

# *Producing an Evolutionary Self*

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## **THE ARGUMENT**

**I** LOCATE LAMARCK IN A LOOSE SENSE within the sensationalist discourse and the materialist discourse as understood in the latter part of the eighteenth century. Thus, I analyze Lamarck's discussion of the human from the point of view of problems and difficulties faced by eighteenth-century attempts to establish a science that anachronistically can be called psychology.

I argue that Lamarck cut through the knots of mind-body/mind-brain relations by positing an evolutionary self, which he called "*sentiment d'existence / sentiment intérieur*." This construal allowed him to offer a self that by virtue of being evolutionary was hierarchically spread across the evolutionary system and had a different measure depending on its evolutionary history. Capacity for experiencing was differential and depended on bodily structures, meaning that less complex living entities had a very rudimentary sense of existence, and those with a more complex nervous system had a correspondingly expanded sense of their existence and of their feelings. According to Lamarck the process of increasing complexification was exhibited by the structure and the functioning of the nervous system of living entities. Thus, on the one hand, the human self was subsumed under the general evolutionary laws of living entities and thereby became naturalized; but on the other hand, this human self was also made unique by virtue of the ever-greater evolutionary complexification of living entities. The construal of an evolutionary

self resonated with the measure of plasticity of living entities, that property which allowed them, when interacting with their environment, to adapt to changes in the environment.

As a coda to the above exposition, I look at a certain facet of the endeavor of John Hughlings Jackson, tracing how an evolutionary self whose principal thrust had been to cut through the Cartesian division became an important methodological tool in legitimating neurology as an evolutionary science that dealt with the physiological. Hughlings Jackson's work was based on Lamarckian evolutionary concepts, mechanisms, and metaphors that had been addressed and deployed in diverse intellectual, medical, scientific, and political circles in Great Britain throughout the first half of the nineteenth century.<sup>1</sup> Of particular relevance was Herbert Spencer, who in 1855 published his *Principles of Psychology*, in which evolution was an essential feature, thereby "evolutionizing" the field. Hughlings Jackson was a younger contemporary of Spencer, and he applied Lamarckian-Spencerian evolutionary views to his analysis of the structure and functioning of the nervous system. He explicitly acknowledged the conceptual necessity to account for an *evolutionary* self in order to allow him to adopt a dual framework that incorporated both his evolutionary stance and the demand of objectivity in the practice of medicine. Put more precisely, it enabled the medical specialty of neurology that he was creating and promoting to be characterized as and considered to be objective, and thus be constituted as a scientific discipline. Note that for Hughlings Jackson and many among his contemporaries, neurology could become a scientific-medical discipline only if it dealt with objects, states, and processes that were looked upon then as elements of scientific (medical) practices, which de facto meant that they were physiological.

## INTRODUCTION

Though Lamarck had discussed "man" earlier,<sup>2</sup> he addressed issues that pertained directly to humans much more so after the overall conception of "*la marche de la nature*"<sup>3</sup> had been elaborately spelled out in his *Philosophie zoologique* (1809). I shall focus primarily on this work and on his writings published shortly thereafter: namely, his *Histoire naturelle des animaux sans vertèbres*, the entries commissioned by Julien-Joseph Virey for the *Nouveau dictionnaire d'histoire naturelle*, these same entries and others as gathered in *Système analytique des connaissances positives de l'homme*, and a number of other short articles written during those years.<sup>4</sup>

<sup>1</sup> E.g., Adrian Desmond, *The Politics of Evolution: Morphology, Medicine, and Reform in Radical London* (Chicago: University of Chicago Press, 1989).

<sup>2</sup> Lamarck first fully developed his transformist ideas in the latter part of his *Recherches sur l'organisation des corps vivans: Et particulièrement sur son origine* (Paris: Maillard, 1802). This discussion was greatly enlarged and elaborated in his *Philosophie zoologique* (Paris: Dentu et l'Auteur, 1809).

<sup>3</sup> I shall use the term "evolution" only to depict Lamarck's "transformism" or his "march of nature." Wherever I use terms and categories used by the subjects of this study, I put them in double quotes and, when not in English, also in italics. I have also referred to some of them as researchers; that is, I have used present-day terms and categories where deemed useful. Thus, for example, I use "physiological" in its modern sense rather than in its Lamarckian "physical," material connotation. In Lamarck's time "physiology" was closely related to medicine rather than to zoology and/or natural history.

<sup>4</sup> See, e.g., at P. Corsi's website Jean-Baptiste Lamarck (1744–1829), <http://www.lamarck.cnrs.fr/index.php?lang=fr>: Lamarck's *Philosophie zoologique; Extrait du cours de zoologie sur les animaux sans vertèbres* (Paris: D'Hautel et Gabon, 1812); *Histoire naturelle des animaux sans vertèbres*, 11 vols. (Paris: Deterville, 1815–22); articles from the various volumes of the *Nouveau dictionnaire d'histoire naturelle* (Paris: Deterville, 1817), s.v. "Faculté," "Fonctions organiques," "Habitue," "Homme," "Idée," "Irritabilité," "Intelligence," "Imagination," "Instinct," "Jugement," "Météorologie," "Nature"; *Système analytique des connaissances positives de l'homme* (Paris: Chez l'Auteur et Belin, 1820). See also William Morton Wheeler and Thomas Barbour, eds., *The Lamarck*

In the following paragraphs I assume that there were three contextual frames of discourse of importance to the matter under discussion: the uses of sensibility discourse;<sup>5</sup> the ways and modes of discussing mind, mind-body, and mind-brain; and the traditions of dealing with the self. I shall explicate them very succinctly.

