson's philosophy.

[220] Féré, "Sensation et mouvement," 359.

[221] Ibid., 351.

dynamometric force upon slight provocations, a lack of stimulation also left them nearly immobile:

> These phenomena of excitation and attenuation of function according to the presence or absence of stimulants are evident above all in certain subjects and in hysterics in particular: one often sees them experience, upon waking, a painful sense of fatigue, at times with tendency toward lipothymias [fainting]; their movements then are also difficult and slow; many have remarked that their feet and their hands have diminished in volume and that their rings fall from their fingers. In some of these subjects, dynamometric pressure is approximately zero in the dark.[222]

These were the findings that the reviewer of Féré's monograph for the *Revue philosophique*, Pierre Janet, received with the greatest interest. The correlation between excitation and the "motor force" of a subject appeared to Janet to contain a fundamental explanation for a well-known condition: the extraordinary susceptibility of some individuals to the influence of others, with therapeutic effects. "Could one not explain by this," Janet wrote, "the happy and tonic influence, so to speak, that certain magnetizers claim to exercise upon their subjects, as well as some of the efficacy of magnetic passes?"[223] Janet did not give names, but in 1887 the most prominent and medically recognized instances of "happy and tonic" therapies achieved by "magnetizers" were the clinical successes of the Nancy School.[224] Janet saw that Féré's conclusions about the vital role of excitations could place the burden of explanation for these cures upon the receptive condition of the subject, rather than upon the particular potency of a suggestion. Of such "predisposed" subjects Janet wrote: "Their force, or rather their reserves of force, being insufficient, they are sensitive to all dynamogenic excitations arriving from outside, and they react immediately."[225] In his concluding remark Janet endorsed the fundamental hypothesis about the nature of the body that Féré believed the experiments confirmed: "It is in

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[222] Féré, "Note sur les conditions physiologiques des émotions," *Revue philosophique* 24 (1887), 564-5.
[223] Pierre Janet, review of Ch. Féré, *Sensation et mouvement*, *Revue philosophique* 24 (1887), 201.
[224] On the blurriness of the distinction between the words "magnetism" and "hypnotism" in this period, see note 13.
[225] Janet, review of Ch. Féré, 201.

these cases," Janet wrote, "that, more than ever, the organism seems to be an extremely delicate machine that needs to receive forces from outside before transforming these into muscular movements."[226] "The human organism," Féré had concluded, "however complicated, has thus reacted like any other body under the influence of exterior agents."[227] That many of these reactions still "eluded analysis" was of little consequence for a projected picture of complete mechanical determinism.[228]

And this picture extended beyond the movements of the body. In addition to the correlations that Féré found between "quantity of excitation" and "quantity of reaction" in exposures to light and sound, he discovered a third correlation that might appear, to us, to be of a different order. When a sensitive subject was made to watch flexions of the hand executed by another person (that is, by the experimenter, Féré), the subject would report the sensation of that movement in his own hand, though this was not moving. A dynamographic measurement taken at this moment would yield a substantial increase in force, by a third or a half, a change corroborated by the plethysmograph—

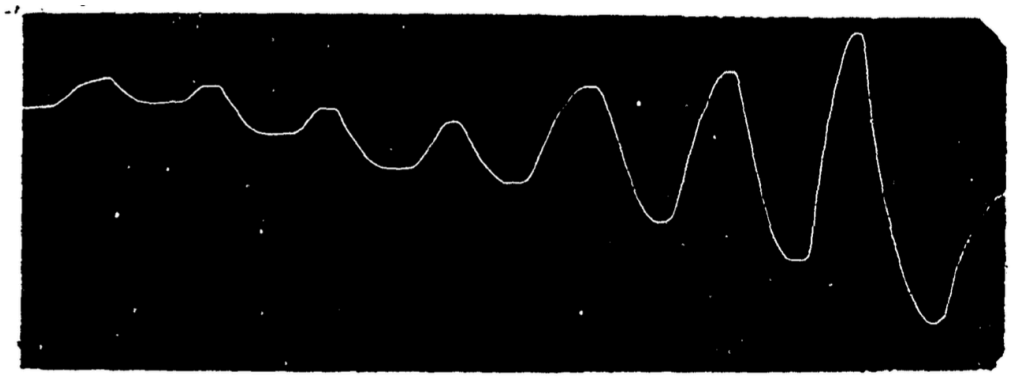

Fig. 4. — Modifications de volume de l'avant-bras et de la main à la vue des mouvements de flexion de la main. (Le tracé se lit de gauche à droite.)

Fig. 3 Volume change of the forearm and hand upon visual perception of movement
Charles Féré, *Sensation et mouvement* (Paris: Alcan, 1887), p. 14.

[226] Ibid., 199, 202.
[227] Féré, "Sensation et mouvement," 359.
[228] Ibid.

—showing the dramatic swelling of the subject's hand and forearm as he *watched* the movement being performed.[229] (This, then, is how the arm "sees.") If no measurement was taken and the mere sensation of flexing allowed to persist, the subject would soon begin to make the movement himself—"irresistibly," wrote Féré.[230] Féré explained this phenomenon, too, as a direct correlation between "intensity of excitation" and energy of reaction. But what appears to differ here from the experiments with light and sound is the quantity that Féré took to be intensifying. Not the initial movement, which he did not bother to quantify: instead, the correlation was between the dynamogenic force produced and the intensity of the subject's "mental representation" of the movement being performed. [231] The intensification was a mental affair. Féré called the phenomenon "psycho-motor induction."

We enter now into a real tangle of cause and effect. The idea at the heart of psycho-motor induction was that the body, upon seeing a movement, tends to replicate it. In the context of French psycho-physiology, this idea became a universal key. It fortified the claim of physiologists to the study of the mind, and it came to furnish, by 1887, the scientific solution to the problem of mind-reading, *la suggestion mentale.*

First, to return to the particular correlation between thought and movement that psycho-motor induction allowed Féré to identify. We have seen a similar correlation demonstrated before: Eugène Gley, only a year prior to Féré's experiment, had registered the body's unconscious movements as indications of the mind's closely guarded thoughts; Gley, too, had observed that these movements became more pronounced as the mental "image" of the secret object "intensified."[232] Gley's aim was detection; Féré's was measurement. Féré's dynamogenic experiments with sensations had yielded energetic quantities that correlated with

[229] Féré, *Sensation et mouvement*, 14.
[230] Féré, "Sensation et mouvement," 342.
[231] Ibid.
[232] Gley, 453.

the color spectrum or with the amplitudes of sounds; he even hazarded that, at least for sights and sounds, there might be a basic "unit of excitation": the "vibration."[233] And he took the dynamogenic effects of psycho-motor induction to be consistent with these findings, even though there was no ready scale of measure for mental representations and he did not look for another unit of excitation. This was because, even in the absence of a detectable vibration, he effectively had another unit of measure: the dynamogenic effect. There was no discrepancy for him in speaking of the "intensity" of mental representations, just as that of light or sound, because he could measure any change of intensity by the difference revealed by the dynamograph. This was just what he did with tastes, ranging sweet, savory, and bitter sensations according to a "dynamic gamut" that he took to be "analogous to the color spectrum."[234] The same dynamic gamut could order the intensity of thoughts.

Such a gamut would have been equal to an illustrious company of quantitative concepts in the history of science, born, as Theodore Porter writes, of "promiscuous measurement, informed by a few simple analogies."[235] The analogies here are also historically illuminating. When Bergson comes to critique the very notion of intensity, on the grounds that it has been conceived as an illegitimate admixture of cause and effect, it will be a critique instantiated by Féré's experimental practice and the analogies that informed Féré's measurements. The consistency with which Féré regarded the dynamogenic effects of intensifying sensations and those of intensifying thoughts also reveals an important aspect of how Féré understood all "peripheral excitations": everything—light, sound, the sight of other people's movements—had an effect on the mind, and so dynamogenic consequences could be taken as a measure of the mind, too. In fact, the mind was as dependent upon exterior excitation—to function—as the

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[233] Féré, "Sensation et mouvement," *352*, *355*. He was aware of his echo of David Hartley here and proposed that Hartley's work be revisited.
[234] Ibid., *356*.
[235] Theodore M. Porter, *Trust in Numbers* (Princeton, 1995), 18.

rest of the body: "We only know exterior objects," Féré wrote in 1886, "by the motor reactions that they provoke throughout our whole organism."[236]

Psycho-motor induction requires at least two people. If one person's movement incites another's, and movements instruct the mind, a channel of silent communication begins to open. And if it becomes plausible that the movement of the first person is itself consequent upon a thought—willed or not, *conscious* or not—then the only limits to the possibility of this communication are the limits of perception. "It's possible," wrote Féré in 1887,

> that certain subjects particularly sensitive to the phenomenon of psycho-motor induction unconsciously imitate the movements that necessarily accompany the idea of whomever is in their presence, and are consequently brought to experience the same emotion, the same thought, in a word, to obey what one calls mental suggestion.[237]

The pieces of this puzzle have now assembled to explain, to those involved, the phenomenon with which this chapter began. In 1886 Bergson's experiment was one of several investigations of mental suggestion published in the *Revue philosophique*.[238] In 1887, Féré's monograph summed up the consensus: "Nothing takes place in the mind without a modification of substance and no one can say at what point these modifications of substance cease to be perceptible."[239] In a way, this solution was analogous to William Carpenter's diagnosis of

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[236] Féré, "Sensation et mouvement. Contribution à la psychologie du fœtus," 259.
[237] Féré, *Sensation et mouvement*, 16.
[238] Pierre Janet was an instigator in several that were presented to the Société de Psychologie Physiologique from 1885-1886 and published in the *Revue philosophique* under that rubric. In his review of Féré's book, Janet welcomed Féré's solution to mental suggestion as "une supposition ingénieuse et dans bien des cas très vraisembable" (Janet, review of Féré, 200). See Janet, "Note sur quelques phénomènes de somnambulisme," 190-198; and "Deuxième note sur le sommeil provoqué à distance et la suggestion mentale pendant l'état somnambulique," *Revue philosophique* 22 (1886), 212-223; J. Ochorowicz, "Sur le problème de la suggestion mentale," idem., 208-212; Albert Ruault, "Le mécanisme de la suggestion mentale hypnotique," idem., 679-697.
[239] "…rien ne se passe dans l'esprit sans une modification de la substance et personne ne peut dire à quel point ces modifications de substance cessent d'être sasissables." Ibid., 119. The same views were expressed by the physician Albert Ruault to the Société de Psychologie Physiologique as early as 1885, but not published until late 1886, well after Bergson had conducted his experiment.

"thought-reading" as muscle-reading—but for two key differences. One: it was the body that divined, not the mind. It was the body, by its unconscious mimicry of the tell-tale movements of another body, that instructed the mind—a situation that Ian Hacking has deftly appraised as, "Your thoughts…show up in my muscles rather than my mind."[240] Two: this process required no voluntary or even conscious exertion. Mind-reading was not an affair of Stuart Cumberlands: any *névropathe* will do. If you possessed this condition, then no movement may be too fine, and you *could not help* but perceive it. The perception—the excitation—would have the compulsive power of a hypnotic suggestion.

The theory of suggestion, as articulated by Bernheim, the leader of the Nancy School, readily accommodated the mechanics of excitation. This is one way to see the resolution of the dispute between the two schools of hypnotism. Charcot had understood hypnotism as a physiological susceptibility to various mechanical agents: bright light, loud noises, the application of pressure and of metals, magnets, and electrodes.[241] The means by which Charcot induced hypnosis—flashing a light or striking a gong—rested on this principle of excitation.[242] But suggestion was protean: the "ideas" by which it was purported to act on the mind could be conjured by any mechanical agent, acting on any sense. Bernheim wrote of the potency of "sensory suggestions" even for people with no particular nervous affliction.[243] Féré, even within the embattled Salpêtrière, recognized in 1886: "Suggestion can be produced by processes difficult to appreciate. For it is not only by the voice of another that it is produced…it can also be determined by extremely various actions on each of our senses, including the muscular

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[240] Hacking, "Telepathy: Origins of Randomization in Experimental Design," 439.
[241] Charcot wrote of "excitations mécaniques" (Charcot, "Sur les divers états nerveux déterminés par l'hypnotisation chez les hystériques" [1882], 404).
[242] Yes, the Salpêtrière had a Chinese gong (Jerome Schneck, "Jean-Martin Charcot and the History of Experimental Hypnosis," *J. Hist. Med. and Allied Sciences* 16, no. 3 (1961), 304.) Féré would produce dynamographic curves tracing its effects (Féré, "Sensation et mouvement," 352, fig. 7, 9).
[243] Bernheim, *De la suggestion et de ses applications à la thérapeutique* (Paris: Doin, 1888), 185.

sense."[244] The burden was on Charcot to eliminate the element of suggestion from his experiments, and he could not. By 1890, the Nancy School had prevailed.[245]

But the triumph of suggestion was not an endorsement of the mind's jurisdiction over the body, despite the therapies that the mind could be induced to effect. In fact, suggestion reinforced a centripetal view of cause and effect between body and mind. Between the exterior causal agent (for instance, the physician) and the bodily effect, suggestion interposed an "idea"—but this served only to loop the mind more firmly into the process, to conscript it more explicitly in the action of the agent. "What is suggestion," wrote Féré in 1887, "but a provoked mental representation?"[246]

"Our acts can be determined," wrote Richet, "by causes of which we know not."[247] This, in a sentence, is the story of somnambulism in the late nineteenth century. It is also the story, potentially, of waking life in the same period. The physiology of the 1880s, by state-of-the-art objective measures, discovered some of these clandestine causes. They turned out to be ubiquitous and banal. This confirmed the theory of the Nancy School that suggestion was not confined to the clinic: it was just how the mind worked. "The normal condition," Bernheim wrote,

> the physiological condition, to a rudimentary degree, presents phenomena analogous to those that one observes in hypnotism…[for] there exists in our cerebro-spinal nervous apparatus a certain automatism by which we accomplish, intentionally or not, the most complex acts; by which we submit, in some measure, to orders that are given to us, to movements communicated to us, to sensory illusions suggested to us.[248]

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[244] Féré, *La médecine d'imagination* (Paris: Delahaye, 1886), 9.
[245] See James, *The Principles of Psychology*, vol. 2, 1199. James attended the 1889 Congress on Physiological Psychology in Paris, which had been a confrontational affair. See the *Comptes rendus du Congrès de psychologie physiologique* (Paris: Doin, 1889), especially the events of August 9.
[246] Féré, *Sensation et mouvement*, 18, n. 1.
[247] Richet, "La personnalité et la mémoire dans le somnambulisme," 242.
[248] Bernheim, *De la suggestion et de ses applications à la thérapeutique*, 188.

Everyone, to some degree, was "predisposed." For Féré, it was reflexes all the way up, all the way in. "In sum," he wrote in 1886,

> the fetus in the uterine cavity reacts, one can say inevitably, not only to all the excitations that reach it directly, but to all the sensations, perceived or not, to all the mental representations, of its mother. When it comes into the world it already has a foretaste of the so-called liberty that it will enjoy.[249]

So it is surprising to find the language of suggestion enlisted in a philosophical defense of the psyche against determinism. Suggestion will be Bergson's language of choice in the *Essai*, though all of its terms—*hypnosis, imitation, capture, absorption, actor*—are weighted against him. Repeatedly in his argument, Bergson will invoke the familiar phenomena of somnambulism, to illustrate a causal relation of another order, so foreign to a determinist regime that he will refuse to even call it causal: it is "suggested, and not caused."[250] But, in the 1880s, to invoke somnambulism in an argument for free will is like trying to reach a destination by walking in the opposite direction.[251]

For not only did the phenomena of suggestion seem to others to confirm that the same causal laws were operative in the mind as in the body. Suggestion was exemplified, after all, by a condition most defective in personal agency. In *Les maladies de la volonté* (1883), Ribot described somnambulism as a prominent case of the will's "extinction."[252] He presented this case as a state of perfect puppetry: "At the voice of the operator," Ribot wrote, "the hypnotised subject stands up, walks, sits down, sees absent persons, travels, describes landscapes. He has, as the phrase goes, no will but that of the operator."[253] The strings of this puppet are none other than the subject's physiology. "The hypnotised subject is an automaton that one plays

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[249] Féré, "Sensation et mouvement. Contribution à la psychologie du fœtus," 258-9.
[250] Bergson, *Essai sur les données immédiates de la conscience* (Paris: Alcan, 1889), 13.
[251] See Lewis Carroll, *Through the Looking Glass, and What Alice Found There* (London: Macmillan, 1872), 34-35.
[252] Ribot, *Les maladies de la volonté.*
[253] Ribot, *The Diseases of the Will*, 104.

according to the nature of his organisation. There is an absolute annihilation of the will, the conscious personality being reduced to one single and unique state, which is neither chosen nor repudiated, but undergone, imposed."[254]

And yet: somnambulism and suggestion will offer Bergson a model of psychological integrity and individual liberty, a way of understanding the psyche in its most personal aspect, capable of acts that Bergson believed to be the freest expressions of the self. Ribot's book will go through 25 editions over the next quarter-century. The ideas it encapsulated will be an epistemic vise from which Bergson must work the theory of the *Essai* free.

[254] Ribot, *The Diseases of the Will*, 105, translation modified; *Les maladies de la volonté*, 138.

Chapter 3

THE DURÉE OF THE BODY

The Metaphorical and the Empirical in Bergson's New Psychology

> By his metaphor the speaker is trying to communicate what he believes to be a fact.
>
> — C. S. Lewis, *Studies in Words*[1]

1. The Facts of Psychology

Beginning in 1884, Bergson lived at 38 route d'Aubière, in Beaumont, about three kilometers due south of the lycée Blaise-Pascal, where he taught, at the center of Clermont-Ferrand. For some years you could look for him on that road, walking downhill to Clermont, walking uphill back, as the sun set on the volcanic plateaus to the west. Within months of arriving for the 1883-1884 school year, Bergson reported to his friend Albert Kahn that he had taken up the philosophical work he had had to put off, from month to month, for the last two years.[2] This would become the *Essai sur les données immédiates de la conscience*, which he would submit to the Sorbonne, in 1888, for his doctorate.

The *Essai* was an argument for the liberty of the psyche against scientific and philosophical determinism. Its insights were the result of a resolutely introspective psychology. But this was not a form of introspection that either the "new" scientific psychology, promoted

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[1] Lewis, *Studies in Words* (Cambridge, 1960), 216.

[2] "Quoi qu'il en soit, j'ai infiniment plus de liberté que je n'en avais à Angers. J'ai déjà pu entreprendre des travaux que, depuis deux ans, j'étais toujours obligé de remettre de mois en mois, la mort dans l'âme. Quant à la ville de Clermont-Ferrand, elle est très pittoresque, environnée de hautes montagnes, et à 15 minutes seulement de Royat, la ville d'eaux à la mode." Bergson, letter of early 1884 to Albert Kahn, in *Henri Bergson et Albert Kahn, Correspondances*, ed. Sophie Cœuré and Frédéric Worms (Strasbourg and Boulogne: Desmaret and Musée départemental Albert-Kahn, 2003), 68.

by Théodule Ribot, or the institutionally established metaphysical psychology, inherited from Victor Cousin, could easily recognize, either to reject or to embrace. Introspection—*observation intérieure* or *observation par la conscience*—was the centerpiece of Cousin's philosophy of Eclecticism, which he and his followers also called Spiritualism; under Cousin's extremely canny cultivation of a root Cartesian method, introspection had a specific, "technical" meaning in French philosophy for much of the nineteenth century, with a rigorously philosophized rationale and confirmed metaphysical results.[3] When Ribot launched his renegade career, he defined his enterprise against the introspective psychology he had been taught, determined to open the field of investigation for "the psychologist who does not limit himself to querying his consciousness."[4] Between Ribot's vision of a "psychophysiology" and "the old psychology," introspection was the methodological fault line. The line also marked an agreement. Ribot and his adversaries agreed on the distinction to be made between two kinds of "données": "les

[3] The results concerned the nature of the soul as a spiritual substance and its ability to understand the nature of the universe. This basic Cartesian affirmation was also common to the various non-Eclectic spiritualists who came to prominence after Cousin: Jules Lachelier, Félix Ravaisson, Alfred Fouillée, Émile Boutroux. The following definition of "introspection," collectively agreed upon by the first members of the Société française de philosophie, a group that included Bergson, thus reflects the broader relevance of this term beyond Cousin, whose name is not mentioned. The thinkers who produced this consensus all earned their philosophical credentials (degrees, monographs, academic chairs) in the late nineteenth century: "**INTROSPECTION**. [...] Observation d'une conscience individuelle par elle-même, en vue d'une fin spéculative : 1° soit en vue de connaître l'esprit individuel en tant qu'individuel ; 2° soit en vue de connaître l'esprit individuel en tant que type immédiatement observable de l'âme humaine en général, ou même de tout esprit, quel qu'il soit." A lengthier discussion follows, beginning with the explanation that introspection itself is a "terme d'origine anglaise, où il appartient à la langue usuelle. Il est plus rare et toujours technique en français." Also technical was the adjective form, "employé presque uniquement dans l'expression *méthode introspective*." André Lalande (ed.), *Vocabulaire technique et critique de philosophie*, 5th ed. (PUF, 1947 [1902-1923]), 519-520. For Cousin and the particular philosophical rigor of his highly effective doctrine, see Goldstein, *The Post-Revolutionary Self* (Harvard, 2005), esp. 165-171; and Brooks, *The Eclectic Legacy*, 29-66.

