

Locke and Projects for Naturalizing the Mind in the 18th Century

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Abstract

How does Locke contribute to the development of 18th-century projects for a science of the mind, even though he seems to reject or at least bracket off such an idea himself? Contrary to later understandings of empiricism, Locke goes out of his way to state that his project to investigate and articulate the ‘logic of ideas’ is *not a scientific project*: “I shall not at present meddle with the Physical consideration of the Mind” (*Essay*, I.i.2). Locke further specifies that this means his analysis of mental processes will not engage with knowledge of the brain (e.g. in terms of corpuscles and animal spirits), even though he had been the student of Thomas Willis. Now, Kant seemed to make an elementary mistake, given such a clear statement on Locke’s part, when he claimed that Locke’s project was a “physiology of the understanding” (in the Preface to the A edition of the first *Critique*). One can ask of course what this physiology of the understanding was, and if it existed, in or out of the Lockean intellectual world (as I have sought to investigate in a 2016 paper). This leads me to inquire into the outcome of his empiricism for a scientific treatment of the mind, including in the sense of a ‘naturalization’ of the mind (with implications also for our understanding of empiricism: Anstey’s influential distinction between experimental and speculative philosophy does not seem useful here). Because if Kant made this charge, there were also many 18th-century thinkers who *positively* treated Locke as their great forerunner in psychology and related fields: Charles Bonnet and Joseph Priestley among them, just as some prominent physicians such as Cabanis claimed to be ‘finishing the job’ that Locke had started in, e.g. their materialist theories of the passions. What one might term ‘the Locke Problem’ here is: how can one reconcile empiricism and claims about cerebral processes, while seeking to remain a Lockean? Differently put, what is the process of naturalization, a naturalization of?

Scholars have a lot to say on Locke on ideas, and a fair bit to say about Locke on thinking matter and by extension on materialism, but for some strange reason they rarely pick up on the moment when Locke quite bluntly states that he won't "meddle with the Physical Consideration of the Mind," including particular neurophysiological considerations such as "by what Motions of our Spirits, or Alterations of our Bodies, we come to have any Sensation by our Organs, or any *Ideas* in our Understandings; and whether those *Ideas* do in their Formation, any, or all of them, depend on Matter, or no" (Essay, I.i.2).¹ To be precise, Locke is not just bracketing off explicit neurophysiological considerations, given that in his list of what he won't "meddle with," we find not only various concrete empirical hypotheses on motion or sensation but also "whether the ideas in our understandings . . . depend on matter or not" (*ibid.*). In that sense, the issue raised here could also be related to the vexed issue of Locke's relation to materialism, which *has* been discussed at some length, whereas I shall focus on his relation to naturalistic projects concerning the mind (rather than the more discussed question of his relation to materialism), and the extent to which such projects arising in the generations after his death (and proudly invoking Locke's patronage) could be said to be unfaithful to Locke or not. Locke does reiterate later on that any effort to "enquire philosophically into the peculiar Constitution of Bodies" was "contrary to the Design of this Essay" (II.xxi.73).

We should really seek to take this in, as it is so often overlooked: Locke declares clearly that he will not look into ("meddle with") the physical underpinnings of the mind. The Lockean project of the logic of ideas (or study of the understanding), including what we might call associationism (in the sense of an account of mental life as explainable in terms of the connections and interconnections between various sense-impressions, i.e., "the components of consciousness as connected in experience": Murphy and Klüver 1951, p. 26), is not a neurophysiology or even a neurophilosophy.² And yet, no less than Kant proclaimed in the Preface to the first edition of the first *Critique* that Locke's approach to the mind was limited in that it remained "a kind of physiology of the human understanding" (Preface to 'A edition', A viii). Was Locke entirely misunderstood on this question of whether the mind was to be investigated naturalistically? Was he inconsistent? It is also possible that both are true! Furthermore, 18th-century figures invoking Locke while 'disobeying' the stricture not to investigate the mind naturalistically, can also be understood as extending other elements of Locke's project (e.g. associationism).