### *Sensibility Discourse*

Beginning in 1793, the year of the establishment of the Muséum national d'histoire naturelle, Lamarck was a member of its research and teaching staff. Despite wide differences, most of the staff of the museum were committed to an empiricism in which sense experience was primary. However, this empiricism did not preclude the role of reason in the search for a unitary picture of nature, nor did it sever it from moral issues. This commitment encompassed those who subscribed to some version of the Lockean epistemological and methodological assumptions and those who looked upon nature from the sensibility/sentiment perspective. Furthermore, this stance was complemented by the constant need to be attentive and sensitive to rapidly shifting regimes, governmental practices, ideologies and rhetoric, and, specifically, changes concerning scientific practices and institutions, in particular those in natural history.<sup>6</sup> Of relevance here is the practice of stretching the sensibility or the sensibility-cum-sentiment assumptions to fields beyond their original application. The primary signification of these assumptions focused on the senses and assigned a particularly important status to the ability to use the senses, to have sensations, as a venue from which to view the world of phenomena and of meaning—over and above reflection and the response of sentiment to sensations. *Toward the end of the century sensibility was understood as the locus of interactions between the mind and the body.* Thus, sensory experience and sentiment constituted the foundations of the self, of subjectivity, and of sociability. Though their views originated in Locke's sensationalist epistemology, Rousseau, Helvetius, Condillac, Buffon, and Diderot can be viewed as some of the principal proponents of "sensibility." Furthermore, it should be noted that during the revolutionary decade "sensibility" was translated and vernacularized into the moral-political idiom.

In Lamarck, material structures and modes of organization relevant to "sensibility" served as major assumptions in forming a scheme of nature. For him, consistent with his views that interacting components must be seen within the framework of an organism, "sensations" and "feelings" *had to be embodied in order to be*; they could not be related to semiexternal sense organs whose responses and outputs would then become located and worked out in a disembodied mind, psyche, or nondescriptive mediating organ.<sup>7</sup>

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*Manuscripts at Harvard* (Cambridge, MA: Harvard University Press, 1933); Max Vachon, Georges Rousseau, and Yves Laissus, eds., *Inédits de Lamarck; d'après les manuscrits conservés à la Bibliothèque centrale du Muséum national d'histoire naturelle de Paris* (Paris: Masson, 1972).

<sup>5</sup> See, e.g., Sergio Moravia, "From *Homme Machine* to *Homme Sensible*: Changing Eighteenth Century Models of Man's Image," *Journal of the History of Ideas* 39, no. 1 (1978): 45–60; Jessica Riskin, *Science in the Age of Sensibility: The Sentimental Empiricists of the French Enlightenment* (Chicago: University of Chicago Press, 2002).

<sup>6</sup> See Corsi's explanation of why Lamarck did not pursue further the notion of "biology": Pietro Corsi, "Biologie," in *Lamarck, philosophe de la nature*, ed. P. Corsi et al. (Paris: Presses universitaires de France, 2006), 37–64. See also P. Corsi, "Idola Tribus: Lamarck, Politics and Religion in the Early Nineteenth Century," in *The Theory of Evolution and Its Impact*, ed. A. Fasolo (Milan: Springer, 2012), 23–25.

<sup>7</sup> For an elaboration of aspects of this subsection and some other parts of the essay, see a previous article of mine: Snaith B. Gissis, "Interactions between Social and Biological Thinking: The Case of Lamarck," *Perspectives on Science* 17, no. 39 (2009): 237–306.

### *Late Eighteenth-Century Discussions of Mind, Mind-Body, and Mind-Brain*

It is widely assumed that though during the late eighteenth century substance dualism was the rule of the day, yet concurrently there was a sustained attempt to constitute a unified “science of man” anchored in the body that tended to a monist worldview. The options at the time seemed to be *either* some less or some more sophisticated dualist analysis *or* a nondualist one (e.g., either materialist-physiologist or vitalist).<sup>8</sup> Either way, an elucidation of mental functioning was sought, since even radical materialists sensed that simplistic reduction or mere “soul (reason-volition) elimination” would not help clarify the complexity being addressed. Sergio Moravia examined another facet of the same issue as manifested in the diverse strategies adopted to perceive—and thus to empirically investigate—these unseen functions.<sup>9</sup> It was found to be particularly bothersome to have to account empirically both for states, events, and processes looked upon as mental *and* for “that something” whose states, events, and processes they were—or anachronistically put: how to simultaneously account for the subjective, personally identified, *first*-person referent of those *third*-person descriptions. The notions of relations, interactions, and their locations—specifically when dealing with the nervous system or any part of it—became of central importance and were often construed both as conceptual tools and as the very object of the investigation. Recall that the means for the latter would be not only (traditional) introspection but also experiencing, as well as experiment and observation.<sup>10</sup> Fernando Vidal has pointed to the inhering tension between the body as an attribute of the self and the body as that which constitutes the self, and how later on that tension became transmuted to self-brain relations.<sup>11</sup> Discussions of

<sup>8</sup> In the rest of the essay I shall try to avoid using general terms such as “materialism,” “vitalism,” and “mechanism” because I think that within the context of the late eighteenth and early nineteenth centuries they are not helpful in trying to understand the particular case I discuss. One reason for that is that their signification was changing. See, e.g., Pietro Corsi, “Models and Analogies for the Reform of Natural History: Features of the French Debate, 1790–1800,” in *Lazzaro Spallanzani e la biologia del Settecento: Teorie, esperimenti, istituzioni scientifiche; Atti del convegno, marzo 1981*, ed. Walter Bernardi and Antonello La Vergata (Florence: L. S. Olschki, 1982), 381–96; François Duchesneau, *La physiologie des lumières: Empirisme, modèles et théories* (The Hague: Martinus Nijhoff, 1982); François Duchesneau, “Territoires et frontières du vitalisme (1750–1850),” in *Vitalisms: From Haller to the Cell Theory*, ed. Guido Cimino and François Duchesneau (Florence: L. S. Olschki, 1997), 297–349; Timo Kaitaro, “Can Matter Mark the Hours? Eighteenth-Century Vitalist Materialism and Functional Properties,” *Science in Context* 21, no. 4 (2008): 581–92; Alexandre Métraux, “The Emergent Materialism in French Clinical Brain Research (1820–1850): A Case Study in Historical Neurophilosophy,” *Graduate Faculty Philosophy Journal* 22, no. 1 (2000): 161–89; Sebastian Normandin, “Visions of Vitalism: Medicine, Philosophy and the Soul in Nineteenth Century France” (PhD diss., McGill University, 2005); Hans Peter Reil, *Vitalizing Nature in the Enlightenment* (Berkeley: University of California Press, 2005); Roselyne Rey, *Naissance et développement du vitalisme en France de la deuxième moitié du 18e siècle à la fin du Premier Empire* (Oxford: Voltaire Foundation, 2000); Philip Sloan, “Natural History, 1680–1802,” in *Companion to the History of Modern Science*, ed. R. C. Olby, G. N. Cantor, J. R. R. Christie, and M. J. S. Hodge (London: Routledge, 1990), 295–313; Ann Thomson, “Materialistic Theories of Mind and Brain,” in *Between Leibniz, Newton and Kant: Philosophy and Science in the Eighteenth Century*, ed. Wolfgang Lefèvre (Dordrecht: Kluwer Academic, 2001), 149–73; Elizabeth Williams, *The Physical and the Moral: Anthropology, Physiology, and Philosophical Medicine in France, 1750–1850* (Cambridge: Cambridge University Press, 1994); Charles Wolfe, *Materialism: A Historico-philosophical Introduction* (Dordrecht: Springer, 2016), esp. 1–86.