[4] "le psychologue qui ne se borne pas à intérroger sa conscience," Ribot, "Les mouvements et leur importance psychologique," *Revue philosophique* 8 (1879), 372. See chapter 3, section 2 for the prior discussion of this article.

données du sens intime" and "les données physiologiques."[5] And they agreed in how they identified any *donnée* as one or the other kind, as a phenomenon observable only by consciousness or as a material phenomenon of the body. The disagreement was over which of these kinds constituted the fundamental order of "facts" for a science of psychology.

The strangeness of the psychology of Bergson's *Essai* begins with Bergson's evident disregard for this distinction between two competing orders of facts. He does not even argue the distinction away; he simply conducts his analysis as though it were not there. The title of the work tells you which set of "données" you can expect to deal with: "the immediate givens"—or "data"—of "consciousness."[6] But as Bergson instructs you to introspect various everyday experiences—joy, sadness, liking, suffering—and tells you, in each instance, what he thinks "an attentive consciousness would find," you realize that the results of his introspection are unlike anyone else's.[7] Certainly the objects that appear to Bergson's introspection do not resemble the structured contents of the mind that you would have been taught in your lycée philosophy class. You would be hard-pressed even to identify his "données immédiates de la conscience" as mental phenomena, for although he invites you to analyze objects as immaterial as an "idea" or an "inclination"—"Analyze this inclination itself," he says; "Analyze this impression"; "Analyze

[5] Ibid. *Sens intime* is a term Victor Cousin preserved from the early nineteenth-century psychological thinker Maine de Biran and that Cousin took synonymously with *conscience*. This was the meaning generally associated with the Eclectic tradition at the turn of the century, despite the efforts of individual representatives, like Paul Janet, to parse a distinction. See Lalande, *Vocabulaire*, 518.

[6] In the English translation of the *Essai* that Bergson authorized in 1910, "Essai sur les données immédiates de la conscience" appears as the subtitle, "An Essay on the Immediate Data of Consciousness." The title of the work in English is *Time and Free Will.*

[7] "…une conscience attentive trouverait…" Bergson, *Essai sur les données immédiates de la conscience* (Paris: Alcan, 1889), 35.

the idea that you have" of intense suffering—what he has you notice about all of these is how they are attended by—indeed *constituted* by—numerous movements of the body.[8]

In other words, Bergson appears to conflate psychological phenomena with physiological phenomena, a confusion prepared by the very title of the *Essai*. "*Essai sur les données immédiates de la conscience*" promises to investigate one kind of *donnée* while hosting a gala exhibition of the other kind. This seeming misidentification is not trivial in French philosophy in the 1880s, and especially not for Bergson, whose job it is, as a lycée philosophy professor, to enforce the contemporary distinction between psychology and physiology that his own philosophy comes to elide. Bergson excels at his job, as inspectors from the education ministry, who visit his classroom yearly, invariably attest.[9] Then in 1888 he submits, to the highest guardians of philosophical orthodoxy in France, a doctoral thesis that shifts the ground of the psychological universe, by re-examining what the phenomenological "givens" of psychology really are.

It is not a revelation that the philosophy Bergson came to write was a departure from the philosophy he was employed to teach. But I challenge the prevailing scholarly view that there were two Bergsons, essentially irreconcilable, the original thinker and the state-sponsored *professeur de lycée*. I believe Bergson's participation in the lower ranks of the philosophical teaching corps had everything to do with what the *Essai* came to be. It was by scrupulously observing the pedagogical imperatives of the lycée philosophy program of the 1880s that Bergson came to develop a new psychology, radically unlike the psychology that the philosophy program itself prescribed. Chief among the new imperatives of philosophy instruction was the aim to teach psychology strictly as a science, a study of "facts"—the "*faits*"

[8] "Analysez cette inclination elle-même…"; "Analysez l'idée que vous vous faites…"; "Analysez cette impression…" Ibid., 35, 28, 21.
[9] Archives nationales F17/22552/A/Extrait 1.

or "*données*" of consciousness.[10] And a particularly important class of facts to be covered in the revised curriculum of 1880 included the phenomena that were the subject of the last chapter: the phenomena of somnambulism, natural and *provoqué*.[11]

It was this class of facts that led Bergson to his point of rupture, to rethink the nature of the *donnée immédiate*. As he taught the rudiments of psychology to his philosophy class, while attending closely to the experimental frontier I have described, he came to a new understanding of what constituted psychology's simplest empirical datum. The notes that remain from these classes, taken by his students, allow us to understand Bergson's particular insight and to ascertain, quite exactly, when and how he reached it. It was in the year 1886—the year, you'll recall, in which Bergson conducted his own experiment in hypnotism and contributed his findings to the discussion underway in the *Revue philosophique*.[12]

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"Voilà un fait."

This was how Bergson introduced his philosophy students in Clermont-Ferrand to the study of psychology, until as late as 1885.[13] He would present the class with a series of

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[10] These terms were used interchangeably. The report of changes to the philosophy curriculum in 1880 describes psychology as "la science des *faits* de conscience et de leurs *lois*" and as "une étude attentive des données de la conscience et des lois de la pensée." Henri Marion, "Le nouveau programme de philosophie," *Revue philosophique* 10 (1880), 422, 421. Original italics.
[11] This component of the 1880 curriculum is also a key piece of the history of the French reception of Freud. See Jan Goldstein, "Neutralizing Freud: The Lycée Philosophy Class and the Problem of the Reception of Psychoanalysis in France," *Critical Inquiry* 40 (2013): 40-82.
[12] See chapter 2, section 1.
[13] My account in this chapter of what Bergson taught in Clermont-Ferrand relies upon four sets of notes taken by Bergson's pupils and published in Bergson, *Cours I*, ed. Henri Hude (PUF, 1990); Bergson, *Leçons clermontoises*, 2 vols., ed. Renzo Ragghianti (L'Harmattan, 2003); and Bergson, *Cours de philosophie de 1886-1887*, ed. Silvain Matton (Séha, 2010). The earliest manuscript published by Ragghianti dates to the 1885-1886 school year. Ragghianti has concluded that this manuscript, by a pupil named Eugène Estival, corresponds nearly exactly to the manuscript published by Hude, which bore no name or date, and which Hude assigned to

representative phenomena, or "faits," that psychology was about, phenomena that concerned this particular science and this science alone. The lesson, following the current *programme* of the philosophy class, is on the "Object of psychology" and the "particular character of the facts psychology studies."[14] It is mid-October.[15] Within the first week of the school year, Bergson's philosophy students are plunged into the middle of a polemic.

Because the very first example of a "fait psychologique" that he gives is the pain that arises from a pricked finger—a phenomenon that does not appear, at first, to be an entirely mental affair. "Voilà un fait."[16] What makes this *fait* properly psychological, Bergson explains, is that it cannot be found on the body—not even at the point of the prick. "The pain that I feel," he asks, "where is it? One insists in vain that it is at the extremity of my finger, for if it were there, we would be able to see it, touch it; ultimately, we would discover the point where this pain resides. Now, this is impossible and absurd."[17] The placelessness of this phenomenon will turn out to be the common feature of all facts of psychology. It will be likewise demonstrable in the other two examples he comes to in this lesson: the phenomenon of a thought and the phenomenon of a resolution, a decision taken. With each example Bergson poses the question, *where*: Where is the thought? Where does one locate the making of a decision? And each time,

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the year 1887-1888 for entirely arbitrary reasons (Bergson, *Cours I*, 17-19). Ragghianti has challenged Hude's dates on the basis of references to specific scientific publications that appear in the notes. My account disregards Hude's dates on the basis of the notes' philosophical content. The psychology notes in Hude's *Cours I* must date to 1885 or earlier, because beginning in 1886 the psychology lessons show that Bergson's views have begun a dramatic shift.

[14] "Objet de la psychologie : caractère propre des faits qu'elle étudie," "Programme officiel du cours," *Revue philosophique* 10 (1880), 427; Bergson, *Cours I*, ed. Hude, 25.

[15] The notes from 1885-1886 published by Ragghianti precisely date each lesson. *Leçons clermontoises*, vol. 1, 20.

[16] "Je considère cette douleur bien caractéristique qu'on éprouve lorsqu'on se pique le doigt. Voilà un fait." Bergson, *Cours I*, ed. Hude, 25.

[17] "La douleur que j'éprouve, où est-elle ? On soutiendra en vain qu'elle est à l'extrémité de mon doigt, car si elle y était, on pourrait la voir, la toucher, on finirait par découvrir un point où cette douleur habite. Or ceci est impossible est absurde." Ibid., 25.

his definitive answer is "nowhere": thoughts are not in the head—you won't find any if you peer into the tissues of the brain—and resolutions, acts of will, are not in the body.[18]

It is clear from this very first lesson in psychology that psychology has something to protect. That is: access to the study of its phenomena by a neighboring investigation—physiology. The way French psychology guards this exclusive access, in the late nineteenth century, is by denying that mental phenomena are perceptible by the usual empirical means: the senses. Arguing that these phenomena are placeless is one way to sweep them cleanly out of sensory range.

But making this argument for phenomena the likes of a pricked finger takes especial care, for it is on just this "order of facts"[19] that psychology and physiology share a border in the 1880s. So it is to his first and seemingly least sophisticated example that Bergson devotes the lengthiest exposition in his 1885 classroom. What leads us to believe, falsely, that the pain of a pricked finger is located precisely in the finger, he explains, is an illusion we are accustomed to seeing in amputees, who purport to feel sensations in extremities that aren't actually present. The source of their illusion, and ours in the finger-prick, is habit:

> …By an effect of habit, we localize certain pains or certain pleasures in certain parts of the body. But these pains and these pleasures are neither here nor there. They are nowhere. Pains and pleasures are phenomena, facts that exist, that are produced, this is incontestable, but they have no extension. For if one could indicate the exact place where they are to be found, one could see them or touch them, one could reveal them [*les mettre en évidence*] by experiment or by some physical procedure. Well, now, this is impossible.[20]

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[18] On thoughts: "Si la pensée était dans la tête, elle y occuperait une place et en disséquant les tissus qui en font partie, on finirait par trouver la pensée au bout de son scalpel." On resolutions: "Je dis bien il es vrai que c'est moi qui ai pris cette résolution, et que moi je suis ici et non pas ailleurs. Mais est-ce bien le moi qui est ici, qui réside dans cette pièce quand je me mets en mouvement ? C'est le corps. Mais cette force que j'appelle moi, que j'appelle je, je ne puis pas dire qu'elle soit dans mon corps, car si elle s'y trouve, où est-elle?" Ibid., 27.

[19] Ibid.

[20] "…Par un effet d'habitude, nous localisons certaines douleurs ou certains plaisirs dans certaines parties du corps. Mais ces douleurs et ces plaisirs ne sont pas plus là qu'ailleurs. Ils ne sont nulle part. Une douleur ou un plaisir sont des phénomènes, des faits qui existent, qui se

In sustaining this polemic, Bergson is aided by the highest authorities in French philosophy. On his classroom desk he keeps two volumes in which we can find every point he makes during this opening lesson in psychology: Paul Janet's *Traité élémentaire de philosophie* and Élie Rabier's *Leçons de philosophie*.[21] These are two of the latest and most trusted philosophy manuals written for lycée students (and their teachers). Janet, a direct disciple of Victor Cousin, holds one of the three chairs in philosophy at the Sorbonne, a position that gives him jurisdiction over the philosophical content of the yearly baccalaureate exam. During the most recent curricular reform, in 1880, Janet also composed the *programme* for the philosophy course, subsequently approved by the ministerial high council. So he has written the course, the exam, and the study guide. Rabier is of a younger generation of Spiritualist philosophers, a decorated philosophy teacher at the prestigious Lycée Charlemagne in Paris.[22] His manual appears in 1884; within five years, he will rise to the top of the education ministry, as Director of Secondary Education, a position he will hold for the rest of Bergson's lycée teaching career. Rabier's manual will remain in print for nearly thirty years, proving far more robust than Janet's.[23] Though intended as two volumes and never completed beyond the first, which covers only psychology, the manual appears to have served its chief purpose. Historian Jacqueline Carroy has called this text "an engine of war against the psychology of Ribot."[24]

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produisent, c'est incontestable, mais qui n'ont pas d'étendue. Car, si on pouvait indiquer un lieu précis où ils se trouve, on pourrait les voir ou les toucher, ou les mettre en évidence par une expérience ou un procédé physique quelconque. — Or ceci est impossible." Ibid., 26.

[21] On various contents of Bergson's desk, see Marcel Conche, "Bergson à Clermont," *L'Enseignement philosophique* 47, no. 2 (1996), 6.

[22] Public servants in education were decorated with martial titles like "officier d'académie," "officier de l'instruction publique," and the Légion d'honneur. On Rabier's illustrious career see Yves Verneuil, "Un protestant à la tête de l'enseignement secondaire : Élie Rabier," *Histoire de l'éducation*, 110 (2006): 111-139.

[23] Janet's manual was reissued for ten years, until 1889; Rabier's, for twenty-eight, until 1912. Poucet, *Enseigner la philosophie* (CNRS, 1999), 142.

[24] Jacqueline Thirard (Carroy), "La fondation de la 'Revue philosophique,'" 407.

Between Janet and Rabier, the old and the new guard of French philosophy, we have the parameters of the vocabulary of Spiritualist psychology. Janet's *Traité* was first published in 1879 and minimally revised to suit the curriculum of the 1880s; the terms in which it teaches the distinction between psychological and physiological phenomena—a lesson that dates to the *programme* of 1874—are the terms in which Bergson would have learned this lesson himself in lycée.[25] In this older text, the cardinal difference between the psychological and the physiological is the means of perception: physiological phenomena, Janet writes, are "known by means of the senses, like other bodies," while psychological phenomena are "known by consciousness"—an altogether different faculty.[26] It is in Rabier that we find this lesson in the extended, armor-plated form that Bergson teaches. True to its polemical purpose, Rabier's guide to psychology begins by saying what psychological facts *cannot* be. They are not "functions of the brain," as physiology would have them. Between the facts of psychology and those of physiology—"les faits spirituels" and "les faits organiques"—there is an "essential opposition [*opposition de nature*]," Rabier writes, from which a suite of other differences follow.[27] The opposition is the basic Cartesian one between things that have extension and things that do not, a distinction expressed in terms of matter and movement. Psychological facts do not consist of material movements, Rabier writes, and have nothing to do with them.

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[25] Bergson attended the Lycée Fontanes (now Lycée Condorcet) in Paris from 1868-1878. The *programme* of 1874 was composed by Elme Caro, Paul Janet's Sorbonne colleague and fellow Cousinian (Poucet, *Enseigner la philosophie*, 90-94). After 1880, Janet's *Traité* acquired an appendix, which summarily addressed each topic of the revised curriculum, in sequence. The appendix is filled with references to the foregoing 875 pages, which contain exactly the same text as the *Traité* of 1879. You can get away with this when you yourself are the authority on the new curriculum.

[26] Between "l'homme physique" and l'homme moral," Janet writes, "l'un est connu par le moyen des sens comme les autres corps ; l'autre se connaît lui-même par la conscience. Les phénomènes qui se passent dans l'un sont des phénomènes *physiologiques*; les phénomènes qui se passent dans l'autre sont des phénomènes *psychologiques*. La psychologie est donc distinct de la physiologie et elle s'occupe exclusivement des phénomènes de conscience." Paul Janet, *Traité élémentaire de philosophie* (Paris: Delagrave, 1879), 30. Italics in original.

[27] Élie Rabier, *Leçons de philosophie t. 1: Psychologie* (Paris: Hachette, 1886 [1884]), 21-22.

> Organic functions *are* purely and simply *movements* of an organ and of a material on which it acts. [...] Now consider thought or emotion [*sentiment*]...Is thought a movement? A materialist may well say...thought is an *effect*, a *result* of cerebral movements. But he cannot say without manifest absurdity that thought *is* a movement of the brain. Take whatever kind of movement there might be: rectilinear, curvilinear, a right- or left-turning spiral: what can even the most minute analysis find in common between this movement and the poorest, humblest thought, whether this be a simple sensation, such as the sensation of bitterness, or the sensation of blue? A movement is never, in sum, but the transport of a morsel of matter from one place to another: what resemblance is there between this fact and the consciousness of blue?[28]

Bergson teaches the "distinction between psychological facts and physiological facts" as psychology lesson two, in keeping with the *programme*, and presents an argument that matches Rabier's step for step. Like Rabier, he begins by introducing psychology's adversaries:

> If one were to believe the materialists, emotion, thought and volition would, as they say, only be functions of the brain. The brain secretes thought, they say, as the liver secretes bile. So-called psychological phenomena are always brought back to molecular movements, to physical or chemical phenomena taking place in the nervous system. So then why institute a special science whose object would be to study emotion and thought, when the study of the brain amply suffices? There is no distinct science studying the movements of the heart; this study belongs to physiology. [...] [Psychology] ought to be but a chapter of physiology.[29]

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[28] "Les fonctions organiques *sont* purement et simplement des *mouvements* de l'organe et d'une matière sur laquelle il agit. [...] Considérons maintenant la pensée ou le sentiment...La pensée est-elle un mouvement? Un matérialiste peut bien dire...la pensée est un *effet*, une *résultante* des mouvements cérébraux. Mais il ne peut dire sans absurdité manifeste la pensée *est* un mouvement du cerveau. Soit en effet, un mouvement quel qu'il soit, rectiligne, curviligne, en spirale dextre ou sénestre : qu'est-ce que l'analyse la plus minutieuse peut saisir de commun entre ce mouvement et une pensée si humble, si pauvre qu'elle soit, fût-ce une simple sensation, comme la sensation d'amertume, ou la sensation du bleu ? Un mouvement n'est jamais, en somme, qe le transport d'un morceau de matière d'un lieu dans un autre : quel rapport de ressemblance y a-t-il entre ce fait et la conscience du bleu ?" Ibid., 22.