¹ Rarely, except for the important work of Sutton and Wright.

² Before the reader worries that 'neurophilosophy' is just a crude anachronism here, recall that Locke was Thomas Willis' student at Oxford, Willis who was the author of *De cerebri anatome* and of essays on the soul understood as the locus of mental faculties, and its physiological dimensions (on Willis on the soul see Wolfe and van Esveld (2014), Caron (2015)). But, as I discuss in what follows, this should not lead us to naïvely treat the *Essay* as ... a piece of neurophilosophy (even of the most programmatic sort).

I am interested here in the twofold question, (i) as to the nature of Locke's project as regards the study of the mind, and the extent to which this project *can be* seen as opening onto a science of the mind, and (ii) the extent to which this project *could be* seen or *was* seen by Lockeans of various types and varying degrees of loyalty, as something to be naturalized (that is, as something allowing of naturalization), which they could then proclaim was part of their own undertaking, whether this took the form of a 'psychology', a 'medicine of the mind', a 'physics of the mind', etc. Is it enough to say Kant was wrong about Locke? Because indeed Locke's approach to the mind or the understanding, including his last word on the topic in *Conduct*, is non-naturalistic – not *anti*-naturalistic (Locke never insists that the nature of the mind is somehow of a different kind than the nature of matter, or not a legitimate object of natural-philosophical or natural-historical investigation, especially given his advocating of a 'plain, historical method').³

Was Locke a neurophilosopher?

Notice that the view that Locke was something like an early practitioner of a science of the mind, was not just Kant's: it exists in a positive version, sometimes known as the 'underlabourer' reading of the *Essay*. This reading, which goes back notably to Larry Laudan in the 1970s, takes literally a piece of rhetorical modesty in the Epistle to the Reader, when Locke describes himself as a mere 'underlabourer:

"... I plainly tell all my readers, except half a dozen, this treatise was not at first intended for them; . . . *The commonwealth of learning is not at this time without master-builders*, whose mighty designs in advancing the sciences, will leave lasting monuments to the admiration of posterity; but every one must not hope to be a Boyle, or a Sydenham; and in an age that produces such masters, as the great Huygenius, and the incomparable Mr. Newton, . . . ; *it is ambition enough to be employed as an under-labourer* in clearing the ground a little, and removing some of the rubbish that lies in the way to knowledge" (*Essay*, ed. Nidditch, p. 9).⁴

This literal reading takes the *Essay* to be seeking to do for the mind what Newton or Boyle did for their corresponding parts of the physical and chemical universe (Laudan describes Locke's epistemology as that of a "life-long scientist": Laudan 1981, p. 54), and it is woefully mistaken. In fact, the motivating force in Lockean empiricism is achieving better knowledge of the central issues concerning our *conduct*, how we should live: "Our Business here is not to know all things,

³ It thus makes no sense to describe Locke as the pupil of Willis who, using anatomical discoveries as "stepping-stones," developed the "philosophy that would shape the Enlightenment and modern neuroscience" (Lega (2006), p. 569). For correctives to this view see Wright (1991) and Caron (2015). As to whether Locke may be said to be an actor in a process of 'naturalization of the soul' (not an especially clear expression itself), I return to the question below.

⁴ For a reading of Locke which seeks to emphasize natural philosophy albeit *without* reverting to this heavy-handed 'underlabourer' view, see Anstey (2011) (including his cautious comments on the latter interpretation, pp. 12-14).

but those which concern our Conduct” (*Essay*, I.i.6) – it is a *practical* project at its core, as is clearly indicated by the account Locke gives of the genesis of the *Essay*: “Were it fit to trouble thee with the history of this *Essay*, I should tell thee, that five or six friends meeting at my chamber, and *discoursing on a subject very remote from this*, found themselves quickly at a stand, by the difficulties that rose on every side” (*Essay*, ed. Nidditch, p. 7)