<sup>9</sup> Sergio Moravia, “The Capture of the Invisible: For a (Pre)History of Psychology in Eighteenth-Century France,” *Journal of the History of the Behavioral Sciences* 19 (1983): 370–78.

<sup>10</sup> See, e.g., Michael Hagner, “The Soul and the Brain between Anatomy and *Naturphilosophie* in the Early Nineteenth Century,” *Medical History* 36 (1992): 1–33; Fernando Vidal, *The Sciences of the Soul: The Early Modern Origins of Psychology* (Chicago: University of Chicago Press, 2011).

<sup>11</sup> See Ludmilla Jordanova, “Medical Meditations: Mind, Body and the Guillotine,” *History Workshop* 28 (1989): 39–52. See also Vidal, *Sciences of the Soul*, chap. 9.

morals thus became intertwined with those issues concerning perspectives on the body, its anatomic and physiological structure and function, such as the notions of sensibility and irritability, temperament, and mind-body and mind-brain relations (e.g., constitution, habit, and consciousness).<sup>12</sup> Another significant framing of the above discussion regarded both bodily structures and patterns of behavior as being innate or, alternatively, as environmentally affected/produced by an assumed mechanism that could be conflictual or dialectical or could be inherited, or both.<sup>13</sup>

### *Traditions of Dealing with the Self*

Some historians have considered the period between the last two decades of the eighteenth century and the first two of the nineteenth century as the period of the emergence of the self in both high and low culture and as a scientific object.<sup>14</sup> They have pointed out that the majority of the thinkers during that period, particularly in France, looked upon the individual as the basic unit of description and analysis.<sup>15</sup> Thus, the self became problematized in the discourses of the time on both the social and nature. Roughly speaking, three major traditions, already mentioned above, clashed on how to deal with the enduring self-identity of individuals and with the explanatory mechanisms for perceiving and reasoning, while discrete components of each were intertwined in a wide array of variations. For present purposes these were the theological seventeenth-century positions on the soul; the range of Cartesian two-substances positions; and the sensualist epistemological positions, as well as the subversively pervasive Spinozistic influence.<sup>16</sup> A plethora of programs and frameworks had developed in the spaces between these principal traditions. By the end of the eighteenth century the sensualist-empiricist approach seemed to be the predominant one, particularly in medical physiology and in (empirical) natural history. Physiologists and naturalists had read Newton in a variety of ways and constructed mechanistic models deployed

<sup>12</sup> Dominique Boury, "Irritability and Sensibility: Key Concepts in Assessing the Medical Doctrines of Haller and Bordeu," *Science in Context* 21, no. 4 (2008): 521–35; Moravia, "From *Homme Machine* to *Homme Sensible*"; Hubert Steinke, *Irritating Experiments: Haller's Concept and the European Controversy on Irritability and Sensibility, 1750–1790* (Amsterdam: Rodopi, 2005).

<sup>13</sup> See, e.g., Tobias Cheung, "Omnis Fibra ex Fibra: Fibre oeconomies in Bonnet's and Diderot's Models of Organic Order," in *Transitions and Borders between Animals, Humans and Machines, 1600–1800*, ed. Tobias Cheung (Leiden: Brill, 2010).

<sup>14</sup> See, e.g., Jan Goldstein, "Mutations of the Self in Old Regime and Post-revolutionary France," in *Biographies of Scientific Objects*, ed. Lorraine Daston (Chicago: University of Chicago Press, 2000), 86–116; Jan Goldstein, *The Post-revolutionary Self: Politics and Psyche in France, 1750–1850* (Cambridge, MA: Harvard University Press, 2005); Dror Wahrman, *The Making of the Modern Self: Identity and Culture in 18th Century England* (New Haven, CT: Yale University Press, 2004). See also Martin Staum, *Minerva's Message: Stabilizing the French Revolution* (Montreal: McGill-Queen's University Press, 1996); Gareth Stedman Jones, "The New Social History," in *The Age of Cultural Revolutions: Britain and France, 1750–1820*, ed. Colin Jones and Dror Wahrman (Berkeley: University of California Press, 2002), 94–136.

<sup>15</sup> Note, though, that there were significant exceptions. Some, e.g., Ferguson and even Condorcet in his late writings, argued that one could not imagine, hypothesize, describe, or analyze discrete individuals in isolation: one had to consider them as already socialized within the context of some society. They all thought that an explanation had to be provided for the fact that sociability was a universal human trait. From the second half of the eighteenth century onward, the dynamic character of being human became emphasized as the foremost feature at both the individual and the collective level—perfectibility and progress—and became a key notion in eighteenth-century writings on the mechanisms that allowed culture and civility to evolve.