[29] "S'il faut en croire les matérialistes, le sentiment, la pensée, la volonté ne seraient, comme il disent, que des fonctions du cerveau. Le cerveau sécrète la pensée, disent-ils, comme le foie sécrète la bile. Les phénomènes dits psychologiques se ramènent toujours à des mouvements moléculaires, à des phénomènes physiques ou chimiques s'accomplissant dans le système nerveux. Mais pourquoi donc instituer une science spéciale dont l'objet serait étudier [*sic*] le sentiment et la pensée, alors que l'étude du cerveau suffit amplement ? Il n'existe pas de science distincte étudiant les mouvements du coeur, cette étude appartient à la physiologie. Pourquoi donc en existerait-il une spéciale pour examiner ou approfondir les fonctions du cerveau ? Ce ne doit être qu'un chapitre de la physiologie." Ibid., 30. My emphasis. Rabier's text begins the same lesson thus: "En effet, dit-on, la physiologie est l'étude des fonctions des organes : la circulation, fonction du coeur et des autres vaisseaux sanguins ; de la respiration, fonction des poumons ; de la digestion, fonction de l'estomac, etc. Mais que sont la pensée, le sentiment, la

That psychological phenomena do not resolve into material movements, however small the morsel of matter—in Cartesian terms, that these phenomena have no extension—is the reason they elude all sensory perception, and the reason they are "impossible" to locate on the body.[30] This is the extended chain of reasoning that Rabier provides in his manual, and Bergson, after giving his class that initial tour of psychological facts, lays out this argument in full. And just as Rabier declared it a "manifest absurdity" to equate two things so patently unlike as a thought and a movement, Bergson brings his class to the same insolubility:

> One understands function in physiology as an ensemble of movements. [...] Thus, to say that thought is a function of the brain is to admit...that thought can be identified with molecular movements taking place in the brain. — Now, in this form the theory is obviously untenable. For, after all, what resemblance can one find between the displacements of molecules and an idea, the idea of philosophy for example? It is right to say that the liver secretes bile, for it suffices to dissect the liver to find bile. But when one says that the brain secretes thought, one pronounces an unintelligible proposition, for one can well dissect the brain, and find cerebral matter there, in which one can observe the displacements of molecules. But one will never encounter either a thought nor an emotion.[31]

In substance, Spiritualist psychology is no different in 1884 or 1885 than it was in 1879. For the most part, the facts themselves are the same: as before, the phenomena studied by

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volonté, sinon des *fonctions du cerveau ?* La psychologie, ou étude des fonctions du cerveau, n'est donc qu'un chapitre de la physiologie..." Rabier, *Leçons de philosophie*, 21-22. Italics in original.

[30] Rabier's argument continues: "Les faits organiques étant des mouvements de certaines masses matérielles, occupent dans le corps certaines places que l'on peut assigner. On peut donc les localiser...Au contraire, les faits psychologiques, n'étant pas inhérents à la matière même, n'ont aucune étendue; par suite *ils ne sauraient occuper aucune portion de l'espace* : ils ne sont, à parler rigoureusement, **nulle part**." Rabier, *Leçons de philosophie*, 23. Italic and bold text in original.

[31] "On entend par fonction en physiologie un ensemble de mouvements. [...] Ainsi, dire que la pensée est une fonction du cerveau, c'est admettre...que la pensée peut être identifiée avec des mouvements moléculaires s'accomplissant dans le cerveau. — Or sous cette forme la théorie est évidemment insoutenable. Car enfin quelle ressemblance peut-on trouver entre les déplacements de molécules et une idée, l'idée de philosophie par exemple ? On a raison de dire que la foie sécrète la bile, car il suffit de disséquer la foie pour trouver la bile. Mais, quand on dit que le cerveau sécrète la pensée, on énonce une proposition inintelligible, car on aura beau disséquer le cerveau, on y trouvera de la matière cérébrale, on pourra observer en lui des déplacements de molécules, mais on ne rencontrera jamais ni la pensée, ni le sentiment." Bergson, *Cours I*, ed. Hude 31.

psychology are feelings, thoughts, and acts of will—the three categories believed to compass the whole phenomenal range of the mind. What is different in the 1880s is to call the contents of these categories "facts." This was a change instigated by the curriculum itself.

The revised curriculum of 1880 was a product of the same movement of comprehensive education reform that we saw Bergson confront, tendentiously, in chapter one. The reform movement did not challenge the teaching of philosophy the way it challenged the teaching of classical languages. In fact, the philosophy section of the ministerial high council, the Conseil supérieur de l'instruction publique, embraced the spirit of the reform without compromise to the principles of Spiritualist philosophy. They achieved what we might call a re-branding. Recall that the pedagogical mission of the reformist ministry in 1880 was to change the recitative character of French education, by filling the classroom with "things" from the world. To teach "from the example to the formula, from the concrete to the abstract" was the slogan for cultivating minds capable of "discovering and observing facts," rather than merely of artful discourse.[32] And for this the model field of study, with its vast terrain of facts, was—philology.[33] Well, philosophy, too, had facts. Presenting the new philosophy curriculum to the readership of the *Revue philosophique*, Henri Marion, member of the high council, affirmed that two long-standing components of the philosophy course were "*sciences positives*" in the making, and would be taught as such under the new plan. These were psychology and logic. Each would be divested of topics that belonged properly to metaphysics, a separate section of the philosophy course. For psychology, this meant deferring the question of the nature of the mind and exclusively conducting "an attentive study of the givens [*données*] of consciousness and the

[32] The ministerial memorandum quoted in Falcucci, *L'Humanisme dans l'enseignement secondaire en France*, 351-355; and Bréal, *Quelques mots sur l'instruction publique*, 159. See chapter 1 of this dissertation, section 4.
[33] See chapter 1 of this dissertation.

laws of thought."[34] "Psychology," explained Marion, "in the aim of the Conseil supérieur, must be simply the science of *facts* of consciousness and their *laws*. It is true that this order of facts, more than any other, elicits metaphysical curiosity. [...] But these facts have been and must be, more than ever, studied in themselves, for themselves."[35]

The language of "facts" is prolific in Rabier's manual, in contrast to Janet's, which retains "phénomène" in important instances where Rabier uses "fait."[36] The language of facts does not replace the language of phenomena, but joins it: henceforth the phenomena that psychology has always been concerned with are the "facts" of this science. Flush with facts in the work it is already doing, Spiritualist psychology is able to adopt the language of facts without revising the facts themselves. For psychology lesson five, Bergson, again cued by the *programme*, presents an overall "classification of psychological facts": "We will thus distinguish three categories of psychological facts. Facts of sensibility [*faits sensibles*]. — Intellectual phenomena. — Determinations of will. We will make a point, however, to attach to this last category of phenomena the facts of instinct and the facts of habit."[37]

Let's look at the facts themselves now more closely. Bergson began with an initial set of examples, a token of each of the three principle categories: I prick my finger and feel a sensation

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[34] "une étude attentive des données de la conscience et des lois de la pensée," Marion, "Le nouveau progamme de philosophie," 421.
[35] "La psychologie, dans l'intention du Conseil supérieur, doit être simplement la science des *faits* de conscience et de leurs *lois*. Il est vrai que cet ordre de faits, plus que tout autre, suscite la curiosité métaphysique. [...] Mais ces faits ont été et doivent être plus que jamais étudiés en eux-mêmes, pour eux-mêmes." Ibid., 422. Original italics.
[36] For instance, Janet's manual teaches the all-important distinction between psychology and physiology as a distinction between two orders of "phénomènes"; Rabier's as a distinction between two orders of "faits." Janet, *Traité élémentaire de philosophie*, 31; Rabier, *Leçons de philosophie*, 27. "Fait psychologique" and "fait de conscience" are common phrases throughout the later text.
[37] "Nous distinguerons ainsi trois catégories de faits psychologiques : Faits sensibles. — Phénomènes intellectuels. — Déterminations volontaires. Nous aurons soin toutefois de rattacher à cette dernière catégorie de phénomènes les faits instinctifs et les faits d'habitude." Bergson, *Cours I*, ed. Hude 50.

of pain; I suffer the loss of a friend and feel sad—a "sentiment,"[38] considered with sensation as a fact of sensibility; I reflect on my chances of doing well on a difficult exam—a thought; I resolve to get to work—a decision. These are stock examples, though doubtless deliberately chosen for an audience of schoolboys; in each instance their aim is to yield a discrete concept, with a specific name. As far as the non-metaphysical portion of Spiritualist psychology, the science that this psychology most resembles is taxonomy. Its work consists in naming, defining, enumerating, and classifying the contents of the mind. This is evident in the phrases that Professor Bergson often employs in these lessons: "We give the name of…" and "Let us enumerate…"[39] The lesson on "sensation and sentiment" this year concludes by surveying the inventory. Explaining that it is "convenient" to group sentiments into those that relate to the past, those to the present, and those to the future, Bergson proceeds:

> 1° *Sentiments that are related to the present.* — In general these are joy and sadness. If one perceives a present joy as lasting, as boundless in time, one calls it security. If the cause of this joy appears that it will not endure beyond the present time, worry, fear, etc., result. So these various sentiments: security, worry, fear, are but varieties of joy and sadness, engendered by differences in the representation of causes.[40]

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[38] I am not translating *sentiment* as "emotion" here because a principled distinction existed between these terms in psychology, both in French and in English. As Herbert Spencer attested, or tried to regulate, in his *Principles of Psychology*: "The word Sentiments, as used in this and succeeding chapters, must be taken to comprehend those highest orders of feelings which are entirely representative"—meaning strictly mental, without any participation of the body (*Principles of Psychology* 2nd ed., vol. 2 [New York: Appleton, 1872], 578). In class this year, Bergson defines "émotions" as "états affectifs de l'âme produits par un ébranlement"—ébranlement being a physical disturbance (Hude vol. 1, 58). But in the *Essai*, *sentiment* and *émotion* are synonymous. This in turn is a principled decision, for Bergson's argument there is predicated on the way psychological states involve—even consist of—perturbations in the body.

[39] Eg. "On donne le nom de faits intellectuels à ces phénomènes qui…"; "Enumérons les sensations qui nous sont fournies par nos divers organes"; "Enumérons ces perceptions," Ibid., 49, 117, 118.

[40] "Il est commode de répartir les sentiments en groupes : ceux qui se rapportent au présent, ceux qui se rapportent au passé, ceux qui enfin se rapportent à l'avenir. 1° *Sentiments qui se rapportent au présent.* — Ce sont la joie et la tristesse d'une manière générale. Si on se représente la joie présente comme devant durer, comme sans bornes dans le temps, on l'appelle sécurité. Si la cause de cette joie ne paraît pas devoir se prolonger au-delà du temps présent, il en résulte de l'inquiétude, de la crainte, etc. Donc ces divers sentiments : sécurité, inquiétude, crainte, ne sont

The catalogue of joy and sadness related to the past contains the following:

> When the memory of past sadness is joined by the idea of one or more specific persons who have been its cause, the sadness experienced is called rancor, resentment. [...] When the memory of joy is joined by the memory of persons who have been its cause, we experience a sentiment of gratitude."[41]

The assumption I would like us to notice here is that *naming* a psychological fact suffices to make it evident—and suffices to make evident just what is supposed to be contrasted with movements of matter. Rabier, in the opening lessons of his manual, never stops to *describe* a psychological fact, but only names them: "thought," "emotion," "the sensation of bitterness," "the sensation of blue." Bergson teaches with examples; his illustrative facts include brief descriptions, cursory bits of context. But the aim is always to indicate a reliably occurring psychological phenomenon, a fixed entity derivable by reasoning, as definite as the product of an equation. That psychological facts are nameable like this is part of the general *a priori* character of Spiritualist psychology. The facts of this science do not begin in experience and are not supposed to.

This character of Spiritualist psychology is explicit in the lesson on the overall classification of facts, which, in both Rabier's manual and Bergson's classroom presentation, includes a "proof" that there are indeed exactly three distinct categories of psychological phenomena. Bergson's proof differs from Rabier's, but both are skillful demonstrations in logic that readily, subsequently, find corroboration in experience.[42]

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que des variétés de la joie et de la tristesse, engendrées par des différences dans la représentation des causes." Ibid., 65. Italics in original.

[41] "Lorsqu'il se joint au souvenir de ces tristesses passés, l'idée d'une ou plusieurs personnes déterminées qui en ont été la cause, la tristesse éprouvée s'appelle rancune, ressentiment. [...] Lorsqu'au souvenir de cette joie se joint le souvenir de personnes qui en ont été la cause, nous éprouvons un sentiment de reconnaissance." Ibid., 66.

[42] Rabier's proof shows the priority of logical conception over the actualities of experience: "...Il faut se demander : 1° si ces diverses fonctions, quoique peut-être toujours unies en fait, ne peuvent *idéalement* se concevoir l'une sans l'autre ; ou, en d'autres termes, si l'idée, essence, ou

With impressive parsimony, Bergson uses two distinctions to carve up the entire phenomenological universe of psychology. Across the three categories, he finds two salient variables: whether or not an active "soul," or self, is required for a given phenomenon; and whether or not a representation of an external object is required. Facts of sensibility require neither; facts of the intellect require at minimum one representation, but not an active self—as Bergson explains portentously, because most of the time the mind does not get to choose its thoughts;[43] and facts of volition *seem* to require an active self. Here he is even more portentous: "Facts of this third category…consist essentially of a choice, real or apparent."[44] The apparent, for now, is enough: "Doubtless," he muses, "a deeper analysis of these facts too often shows that our liberty is incomplete, sometimes even that it is illusory…But we are only concerned here with appearances."[45] It is Bergson the mathematician who concludes this demonstration:

> It is now easy to see *a priori* that all psychological facts whatever they may be can be entered into our classification…In effect, every psychological phenomenon is a state of the soul or an act accomplished by the soul, for ultimately there is no in-between: either

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définition de de l'une n'est pas enveloppée dans l'idée, essence, ou définition de l'autre. 2° On cherchera ensuite si, *en fait*, la vie psychologique ne nous présente pas ces diverses fonctions *isolées* les unes des autres" (Rabier, *Leçons de philosophie*, 83, italics in original, my underlining). A footnote reminds the reader that this rational operation is one of the most efficacious in the history of philosophy: it was exactly how Descartes established the unequivocal distinction between thought and extendedness. Here, applying the test of conceptual independence yields exactly three separate categories, whose distinctiveness can then be verified among the actualities of psychological life. Thus the first and real test of the truth of these categories is whether they are separately thinkable. And because the thought of each reveals an essence particular to each, the answer is yes (ibid., 83-84).

[43] Bergson's wry example here is the thought of "Victor Cousin": "Je n'ai pas appelé cette idée, elle me vient parce que j'aborde l'étude de la philosophie dont Victor Cousin a esquissé chez nous le programme." Bergson, *Cours I*, ed. Hude 48.

[44] "On donne le nom de déterminations volontaires aux faits de cette troisième catégorie. Ils consistent essentiellement dans un choix réel ou apparent entre deux contraires…" Ibid., 50.

[45] "Sans doute une analyse approfondie de ces faits montre que trop souvent notre liberté est incomplète, parfois même qu'elle est illusoire…Mais nous ne nous occupons ici que des apparences" (ibid., 49-50). I will return to the dark sophistication of these views in a moment. Bergson's willingness to accept the "apparent," here, as the basis of his distinctions, shows the real use he makes of experience, even within a philosophical system that deals chiefly in products of reason. Unlike Rabier, Bergson chooses to work with how things appear rather than try to think his way into how things must be "in essence."

> the soul is active, or it is passive. This granted, when the soul is passive, only two possibilities can arise…In total there are thus only three possible cases: — either the soul is active —, or it is passive without representation of an exterior object —, or it is yet passive but with such a representation. — All of which is to say that one can only distinguish three categories of psychological facts: facts of activity: instinct, will, habit —, facts of sensibility [*faits sensibles*] —, intellectual facts.[46]

Bergson need not have raised those doubts about the mind's freedom to think and act. He has orthodox arguments at hand, guaranteeing that freedom.[47] But the skepticism he voices shows how little those arguments suffice for him even now, this early in his career. This distrust does not go away. It is part of what leads him to the radical solution he will put forward in the *Essai*, in defense of the mind's freedom against psychological determinism. His solution, however, will undermine Spiritualist psychology, for it will challenge the hitherto unqueried assumption that the life of the mind can be approached as a math problem.

2. The Intelligibility of the Body

This chapter is about how Bergson comes to his insight about the freedom of the psyche, which he believes the mind keeps in a kind of reserve, "in the depths of

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[46] "…Il est maintenant facile de voir *a priori* que tous les faits psychologiques quels qu'ils soient peuvent rentrer dans notre classification… Ceci posé, quand l'âme est passive, deux cas seulement peuvent se présenter : ou bien elle reste enfermée en elle-même, absorbée par la conscience de ce qui se passe en elle; ou bien elle n'est pas absorbée par cette conscience et alors elle se représente quelque objet extérieur à elle. — Il n'a y donc en tout que trois cas possibles : — ou bien l'âme est active —, ou elle est passive sans représentation d'objet extérieur —, ou elle est passive encore, mais avec cette représentation. — Ce qui revient à dire qu'on ne peut distinguer que trois catégories de faits psychologiques : les faits d'activité : instinct, volonté, habitude —, les faits sensibles —, les faits intellectuels." Ibid., 52.

[47] In Paul Janet's teaching, for instance, the psyche is free by virtue of its capacities for thought and volition: "Nous définirons donc la liberté la *puissance d'agir d'après des idées ou concepts*. S'il n'y avait dans l'homme que la sensibilité, c'est-à-dire le plaisir ou la douleur, l'homme, tout en étant libre en puissance (et c'est peut-être la condition des animaux), ne le serait pas en fait." Janet, *Traité élémentaire de philosophie*, 319, italics in original.

consciousness."[48] It is at this depth, he finds, that a person's psychological life is really lived. He will call this life of the mind the experience of *la durée*. With the *durée*, Bergson will recast the problem of free will by showing psychological determinism to be a native illusion, a product of the mind's own habits of perception. The mind constantly overlooks the real dimensions of psychological experience, Bergson will argue, because it is naturally inclined to mathematize its perceptions. That is how the mind perceives psychological phenomena not as they really are, but as definite, reliably occurring entities—feelings and thoughts knowable by name and fixable to determinate sequences of cause and effect. Any debate over free will conducted on this basis, Bergson realizes, will be doomed to a draw. This is the predicament of the Spiritualists, who mount rational arguments in favor of a free and moral intellect, but espouse a psychology that creates the same conditions for determinism that enable the arguments of their opponents. What Bergson comes to critique is the perception of the very terms of the problem of psychological determinism: the units of experience upon which both determinism and rational liberty are predicated. It is a critique of what the problem of determinism assumes about the nature of psychological phenomena—that is, about the facts of psychology.

The *Essai*, too, is written in the language of psychological "facts," a term that Bergson uses variably with "phenomena" and "states" (as in, "psychic states" or "states of the soul") depending on the aesthetic of the passage.[49] The three terms have the same referent. But "facts" is an odd member of this group without the context of lycée psychology I have given here. When, under Bergson's close supervision, the *Essai* is translated into English twenty years later, the phrase *fait psychologique* does not appear; it becomes "psychic phenomenon" or "inner state."[50] The absence of the original phrase indicates its peculiarity and its specificity to the

[48] "dans les profondeurs de la conscience," Bergson, *Essai*, 94.
[49] Eg. "états psychiques" (ibid., 4); "états de l'âme" (6).
[50] Bergson, *Time and Free Will*, tr. F. L. Pogson (London: Allen & Unwin, 1910), 5, 10.

French context. Meanwhile, in the French text, Bergson clearly uses the phrase with intent. When he writes that, "The further we descend into the depths of consciousness, the less right we have to treat psychological facts as things that can be juxtaposed," his corrective is directed at a particular establishment: the people who talk about "psychological facts" are the Spiritualists among whom he teaches.[51]

Looking now at the *Essai*'s version of the facts of psychology, we find a very different kind of account. Here, from the *Essai*'s opening pages, is Bergson's description of joy:

> Inner joy is not, any more than passion, an isolated psychological fact, occupying first a corner of the soul and taking up more space little by little. At its lowest degree, it is rather like a turning [*orientation*] of our states of consciousness toward the future. Then, as if their weight were diminished by this attraction, our ideas and our sensations succeed one another with greater rapidity; our movements no longer cost us the same effort. At last, in extreme joy, our perceptions and our memories acquire an undefinable quality, comparable to a warmth or to a light, and so novel that, in certain moments, turning back upon ourselves, we feel a kind of astonishment in our own being.[52]

This description is so unlike the recipes of "sentiments" we heard him recite in class that there seems not to be even a basis for comparison. Both, it is true, make reference to the future: in the

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[51] "Plus on descend dans les profondeurs de la conscience, moins on a le droit de traiter les faits psychologiques comme des choses qui se juxtaposent," *Essai*, 7. "The further we penetrate into the depths of consciousness, the less right we have to treat psychic phenomena as things which are set side by side," *Time and Free Will*, 8-9.