What was the “very remote” subject? One of these five or six friends, James Tyrrell, wrote, in the margins of this passage, “morality and revealed religion.”⁵ Locke’s empiricist project is not only *not* a science of the mind, but is motivated by moral and ultimately theological concerns. True, Locke thinks there can be a demonstrative science of morals (and mathematics), but not of the mind, *even if he does not reject the latter in the way Kant does*, when he boxes off Locke’s project as a ‘physiology’ of the understanding, and overall rejects attempts at naturalization. As Stephen Gaukroger puts it, “Kant . . . rejected all such attempts at naturalization, on the basis of an understanding of scientific enquiry that took rational mechanics as its model, arguing that philosophical anthropology could not aspire to the standing of ‘knowledge’” (Gaukroger 2016, p. 12).

Recent readings of Locke which try to steer him in the direction of natural philosophy – after all, wasn’t he a friendly correspondent of Newton and Boyle, and didn’t he author some interesting early medical manuscripts e.g. on respiration? – are also, I think, misguided in this respect⁶; I find support for my view in Dugald Stewart’s comment in the early 19th century that in the *Essay*, “not a single passage occurs, savouring of the Anatomical Theater or of the Chemical Laboratory” (Stewart (1811/1842), vol. 1, p. 101).

Locke cleverly contraposes traditional metaphysics (considerations “wherein its Essence [sc. the mind] consists”: I.i.2) and the danger of Hobbesian inert materialism (“to resolve all into the accidental unguided motions of blind matter, or into thought depending on unguided motions of blind matter, is the same thing”: IV.x.17). He is not a metaphysician of essence nor a corpuscular reductionist per se; the elementary level Locke wishes to focus on is that of *ideas*, not the “depths of the ocean of Being” (I.i.7), even if he does open a conceptual space for the possibility of materialism, and his arguments against idealism (such as Cartesian dualism) are more sophisticated than his arguments against materialism. As the conservative polemist A.-M.

⁵ The manuscript of the *Essay* with Tyrrell’s marginal annotations is now in the British Museum. For a more detailed account of this story see Nuovo (2017). Locke adds in the above the passage that the way out of those difficulties and unresolvable tensions was to “examine our own abilities, and see what objects our understandings were, or were not, fitted to deal with” (ibid.). The fundamentally practical motivation is also famously evident in Locke’s theory of personal identity, in which the deciding factor ultimately is not our material composition but God’s decision on the day of the Last Judgment. Suffice it to say that if we understand the *Essay* as primarily concerned with matters “concern[ing] our Conduct” (*Essay*, I.i.6), this has implications for how we should understand empiricism, i.e., less as an epistemological project, and more as a ‘practical’ (i.e., ethical) project.

⁶ See the ‘debate’ between Peter Anstey and J.C. Walmsley (Anstey 2015, Walmsley 2016).

Roche put it in 1759: Locke declared himself “if not in favor of materialism, then at least of its possibility,”⁷ although another apologeticist, the Abbé Pluquet, thought Locke was right against Stillingfleet,⁸ and that it was a sufficient proof of faith to trust in God, without having to construct a metaphysics proving the immortality of the soul – much as Joseph Priestley would argue a few years later (Pluquet (1757), vol. 2, p. 457).

Yet it's not enough to just state that Kant was wrong in his anti-‘physiological’ obsession. Not because of the obvious objection to my claim – that Kant didn’t mean it literally, i.e., the issue was not a literal ‘neurophysiology’ – because then, my point remains that he (Kant) thinks Locke is seeking to produce an empirical natural science of mental life, which he isn’t. It is not enough, because Kant (who reiterates this elsewhere, arguing that it is “futile” to “demand a physiological explanation” of the law of the association of ideas⁹) put his finger on something – on a sore spot perhaps. For in the second half of the 18th century a variety of thinkers – physicians, natural philosophers, and philosophers *tout court* (names here include Le Camus, Gaub, Bonnet, and Cabanis) kept on, not *denouncing* Locke for naturalizing the mind like Kant does, but *praising* him for exactly that, while emphasizing that unfortunately he didn’t finish the job.