<sup>16</sup> See Jonathan I. Israel, *Radical Enlightenment: Philosophy and the Making of Modernity, 1650–1750* (Oxford: Oxford University Press, 2001); as well as Jonathan I. Israel, *Enlightenment Contested: Philosophy, Modernity, and the Emancipation of Man, 1670–1752* (Oxford: Oxford University Press, 2006); and the debates these volumes sparked.

to interpret their own materials. However, many came to regard that corpus more as a hindrance than as a help in their attempts to understand life, generation-heredity-development, perception and intellection, cohesive unity and functional diversity in the organism, and so on—all gradually becoming perceived as complex, time-dependent processes in nature, *all carrying history*. And to some of the naturalists such processes seemed to resist mathematization and quantification.<sup>17</sup>

### GENERAL TENETS OF LAMARCK'S SENSATIONALISM

I discuss Lamarck's construction of a "self" within the above, tersely summarized contexts. I submit that we must look within the contemporaneous epistemology in order to understand his views on "feelings"; in other words, we must locate them within the framework of sensationalism, later also called associationism. The tenets of sensationalism were transposed by Lamarck to a scheme of nature in which matter and the modes of organization relevant to it were the basis of the major formative assumptions. Environment, organism, nerves and nervous system, and behavior—seen as events and processes—all became embodied and were to be detected through the reactions and the actions of the organism's various subsystems and parts.

Both Cuvier and Lamarck looked upon the nervous system as a gauge of the level of complexity of an organism. However, this was couched within differing perspectives on living nature. Lamarck was acutely aware of both the complexity and the time directedness characterizing the phenomena of life. He considered organization and self-organization to be life's principal features, and thus complexification to be an inherent property of life. His conception of "*la marche de la nature*," also called "transformism" and somewhat later "evolution," assumed both a growing complexification of living entities and the organism's openness to the environment in which it finds itself, characterized by interactions with the environment that transform it (and transform the environment). This was Lamarck's foundational framework, and thus the perspective through which distinctions were drawn between the living and the nonliving, by which flora and fauna were distinguished, and by which vertebrates and invertebrates were classified. In contradistinction to some of his contemporaries, the evolutionary mechanism Lamarck had adopted operated by way of structured hierarchies (assigned to any system chosen as a thread to be followed) that allowed him to identify a near zero point and to adumbrate a gradual compounding and amalgamation across the ascending scale of organisms, leading to an increasing complexification.<sup>18</sup> Furthermore, he tended to assign the invertebrates a role somewhat similar to that of model organisms: that is, as accessible, typical exemplars of widely observed features, serving as an index to the group of instances and to the set of *problématiques*.<sup>19</sup>

The tendency to complexification, the "life-force," became the predominant mechanism for progress in the organic world, while "circumstances" were considered secondary to it.

<sup>17</sup> In writing this subsection as well as in what follows I made use of arguments and materials collected and elaborated on in my previous article Snait B. Gissis, "Lamarck on Feelings: From Worms to Humans," in *The Body as Object and Instrument of Knowledge: Embodied Empiricism in Early Modern Science*, ed. Charles T. Wolfe and Ofer Gal (Dordrecht: Springer, 2010), 211–39.

<sup>18</sup> E.g., "Life . . . tends incessantly by its very nature to a higher organisation, to the creation of special organs, to the isolation of these organs and their functions, and to the division and multiplications of its own centres of activity." Lamarck, *Philosophie zoologique*, trans. Hugh Elliot (Chicago: University of Chicago Press, 1984), 239 (II/vi).

<sup>19</sup> See, e.g., Rachel Ankeny, "Model Organisms as Models," *Proceedings of the Philosophy of Science Association* 3 (2001): 251–61; Rachel Ankeny and Sabina Leonelli, "What's So Special about Model Organisms?," *Studies in History and Philosophy of Science* 42 (2011): 313–23.

Circumstances impacted on organisms indirectly via the mechanism of use and disuse—that is, with the formation of habits inherited intergenerationally.

Already by 1806 the predominant function that served Lamarck as a tool of classification was the presence (or absence) of nervous activity, signaled by the presence (or absence) of any form of a specialized system of nerves. This meant taking into account the number and the complexity of specialized subsystems of the organism, the extent and diversity of its functioning, its behavior, and the spectrum of its experiencing and acting—that is, its “faculties” and their range. In *Philosophie zoologique*, published in 1809, the evolutionary perspective was much more conspicuous than before, as the question of animal–human continuity was brought to bear directly and indirectly on numerous issues. Methodically, Lamarck insisted that the order of the investigation ought to follow the order that nature had taken and thus reveal conditions and relationships, including causalities, responsible for the increasing complexification.<sup>20</sup>

Furthermore, it seems that a notion of emergence might have been implicit in this injunction, since in contrast to a “post-factum” description, it was impossible to either universalize any stage of the evolutionary progress or make predictions from one stage to the next one. In that sense it provided the possibility of regarding the evolutionary path as containing emergent offshoots, useful for the analysis of the particularities of the most complex systems.

Lamarck’s methodological position when discussing humans was different from that of the ideologues, from that of Pierre Cabanis, and from that of physicians in general. They used “man,” even though a part of nature, as the starting point of their discussion of living nature and devoted protracted discussions to man’s special, and even separate, status within nature and to the particular conceptual tools needed to analyze his unique faculties. Lamarck instead started with a panorama of living nature. He felt it incumbent to provide explanations for experiencing, feeling, and intellection across the branching scale of the living. When finally discussing “man,” he argued for applying the laws of “physics” (his Lamarckian chemistry, geology, and physics) uniformly, since the naturalist could observe, investigate, and explicate only matter, which for him meant evolutionized matter.

For Lamarck, “feeling” events and processes, which took place in organisms in constant interactions with their specific environments, were neither mental/psychological nor bodily but rather hybrid, direct consequences of physiological processes. The active agency involved in transferring was attributed not to the nervous system per se but to the “*fluides nerveux*” running through a bodily hydraulic system composed of pipes, tubes, and canals, the totality constituting elements of a constant dynamics of change. Given the methodological constraints, and given the resources of the contemporaneous discourses, Lamarck used the evolutionary framework to construe the experiencing of “feelings” as an emergent offshoot of bodily structures that developed and evolved (not through quantitative steps) across the temporal evolutionary span and its bodily spaces, systems, and subsystems.

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<sup>20</sup> “[C]et ordre est le seul que soit naturel, instructif pour nous, favorable à nos études de la nature: et qui puisse, en outre, nous faire connoître la marche de cette dernière, ces moyens et les lois qui régissent ses opérations à leur égard. Des rapports qui doivent être employés dans la distribution et la classification des animaux” (unpublished, 1816–17; Vachon, Rousseau, and Laissus, *Inédits*, 248).