[52] "La joie intérieure n'est pas plus que la passion un fait psychologique isolé, qui occuperait d'abord un coin de l'âme et gagnerait peu à peu de la place. A son plus bas degré, elle ressemble assez à une orientation de nos états de conscience dans le sens de l'avenir. Puis, comme si cette attraction diminuait leur pesanteur, nos idées et nos sensations se succèdent avec plus de rapidité ; nos mouvements ne nous coûtent plus le même effort. Enfin, dans la joie extrême, nos perceptions et nos souvenirs acquièrent une indéfinissable qualité, comparable à une chaleur ou à une lumière, et si nouvelle, qu'à certains moments, en faisant retour sur nous-mêmes, nous éprouvons comme un étonnement d'être." *Essai*, 8. I am adopting here Bergson and Pogson's translation of *orientation* as "turning": "Neither inner joy nor passion is an isolated inner state which at first occupies a corner of the soul and gradually spreads. At its lowest level it is very like a turning of our states of consciousness towards the future. Then, as if their weight were diminished by this attraction, our ideas and sensations succeed one another with greater rapidity; our movements no longer cost us the same effort. Finally, in cases of extreme joy, our perceptions and memories become tinged with an undefinable quality, as with a kind of heat or light, so novel that now and then, as we stare at our own self, we wonder how it can really exist." *Time and Free Will*, 10.

classroom exposition, joy and sadness yield different varieties of sentiments depending on whether they involve the future, the present, or the past; and here, an "orientation" of consciousness toward the future is joy's very rudiment. But this distorted similarity itself suggests that Professor Bergson has managed to step through some looking-glass, into a differently ordered world.

Before asking how he got here, let's look at what the passage above shows of the elements of this other world. Joy, here, is mobile, and to describe it is to describe how it moves. It begins as a "turning" of one's consciousness toward the future. As it grows, it appears as an acceleration of conscious phenomena, which seem lighter as they pass by. Finally, it is an "undefinable quality" in which all of one's conscious experience comes to be bathed. Joy itself is not a thing: it is a movement, a way; when it is greatest, it is an atmosphere.

One way to contrast this joy as "quality" with the joy described in Bergson's psychology lesson is to see that the classroom joy is a compound of ideas. It is not a way but a thing, as are all the "sentiments" he listed in that lesson. Set the two joys side by side: one occupies a designated position in a kind of periodic table of the sentiments; the other is a movement that sweeps through the whole tableau, warming, quickening every conscious experience.[53] In the *Essai*, Bergson calls this view a "wholly dynamic way of looking at things,"[54] and claims that it is commonly obstructed—by consciousness itself. For consciousness, as we will see, perceives

[53] Bergson describes this dynamic two paragraphs before the description of joy: "Quand on dit qu'un objet occupe une grande place dans l'âme, ou même qu'il y tient toute la place, on doit simplement entendre par là que son image a modifié la nuance de mille perceptions ou souvenirs, et qu'en ce sens elle les pénètre, sans pourtant s'y faire voir." *Essai*, 7.
[54] "cette représentation toute dynamique," *Essai*, 7. I follow here the authorized English translation (*Time and Free Will*, 9).

preferentially, and what it "loves," Bergson writes, are "clean-cut distinctions, easily expressed in words and in things with well-defined outlines."[55]

Joy as movement, as a "quality" rather than a "thing," begins to reveal the nature of the contrast between the two psychologies, the orthodox one that Bergson taught and the one that he created in the *Essai,* in which an entirely different set of facts guaranteed a different kind of freedom for the mind. And although, when juxtaposed, the two psychologies appear incommensurable, we can follow the path that Bergson took from one to the other. For Bergson's conception of psychological facts as movements had an empirical basis in a particular set of historical scientific researches: it came from movements that he observed in the body, with the aid of the physiological investigations in hypnotism and mental suggestion I described in the last chapter. In this new perception of the body Bergson found a more accurate way of perceiving the mind, as well as a language that could give an account of psychological phenomena as he believed they really were. This language introduced a material dimension into the mind, yet avoided the materialist terms that Bergson always derided: the terms of "molecular" movement, which he came to fault not for being reductive but for being unempirical. What he did in the *Essai* was to break out of the two-toned universe in which the Spiritualists defended psychology against physiology, and into another that contained a whole array of dualisms, but none of them mind versus body.

Consider the *faits psychologiques* described in the *Essai*'s first pages. They all receive what Bergson calls "dynamic" depictions; they all consist of movements. The mobility of joy appears to be figurative, as Bergson's description uses the language of simile: joy "*resembles* a turning of

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[55] "…Cette représentation toute dynamique répugne à la conscience réfléchie, parce qu'elle aime les distinctions tranchées, qui s'expriment sans peine par des mots et les choses aux contours bien définis." Ibid. "…This wholly dynamic way of looking at things is repugnant to the reflective consciousness, because the latter delights in clean cut distinctions, which are easily expressed in words, and in things with well-defined outlines." *Time and Free Will*, 9.

our states of consciousness"; ideas and sensations follow one another more quickly "as if" they have become lighter; and extreme joy is an "undefinable quality, *comparable* to a warmth or a light."[56] But even a figurative language of movement here demands some justification, because a philosopher seeking his doctorate from the Spiritualist establishment does not casually invite a body, literal or figurative, into an account of the psyche. He ought to have no need for such language, as Bergson himself once demonstrated, when he taught these very sentiments as assemblages of ideas only, with no material traces. But as we'll see, Bergson now has a particular philosophical imperative to speak in metaphor, and new empirical grounds to believe that the right language for the psyche is a language of the body.

At this point, Bergson has already hinted at one of the *Essai*'s key arguments, that language itself leads consciousness to misperceive changes of quality, out of a preference for "clean-cut distinctions, easily expressed in words." This idea builds momentum as he moves on to descriptions of aesthetic sentiments: "It's this qualitative progress that we interpret as a change of magnitude, because we love simple things, and our language is ill-suited to express the subtleties of psychological analysis."[57] Let's leave aside for now the dichotomy between quality and quantity toward which his argument is building. The charge he is levelling here is that psychology has an intelligibility problem. He does not just believe that there are no words to describe psychological phenomena as they really are. He believes that words themselves are the wrong medium for communicating experiences of this kind. It would seem that Bergson, discrediting the usefulness of language for the very task he has undertaken, were determined to

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[56] Emphasis added.

[57] "C'est ce progrès qualitatif que nous interprétons dans le sens d'un changement de grandeur, parce que nous aimons les choses simples, et que notre langage est mal fait pour rendre les subtilités de l'analyse psychologique." *Essai*, 10. "It is this qualitative progress which we interpret as a change of magnitude, because we like simple thoughts and because our language is ill-suited to render the subtleties of psychological analysis." *Time and Free Will*, 13.

write his doctoral thesis with his hands tied behind his back. Except that he does have a way to make language work, nevertheless, in his favor.

His solution is to speak of experiences of the psyche in a figurative language of the body. For the peculiarity of Bergson's intelligibility problem is that the experiences in question *are* knowable—by everyone who experiences them; they are just not articulable. To express psychological phenomena, what you need is a medium other than language. And this, as Bergson has recently come to understand, is exactly what the body supplies.[58]

Joy, in Bergson's dynamic depiction, does not itself have a body, but a body is implied in every sentence: you are meant to see one—in fact, you are meant to *be* the body as you read, in order to understand the feeling being described. Rather than tell you that joy *is* X or Y, as he once did in class, Bergson invokes bodily movements and sensations as so many "as ifs"—and thus *cues* the experiences that he wants the reader to apprehend. This language of the body does not need to contain an actual body to ensure that you, the reader, lend it yours—that you immediately act out what he is describing and feel it, at least in germ, for yourself. For Bergson is now very aware of how reliably the body is set in motion the instant an idea is suggested to the mind—an insight he has gained from researches in hypnotism. The intimate connection between the mind and the body that, as we saw before, allowed for perceptions to arise via the body's reflexive movements, and for states of mind to be given by attitudes in which the body is

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[58] T. S. Eliot's writing about metaphysical poetry helped me think through this. Eliot identified a certain spare style of figurative language as a language of "rational necessity": its imagery has a "strict utility," and is there solely for the sake of making something difficult intelligible, rather than, for instance, to proliferate ingenious comparisons, as in the elaborate conceits of "metaphysical" poetry in the seventeenth century (Eliot, *The Varieties of Metaphysical Poetry* [London: Faber and Faber, 1993], 120-121). Eliot's exemplar of this rational necessity was the figurative language of Dante in the *Paradiso*, which, on Eliot's reading, was Dante's means of overcoming the difficulty of communicating experiences of heaven that necessarily surpassed the reader's earthly ability to comprehend. This helped me see that Bergson also had a problem of intelligibility, which he brought upon himself: the difficulty of communicating psychological experiences while believing that language itself falsifies the very experiences he needed it to express.

placed, here gives Bergson his purchase on a psychology that resists language itself. Speaking directly to the body of the reader, Bergson can relate experiences of the psyche whose dynamism would otherwise be obscured by the "clean-cut distinctions" of language.[59]

It is a dynamism of the mind and the body both, in concert. It is a conception of movement on another order than the movement of molecules that we have seen Bergson abjure in class. About molecules he does not change his mind: the *Essai* explains concisely why they are, as ever, meaningless for psychology—because no one experiences psychological phenomena as molecules.[60] But a psychology built strictly upon direct experience cannot claim that people experience something called "joy," either—or "worry," or "fear," when "joy" threatens to disappear. These entities, for Bergson, are now as fictive as molecules.[61] What people do experience, he has realized, are the reflexive movements of the body. And as experiments in hypnotism and suggestion have just shown, these movements are more numerous, more widely dispersed in the body, and more minutely detectable than anyone has thought.

Here was a material dimension of psychological experience that defied the mind-body dualism of Spiritualist psychology. The expressive automatisms exhibited by hysterical subjects under hypnosis; the discreet, involuntary movements that gave away unspoken thoughts; the reflexive mimicry of those movements by an observer that allowed such thoughts to be

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[59] This co-optive use of another's body is exactly how Bergson believes artists manage to communicate the sentiments of their art: "…L'artiste vise…à nous faire éprouver ce qu'il ne saurait nous faire comprendre. Il fixera donc, parmi les manifestations extérieures de son sentiment, celles que notre corps imitera machinalement, quoique légèrement, en les apercevant, de manière à nous replacer tout d'un coup dans l'indéfinissable état psychologique qui les provoqua. Ainsi tombera la barrière que le temps et l'espace interposaient entre sa conscience et la nôtre…" *Essai*, 13-14.

[60] *Essai*, 5, 26.

[61] We are a few years away from the turn-of-the-century debate over atoms in France. Bergson will persist in regarding atoms as hypothetical, at best a form of scientific notation. I will return to this view in chapter 5 of this dissertation.

communicated: here was a new class of bodily reflexes of far greater import for psychology than the movements of matter that the Spiritualists had prematurely and indiscriminately dismissed.[62] These movements differed from familiar reflexes like blinking and sneezing, as well as from the movements of molecules, in that they were at once directly perceptible to consciousness and, somehow, charged with psychological meaning. Pre-empting and even instigating conscious awareness, these automatic initiatives of the body served as the mind's most immediate informants—leading the physiologist Charles Féré to conclude, as we saw, that "we only know exterior objects by the motor reactions that they provoke in our entire organism."[63] Bergson, too, came to understand the body as responsible for every act of perception—even for the perception of one's own thoughts. This is why, when the introspective work of the *Essai* begins in earnest, he repeatedly instructs the reader to apprehend the nature of psychological experiences by noticing the movements of the body that they involve. And suddenly the body is no longer figurative. Explaining what consciousness is really perceiving when the mind feels an "inclination" toward one thing over another, he writes:

> …What can our preference be if not a certain disposition of our organs, such that, two pleasures arising simultaneously in our mind, our body inclines toward one of them? Analyze this inclination itself, and you will find a thousand tiny movements that begin, that are sketched in the organs concerned, and even in the rest of the body, as if the organism were going forth to meet the pleasure as soon as it is pictured. When we define inclination as movement, we are not using a metaphor.[64]

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[62] On mind-reading see chapter 2, sections 2 and 5; on the theatrics of hysterics see chapter 2, section 3.

[63] "Nous ne connaissons les objets extérieurs que par les réactions motrices qu'ils provoquent dans notre organisme tout entier." Féré, "Sensation et mouvement. Contribution à la psychologie du fœtus," *Revue philosophique* 21 (Jan. – June 1886), 259. Also quoted in chapter 2, section 5.

[64] "Et que peut être notre préférence sinon une certaine disposition de nos organes, qui fait que les deux plaisirs se présentant simultanément à notre esprit, notre corps incline vers l'un d'eux? Analysez cette inclination elle-même, et vous y trouverez mille petits mouvements qui commencent, qui se dessinent dans les organes intéressés et même dans le reste du corps, comme si l'organisme allait au-devant du plaisir représenté. Quand on définit l'inclination un mouvement, on ne fait pas une métaphore." *Essai*, 28. "What can our preference be, except a certain disposition of our organs, the effect of which is that, when two pleasures are offered

Compare this passage to the definitive position in lycée psychology that psychology has nothing to do with facts of movement, and you begin to realize what has occurred. For the Spiritualists, it did not matter whether a movement took place on the scale of molecules or on the scale of organs. All movements that the mind did not will were uninteresting for psychology, and all movements of which the mind was not conscious were irrelevant. Rabier's manual, the most aggressive effort to demonstrate the robustness of Spiritualist psychology in the 1880s, defended the domain of the psychological by defining it against all phenomena of material movement: of the two essential orders of facts, those of physiology were to be understood as "purely and simply *movements* of an organ and of a material on which it acts," while "a movement is never, in sum, but the transport of a morsel of matter from one place to another."[65] But morsels of matter turned out not to be uniformly opaque to consciousness. Physiology now showed that the mind was dimly aware of a vast region of unwilled bodily activity—a set of experimental findings to which Bergson himself contributed in 1886. I believe it was from here that Bergson's own thinking began to change. Now, rather than dispute the explanatory privilege of physiology for psychological phenomena, he began to see that these various incursions of the body into conscious life also enlarged the domain of the conscious. The observations from physiology changed what a truly empirical investigation of one's consciousness ought to find.

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simultaneously to our mind, our body inclines towards one of them? Analyse this inclination itself and you will find a great many little movements which begin and become perceptible in the organs concerned, and even in the rest of the body, as if the organism were coming forth to meet the pleasure as soon as it is pictured. When we define inclination as a movement, we are not using a metaphor." *Time and Free Will*, 38.

[65] "Les fonctions organiques *sont* purement et simplement des *mouvements* de l'organe et d'une matière sur laquelle il agit. [...] Un mouvement n'est jamais, en somme, qe le transport d'un morceau de matière d'un lieu dans un autre," Rabier, *Leçons de philosophie*, 22. Original italics.

What a more scrupulous introspection finds, the *Essai* argues, are the unarticulable experiences that actually make up a person's conscious life. These are the phenomena that consciousness is most directly—"immediately"—given. In the instance of a preference or an inclination, it is the feeling of countless small stirrings in the body—"sketches" of movement made by various organs. When Bergson makes a point here of declaring that he is *not* speaking in metaphor, he is insisting that the particular form of correspondence between this psychological phenomenon and its physiological manifestation is not dualism. It is equivalence—an identity in the strictest sense. Introspect your feeling of a preference and you'll find that it is the feeling of this mosaic of movements. Notice, too, that what stirs the depths of the body, in the passage I quoted, is not a physical action upon the body from without, but a thought—a pleasure "pictured" within the mind. We only experience a preference because the body acts, variably and for the most part discreetly, upon everything that the mind thinks. The textured feeling of an intricate bodily response is the whole of our experience of our thoughts.

Yet: it is not obvious how an empirical "given" of this kind for psychology is in any way conducive to the mind's freedom. The Spiritualists won one kind of freedom for the mind—a freedom of thought and will—by lifting away as much psychological activity as possible from the life of the body. Bergson is now doing exactly the opposite, yoking the mind so completely to the body that every *fait psychologique* comprises an assortment of bodily movements. And he does not deny that every one of the movements that make up this complex is a reflex. What room does he have, then, to argue that psychological life is fundamentally free? For what has emerged from the researches in hypnotism is a bodily life far more complicated than the Spiritualists have known—but it is only a more complex automatism.

This is where we must see how Bergson's psychology safeguards a different kind of freedom by operating within a different set of oppositions. In this psychology there is no

dualism of mind and body, because the experience of the mind and the experience of the body are identical. There is not even a meaningful distinction between what is willed and what is unwilled. The complete automatism of the body is no impediment to Bergson because the exercise of the will is not what counts for someone to be free. Instead, freedom depends on the recognition of a difference between what is experienced and what is reasoned. The *Essai* pursues this distinction in a variety of forms: as what is "immediate" versus what is conceptualized; as "quality" versus quantity; as what is "personal" versus what is "impersonal." In the following, I will show how the meanings of these words in the *Essai* are at once idiosyncratic to Bergson and artifacts of scientific observations of the 1880s.

3. The Perception of Quality

Bergson takes joy to be a movement, but recognizing this does not make it self-evident that he should also call this movement a "quality." If we dwell on this choice we might realize that Bergson gives a peculiar meaning to the word *quality* itself. When he speaks of "quality" in the *Essai*, Bergson sometimes adjoins a synonym, as though to clarify the sense that he means. That synonym is *nuance*, as in "a certain quality or nuance" distinguishing one state of mind from another, or "a certain nuance or quality" marking the intensity of a sensation.[66]

You will not find *nuance* in any definition of *quality*, in French or in English. To speak of *quality* in the sense of *nuance*, as Bergson does, actually contravenes the meanings of both. A *quality*, the Littré dictionary would tell you in the 1880s, is "what makes a thing what it is," or

[66] "L'intensité pure [of experiences like joy, sadness, or aesthetic feelings] se réduit à une certain qualité ou nuance" (6); "l'intensité, qui n'était qu'une certaine nuance ou qualité de la sensation" (31-32).

"what makes one call such a thing by such a name."[67] *Nuance*, in contrast, has a specific, literal meaning in the language of color, which informs its "figurative" meaning.[68] A "degree of increase or decrease in the appearance of a single color"—the literal meaning—is the basis of the more general definition, "a delicate and almost imperceptible difference found between two things of the same kind."[69] Altogether, a change of quality produces a difference in kind; a change in nuance is a difference of degree. There is nothing accidental about Bergson's seemingly casual assertion that *quality* and *nuance* are interchangeable. It reveals how he has changed the meaning of "quality." It also conveys the essence of his argument about the "immediate" experience of the psyche—the "données immédiates de la conscience" of the *Essai*'s title. On this level of experience, Bergson comes to believe, every change in degree *is* a difference in kind.

It is this insight that Bergson will develop into an argument about the speciousness of psychological determinism in the *Essai*'s final chapter. Because the mind's immediate experience of the world is "qualitative"—in the particular sense that Bergson means this word—that experience is constantly *sui generis*: never repeatable, never even comparable to another experience, and thus never amenable to either measurement or prediction. To show how Bergson's "quality" becomes a seed of personal freedom in the psyche, I need to explain just how Bergson comes to understand *quality* in the sense of *nuance*—a meaning that allows him to

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[67] "ce qui fait qu'une chose est telle"; followed by an illustrative quotation from Malebranche: "ce qui fait qu'on appelle une chose d'un tel nom." *Dictionnaire de la langue française (Littré)* [1873].
[68] "**Nuance**," Littré (1873).
[69] "1. Degré d'augmentation ou de diminution que présente une même couleur…3. différence délicate et presque insensible qui se trouve entre deux choses du même genre," Littré (1873). The contemporary edition of the *Dictionnaire de l'Académie française* corroborates: "**Nuance**. Des degrés différents par lesquels peut passer une couleur, en conservant le nom qui la distingue des autres" (6th ed., 1835).

discover what the nature of psychological experience actually has to do with the impossibility of determinism.

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Quality has a more specific literal meaning that at least puts the word in the same semantic field as *nuance*. In the philosophy of perception, a "quality" is a perceived property, an aspect of a perceptual experience or a material property of a perceived object—or both, depending on your metaphysics.[70] This is the meaning that a philosophical reader would expect to find in a study of the "données immédiates"—immediate givens—of consciousness. And regardless of whether you took a given quality to be inherent in the object perceived or to exist solely in the experience of the perceiver—regardless, that is, of whether you accepted the existence of both objective and subjective qualities, and designated them as primary and secondary, respectively—the same examples would come to mind as instances of the word *quality*: shades of light, textures of surfaces, shapes, weights, feelings of warmth and cold. All of these bear a superficial resemblance to the figurative elements in the *Essai*'s description of joy: a lightened state of consciousness, "comparable to a warmth or a light." But both kinds of perceptual quality, objective and subjective, possess a feature that is absent from "quality" in the *Essai*: they are materially determined, whether by the physical properties of the objects perceived or by the particular physiology of the perceiving subject.