## AN EVOLUTIONARY SELF

As mentioned earlier, at the end of the eighteenth century the issue of self was often discussed within a context of sensationalist epistemology and/or within a context of a variety of dualisms. The self was accordingly either non-unitary and tenuously continuous, such as a self that depended on memory, or unitary and continuous, such as a soul-substance or its analogues.

Within these frameworks the self was designed to fulfill a variety of epistemological roles, consistently assigned to the mental-psychological, roles deemed necessary for describing states, events, and processes of experiencing that could be ascribed to the self, roles that belonged to it having assumed its existence.

On the other hand, the positions that resonated with Lamarck, as far as one can judge from his interlocutors, to whom he usually did not refer by name, were probably the ones attributed to some vitalist physicians or the more severe monist materialist position such as the one d'Holbach held or the mixed options delineated by some of the ideologues and by Diderot. They had in common the shunning of introspection as a privileged access to the self and the attempt to construct "physical"-physiological explanatory mechanisms, preferably nonreductive ones.

Once again in order not to commit himself to the mental-psychological, and in order to remain within his methodological as well as epistemological constraints, Lamarck chose to posit a hybrid evolutionary entity, "*le sentiment d'existence / le sentiment intérieur*," that would fulfill the role of an assumed self.<sup>21</sup> When Lamarck called the self a "feeling," or "sentiment," he was using an option already in the repertoire of models of enduring cohesive identity. His innovativeness lay in the evolutionary grid applied to this notion:

Every sensing being, that is, a being that is endowed with the faculty of sensing, and nowhere else but in the animal realm do beings of that sort exist, possesses a *sentiment intérieur*, which it enjoys without discerning it, which gives [that being] a very obscure notion of its existence, or, put differently, constitutes in it the feeling of its being, and in this way makes possible [*donne lieu*] that "I" so familiar to us, because we have the capacity to pay attention to it. This intimate feeling of existence, in one word this particular "I" [*moi*], has been well known to us, as I have said; but it seems to me that the *sentiment intérieur* that allows for it [the *moi*], constituting a power which, on the one hand, is susceptible to being moved by [i.e., responsive to] any felt

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<sup>21</sup> See also Ludmilla Jordanova, "La psychologie naturaliste et le 'problème des niveaux': La notion du sentiment intérieur chez Lamarck," in *Lamarck et son temps, Lamarck et notre temps*, Colloque international dans le cadre du Centre d'études et de recherches interdisciplinaires de Chantilly (Paris: Vrin, 1981), 69–80. But note that though the term "*le sentiment d'existence / le sentiment intérieur*" was used by numerous authors in France, particularly in the second half of the eighteenth century, it was rather polysemic. Its varying meanings related primarily to humans, for example, to "the moral," to that which is beyond reason, etc., and when related to animals, then the comparison emphasized the gap, the conspicuous difference, between animals and humans. See, e.g., Georges-Louis Leclerc, comte de Buffon, *Histoire naturelle générale et particulière: Avec la description du Cabinet du roy* (Paris: L'Imprimerie royale, 1749–88), 15:cxxix (<http://www.buffon.cnrs.fr>). Cabanis used only "*sentiment d'existence*" and related it to issues of the will, such as being a physician, when he discussed the changes brought about by different living regimes, particularly nutrition, that could "en un mot, à donner un plus grand sentiment d'existence." Pierre Jean Georges Cabanis, *Rapports du physique et du moral de l'homme*, 2nd ed. (Paris: Crapart, Caille et Ravier, 1805), 386. He also used the term when he discussed sympathy, the sense of self, and will (541). For Cabanis, "le moi resides exclusivement dans la volonté," and even the fetus has a sense of that (31). See also Martin Staum, *Cabanis: Enlightenment and Medical Philosophy in the French Revolution* (Princeton, NJ: Princeton University Press, 1989).



need and, on the other hand, is capable of immediately causing action, has not been recognized by anyone before me.<sup>22</sup> (original emphases, my translation)

Up to 1806, while his general evolutionary scheme was crystallizing, Lamarck's theory of sentiments was rather rudimentary, and the issue of the self was barely mentioned.<sup>23</sup> It first received a detailed elaboration and explication in *Philosophie zoologique*. One can surmise from the adjectives accompanying "*le sentiment d'existence*"—namely, "intimate" and "obscure"—that it pertained to all possible animal entities in the range of the living and was thus a wide, basic concept, while "*le sentiment intérieur*" was reserved for animals with more complex nervous systems.<sup>24</sup> However, for both groupings the "feeling" of one's existence was there continually, pervading the whole organism as it acquired feelings produced by the very activities of living, and was thus based on the interconnectedness of the nervous system that bound these processes together. Much later, in the entries Lamarck submitted to the new *Deterville Natural History Dictionary* (1817), a distinction between a conscious and a nonconscious state of such "*sentiment*" appeared. A further distinction between animals and humans appeared in the book that dealt primarily with humans, his *Système analytique*. Explicating in this fashion the "*sentiment intérieur*" through the evolutionary grid meant that Lamarck considered it emergent: absent in very low invertebrates and appearing in crude form in invertebrates from insects up. Being a "feeling" it could not exist without a nervous system and the fluids' pipeworks and mechanisms that would support it. Furthermore, both the degree of sophistication and efficacy in bodily movement of this "feeling"—that is, the manifestation of constraint, compulsion, control, and choice—depended on the complexity of this system and its workings. It was completely embodied and it accounted for the transition to graduated experiencing, which already at its elementary level regulated and monitored the organism.<sup>25</sup> Vertebrates in general, mammals and humans in particular, had a more privileged position in relation to it. Agency was attributed through the notion of need: it was a "feeling" "aroused by needs" and a causal agent in both movements and actions related to needs.