Bergson himself appears to have gone from one of these positions to the other, before departing from both. As a lycée student, he demonstrated a realist understanding of sensory perception in an essay for the philosophy competition of the 1876 Concours général, which he

[70] The Littré takes a Cartesian view. The second definition of *qualité* is its philosophical sense: "Manière d'être des corps en vertu de laquelle ils font sur nos sens une impression particulière qui nous donne l'idée de figure, de couleur, de grandeur, etc." Littré (1873).

won.[71] As a teacher, through about 1885, he taught sensory perception as a subjective affair of physiological determinants. These positions, though antithetical, were expressed in a common language—a language in which material determinism was built in. A verb expressing the action of "qualities" was "determine"—as in, the qualities of an object "determine" your perception of that object;[72] and a synonym for "qualities" was "determinations [*déterminations*]"—as in, the perception of an object's "diverse qualities and determinations,"[73] or "the nervous determinations of touch" produced by a pinprick.[74]

The language of quality was consistent across these ontological variants because a common conception of the mechanics of sensory perception informed both. According to this model—the working model of nineteenth-century physiologists—sensations occurred when the body received "impressions" from without, which then entered the realm of experience by an act of "translation." As Bergson put it in 1876: "Perception is, definitively, but the translation of impressions produced on the retina: now, we know that exterior objects come to be depicted upon the unique surface of this membrane, in whatever arrangement they are found situated."[75] In 1885, the picture of sensation he presented to his students was more physiologically embellished but no less materially fixed:

> We call sensation all states of the soul that have for immediate cause a physical impression, that is, to speak with more precision, a change undergone in the state of the nervous system: anatomy shows us that nerves depart from various parts of the body to arrive, by various turns, in the brain. We have compared them to telegraph lines converging upon a central bureau. All modification undergone in these nerves, and in particular at their points of terminus, can give rise to a sensation, though a sensation is not always produced. Thus a pin pushed into the skin produces nervous determinations

[71] Archives nationales AJ/16/796 (hereafter Bergson, 1876 Concours).
[72] "des qualités qui le déterminent," Bergson, 1876 Concours, p. 13.
[73] "ses qualités et ses déterminations diverses," ibid., p. 12.
[74] "une épingle enfoncée dans la peau produit des déterminations nerveuses du tact," Bergson, *Cours I*, ed. Hude, 59.
[75] "La perception n'est en definitive, que la traduction des impressions produites sur la rétine : or on sait que les objets extérieurs viennent se peindre sur la surface unique de cette membrane, dans quelque plan qu'ils se trouvent situés." Bergson, 1876 Concours, p. 5.

> of touch; from there a perturbation [*ébranlement*] of the nervous system that translates in us as the sensation of a prick. A ray of sunshine touching our retina, that is, the excitation [*l'épanouissment*] of the optic nerve, determines a nervous perturbation [*ébranlement*], from which results for our soul the sensation of light or of color, and so forth.[76]

This lesson in 1885 was prescribed by the *programme* as a combined overview of two sub-categories of psychological phenomena that Spiritualist psychology considered distinct, "sensations" and "sentiments." Their difference lay precisely in sensations being bodily events, and thus materially determined, and sentiments being mental states, independent from bodily conditions. Bergson emphasized this distinction when he proceeded to the second category that day, explaining, "My sentiment is not tied to a physical impression," and reminding the class that "for sensation things happened quite differently. Each sensitive nerve gave rise to a well determined sensation."[77]

The image of nervous transmission as a telegraph system was from Helmholtz, as was the importance Bergson gave here to the particular locations in the brain where various "impressions" arrive. On Helmholtz's theory, different locations of nervous terminii were what

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[76] "On appelle sensation tout état de l'âme qui a pour cause immédiate une impression physique, c'est-à-dire, pour parler avec plus de précision, un changement survenu dans l'état du système nerveux : l'anatomie nous montre que, des diverses partie du corps, partent des nerfs qui vont aboutir par des détours plus ou moins longs au cerveau. On les a comparés à des fils télégraphiques venant converger vers un bureau central. Toute modification survenue dans ces nerfs, et en particulier au point où ils se terminent, peut donner naissance à une sensation, quoique la sensation ne se produise pas toujours. Ainsi une épingle enfoncée dans la peau produit des déterminations nerveuses du tact; de là un ébranlement du système nerveux qui se traduit en nous par la sensation d'une piqûre. Un rayon de soleil touchant notre rétine, c'est-à-dire l'épanouissement du nerf optique, détermine un ébranlement nerveux, d'où résulte pour notre âme la sensation de lumière ou de couleur, et ainsi de suite" (Bergson, *Cours I*, ed. Hude, 59). Emphasis added. Though Bergson uses "*épanouissement*" despite having the word "*excitation*" available in French. In the absence of an accurate English equivalent for *épanouissement* in this context, I have used "excitation" following English translations of Helmholtz, whose theories of sensation and visual perception are the basis of Bergson's account here. See for instance Helmholtz, "The Recent Progress of the Theory of Vision" (1868), in *Science and Culture*, ed. David Cahan (Chicago, 1995), 127-203.

[77] "Mon sentiment n'est pas lié à une impression physique. [...] Pour la sensation les choses se passaient d'une manière bien différente. Chaque nerf sensitif donnait lieu à une sensation bien determinée" (Bergson, *Cours* I, ed. Hude, 64).

differentiated the sensations felt. The nerves themselves, indeed like telegraph lines, were suppose to be identical, leaving the question of sensory difference to be settled entirely by the point of contact in the brain. Disputes with Helmholtz about this were ongoing among contemporary physiologists.[78] But regardless of whether sensory differentiation occurred in the brain or, as Helmholtz's critics contested, in already differentiated nervous structures en route to the brain, the particular "quality" of a sensation was entirely the product of the material specifics of nervous transmission. In 1885, Bergson appears to have been so taken with the didactic aid of the telegraph image that he regarded the matter as largely settled in Helmholtz's favor:

> Imagine filaments of iron, absolutely identical, departing each and every one from the same battery, but ending: this one in a bell, that one in a telegraph apparatus, this other in an electric light. These are identical threads, transmitting an identical current, and nevertheless they produce a sound here, a movement there, and elsewhere a radiant light. — Well now, the threads are the sensitive nerves, probably identical among themselves, and what travels along the threads are impressions, movements also very analogous among themselves. What differs is the special conformity, the nature of the point or apparatus where they arrive…in the nervous center.[79]

The Spiritualist antidote for this incursion of material determinism into the psyche was to make psychology as much as possible about phenomena other than sensations. The real phenomena of interest to Spiritualist psychology were those that showed the psyche at work, synthesizing, discerning, reasoning—phenomena that affirmed, as Bergson wrote in 1876, "the necessary existence of an intellect capable of conceiving the absolute, of pronouncing, in light of

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[78] Boring, *A History of Experimental Psychology* (New York: Century, 1929), 88-94.
[79] "Imaginez des fils de fer absolument identiques, partant les uns et les autres d'une même pile, mais aboutissant : celui-ci à une sonnerie, celui-là à un appareil télégraphique, cet autre à un appareil de lumière éléctrique. Ce sont des fils identiques, transmettant un courant identique et pourtant ils engendreront ici un son, là un mouvement, ailleurs une lumière éblouissante. —Eh bien les nerfs sensitifs sont des fils probablement identiques entre eux et ce qui voyage sur ces fils, ce sont des impressions, des mouvements très analogues entre eux. Ce qui diffère, c'est la conformité spéciale, c'est la nature du point ou de l'appareil auquels ils viennent aboutir…dans le centre nerveux." Bergson, *Cours I*, ed. Hude, 115.

eternal principles and of the infinite, upon the obscure givens [*données*] of sensation."[80] His account in that essay of what happens in the event of one of these "givens" shows what little there is for the psyche to do in these instances, and what little choice the mind has to perceive such sensations otherwise than as they're given:

> Everyone knows that, among the impressions produced upon us by external objects, some provoke a direct, immediate judgement, by which the mind affirms at once the reality and the materiality [*matière*] of these objects. Such is the perception of color, for example. Following a certain impression produced upon the retina and upon the optic nerve by an undulating movement, more or less pronounced, the mind affirms at once the objective existence of the color, or at least of the unknown cause of color, and, to a certain extent, the nature of this color, and of this cause…Here we have a primitive, immediate fact.[81]

Color perception was a favorite example of this most "direct" kind of sensation in Spiritualist psychology, a sensation presented to consciousness exactly as the body has received it.[82] Another name for such straightforward sensations was the "*donnée immédiate*." Apart from colors, only the sensations of smell and taste remained to fill out the rest of this category, Bergson argued in his competition essay, for "these senses have the privilege of giving

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[80] "l'existence nécessaire d'une intelligence capable de concevoir l'absolu, et de prononcer, à la lumière des principes eternels et de l'infini, sur les obscures données de la sensation," Bergson, 1876 Concours, p. 10.

[81] "Chacun sait que, parmi les impressions produites sur nous par les objets extérieurs, les unes provoquent un jugement direct, immédiat, par lequel l'esprit affirme à la fois leur réalité et leur matière. Telle est la perception de la couleur, par exemple. A la suite d'une certaine impression produite sur la rétine et sur le nerf optique par un mouvement ondulatoire plus ou moins prononcé, l'esprit affirme à la fois l'existence objective de la couleur, ou du moins, de la cause inconnue de couleur, et, jusqu'à un certain point, la nature de cette couleur, et de cette cause…C'est là un fait primitif, immédiat…" Bergson, 1876 Concours, pp. 3-4. Emphasis added.

[82] For example, Paul Janet wrote in his 1880 textbook: "Les données des sens, par exemple, la couleur, le son, la solidité, etc.…sont le produit direct des sens…elles sont données, senties, immédiatement perçues. Il en est de même des données immédiates de la conscience….ainsi le plaisir ou la douleur, le souvenir, la sensation sont des phénomènes qui nous sont données directement…chacun de ses phénomènes est ce qu'il est, et ne représente rien que lui-même : la sensation de bleu, au moment où l'éprouve, n'est autre chose qu'elle-même : elle est ce que vous savez, et rien autre chose." Janet, *Traité*, 190. My underlining.

immediately all that they can furnish."[83] Having restricted the category of the immediate to these three kinds of experiences, Bergson then proceeded to his winning argument: a demonstration of how all other perceptions—such as of shape, size, relief, and distance—were the active work of the psyche. The author of the *Essai sur les données immédiates de la conscience* once understood the *donnée immédiate* exactly as intended by his education: these were the phenomena of least interest and greatest inconvenience to Spiritualist psychology.

In the *Essai*, the language of "quality" is filled with color words, but it is a metaphorical idiom. "Quality" in the *Essai* is not a material property of a perceived object, nor an experience dictated by the specifics of a physiological transmission. Instead, Bergson writes:

> When it is said that an object occupies a large space in the soul, or even that it fills the soul entirely, we ought to understand by this simply that its image has altered the nuance of a thousand perceptions or memories, and that in this sense it pervades them [*elle les pénètre*], although it does not itself come into view.[84]

The word "nuance" in this passage appears in the authorized English translation as "shade"—the literal meaning of *nuance* in the language of color.[85] But this "nuance" is nowhere on the visible spectrum. You can't actually see it, but only expressions of it, in the way it affects other contents of conscious experience.

"Quality" in the *Essai* takes a different set of verbs: a quality "colors" states of mind—multiple states at once; it "dyes," "tints," "stains"—as in Bergson's observation that a feeling, whether a deep joy or a deep sorrow, is really "a certain quality or nuance, from which a more

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[83] "Ces sens ont le privilège de donner immédiatement tout ce qu'il peuvent fournir." Bergson, 1876 Concours, p. 4.
[84] Translation modified from *Time and Free Will*, 9. "Quand on dit qu'un objet occupe une grande place dans l'âme, ou même qu'il y tient toute la place, on doit simplement entendre par là que son image a modifié la nuance de mille perceptions ou souvenirs, et qu'en ce sens elle les pénètre, sans pourtant s'y faire voir." *Essai*, 7.
[85] *Time and Free Will*, 9.

or less considerable mass of psychic states becomes colored [*se colore*]."[86] A signature consistency in the *Essai* is that whenever a quality is present, or is changing, it behaves like a color. It acts as a kind of wash, bleeding into a person's psychological experience. When the color metaphor first appears—in that phrase, "a certain quality or nuance, from which…a mass of psychic states becomes colored"—Bergson immediately supplies an example, as though he is aware of having just written something that needs explaining.

> For example, an obscure desire turns little by little into a great passion. You will see that the feeble intensity of this desire consisted at first in its appearing to be isolated and as if foreign to the rest of your inner life. But little by little it penetrates a greater number of psychic elements, tinging them, so to speak, with its own color: and lo! your outlook on everything now seems to have changed. All your sensations, all your ideas seem fresh; it is like a new childhood.[87]

That the metaphor is in the verb—*penetrate, tinge, suffuse*—means that "quality" in the *Essai* is spoken of in a metaphorical idiom even when it is not explicitly called a "color" or a "shade." The idiom chosen expresses something about psychological experience that Bergson does not want you to lose sight of: the way that a *fait psychologique* alters the experience of other *faits psychologiques*. For Bergson, this dynamic is what makes something identifiable as a "quality," what makes "qualitative change" change of a particular kind: a change that happens by suffusion, that has a concerted effect on many things.

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[86] "L'intensité pure [of aforementioned emotions]…se réduit ici à une certaine qualité ou nuance dont se colore une masse plus ou moins considérable d'états psychiques." *Essai*, 6. Bergson's English translation has: "a certain quality or shade which spreads over a more or less considerable mass of psychic states." *Time and Free Will*, 8.

[87] "Par exemple, un obscur désir est devenu peu à peu une passion profonde. Vous verrez que la faible intensité de ce désir consistait d'abord en ce qu'il vous semblait isolé et comme étranger à tout le reste de votre vie interne. Mais petit à petit il a pénétré un plus grand nombre d'éléments psychiques, les teignant pour ainsi dire de sa propre couleur; et voici que votre point de vue sur l'ensemble des choses vous paraît maintenant avoir changé. Toutes vos sensations, toutes vos idées vous en paraissent rafraîchies ; c'est comme une nouvelle enfance." *Essai*, 6. My translation largely follows *Time and Free Will*, the notable exception being that I use "penetrates" instead of "permeates" (*Time and Free Will*, 8).

Think again of the *Essai*'s burgeoning joy, how it reorients multiple conscious states at once, quickens multiple ideas and sensations; as it grows, how it lightens your various movements, and at its greatest, suffuses *all* of your perceptions, even all of your memories. "There are thus many characteristic forms of inner joy," writes Bergson, "so many successive stages which correspond to qualitative modifications of the mass of our psychological states."[88] Why "mass"? Because joy does not distinguish between perceptions, sensations, ideas; when it is there, it is in all of these at once.

> The number of states that each of these modifications attains is more or less considerable, and, although we do not explicitly count them, we well know if our joy penetrates all of our impressions in the course of a day, for example, or if a few of them are left out.[89]

Likewise sorrow bereaves a multitude of sensations and ideas, such that each of them bears a sense of loss and hopelessness.[90]

Giving expression to the particular porousness of the *Essai*'s psychological facts is only part of the philosophical work of Bergson's metaphorical language of color. This language serves two further functions, an empirical one and a metaphysical one. I'll start with the empirical.

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[88] "Ainsi, il y a plusieurs formes caractéristiques de la joie purement intérieure, autant d'étapes successives qui correspondent à des modifications qualitatives de la masse de nos états psychologiques." *Essai*, 8.

[89] "…Le nombre des états que chacune de ces modifications atteint est plus ou moins considérable, et quoique nous ne les comptions pas explicitement, nous savons bien si notre joie pénètre toutes nos impressions de la journée, par exemple, ou si quelques'unes y échappent." *Essai*, 8. "…The number of states which are concerned with each of these alterations is more or less considerable, and, without explicitly counting them, we know very well whether, for example, our joy pervades all the impressions which we receive in the course of the day or whether any escape from its influence." *Time and Free Will*, 11.

[90] "On montrerait sans peine que les différents degrés de la tristesse correspondent, eux aussi, à des changements qualitatifs. Elle commence par n'être qu'une orientation vers le passé, un appauvrissement de nos sensations et de nos idées, comme si *chacune d'elles* tenait maintenant tout entière dans le peu qu'elle donne, comme si l'avenir nous était en quelque sorte fermé." *Essai*, 8. My emphasis.

Bergson's choice of color words over all other terms to describe changes of quality reflects how he actually observed these changes, in a particular context, enacted in a particular form. He saw them on the moving body, in the automatic reactions that emerged in ever finer detail in the physiological researches of the 1880s. As he tracked these investigations he made two sets of observations: of the enormous variety of the body's movements, and of the extent of the body's engagement from moment to moment. In the body's movements he noticed the extreme heterogeneity of events that occur at any given moment of psychological life. He saw how this motley totality could not be measured as a numerical sum, a collective quantity, because each change was unique. Instead, the only way to know what everything added up to, from moment to moment, was to feel it. That felt whole became Bergson's notion of quality.

Like his contemporaries, Bergson saw the life of the body as an index to the life of the mind. The first chapter of the *Essai* makes clear that Bergson is seeing the same bodily phenomena as everyone else. The physiologists whose works I presented in chapter two are not only cited here but quoted at considerable length: William James's contentious papers on effort (1880) and emotion (1884), Charles Darwin's *Expression of the Emotions* (1872), Charles Richet's *L'homme et l'intelligence* (1884), Ribot's *Mécanisme de l'attention* (1888), and Herbert Spencer's *Principles of Psychology* (in Ribot's French translation of 1874). But Bergson's many quotations amount to repurposed data, as he uses the observations recorded in these works to show how qualitative experiences are composed and how they change. From time to time, he acknowledges that this is not what these authors themselves believed they were documenting.

From James's study of the physiology of effort, Bergson draws "a conclusion that Monsieur James has not formulated."[91] James's paper, we saw, was a verdict in the debate about whether the "feeling of effort" was centrifugal or centripetal—that is, whether it was the feeling

[91] "…une conclusion que M. James n'a pas formulée, mais qui nous paraît tout à fait conforme à l'esprit de sa doctrine," *Essai*, 18. Translation modified from *Time and Free Will*, 24.

of an outgoing "innervation" of muscles designated for effort or an "incoming" feeling of muscles in action.[92] The subjects of the *experimentum crucis* were victims of a specific paralysis, leading researchers to believe that effort was centrifugal, the feeling of innervation, since the subjects experienced effort even when their efforts produced no response in the paralyzed muscle. James, however, pointed out that, in these very experiments, the apparently motionless subjects *were* in fact moving, in parts of their bodies where the experimenters weren't looking. The feeling of effort, James concluded, was the result of these out-of-the-way movements, "'a complex afferent sensation,'" Bergson quotes him, "'which comes from contracted muscles, stretched ligaments, compressed joints, an immobilized chest, a closed glottis, a knitted brow, clenched jaws,' in short, all the peripheral points where effort entails a modification."[93] These observations are lifted verbatim from James's work but given as evidence for a claim of Bergson's own. To James these hitherto unacknowledged movements in the study of effort demonstrate that every effort is a more extensive bodily phenomenon than a concentrated expenditure of force. To Bergson, these movements are the assorted components of an ongoing qualitative experience, in which any change felt is due to a change in the body's mobile composition.

Effort is a particular prize for Bergson's argument about the ubiquity of quality, because effort is one experience that seems, to contemporaries, indisputably an affair of simple magnitude, characterizable wholly by "more" or "less." James's paper shows, instead, that every

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[92] James, "The Feeling of Effort" (1880), which James incorporated into *The Principles of Psychology* vol. 2, chapter 26 ("Will"). In the *Essai* Bergson cites the French translation of the article, "Le sentiment de l'effort," that appeared in Renouvier's *Critique philosophique* 2 (1880). I provide the context of this centrifugal-centripetal debate in chapter 2 section 2.