Lamarck partook in the assumption of there being special organs for specialized functions. This assumption was shared by a number of contemporaneous naturalists, but for Lamarck these functions and organs had evolved gradually. This meant that there would be a particular space within the nervous system where the processes of a need being felt through "emotion" took place. Since Lamarck looked upon the nervous system as having distinct and separate parts for sensing and for movement, this meant having the power to affect movement and having the power

<sup>22</sup> "Tout être sensible, c'est-à-dire, doué de la faculté de sentir, et ce n'est que dans le règne animal qu'il en existe de cette sorte, possède un *sentiment intérieur*, dont il jouit sans le discerner, qui lui donne une notion très-obscure de son existence, ou autrement, qui constitue en lui le sentiment de son être, et qui y donne lieu à ce moi si connu de nous, parce que nous avons le pouvoir d'y donner de l'attention. Ce sentiment intime d'existence, en un mot, ce moi en question nous étoit bien connu, comme je viens de le dire; mais le *sentiment intérieur* qui y donne lieu, constituant une puissance, d'une part, susceptible d'être émue par tout besoin senti" (Lamarck, "Instinct," in *Nouveau dictionnaire d'histoire naturelle*, 332).

<sup>23</sup> Lamarck, *Recherches sur l'organisation des corps vivans*, 168.

<sup>24</sup> External pressures were understood to be the source and cause of the movement of lower organisms. Their movements were tropism-like, because (mentioned in *Philosophie zoologique* and elaborated upon in *Système analytique*) they could not have "feelings" and thus could not enjoy the concerted bodily movements related to "*sentiment intérieur*." The absence of "*sentiment intérieur*" was indicative of the narrow range of the organism's needs and of its place on the evolutionary ladder.

<sup>25</sup> The "*sentiment intérieur*" was posited as a necessary condition for higher functions such as a variety of modes of thought of which volitional acts were a derivation. I shall not discuss here the entwining of that with "instinct."

to affect the processes that resulted in the formation of an action and/or of a reaction.<sup>26</sup> The uniqueness of the “*sentiment intérieur*” was its ability to be both a transmitter and an initiator of movement. Being activated by a need meant, within the Lamarckian conceptual grid, that the “*sentiment intérieur*” played an important role in the formation of habits, which, when they became an acquired trait, were passed on intergenerationally.

Through this double-layered “*sentiment*” Lamarck provided a hybrid entity, an evolutionized materialization of the mental, a substitute for a substantive substrate of the functional unity of the organism.<sup>27</sup> It functioned as a cohesive whole in relation to its inner working and likewise in its distributed reactive functioning and in its efficacious functioning. This meant that it functioned as a stable system. This system was both a self-referring and a referral system, since it was referring to the ever-present needs of the living organism, particularly the needs to successfully adapt and to survive. These needs were looked upon as arising in the constant interaction with the environment, as embodied in this generalized, continuous process.<sup>28</sup> Thus, the assumption of an emergent, gradually evolving “*sentiment d’existence / sentiment intérieur*” was intended to resolve the empiricist cul-de-sac of identity-and-continuity of the self<sup>29</sup> on many levels. Already in *Philosophie zoologique*, but much more so in his *Histoire naturelle* and in his *Système analytique*,<sup>30</sup> Lamarck tried to stretch the epistemological and social-cultural (“moral”) labor that the “*sentiment intérieur*” could perform and to turn it into a full blown social-cultural self. In this manner a “feeling” of an active self was posited within the sensualist framework, a self that, by virtue of being a necessary result of organic structures, was in that sense, moreover, innate. However, that quasi-innate self would be meaningless without an evolving experiencing within a specific environment.<sup>31</sup> As Lamarck put it: “No doubt, man is born without ideas, without enlightenment, in possession of nothing but a *sentiment intérieur* and general proclivities which tend to exert themselves mechanically. It is only with time and through education, experience, and the circumstances which he encounters that he acquires ideas and knowledge.”<sup>32</sup>

I submit that although Lamarck started from (third-person) *descriptions*, that is, descriptions and analyses of bodily structures (their functioning, causalities, mechanisms), thus catering to the demands of contemporaneous science, this enabled him to convey the meaning of (a first-person) *experience*, that is, the subjective sense of the self, the “I,” the experiential content of the “inner sentiment” to that self which, within the evolutionary hierarchy, is endowed with being

<sup>26</sup> On the issue of the spatial dimension, see also Robert J. Richards, *Darwin and the Emergence of Evolutionary Theories of Mind and Behavior* (Chicago: University of Chicago Press, 1987).

<sup>27</sup> Yet, when looking at the notion within his scheme, it seems that “*sentiment intérieur*” did not fulfill the role of a “feeling” in Lamarck’s own view and belonged perhaps more in his faculty discourse.

<sup>28</sup> Lamarck assumed a unitary organic individual and denied the possibility of a scattered or divided “*moi*,” such as Cabanis’s, who suggested the possibility of partial, plural “*moi*,” related to differing nervous centers, with the caveat that one could say very little about them: “*puisque toutes nos sensations de moi rapportent exclusivement au centre général et que nos moyens d’acquérir des notions exactes*” depend on grasping the circumstances “*dans leur enchainement*” (Cabanis, *Rapports*, 503).

<sup>29</sup> Jan Goldstein characterized this as the “horizontal fragmentation of the self” in *Post-revolutionary Self*.

<sup>30</sup> See also the articles written for *Nouveau dictionnaire d’histoire naturelle*.

<sup>31</sup> In that sense the need for evolving experiencing was a Piaget-like structure, to characterize it anachronistically.