[93] "Notre sentiment de l'énergie musculaire déployée 'est une sensation afférente complexe, qui vient des muscles contractés, des ligaments tendus, des articulations comprimées, de la poitrine fixée, de la glotte fermée, du sourcil froncé, des mâchoires serrées,' bref, de tous les points de la périphérie où l'effort apporte une modification." *Essai*, 18. I've taken the quotation in English from *Time and Free Will*, 24.

feeling of effort comprises a unique mosaic of movements, dispersed throughout the body. As an effort intensifies, these movements multiply. Bergson invites you to see this for yourself:

> Try, for example, to clench your fist "more and more." It will seem to you that the sensation of effort, entirely localized in your hand, passes successively through increasing magnitudes. In reality, what you experience in your hand remains the same. Only, the sensation that was at first localized has invaded your arm, ascended to the shoulder; finally, your other arm stiffens, both legs follow suit, your breathing stops short: your whole body is now given over.[94]

The first chapter of the *Essai* contains numerous passages like this where Bergson gives the reader detailed instructions on how to unperceive your experience and perceive it again as if for the first time. The process requires you to undo the swift interpretation that your consciousness instantly interposes—such as the notion of "increasing magnitudes" of effort—and notice instead your unmediated experience. For effort, as well as for all the other experiences Bergson describes in this chapter, this means recognizing that all you are really given is a series of extremely diverse sensations. These alone are your *données immédiates*.

Though he has preserved the name, these *données immédiates* are not constituted the same way as the ones he wrote about as a lycée student and taught in his first years at Clermont-Ferrand. And rather than minimize their occurrence in the psychological universe, as he did before, his message in the *Essai* does the very opposite, arguing that, from a strictly empirical view, all psychological phenomena are *données immédiates*. Even experiences that seem to present you with changes in magnitude, such as a perception of light growing brighter or

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[94] Nous prétendons que plus un effort donné nous fait l'effet de croître, plus augmente le nombre des muscles qui se contractent sympathiquement, et que la conscience apparente d'une plus grande intensité d'effort sur un point donné de l'organisme se réduit, en réalité, à la perception d'une plus grande surface du corps s'intéressant à l'opération. [...] Essayez, par exemple, de serrer le poing 'de plus en plus.' Il vous semblera que la sensation d'effort, tout entière localisée dans votre main, passe successivement par des grandeurs croissantes. En réalité, votre main éprouve toujours la même chose. Seulement la sensation qui y était localisée d'abord a envahi votre bras, remonté jusqu'à l'épaule ; finalement, l'autre bras se raidit, les deux jambes l'imitent, la respiration s'arrête ; c'est le corps qui donne tout entier." *Essai*, 18. Translation modified from *Time and Free Will*, 24.

dimmer, or the lifting of two different weights—even these experiences, Bergson says, "reduce…to qualitative changes."[95] "When the psychophysicist lifts a heavier weight," he writes, "he experiences, he says, an increase of sensation. Examine whether this increase of sensation ought not instead to be called a sensation of increase."[96] Restrict your examination to the *données immédiates* that make up this experience and you will find this:

> What is present immediately to consciousness is the sensation of a weighted movement, of sorts, and this sensation itself resolves in analysis into a series of muscular sensations, each of which represents by its nuance the place where it is occurring and by its coloration the magnitude of the weight that one is lifting.[97]

Here is a compact instance of Bergson perceiving in metaphor. He appears to see color, somehow, on the body, and can actually point to what he means by a "nuance" (or as the *Essai*'s authorized translation has it, a "shade.")[98] The connection he has chosen to make between a "nuance" felt in immediate experience and the "place" on the body where that sensation occurs is at once metaphorical and empirical. The paragraph that ends with this descriptive passage begins with a discussion of some recent studies on the location-specific sensations of heat and cold. Bergson cites an 1885 study in *Mind*, which reported findings from three independent investigations, in Sweden, Germany, and the United States, revealing the hyper-localized nature of these sensations on the skin. The skin, Bergson saw, was far from uniformly sensitive

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[95] "Les variations d'éclat d'une couleur donnée…se réduiraient donc à des changements qualitatifs, si nous n'avions contracté l'habitude de mettre la cause dans l'effet, et de substituer à notre impression naïve ce que l'expérience et la science nous apprennent." *Essai*, 40. A phrase like "reduce…to qualitative changes" demonstrates the difficulty of designating Bergson's notion of "qualitative experience" as a critique of scientific reductionism. Bergson is a proponent of reduction, in the sense that he means this word, as a call to radical empiricism. What Bergson's empiricism opposes is abstraction rather than reduction.

[96] "Lorsque le psychophysicien soulève un poids plus lourd, il éprouve, dit-il, un accroissement de sensation. Examinez si cet accroissement de sensation de devrait pas plutôt s'appeler une sensation d'accroissement." *Essai*, 36.

[97] My underlining. "…La conscience immédiate a la sensation d'un mouvement pesant, en quelque sorte, et cette sensation elle-même se résout à l'analyse en une série de sensations musculaires, dont chacune représente par sa nuance le lieu où elle se produit, et par sa coloration la grandeur du poids qu'on soulève." *Essai*, 37.

[98] *Time and Free Will*, 50.

to heat and cold. Instead, it was a constellation of heat-sensing and cold-sensing points, each kind impervious to the sensations felt by the other kind. These differentiated worlds existed millimeters apart, as the study showed in this sensory map of a single pair of hands—

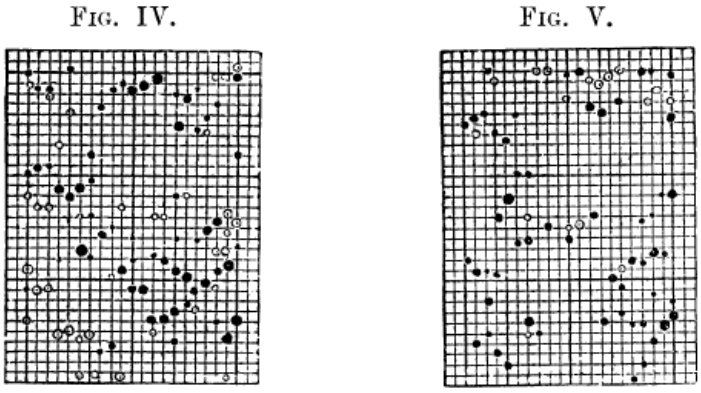

FIG. IV.—Map of the heat-spots and cold-spots on the back of the left hand. Extent, 2 × 3 cms. Dots indicate cold; circles, heat; the larger ones represent the spots which give a strong reaction; the smaller, those which give a weak one. The top of the map is peripheral, the bottom central. The right side is the radial; the left the ulnar.

FIG. V.—Similar map for the symmetrical portion of the right hand of the same individual. In this case, of course, the left side is the radial, and the right the ulnar.

Fig. 4 Geography of heat- and cold-sensing points in a pair of hands
Henry Herbert Donaldson, "On the Temperature-Sense," *Mind* 10 (July 1885), p. 407.

—with dots and circles to indicate cold or heat, and different sizes, like large and small cities, representing different levels of sensitivity.[99] From these results Bergson drew two lessons, one seemingly small—"The recent experiments of Blix, Goldscheider, and Donaldson have shown that cold and warmth are not felt at the same points on the surface of the body"—and one profound:

[99] Henry Herbert Donaldson, "On the Temperature-Sense," *Mind* 10 (July 1885): 399-416, p. 407.

> Physiology is thus inclined from now on to establish between sensations of warmth and cold a difference in nature, and no longer in degree. But psychological observation goes further, for an attentive consciousness would without difficulty find specific differences among different sensations of warmth, as well as among sensations of cold. A more intense warm is really another kind of warmth.[100]

"By his metaphor the speaker is trying to communicate what he believes to be a fact": I quoted C. S. Lewis in the epigraph to this chapter to open the possibility that a fact and a metaphor may be in some instances interchangeable—even difficult to tell apart. Bergson's rendering of "quality" is such an instance. The language of quality in the *Essai* shows Bergson reaching for metaphor to communicate a new fact—a new kind of fact, actually: a whole layer of experience that he calls "immediate," where every change is a change in kind. The choice of color words in particular is also part of a metaphysical claim about what *données immédiates* consist of, and how they differ from their prior iteration in Spiritualist psychology.

Let's return for a moment to the lycée classroom of 1885, where the account of sensations as "translations" of physical events in the body brings Bergson to the brink of the causal gap between the physical and the mental. That year, Bergson considers this gap both necessary and unknowable. In the introductory lesson on sensation he papers over it—"A disturbance of the nervous system…translates in us as sensation"[101]—but in the longer lesson, he lifts up the cover of the translation metaphor and attempts to narrate the aftermath of an impression that has just been received by nerve fibers:

> Up to this point, there has been but the physical impression, a material disturbance of the sensory organs, of the nerves or of the brain. […] But once it reaches the brain, it is

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[100] "Les expériences récentes de Blix, Goldscheider et Donaldson ont montré que ce ne sont pas les mêmes points de la surface du corps qui sentent le froid et la chaleur. La physiologie incline donc dès maintenant à établir entre les sensations de chaud et de froid une distinction de nature, et non plus de degré. Mais l'observation psychologique va plus loin, car une conscience attentive trouverait sans peine des différences spécifiques entre les diverses sensations de chaleur, comme aussi entre les sensations de froid. Une chaleur plus intense est réellement une chaleur autre." *Essai*, 34–35.

[101] "Un ébranlement du système nerveux…se traduit en nous par la sensation." Bergson, *Cours I*, ed. Hude, 59.

> transformed or rather something totally new takes its place, a psychological fact is produced which is the sensation. — Between the sensation and the impression there is no resemblance of any kind nor even any relation. [...] All we can say, is that the latter phenomenon is produced following or upon the occasion of the first. But how is it produced? It's a question that will never be resolved, considering that no explanation, no reasoning will ever fill the unbreachable abyss that separates the physical fact, even the most complicated physical movement, from the simplest fact of consciousness.[102]

"Translation" was a metaphor that held together two continents: what the body underwent and what the mind experienced. As a metaphor, it was both widely used in the language of physio-psychology and unanalyzed.[103] But it was a placeholder, a substitute for metaphysics that, in the nineteenth century, simply denoted a process about which one cannot be more specific at this time.[104] Bergson, however, holds metaphors to task. In 1885, he founders upon the act of transformation that "translation" is supposed to signify: notice that he doesn't resort to the word "*se traduire*" when he tries to break down this process. By the time he writes the *Essai*, he has devised his own solution to this problem, from his new awareness of the body's perpetual

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[102] "Jusqu'ici, il n'y a eu qu'impression physique, ébranlement matériel des organes des sens, des nerfs ou du cerveau. [...] Mais voici qu'une fois arrivé au cerveau, il se transforme ou pour mieux dire quelque chose de tout nouveau se substitue à lui, il se produit un fait psychologique qui est la sensation. — Entre la sensation et l'impression il n'y a aucune espèce de ressemblance ni même de rapport. [...] Tout ce qu'on peut dire, c'est que ce dernier phénomène se produit à la suite ou à l'occasion des premiers. Mais comment se produit-il ? C'est une question qui ne sera jamais résolue, attendu qu'aucune explication, aucun raisonnement ne comblera l'abîme infranchissable qui sépare le fait, le mouvement physique même le plus compliqué du fait de conscience même le plus simple." Bergson, *Cours I*, ed. Hude, 116-117.

[103] For example, Ribot writes, describing the field of analysis in scientific psychology: "The soul and its faculties…disappear, and we have to do only with internal events, which as sensations and mental images translate physical events, or which, as ideas, movements, volition and desire, are translated into physical events" (Ribot, *German Psychology of Today: The Empirical School*, tr. James Mark Baldwin from the 2nd French edition [New York: Scribner, 1886], 8). In his 1879 article on movement, Ribot declares this connective part of the mind-body landscape out of bounds: "fait physique, entre dans la conscience, c'est-à-dire devient psychique (par une transformation dont nous ignorons et dont il ne nous importe pas de connaître la nature)…" Ribot, "Les mouvements et leur importance psychologique," 381.

[104] It was not always this way: translation as an analogy for perception was a studied choice for Descartes. See Nancy Maull, "Cartesian Optics and the Geometrization of Nature," *The Review of Metaphysics* 32, no. 2 (1978): 253-273, esp. 259-260; and Nima Bassiri, "Material Translations in the Cartesian Brain," *Studies in History and Philosophy of Biological and Biomedical Sciences* 43 (2012): 244-255, esp. 251-254.

reactivity—of that dimension of physical movement that is both automatic and perceptible to consciousness.

Now he identifies the "translation" model as the chief impediment to understanding how physical events become felt. "Perhaps the difficulty…is due above all to the fact that we are unwilling to see the affective state as anything other than the conscious expression of an organic disturbance, or the interior echo of an exterior cause," he writes in the *Essai*,

> We notice that a more intense sensation generally corresponds to a greater nervous disturbance; but inasmuch as these disturbances are unconscious as movements, since they come before consciousness in the guise of a sensation that bears no resemblance at all to motion, we do not see how they could transmit to the sensation anything of their own magnitude. […] If the sensation…assumes for us, like the physical impression itself, the form of a magnitude, it's likely because it retains something of the physical impression to which it corresponds. And it will retain nothing of it if it is only the conscious translation of a movement of molecules...[105]

It was Bergson's qualitative study of experiences of intensification—like the efforts of the hapless paralytic, and "the sensation of increase" that Bergson diagnosed for any weight-lifting psychophysicist—that demonstrated another way, a far less speculative channel of communication between body and psyche. In the *Essai*, every movement of the body, provided that it is even dimly perceptible to consciousness, is a *donnée immédiate*. The extensive gallery of *données immédiates* in the book are so many points of connection between the physical and the psychological. That is why Bergson goes to such lengths to document—to *re*-document, rather—the slightest movements of the body observed by his contemporaries: the movements

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[105] "Peut-etre la difficulté…tient-elle surtout à ce qu'on ne veut pas voir dans l'état affectif autre chose que l'expression consciente d'un ébranlement organique, ou le retentissement interne d'une cause extérieure. On remarque qu'à un plus grand ébranlement nerveux correspond généralement une sensation plus intense; mais comme ces ébranlements sont inconscients en tant que mouvements puisqu'ils prennent pour la conscience l'aspect d'une sensation qui ne leur ressemble guère, on ne voit pas comment ils transmettraient à la sensation quelque chose de leur propre grandeur. […] Si la sensation…revêt pour nous, comme l'ébranlement organique lui-même, la forme d'une grandeur, c'est vraisemblablement qu'elle conserve quelque chose de l'ébranlement physique auquel elle correspond. Et elle n'en conservera rien, si elle n'est que la traduction consciente d'une mouvement de molécules…" *Essai*, 24. Translation modified from *Time and Free Will*, 32-33.

of the brow from Ribot's study of attention (1888);[106] the symptoms of disgust from Charles Richet's *L'homme et l'intelligence* (1884);[107] and as many contortions of emotion as it seems he could fit in:

> Darwin has remarkably described the physiological symptoms of fury. "The heartbeat accelerates; the face reddens or takes the pallor of a corpse; breathing is labored; the chest heaves; the quivering nostrils dilate. Often the whole body trembles. The voice alters; the teeth clench or grind against one another, and the muscular system is generally excited to some violent, almost frenetic act…The gestures represent more or less perfectly the act of striking or fighting an enemy. […] An intense fear," says Herbert Spencer, "is expressed by cries, by efforts to hide or escape, by palpitations and trembling." We go further; we maintain that these movements form part of the fear itself: they are the means by which a fear becomes an emotion, subject to pass through different degrees of intensity. […] There is also a keenness [*acuité*] of joy and of pain, of desire, of aversion, and even of shame, which one would find comes from the automatic movements of reaction that the organism begins, and that consciousness perceives. "Love," says Darwin, "makes the heart pound, quickens the breath, makes the face flush." Aversion is marked by the movements of repugnance that we repeat,

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[106] Bergson quotes from Ribot's *Le Mécanisme de l'attention* (Paris: Alcan, 1888): "'L'attention contracte le frontal: ce muscle…tire à lui le sourcil, l'élève, et détermine des rides transversales sur le front…Dans les cas extrêmes, la bouche s'ouvre largement. Chez les enfants et chez beaucoup d'adultes, l'attention vive produit une protrusion des lèvres, une espèce de moue.'" *Essai*, 20-21.

[107] *Essai*, 27. Bergson contends, however, that the eminent Richet has misinterpreted his own data: "Monsieur Richet has observed that the slighter the pain, the more precisely one locates it at a particular spot ; if it becomes more intense, it is referred to the whole of the limb affected. And he concludes by saying that 'pain spreads the more as it grows more intense.' We should rather reverse this proposition, and define the intensity of the pain by the very number and extent of the parts of the body which sympathize with it and react, and whose reactions are perceived by consciousness. To convince ourselves of this, it suffices to read the remarkable description of disgust given by the same author: 'If the excitation is slight, there may be neither nausea nor vomiting…If the excitation is stronger, instead of being confined to the pneumo-gastric nerve, it spreads and affects almost the whole organic system. The face turns pale, the smooth muscles of the skin contract, the skin is covered with a cold perspiration, the heart stops beating: in a word, there is a general organic perturbation following the excitation of the medulla oblongata, and this perturbation is the supreme expression of disgust.' But is it only the expression? In what does the general sensation of disgust consist, if not in the sum of these elementary sensations? And what can we understand here by increasing intensity, if it is not the ever increasing number of sensations that join in with the sensations already experienced?" Translation modified from *Time and Free Will*, 35-37. The study of pain and disgust would be integral to Richet's discovery of anaphylaxis, for which he would receive the 1913 Nobel Prize in Physiology or Medicine.

> inadvertently, when we think of the detested object. We blush, we curl our fingers involuntarily when we feel shame, even if it be retrospective.[108]

This is William James's theory of emotions,[109] with one difference: that, in addition to the bodily changes making up the felt totality of an emotion (as Bergson says above, "these movements form part of the fear itself: they are the means by which a fear becomes an emotion"), Bergson also recognizes in emotions an expressive element that coordinates the motley whole—the idea in the mind that makes one aggregate of movements an experience of fear, for instance, and another aggregate an experience of love. In the passages he takes from Darwin, as we saw, Bergson makes note not only of the body's actions but also of what they represent: "The gestures represent more or less perfectly the act of striking or fighting an enemy." He writes:

> We shall not go as far as to maintain, with Monsieur William James, that the emotion of fury is reducible to the sum of [its] organic sensations: there will always be an irreducible psychic element in anger, if this be only the idea of striking or fighting of which Darwin speaks, an idea that imparts [*imprime*] a common direction upon such varied movements. But although this idea determines the direction of the emotional state and the orientation of the concomitant movements, the growing intensity of the state itself is, we believe, nothing but the deeper and deeper disturbance of the

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[108] My underlining. "Darwin a remarquablement décrit les symptômes physiologiques de la fureur. [He quotes from the French edition (1874) of Darwin's The *Expression of the Emotions in Man and Animals*] 'Les battements du cœur s'accélèrent; la face rougit ou prend une pâleur cadavérique; la respiration est laborieuse; la poitrine se soulève; les narines frémissantes se dilatent. Souvent le corps entier tremble. La voix s'altère; les dents se serrent ou se frottent les unes contre les autres, et le système musculaire est généralement excité à quelque acte violent, presque frénétique… Les gestes représentent plus ou mois parfaitement l'acte de frapper ou de lutter contre un ennemi.' […] Une frayeur intense, dit Herbert Spencer, s'exprime par des cris, des efforts pour se cacher ou s'échapper, des palpitations et du tremblement.' Nous allons plus loin, nous soutenons que ces mouvements font partie de la frayeur même : par eux la frayeur devient une émotion, susceptible de passer par des degrés différents d'intensité. […] Il y a aussi une acuité de joie et de douleur, de désir, d'aversion et même de honte, dont on trouverait la raison d'être dans les mouvements de réaction automatique que l'organisme commence, et que la conscience perçoit. 'L'amour, dit Darwin, fait battre le coeur, accélérer la respiration, rougir le visage.' L'aversion se marque par des mouvements de dégoût que l'on répète, sans y prendre garde, quand on pense à l'objet détesté. On rougit, on crispe involontairement les doigts quand on éprouve de la honte, fût-elle rétrospective." *Essai*, 21-23.

[109] William James, "What is an Emotion?" *Mind* 9, no. 34 (April 1884). I discuss this paper in chapter 2, section 5.

organism.[110]

Bergson maintained his reservation about James's theory out of his familiarity with the phenomena of hypnotism and suggestion, which presented many instances of the body flowering under the command of an idea. The movements enacted on these occasions were so unmistakeably expressive that the hypnotized subjects were likened to actors and even thought superior—indeed, as we saw, they became exemplars for the actor's craft. Their movements told whole stories. These phenomena gave dramatic visual demonstration of how a single change—an idea imparted—could reorient a whole person, her movements, her sensations, even her memories—in short, her entire experience of her mind and body.

Consider how Bergson's descriptions above, of various emotions intensifying, follow the pattern of the suggestion process: an idea, given to the mind as a thought or by some twinge in the body, automatically provokes a whole assortment of bodily reactions, which build out the qualitative experience of an emotion, and which are meaningful both as expressions and as constitutive elements of that state of mind. The intricacies of this causal story are of the highest interest to Bergson. The causal vectors go every which way, as encapsulated in the sentence, "There is also a keenness [*acuité*] of joy and of pain, of desire, of aversion, and even of shame, which one would find comes from the automatic movements of reaction that the organism begins, and that consciousness perceives."[111] The particular intensity of the emotion comes from the movements "that the organism begins, and that consciousness perceives" (the original

[110] My underlining. "Nous n'irons point jusqu'à soutenir, avec M. William James, que l'émotion de la fureur se réduise à la somme de ces sensations organiques : il entrera toujours dans la colère un élément psychique irréductible, quand ce ne serait que cette idée de frapper ou de lutter dont parle Darwin, idée qui imprime à tant de mouvements divers une direction commune. Mais si cette idée détermine la direction de l'état émotionnel et l'orientation des mouvements concomitants, l'intensité croissante de l'état lui-même n'est point autre chose, croyons-nous, que l'ébranlement de plus en plus profond de l'organisme." *Essai*, 22.

[111] My underlining. "Il y a aussi une acuité de joie et de douleur, de désir, d'aversion et même de honte, dont on trouverait la raison d'être dans les mouvements de réaction automatique que l'organisme commence, et que la conscience perçoit." *Essai*, 22-23.

text says these movements are the "*raison d'être*" of the emotion's particular pitch), but these are "movements of reaction"—the body's response to something already perceived. The same loops of cause and effect run through Bergson's descriptions of experiences of art:

> The greater number of emotions swell with a thousand sensations, sentiments or ideas which permeate them: each one of them is thus a state unique in its kind, indefinable, and it seems that we should have to relive the life of he who experiences it to grasp it in its complex originality. Yet the artist aims to introduce us into this emotion, so rich, so personal, so novel, and to make us experience what he cannot make us understand. He will choose, then, among the external manifestations of his sentiment, those that our body will imitate mechanically [*machinalement*], however lightly, upon perceiving them, so as to transport us all at once into the indefinable psychological state that provoked them.[112]

Bergson thinks that the work of an artist, in whatever medium, is to conscript the body of the audience, to use the body's native impulse to imitate whatever it perceives, and thus compose the state of mind intended by the work of art. This is the same reactive body that we saw emerge from physiological experiments during this decade, the body endowed with the dubious gift of "psycho-motor induction."[113] Yet what appeared to investigators like Ribot and Charles Féré as a mechanical causal process successfully observed in the psyche, becomes, for Bergson, paradigmatic of an altogether other kind of cause. "A more attentive psychology sometimes reveals to us effects that precede their causes," Bergson writes in the *Essai*'s final chapter. And he explains the basis of this insight as follows:[114]

> When a subject executes at the appointed hour a suggestion received in the hypnotic state, the act he accomplishes is brought about, according to him, by the preceding

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[112] "La plupart des émotions sont grosses de mille sensations, sentiments ou idées qui les pénètrent : chacune d'elles est donc un état unique en son genre, indéfinissable, et il semble qu'il faudrait revivre la vie de celui qui l'éprouve pour l'embrasser dans sa complexe originalité. Pourtant l'artiste vise à nous introduire dans cette émotion si riche, si personnelle, si nouvelle, et à nous faire éprouver ce qu'il ne saurait nous faire comprendre. Il fixera donc, parmi les manifestations extérieures de son sentiment, celles que notre corps imitera machinalement, quoique légèrement, en les apercevant, de manière à nous replacer tout d'un coup dans l'indéfinissable état psychologique qui les provoqua." *Essai*, 13.

[113] See chapter 2, section 5.

[114] "une psychologie plus attentive nous révèle parfois des effets qui précèdent leurs causes," *Essai*, 121.

> series of his conscious states. Yet these states are really effects, and not causes: it was necessary that the act should take place: it was also necessary that the subject should explain it to himself; and it is the future act that has determined, by a kind of attraction, the whole series of psychic states from which this act will issue as the natural consequence. The determinists will seize upon this argument: it proves in fact that we are sometimes irresistibly subject to another's will. But does it not also show us how our own will is capable of willing for willing's sake, and of then leaving the act which has been performed to be explained by antecedents of which it has really been the cause?[115]

Researchers working with hypnotism subjects had repeatedly observed and come to accept this phenomenon, that a subject will always have his own version of events when asked why a particular act has been carried out—an account he is not aware he has simply invented, since he has no knowledge of being hypnotized and commanded.[116] Thus these fictions, Bergson argues here, are also consequences of the hypnotic command: in the above passage, Bergson describes the intermediate states of mind as surreptitiously organized by the mind in preparation for the act to come. A version of this had played out in his own experiment, too, when he tested the young "telepathic" readers of Clermont-Ferrand.[117] He had surmised that his subjects were not performing telepathy, because they had found a workaround in visual hyperesthesia. But he also noted that they were not conscious of fakery: they *believed* they were reading Bergson's mind—not his eye—for that had been the command given. This was why Bergson called what he observed "unconscious simulation," which gave the article its title. Of the youth who produced the most consistent results Bergson wrote: "One cannot reproach him in the least: he executes

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[115] My underlining. "Quand un sujet exécute à l'heure indiquée la suggestion reçue dans l'état d'hypnotisme, l'acte qu'il accomplit est amené, selon lui, par la série antérieure de ses états de conscience. Pourtant ces états sont en réalité des effets, et non des causes; il fallait que l'acte accomplit; il fallait aussi que le sujet se l'expliquât; et c'est l'acte futur qui a déterminé, par une espèce d'attraction, la série continue d'états psychiques d'où il sortira ensuite naturellement. Les déterministes s'empareront de cet argument : il prouve en effet que nous subissons parfois d'une manière irrésistible l'influence d'une volonté étrangère. Mais ne nous ferait-il pas tout aussi bien comprendre comment notre propre volonté est capable de vouloir pour vouloir, et de laisser ensuite l'acte accompli s'expliquer par des antécédents dont il a été la cause?" *Essai*, 120-121.

[116] See for example Pierre Janet, "Deuxième note sur le sommeil provoqué à distance et la suggestion mentale pendant l'état somnambulique," *Revue philosophique* 22 (1886): 212-223.

[117] See chapter 2, section 1.

the order given him as best he can, and all means are valid because he is incapable of disobeying."[118] His conclusion there now informs the argument he is building in the *Essai*, about why the mind is not to be trusted to give an accurate account of its own beliefs and actions. Because the reasoning you might provide yourself after a decision you've taken, the antecedents you identify after the fact, are effects of that decision rather than its cause: they only become antecedents after the decision is taken. The fallacy of associationist psychology that Bergson identifies in the *Essai* is that it is a psychology based entirely on retrospective reasoning. The determinism it is predicated on and the psychological predictability that it promises—provided only that all antecedents are known—are tautological chimeras.

> If we question ourselves carefully, we shall see that we sometimes weigh motives and deliberate over them, when our mind is already made up. An inner voice, hardly perceptible, whispers: "Why this deliberation? You know the result and you are quite certain of what you are going to do." But no matter! it seems that we make a point of safe-guarding the principle of mechanism and of conforming to the laws of the association of ideas. The abrupt intervention of the will is like a *coup d'état* of which our mind has a presentiment, and which it tries to legitimate in advance by a formal deliberation.[119]

More akin to a teleological cause, but without the determinism of teleology, this alternative causal paradigm becomes Bergson's way of understanding the nature of all psychological phenomena. In a show of how little this dynamic has to do with the familiar

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[118] Bergson, "De la simulation inconsciente dans l'état d'hypnotisme," *Revue philosophique* 21 (November 1886), 530.

[119] Translation modified from *Time and Free Will*, 157-158. "En nous interrogeant scrupuleusement nous-mêmes, nous verrons qu'il nous arrive de peser des motifs, de délibérer, alors que notre résolution est déjà prise. Une voix intérieure, à peine perceptible, murmure : 'Pourquoi cette délibération ? tu en connais l'issue, et tu sais bien ce que tu vas faire.' Mais n'importe! il semble que nous tenions à sauvegarder le principe du mécanisme, et à nous mettre en règle avec les lois de l'association des idées. L'intervention brusque de la volonté est comme un coup d'état dont notre intelligence aurait le pressentiment, et qu'elle légitime à l'avance par une déliberation régulière." *Essai*, 121.

notion of cause, Bergson rejects the word "cause" altogether. The mind's experiences are "suggested, not caused."[120]

Bergson uses the word "suggest" throughout the *Essai* in its literal sense—that is, with all the drama that this word entailed in French science and medicine in the 1880s. His descriptions of qualitative experiences, particularly aesthetic experiences, are consistently rendered in the language of possession and takeover, in addition to the idiom of color, as when he describes that sudden conviction taking hold of us, after half-hearted deliberations, "like a *coup d'état*";[121] or when he writes that "the sentiment suggested" by a work of art "takes possession of us";[122] or of how music "suspends the normal circulation of our sensations and ideas…takes hold of us with such force that the imitation, even infinitely faint, of a trembling voice will suffice to fill us with the utmost sadness."[123]

Within the first pages of the *Essai*, from the start of Bergson's discussion of "aesthetic sentiments," it is clear that the essence of hypnotic suggestion is qualitative experience *par excellence*. "Aesthetic sentiments," he begins, "offer us still more striking examples of this progressive intervention of new elements, visible in the fundamental emotion, which seem to increase the magnitude of the emotion, though in reality they only change its nature."[124] And

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[120] "Il résulte de cette analyse que le sentiment du beau n'est pas un sentiment spécial, mais que tout sentiment éprouvé par nous revêtira un caractère esthétique, pourvu qu'il ait été suggéré, et non pas causé." *Essai*, 12-13. My underlining.

[121] *Essai*, 121.

[122] "le sentiment suggéré s'empare nous," *Essai*, 13.

[123] "Ainsi, en musique, le rythme et la mesure suspendent la circulation normale de nos sensations et de nos idées…et s'emparent de nous avec une telle force que l'imitation, même infiniment discrète, d'une voix qui gémit suffira à nous remplir d'une tristesse extrême." *Essai*, 11. Original italics. Interestingly, *Time and Free Will* has "a state of perfect responsiveness" in lieu of "a state of perfect docility" (14-15). "*Circulation*" deliberately evokes the circulation of blood, a psychological index of much interest following Angelo Mosso's work with the plethysmograph (see chapter 2, section 5).

[124] "Les sentiments esthétiques nous offrent des exemples plus frappants encore de cette intervention progressive d'éléments nouveaux, visibles dans l'émotion fondamentale, et qui semblent en accroître la grandeur quoiqu'ils se bornent à en modifier la nature." *Essai*, 9.

he proceeds to describe the various elements that progressively deepen an experience of aesthetic grace:

> A third element intervenes when the graceful movements obey a rhythm, and are accompanied by music. For the rhythm and the measure, in allowing us to foresee to a greater extent the movements of the artist, make us believe this time that we are their masters. As we almost guess the attitude that the dancer is going to take, he appears to obey us when he actually takes it: the regularity of the rhythm establishes between him and us a kind of communication, and the periodic returns of the measure are like so many invisible threads, by which means we set in motion [*faisons jouer*] this imaginary marionnette. Even if it stops for an instant, our impatient hand cannot keep from moving, as though to push it, as though to restore it to the midst of the movement, the rhythm of which has taken complete possession of our thought and our will. [125]

Who is the author of this experience? The dancer, the viewer, the dancer's body responding to music, the viewer's body responding to dancer and music: the list might go on still. I don't think the answer is either definite or singular; in fact, I think it fascinated Bergson that the authorship of this experience is shared. Because the whole mechanics of perception change when the body is shown to be reactive: reflexively imitative, the body performs the world for consciousness to perceive. On this model Bergson also comes to see how each person puts something of herself in her perceptions, and sometimes recognizes these personal aspects of herself in her experiences. In our language, we might think of this as the way experiences sometimes "speak to us"; in Bergson's language, it is the way certain experiences take on "the particular coloration" that is our own.[126]

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[125] Translation modified from *Time and Free Will*, 12-13. "Un troisième élément intervient quand les mouvements gracieux obéissent à un rythme, et que la musique les accompagne. C'est que le rythme et la mesure, en nous permettant de prévoir encore mieux les mouvements de l'artiste, nous font croire cette fois que nous en sommes les maîtres. Comme nous devinons presque l'attitude qu'il va prendre, il paraît nous obéir quand il la prend en effet ; la régularité du rythme établit entre lui et nous une espèce de communication, et les retours périodiques de la mesure sont comme autant de fils invisibles, au moyen desquels nous faisons jouer cette marionnette imaginaire. Même si elle s'arrête un instant, notre main impatientée ne peut s'empêcher de se mouvoir comme pour la pousser, comme pour la replacer au sein de ce mouvement dont le rythme est devenu toute notre pensée et toute notre volonté." *Essai*, 9-10.

[126] "la coloration particulière qu'ils [all of one's psychological states] revêtent chez une personne," *Essai*, 126.

4. Freeing Sensation

The rupture that led to the reinvented psychology of the *Essai* is visible in Bergson's teaching.

The notes we have from Bergson's students in Clermont-Ferrand show us how Bergson's view of the relation between mind and body evolved over the mid-1880s. The manuscripts I will be referring to date from 1885 to 1888, representing three school years; they have been published in five volumes since 1990, by three different editors. The question of Bergson's philosophical evolution over these years of teaching has not been entertained, due to the scholarly bias that Bergson's teaching, under the mandate of education ministry, was necessarily a fixed quantity, devoid of philosophical innovation.[127] This bias was further aided by the misdating of the earliest set of notes, which show Bergson teaching with full command of Spiritualist psychology, before his views change. If you thought that the lessons I quoted from Bergson at the beginning of chapter 3 were spoken in 1887, and knew that the *Essai* was

[127] Henri Hude, the first to publish the notes of Bergson's students and eventual editor of a four-volume collection, found Bergson "un professeur au dogmatisme un peu raide" (Bergson, *Cours I*, ed. Henri Hude [Paris: PUF, 1990], 20). Renzo Ragghianti, editor of two further volumes of notes collected from Clermont-Ferrand, has noted "l'adhésion ponctuelle" of Bergson's courses to the ministerial *programme* (Ragghianti, "Les cours de Clermont-Ferrand," in *Bergson professeur*, ed. Alain Panero, Sylvain Matton, Mireille Delbraccio [Leuven: Peeters, 2014], 88). The consensus among Bergson scholars is that the lycée courses "représentent une synthèse brillante des conclusions du spiritualisme français"; it is understood that what Bergson spoke in the classroom "est éloigné de toute recherche spéculative" (Panero, Matton, and Delbraccio, "Avant-propos," *Bergson professeur*, 8). Philippe Soulez had formed this opinion provisionally, based on the notes published by Hude, at the time of writing his biography of Bergson. (Soulez and Worms, *Bergson*, [Paris: Flammarion, 1997], 71-72). His work remains the biography of reference. Ragghianti has since affirmed Soulez's opinion: "La position de Soulez selon qui l'enseignement donné au lycée est éloigné de toute recherche spéculative nous paraît désormais acquise" (Ragghianti, "Avant-propos," in Bergson, *Leçons clermontoises I*, ed. Ragghianti [Paris: L'Harmattan, 2003], 10). Bergson scholars now regard as a truism "'l'impossibilité de faire des cours et des textes publiés les 'deux moitiés inséparables' de l'œuvre bergsonienne'" (Ragghianti, quoting Soulez, in "Les cours de Clermont-Ferrand," in *Bergson professeur*, 90).

complete by February of 1888, then Bergson's published philosophy *would* appear to be the product of a double life.

In the year that Bergson spoke of the "unbreachable abyss" between the physical impression and the ensuing sensation, the physiological fact and the psychological fact, he also had a competing directive in the philosophy *programme* to do something about that abyss, in a lesson called "Rapports du physique et du moral." This was one of the additions to the psychology section of the new curriculum of 1880. The *programme* considered the following topics germane to this question: "sleep, dreams, somnambulisme, hallucination, madness."[128] In the year that Bergson declares the abyss "unbreachable" and that the question "will never be resolved," his teaching of the "Rapports" lesson is correspondingly inconclusive. But the iterations of this lesson over the next two years show his dramatic evolution.

The early, inconclusive lesson is from the first volume of notes published by Henri Hude with a mis-estimated date. Renzo Ragghianti's corroboration of these notes with a second, dated manuscript allows Hude's notes to be dated to the 1885-86 school year. In the "Rapports" lesson this year, Bergson makes no pronouncements about the nature of the mind-body relation or even any effort at an argument. He is, however, full of interesting facts and details about somnambulism, in particular the "artificial" or "provoked" kind.[129] As he speaks, it's obvious that he has read the recent slew of scientific work for himself: the experiments of Alfred Binet and Charles Féré, the questions of liability raised by Jules Liégeois, in Nancy, for crimes committed under hypnosis, and Charles Richet's extensive record of clinical observations.[130]

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[128] "Programme officiel du cours," *Revue philosophique* 10 (1880), 427. I discussed this development in chapter 3, section 1.
[129] "Les études sur le sommeil artificiel, ou, comme on dit plus souvent : le sommeil provoqué ou l'hypnotisme ou l'hypnose, sont à l'ordre du jour." Bergson, *Cours I*, ed. Hude, 278.
[130] Ibid., 278-280.

Richet's work has clearly captured Bergson's keenest interest. His lesson is one vivid anecdote from Richet after another:

> Dr. Richet for example suggests to the hypnotized subject that he is transported to the moon. The subject then perceives the earth from afar, in the form of a great ball. To bring him back to earth, he supposes that he attaches a great rope to the earth. The hypnotized subject experiences all the sensations of a man descending, even a burn on his hand that is not factitious and really exists.[131]

In the course of this meandering lesson, hypnotism comes to acquire an astonishing range of powers. It acts on the body—"on sensibility and even on organic functions"—producing sensations of hot and cold, pain and pleasure, even sweat and rope burn.[132] It also acts on the mind, conscripting a subject's thoughts and memories with a single suggestion:

> One leads the hypnotized person to believe that she has changed names and she forgets her true name…One orders her to lose the memory of certain events ⌈*faits*⌉, even of her mother tongue: she can no longer speak. If, by suggestion, one transports her back ten years, all the events ⌈*faits*⌉ that she has lived since will instantly be, for her, as though they have never been. One transforms thus her entire personality. One says to the subject that she has become an army general and she will act like a general.[133]

We know this language of personal transformation—and even the specific example of the sudden general—from the discussion of the psychological stakes of hypnotism in chapter 2. Now we know that in 1885-86 Bergson was right on the heels of those researchers, that he learned this science with its particular mix of images—the actor, the spectator, the automaton—and that he taught this material as he went. "In a word," he tells his students, "as

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[131] "Le Dr. Richet par exemple suggère au sujet endormi qu'il est transporté dans la lune. Celui-ci aperçoit alors la terre de loin, sous forme d'une grande boule. Pour le ramener sur terre, il suppose qu'il attache à la terre une grande corde. Le sujet endormi éprouve toutes les sensations d'un homme qui descend, même une brûlure à la main qui n'est pas factice et existe pour tout de bon." Bergson, *Cours I,* ed. Hude, 278-279.

[132] "sur la sensibilité et même sur les fonctions organiques," ibid., 279.