<sup>32</sup> “*Sans doute, l’homme naît sans idées, sans lumières, ne possédant alors qu’un sentiment intérieur et des penchans généraux qui tendent machinalement à s’exercer. Ce n’est qu’avec le temps et par l’éducation, l’expérience, et les circonstances dans lesquelles il se rencontre, qu’il acquiert des idées et des connaissances*” (Lamarck, *Nouveau dictionnaire d’histoire naturelle*, 279).

a “self-aware” constituted “I,” producing a first evolutionary self and a differing conception of inter-nality.<sup>33</sup> Antonio Damasio’s table of self that delineates an evolutionary path from proto-self to a core self (with consciousness) helps in grasping what I argue that Lamarck was attempting to do.<sup>34</sup>

Let me recapitulate: Lamarck’s model of what was driving “the march of nature” was at the core of his innovative explicating of “feelings” and of the experiencing self. The model aimed to encompass all the known functioning of the human mind and of the human psyche, and it did so by situating humanity as a component of a natural continuity. The basic analytical units, the mechanisms, the generalizations, the laws, all would have to apply to living organisms at large in order to apply to humans. It naturalized human behavior by putting it on a par with the behavior of any living organism. The patterns and mechanisms that would apply to living nature would apply to human perception and consciousness, as well as to unconscious, purposeful, planned, and spontaneous human activities; to thoughts, feelings, desires, and in fact to both individual and social behavior. The *problématiques* that Lamarck dealt with were certainly those of the natural history and physician-physiologist communities of his time and were conceived within the broadly defined framework of sensationalism, or associationism. His questions were defined within this conceptual framework, but the variety of answers given within this framework must have been deeply unsatisfactory to him. His innovative stance, which answered the questions by freeing him from that framework, embodied a systematic and thoroughgoing application of an evolutionary perspective to the living world. There were other naturalists who had suggested inner feelings before Lamarck, but his evolutionary perspective on “feelings” in general and on “*sentiment d’existence / sentiment intérieur*” in particular made his suggestion a generative one for some psychologists in the nineteenth century.

### **CODA: FROM A LAMARCKIAN EVOLUTIONARY SELF TO A HUGHLINGS JACKSONIAN EVOLUTIONARY SELF**

Lamarckian evolutionary concepts, mechanisms, and metaphors were both addressed and used in Great Britain in a diversity of intellectual, medical, and political circles throughout the first half of the nineteenth century.<sup>35</sup> I will very succinctly present here the Lamarckian-Spencerian transfer elaborated by John Hughlings Jackson to cope with the passage from a third-person description to a first-person experience (and back). This may help explicate a conceptual difficulty inhering in sensationalism-associationism psychological conceptualizations and some attempts to solve it through assuming an evolutionary substrate, an evolutionary self.

In 1855 Herbert Spencer published his *Principles of Psychology*, evolutionizing the field through a Lamarckian deployment.<sup>36</sup> His entire enterprise was molded by a scientific and social-political-cultural context that allowed for the assumption that there was a fundamental

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<sup>33</sup> Charles Taylor, *Sources of the Self: The Making of the Modern Identity* (Cambridge, MA: Harvard University Press, 1989).

<sup>34</sup> Antonio R. Damasio, *The Feeling of What Happens: Body and Emotion in the Making of Consciousness* (New York: Harcourt, Brace, 1999), 199; Antonio R. Damasio and Hanna Damasio, “Minding the Body,” *Daedalus* 135, no. 3 (2006): 15–22; Gerald M. Edelman, “The Embodiment of Mind,” *Daedalus* 135, no. 3 (2006): 23–32.

<sup>35</sup> See, e.g., Peter J. Bowler, *The Non-Darwinian Revolution: Reinterpreting a Historical Myth* (Baltimore: Johns Hopkins University Press, 1988); Pietro Corsi, “Before Darwin: Transformist Concepts in European Natural History,” *Journal of the History of Biology* 38, no. 1 (2005): 67–83; Desmond, *Politics of Evolution*; Richards, *Darwin and the Emergence of Evolutionary Theories of Mind and Behavior*.

<sup>36</sup> Herbert Spencer, *The Principles of Psychology* (London: Longman, Brown, Green, and Longmans, 1855).

correspondence between organic nature and mental and social life. This in turn implied that it was meaningful to seek correspondences between the mechanisms of development, evolutionary features, foundational units responsible for the emergence of new features, and types of lawfulness in these domains. It should be added that *Principles of Psychology* dramatically helped shape the context in which such subsequent explorations could be carried out.

For Spencer, just as for Lamarck and for many of the Lamarckians and neo-Lamarckians involved in this search, the interactions of organisms with their environments were of paramount importance. The degree of organization indicated the extent of the constantly changing, entwining interdependencies between organisms, components of organisms, and the environment, thus delineating the range of possible adaptational, innovative changes. Consequently, for them stability inhered in the pattern of change and in the plasticity of what emerged as a result of the interaction rather than in less- or non-changing constellations (since the constellations themselves are changing and not “subject to change”). That meant that the relation between degree of complexity and degree of organization was direct. Spencer argued for a hierarchical view of living nature. Evolutionarily lower (biological) individuals were simpler, less differentiated, less specialized internally, with less coordination, integration, and interdependence among parts, and thus, they were more homogeneous and less adaptive and their modes of activity tended to be rigid and repetitive.<sup>37</sup>

John Hughlings Jackson—a younger contemporary of Spencer—has for a long time been considered the founder of British neurology in the last third of the nineteenth century and a clinician-theoretician who had a deep impact on the development of both neurology and psychology. Both his theorizing on and his classification of neurological pathologies, primarily epilepsy and aphasia, manifested a specific evolutionary view of the nervous system, its structure and its functioning in health and in disease. His work constituted a significant link in the transfer-network of Spencerian/Lamarckian models and mechanisms. Hughlings Jackson quoted Spencer and referred to him in his many papers and lectures, whether presenting a medical case, summing up a more general view on a category of cases, or offering a theoretical analysis. Two facets of his evolutionary thinking on the nervous system are of particular relevance here. First, he was committed to the view that the nervous system was a product of an evolutionary process resulting in layers, higher levels having evolved from lower ones,<sup>38</sup> with “earlier” meaning lower in the order of evolutionary development. Second, he assumed that the layers were hierarchical and linearly inclusive. They consisted of differing nervous centers—high, middle, and low—whose relationship was that of growing inclusion, with higher layers controlling, constraining, and suppressing activities of those beneath them. Unlike both Lamarck and Spencer, Hughlings Jackson dealt almost solely with humans. However, his evolutionary views committed him to looking upon experiential and cognitive functioning as hierarchically distributed among living entities.<sup>39</sup>

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<sup>37</sup> See Snait B. Gissis, “Spencer’s Evolutionary Entanglement: From Liminal Individuals to Implicit Collectivities,” in *Biological Individuality: Integrating Scientific, Philosophical, and Historical Perspectives*, ed. Lynn K. Nyhart and Scott Lidgard (Chicago: University of Chicago Press, 2017).