[133] "On amènera la personne endormie à croire qu'elle a changé de nom et elle oubliera son nom véritable…On lui ordonnera de perdre la mémoire de certains faits, même de sa langue maternelle: elle ne pourra plus parler. Si on la transporte par suggestion à dix années en arrière, tous les faits auxquels elle a assisté depuis seront aussitôt, pour elle, comme s'ils n'avaient jamais été. On transformera ainsi sa personnalité. On dira au sujet qu'il est devenu général d'armée et il agira comme un général." Ibid., 279.

one says, somnambulism is a dream in action, the dreamer being no longer a simple spectator of the role he plays, but really an actor"; and, "the hypnotized subject becomes an automaton, in the sense that he is entirely at the disposition of the operator."[134]

In the following school-year—1886-87—Bergson's "Rapports" lesson is completely different. Instead of proceeding through the list of topics he is supposed to cover under this rubric, as he did the previous year, Bergson takes the class once more through the three main categories of psychological phenomena—sensation, intelligence, will—in order to consider the question of mind-body "rapports" with respect to each. And instead of presenting a series of marvelous anecdotes, he makes an argument. He argues that the truisms about the physiological basis of sensations are wrong. Instead of being the one kind of psychological phenomena in which the psyche has no say, sensation too was a domain of action, even of self-expression.

Bergson begins the discussion of sensation as usual: "All sensation has its cause in a physiological fact and more specifically in a modification…of a sensitive nerve."[135] But what immediately follows this statement is the question, "What accounts for the qualitative differences of sensations?"[136] He asks this in an entirely different spirit than he did a year ago. The question now rings with skepticism, for he is no longer satisfied with the old answer:

> Some attribute it to a difference in structure among sensitive nerves (Hypothesis of the Specific Energy of Nerves). Others maintain that all sensitive nerves are structured in the same way, but that this is not the case with the different parts of the brain where these nerves end. The variety of sensations would be explained…by the diversity of apparatuses, corresponding to various organs, that the sensitive nerves reach like so many telegraph lines. <u>These, let us observe, are so many hypotheses</u>. One thing is

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[134] "En un mot, comme on l'a dit, le somnambulisme est un rêve en action, le rêveur n'étant plus simple spectateur du rôle qu'il joue, mais acteur pour tout de bon," ibid., 277; "Le sujet hypnotisé devient un automate, en ce sens qu'il est tout entier à la disposition de l'opérateur." Ibid., 278.
[135] "Toute sensation a sa cause dans un fait physiologique et plus particulièrement dans une modification…d'un nerf sensitif." Manuscript of Adolphe Achard, in Ragghianti vol., 2, 229.
[136] "A quoi tient la différence qualitative des sensations?" Ibid.

> certain, that sensation most often supposes a nervous perturbation and, nevertheless, one would be wrong to over-generalize: do we not provoke very intense sensations by simple suggestion, in the state of hypnotism? Furthermore, do these sensations not go as far as to react upon the body to the point of determining for example a blister where one has suggested the idea of a burn? The soul is thus not so passive as one likes to declare and we would be wrong to see in sensation only the prolonging or the echo of a molecular vibration, as Tyndall and H. Spencer would have it. We could even maintain that there enters into all sensation an intellectual element that varies with the person, that the same physical excitation does not provoke in everyone the same state of consciousness, even though all give it the same name; in short, we put into each state of the self our entire personality; thus, there is not only action of the physical upon the moral in sensation, but reaction of the soul upon the body.[137]

I've quoted this speech without omission to show how it begins in a Spiritualist classroom and ends in the world of the *Essai*. And how, improbable as this may seem, it is Bergson's attention to hypnotism that leads him there. Perhaps it was his repeated telling of this story of a sensation—the impression and its voyage to the brain—that allowed him to see the facts of hypnotism as unassimilable to this process. Hypnotism disrupted this process by interposing, even prior to any physical impression, a person, a mind that could take control and direct the whole experience. "Thus the soul appears already in the domain of sensitive facts, like a force gifted with a spontaneity of its own," Bergson says, in concluding the sensation portion of this

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[137] "Les uns l'attribuent à une différence de conformation des nerfs sensitifs (Hypothèse de l'Energie spécifique des nerfs). Les autres soutiennent que les nerfs sensitifs sont tous conformés de la même manière, mais qu'il n'en est pas de même des différentes parties du cerveau où ces nerfs aboutissent. La variété des sensations s'expliquerait…par la diversité des appareils auxquels aboutissent comme autant de fils télégraphiques les nerfs sensitifs correspondant aux divers organes. Ce sont là, remarquons-le, autant d'hypothèses. Une chose est certaine, c'est que la sensation suppose le plus souvent un ébranlement nerveux et, néanmoins, on aurait tort de trop généraliser: ne provoque-t-on pas des sensations très intenses par simple suggestion, dans l'état d'hypnotisme? Même, ces sensations ne vont-elles pas jusqu'à réagir sur le physique au point de déterminer par exemple une ampoule là où l'on a suggéré l'idée d'une brûlure? L'âme n'est donc pas aussi passive qu'on veut bien le dire et on aurait tort de ne voir dans la sensation que le prolongement ou l'écho d'une vibration moléculaire, comme le veulent Tyndall et H. Spencer. On pourrait même soutenir qu'il entre dans toute sensation un élément intellectuel qui varie avec les personnes, que la même excitation physique ne provoque pas chez tous le même état de conscience, bien que tous lui donnent le même nom; bref, nous mettons dans chaque état du moi notre personnalité entière; ainsi, il n'y a pas seulement action du physique sur le moral dans la sensation, mais encore réaction de l'âme sur le corps." Ibid., 230. My underlining.

lesson.[138] At the end of that day, he leaves the class with this: "The phenomena of hypnotism…furnish a resounding proof of what we have called the spontaneity of the soul."[139]

In the *Essai*, a person's freedom begins in the qualities of her experience. That is because the qualities she experiences reflect the person she is, are already expressions of herself, and unique to her: as Bergson said in class, "there enters into all sensation an element…that varies with the person";[140] and as he writes in the *Essai*, a person's every state of mind has "the particular coloration"[141] that is hers:

> Thus each of us has our way of loving and of hating, and this love or this hatred reflects our whole personality. Language, however, designates these states by the same words for everyone: and so it has been able to select only the objective and impersonal aspect of love, hate, and the thousand emotions that move the soul. […] Thus it is a coarse psychology, duped by language, that shows us the soul determined by sympathy, aversion, or hate as though by so many forces pressing upon it. These feelings, provided that they go deep enough, each make up the whole soul, since the whole content of the soul is reflected in each of them. <u>To say that the soul is determined under the influence of any one of these feelings is thus to recognize that it is self-determined</u>.[142]

It was in the summer before this school-year that Bergson conducted his own experiment in hypnotism. The report and analysis he submitted to the *Revue philosophique* was published that November. Though he concluded that the experiment did not achieve what he

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[138] "L'âme apparaît donc déjà dans le domaine des faits sensibles, comme une force douée d'une spontaneité propre," ibid., 232.
[139] "Les phénomènes d'hypnotisme…fourniraient une preuve éclatante de ce que nous avons appelés la spontanéité de l'âme." Ibid., 236.
[140] "il entre dans toute sensation un élément…qui varie avec les personnes," ibid., 230.
[141] "la coloration particulière," *Essai*, 126.
[142] Translation modified from *Time and Free Will*, 164-165. "Ainsi chacun de nous a sa manière d'aimer et de haïr, et cet amour, cette haine, reflètent sa personnalité entière. Cependant le langage désigne ces états par les mêmes mots chez tous les hommes: aussi n'a-t-il pu fixer que l'aspect objectif et impersonnel de l'amour, de la haine, et des mille sentiments qui agitent l'âme. […] C'est donc une psychologie grossière, dupe du langage, que celle qui nous montre l'âme déterminée par une sympathie, une aversion ou une haine, comme par autant de forces qui pèsent sur elle. Ces sentiments, pourvu qu'ils aient atteint une profondeur suffisante, représentent chacun l'âme entière, en ce sens que tout le contenu de l'âme se reflète en chacun d'eux. <u>Dire que l'âme se détermine sous l'influence de l'un quelconque de ces sentiments, c'est donc reconnaître qu'elle se détermine elle-même</u>." *Essai*, 125-126. My underlining.

had set out to test (telepathy), he did confirm for himself that hypnotic suggestion can produce organic change—in this case, a sudden and astonishing degree of visual acuity.

In the *Essai*, Bergson envisions each person's consciousness as an individual body of water. Into this fluid "mass of facts of consciousness," new experiences are incorporated to different degrees.[143] Some don't integrate at all, and form a "crust" or "vegetations" on the surface of the self. Hypnotism is part of the same process as everything else:

> The self…presents a certain surface, and on this surface independent vegetations may form and float. Thus a suggestion received in the state of hypnotism is not incorporated into the mass of conscious facts; but endowed with a life of its own, it will usurp the whole personality when its hour strikes. A violent anger roused by some accidental circumstance, a hereditary vice suddenly emerging from the obscure depths of the organism to the surface of consciousness, will act almost like a hypnotic suggestion. […] But suggestion would become persuasion if the entire self assimilated it; passion, even sudden passion, would no longer bear the stamp of fatality if the whole history of the person were reflected in it, as in the indignation of Alceste; and the most authoritative education would not curtail any of our freedom if it imparted to us only ideas and feelings capable of impregnating the whole soul. It is the whole soul, in fact, which gives rise to the free decision…[144]

In 1887-88, Bergson teaches the "Rapports" lesson to another novice philosophy class. He poses a direct question about determinism—"whether all psychic facts are accompanied by a

[143] "masse des faits de conscience," ibid., 127.

[144] Translation modified from *Time and Free Will*, 166-167. "Le moi…présente une certaine surface, et sur cette surface pourront se former et flotter des végétations indépendantes. Ainsi une suggestion reçue dans l'état d'hypnotisme ne s'incorpore pas à la masse des faits de conscience; mais douée d'une vitalité propre, *elle se substituera à la personne même* quand son heure aura sonné. Une colère violente soulevée par quelque circonstance accidentelle, un vice héréditaire émergeant tout à coup des profondeurs obscures de l'organisme à la surface de la conscience, agiront à peu près comme une suggestion hypnotique. […] Mais la suggestion deviendrait persuasion si le moi tout entier se l'assimilait; la passion, même soudaine, ne présenterait plus le même caractère fatal s'il s'y reflétait, ainsi que dans l'imagination d'Alceste, toute l'histoire de la personne; et l'éducation la plus autoritaire ne retrancherait rien de notre liberté si elle nous communiquait seulement des idées et des sentiments capables d'imprégner l'âme entière. C'est de l'âme entière, en effet, que la décision libre émane…" *Essai*, 127.

determinate physiological phenomenon, and vice versa"[145]— and this time he advances a conclusion.

> Even in the case of sensation, there is a part left to indetermination; even here, the psychic phenomenon does not appear to depend entirely upon the physical impression; even here, the psychological fact is not entirely determined when one knows the physiological fact. A fortiori will this be the case with higher-order phenomena. [...] Thus the study of the psychological phenomena most tightly bound to nervous impressions—sensations, sentiments and passions—yields this conclusion: that even when the state of the soul has an organic cause, the soul does not depend on it to the point where it cannot, by an internal effort, neutralize it, or, at the least, lessen the effect.[146]

This "part left to indetermination" is again the part that is individual to each person. The mechanics of nervous transmission—in which "movements take place in the exterior world, strike the sensory organs, are transmitted the length of the nerves to the brain"—is now qualified by each perceiver putting herself into her perceptions:

> It does not seem here that the psychological fact is determined by the physiological fact; there is a part left to indetermination: we do not all see the same exterior world, we put something of ourselves in our external perception.[147]

I have retained some of the repetitiveness of these passages to preserve the sense of Bergson returning, year after year, to the same questions; the sense of his thinking out loud in the classroom, and finding his way to the same conclusion several times before he published the

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[145] "si tout fait psychique est accompagné d'un phénomène physiologique *déterminé*, et inversement," manuscript of Emile Cotton, in Ragghianti vol. 2, 233. Emphasis in original.
[146] "Même dans le cas de la sensation, il y a une part laissée à l'indétermination; même ici, le phénomène psychique ne paraît pas entièrement dépendre de l'impression physique; même ici, le fait psychologique n'est pas entièrement déterminé quand on connaît le fait physiologique. A fortiori en sera-t-il ainsi dans les phénomènes d'ordre plus relevé. [...] Ainsi de l'étude des phénomènes psychologiques les plus étroitement liés aux impressions nerveuses, la sensation, le sentiment et la passion, se dégage cette conclusion: même lorsque l'état de l'âme a une cause organique, elle n'en dépend pas à tel point qu'elle ne puisse, par un effort interne, en neutraliser, ou, au moins, en amoindrir l'effet." Ibid., 259.
[147] "des mouvements s'accomplissent dans le monde extérieur, choquent les organes des sens, se transmettent le long des nerfs jusqu'au cerveau…Il ne semble pas qu'ici le fait psychologique soit déterminé par le fait physiologique; il y a une part laissée à l'indétermination : nous ne voyons pas tous le même monde extérieur, nous mettons quelque chose de nous dans la perception extérieure." Ibid., 259-260.

long argument of the *Essai* that each person's mental life is fundamentally undetermined. "There is a part left to indetermination…" "There is a part left…" This was the seam that Bergson opened in the old psychological universe, and with which he fashioned a fundamentally different universe, in which all the atoms of psychological experience were changed.

CONCLUSION

This project has been a study of how the philosophy of Henri Bergson came to be, in a world where philosophy and science were still enmeshed. To do so I have examined Bergson's language as its own repository of scientific and material history. I have focused particularly on Bergson's figurative language as an index to once salient objects of the past.

In chapter 1, I pursued Bergson's metaphors for the intellect in the context of his teaching career. The polemic over pedagogical reform that Bergson entered at the beginning of his career relied on aspersions cast in a particular figurative language. This language of mechanism and the mechanical, so deeply associated with the nineteenth century, here denoted an altogether different kind of machinery: a lycée education in the humanities. I sought to establish this feature of the pedagogical landscape where Bergson, too, promptly began to throw around the word "mechanical." To overlook the great figurative plasticity of the words "mechanism" and "mechanical" during this period would miss both the complexity of Bergson's critique and the complexity of the threat that occasioned it—a threat from within the lycée establishment.

In chapter 2, I laid out the experimental world of scientific hypnotism in the 1880s. I also showed how and why the language of the theater was used to make sense of the phenomena discovered in this science. With this I posed the question: How did Bergson compose a philosophical argument against psychological determinism while relying upon the same evidence as everyone else—evidence that had convinced contemporary physiologists of the mind's complete material determinism? In chapter 3, I showed that Bergson did so by creating a new language for psychology, with metaphors drawn from the evidence he observed.

Although Bergson's introspective psychology comes to look like a repudiation of contemporary trends in physiology, I showed that it can also be understood as a continuation of these trends, an extension of the latest physiological work into the psyche that was at once in parallel with Ribot's effort and wholly divergent. This telling of the genesis of Bergson's philosophy thus offers a counterintuitive but demonstrable causal process for historians to think with. A diametric opposition between two concurrent bodies of thought need not mean that they developed as antagonists: one may also be premised on the other. My recounting of what Bergson worked with offers evidence of a one-way organic relationship, rather than an adversarial one, between the experimental work of Ribot and Charcot's Société de psychologie physiologique and Bergson's developing philosophy. This reading allows us to pursue what is most perplexing about Bergson's first work of philosophy: How does a contemporary physiology that foreshadowed a strictly mechanical connection between body and mind become the seed for a psychology of seeping colors?

The metaphorical language of coloring was part of Bergson's metaphysical claim of an alternative dynamic of cause and effect: a dynamic that cannot be broken down to a one-to-one correspondence, but in which a single change can change the feeling of everything, both the present and the past. This alternative form of causality is what sets the meaning of Bergson's "quality" apart. It contrasts with the causal process Bergson believed to be intrinsic to all contemporary physical theories, which he called "mechanical," regardless of whether a theory deals in atoms or in energy.[1] Such "mechanical" theories relied on "mechanical" causation,

[1] "Le déterminisme physique, sous sa forme la plus récente, est intimement lié aux théories mécaniques, ou plutôt cinétiques, de la matière. On se représente l'univers comme un amas de matière, que l'imagination résout en molécules et en atomes. Ces particules exécuteraient sans relâche des mouvements de toute nature, tantôt vibratoires, tantôt de translation; et les phénomènes physiques, les actions chimiques, les qualités de la matière que nos sens perçoivent, chaleur, son, électricité, attraction même peut-être, se réduiraient objectivement à ces mouvements élémentaires." *Essai*, 109.

whereby local causes produced local effects, one movement provoked another that, together with the first, resulted in a third, in an infinite series that, theoretically, can be calculated and predicted to its final term.[2] Causation in this form was so different from Bergson's dynamic of "coloring" that, for the phenomena he was interested in, he rejected the word *cause* altogether: a change of quality, he wrote, is "suggested, and not caused."[3] Its actions required a different set of verbs: the language of color, with its seeping stains, spreading dyes, and sometimes total saturation.

Ultimately, the psychology of the *Essai* was not materialist in the way of Ribot's physio-psychology, nor in the way of James's joyously indeterminate materialist theory of the emotions. But Bergson went a long way in lock-step with both. I showed how the nature of perception changed for Bergson when James, Ribot, Féré, Darwin and others showed the body to be reactive. Previously, psychology had accepted the physiological account of perception as a process of physical "disturbances"—"*ébranlements*"—conveyed by nerves to the brain. But from there it seemed you could not cross the threshold between a molecule and a feeling, or a molecule and a thought, but by the leap of "translation." The physiology of hypnotism, however, revealed the body to be an *active* perceiver. Once the body was executing its own movements, the mind-body problem was no longer how molecules become mental content but how movements become mental content. That was a difficulty that Bergson solved by repurposing James's centripetal view of the feeling of effort and James's theory of the emotions.

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[2] "Comme d'ailleurs le principe de la conservation de l'énergie a été supposé inflexible, il n'y a point d'atome, ni dans le système nerveux ni dans l'immensité de l'univers, dont la position ne soit déterminée par la somme des actions mécaniques que les autres atomes exercent sur lui. Et le mathématicien qui connaîtrait la position des molécules ou atomes d'un organisme humain à un moment donné, ainsi que la position et le mouvement de tous les atomes de l'univers capables de l'influencer, calculerait avec une précision infaillible les actions passées, présentes et futures de la personne à qui cet organisme appartient, comme on prédit un phénomène astronomique." *Essai*, 110.

[3] "…suggéré, et non pas causé." *Essai*, 13.

When Bergson wrote of "a thousand tiny movements…sketched" in bodily organs and together composing the feeling of a "preference," he was not speaking hypothetically, no more than he was speaking metaphorically. And even though he could not see the movements occurring inside the body, he believed that they were like the movements he *could* see, in that each movement was a different kind of thing. This is why he carefully reproduced a complete hodge-podge of observations of small, expressive movements. How greatly the changes on the surface of the body differed from one another told him how varied the movements must be inside the body. Together, the activity inside and outside formed a complex of radical heterogeneity for every moment of psychological life. The accretion of these moments as a conscious life proceeds over time is what Bergson called the *durée*, his name for "this heterogeneity that constitutes the very ground of our experience."[4] This famous word had a particular physical basis, an historical scientific actuality. The sciences of the body in the 1880s gave the *durée* the characteristics that it has as a constant experience of qualitative change, every change brought about by the emergence of a new, unique element.

Finally, I argued that Bergson's participation in the lower ranks of the French philosophical establishment had everything to do with what the *Essai* came to be. The psychology of the *Essai* constituted a rupture from the psychology of orthodox spiritualism, but it was a rupture that resulted from an effort of application and clarification. Bergson's new psychology made use of all the old terms—*donnée immédiate*, *la conscience*, *le moi*, *qualité*, *intensité*, *durée*—but presented a world in which all of these were given new meanings. I believe he did not willfully change the meanings. He applied the terms he knew to the experiences he observed and found that, to match the experiences, this was what they *had* to mean. He refitted

[4] "cette hétérogénéité qui constitue le fond même de notre expérience." *Essai*, 73.

old words with new experiences, and in doing so changed the nature of the simplest "given" in psychology.

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