<sup>38</sup> See, e.g., John Hughlings Jackson, “On Some Implications of Dissolution of the Nervous System, 1882,” in *Selected Writings*, ed. James Taylor, Gordon Holmes, and F. M. R. Walshie, 2 vols. (London: Staples Press, 1958), 2:29–30, 42–44; Hughlings Jackson, “First Croonian Lecture, 1884,” in *ibid.*, 46; Hughlings Jackson, “Leeds Address, 1889,” in *ibid.*, 395–96.

<sup>39</sup> It seems that Jackson was not familiar with Lamarck’s formulations directly but knew of them solely through their elaboration within the context of Spencer’s works.

It was when dealing with the high centers of the human nervous system that Hughlings Jackson had to confront the issues of consciousness and of self/person. While Lamarck strove to suggest a hybrid, cutting through the distinction between the physiological and the mental, so as to take the mental out of the realm of metaphysics or theology and into the field of science, which had to be the field of materiality, Hughlings Jackson attempted to clearly *delineate the spheres* in which he was working and to distinguish *methodologically* between nervous system/brain/spine and mind, between mental/psychical and physiological, as well as between anatomy and morphology, all in order to enable a science of the nervous system (neurology), whose object had thus to be physiological. Both used evolutionary assumptions to establish their field as scientific, and both posited an evolutionary self in order to bridge the scientific stance (i.e., third-person descriptions and analyses) and the (human) subjective stance (i.e., the mental, or first-person experiencing).

Hughlings Jackson looked upon the nervous system as “representing” the two basic modes of an organism’s activity, the sensory and the motoric, which, I submit, were the equivalent of the “basic units” in the empiricists’ approach. Clinically, he developed and practiced a methodology of close observation, aiming at “neutrality” and “objectivity,”<sup>40</sup> and adopted a position I refer to as methodological parallelism. This consisted in the following: For the purpose of his *clinical* work he *assumed* that brain states and mind states were intrinsically different, with no causal connection between them in either direction. But since they appeared as temporally parallel, he admitted that they were “concomitant.”<sup>41</sup> Within his evolutionary framework this meant that there would be a correlation between the system of evolutionary functional brain levels and relevant mental phenomena—whether considered subjective or not. This methodological constraint allowed a separation of the mental (at times called “psychical”) from the physiological in order to deal scientifically only with the latter.<sup>42</sup>

In his late work Hughlings Jackson totally equated mind and consciousness. Consequently, he negated the possibility of any mental activity that was not also conscious. Hughlings Jackson thereby broadened the scope of his work, resulting in a complicated distinction between what he called, object states and subject states.<sup>43</sup> The difference between these two states was not a mirror of the distinction between the neurological/physiological and the mental/psychical, since both fell under the latter. Rather, it dealt with the possibility of unmediated introspection as a source of reliable knowledge on the constitution and functioning of both. Hughlings Jackson’s position was complicated. There was no way to provide “an explanation” within his evolutionary framework for the traditionally named faculties—that is, will, memory, reason, emotion—except as

<sup>40</sup> See, e.g., Jeannette Sterling, *Representing Epilepsy: Myth and Matter* (Liverpool: Liverpool University Press, 2010).

<sup>41</sup> See Hughlings Jackson’s Croonian Lectures, in *Selected Writings*.

<sup>42</sup> “It is impossible to study cases of disease of the brain methodically if we confuse psychical states with nervous ones. We must be thoroughly materialistic in our method so far as is practicable” and “study without psychological bias the material basis of mental disorders” (Hughlings Jackson, *Selected Writings*, 2:2, 9).

<sup>43</sup> Lewes, who supported a two-aspects monism, was influential in Hughlings Jackson’s adoption of this distinction, which originated with Lewes. Hughlings Jackson quoted G. H. Lewes: “all the evidence points to the very different fact *that the neural process and the feeling are one and the same process viewed under different aspects*. Viewed from the physical or objective side, it is a neural process; viewed from the psychological or subjective side, it is a sentient process.” And Jackson continued: “Mr Lewes’s view does not conflict with mine *in this inquiry*. . . . It is I think, indeed convenient to make the distinction, even if it be purely artificial” (Jackson, *Selected Writings*, 1:42, italics in the original). Hughlings Jackson is quoting from George Henry Lewes, *Problems of Life and Mind*, 2 vols. (London: Trübner, 1874), 2:459, italics added by Hughlings Jackson.

modes of functioning of consciousness perceived as “attendant” on or correlate to certain activities or configurations of the higher nervous centers. The latter were a legitimate topic of research. Neurology could deal only with objective, embodied, and thus third-person states. However, the pathological phenomenology dealt with clinically included “subjective,” “mental,” “first-person” accounts. The activities of consciousness bore the mark of “belonging to somebody,” a somebody with whom one (even oneself) could become acquainted only through his activities, their products, including himself, etc. These were Hughlings Jackson’s “object states.” *The issue then became how to guarantee the continuity of that “belonging” within the methodological parallelism, which was seen as securing the scientific status of the whole endeavor.* Hughlings Jackson’s solution was to do so by anchoring it in “anatomical substrata of subject consciousness.” I believe that in the above explication, which he characterized as “speculative,” he pointed to a necessary—in fact, to an indispensable—condition for his science, namely, the existence of the self, a self that was indescribable in the terms and tools of methodological parallelism. Like Lamarck before him, Hughlings Jackson started with, to use Damasio’s expression once again, a third-person description but found out that “object states” did need conceptually *an evolutionized first-person foundation*, or experience or explicated meaning or a Hughlings Jacksonian version of a “*sentiment intérieur / sentiment d’existence*”: “Subject consciousness is something deeper than knowledge; it is that by which knowledge is possible. Perhaps we may say that it is an awareness of our own existence as individuals, as persons having object states making up for each the (his) Universe; it is us in an emphatic sense.”<sup>44</sup> A

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<sup>44</sup> Hughlings Jackson, “Remarks on Evolution and Dissolution of the Nervous System” (1887), in *Selected Writings*, 2:96.