Again, we have here a double problem of what *Locke* thought and what *Lockean* projects were. However much Locke may not himself have been engaged in a naturalization of the mind, Lockean projects certainly were. The term ‘naturalization’ can, of course, be a source of confusion – does it imply reductionism? eliminativism? and so on – but I am using the term here just to mean ‘rendering the mind accessible to (a) natural science’.¹⁰ These Lockean-inspired projects, which elsewhere I’ve referred to as phantom philosophical projects because they remain predominantly virtual, that is, they were not carried out, can be divided into two broad kinds:

⁷ Roche (1759), I, p. 85. A similar point is made, more aggressively, in the anonymous review of the French translation of the *Essay* in the Jesuit *Journal de Trévoux* (Jan. 1701, p. 128). (unless otherwise indicated all translations are mine)

⁸ Pluquet (1757), vol. 2, p. 454. Pluquet thought Locke’s caution a better attitude than Cartesian ‘realism’ about substance or substances, which, as Hobbes and La Mettrie’s examples showed, could be extended with drastic consequences.

⁹ Kant, *Anthropologie*, 1798, Vorrede, §31, KGS VII, p. 177; similarly, the project of studying the relation between bodily organs and thought is an “eternally futile inquiry” (letter #79 to Markus Herz, 1773, KGS X, pp. 145-146); an “empirical doctrine of the soul” (*empirische Seelenlehre*) is not science, for one cannot mathematize “the phenomena of the inner sense” (*Metaphysische Anfangsgründe der Naturwissenschaft*, 1786, KGS IV, p. 471).

¹⁰ My usage of this term is independent of, and different from, that found in Martin and Barresi (2000), who focus primarily on seventeenth- and eighteenth-century British thought to find forerunners of thought experiments on personal identity such as Parfit’s ‘fission’ experiment. Further, Martin and Barresi confidently employ a more clearcut distinction between what counts as science (empirically based) and what is merely a priori (e.g. Martin and Barresi 2000, pp. 14, 49), than I do. In my focus on projects for a science of the mind and their Lockean elements (more or less faithful), I stress the potentially problematic status of naturalization, whereas Martin and Barresi treat it as an instance of straightforward, unidirectional scientific progress.

- *Substrate-neutral* (and thereby quite Lockean) psychologies and/or models of the association of ideas

and

- *Materialist, especially 'medical materialist'* projects aiming to provide the physiology Locke had left out of his account

To be clear, both of these were viewed by their practitioners as 'Lockean' particularly in terms of 'sensationalism' (as in, "There appear not to be any ideas in the mind before the senses have conveyed any in": *Essay* II.i.23). The first strategy favors his 'associationism'; the second, the way in which his empiricism can be expanded in the direction of a 'medicine of the mind', including at the neurophysiological level.

It is controversial whether Locke really wanted the mechanism of association, as an explanation, to be restricted to pathological cases. On the one hand, Locke's overall framework in *Essay* II.xxx looks associationist: "Locke's greatest contribution to psychology thus lay in making explicit the possibilities of a theory of association which should start with the data of experience and work out the laws governing the interconnections and sequences among experiences" (Murphy and Klüver (1951), p. 29, cit. Dromelet (2020), p. 162). On the other hand, association is equated with mental pathology by Locke: he apologizes for his language and asks that he

"shall be pardon'd for calling it [*sc. Association, CW*] by so harsh a name as *Madness*, when it is considered, that opposition to Reason deserves that Name, and is really *Madness*; and there is scarce a Man so free from it, but that if he should always on all occasions argue or do as in some cases he constantly does, would not be thought fitter for *Bedlam*, than *Civil Conversation*" (II.xxxiii.4; cf. II.xxxiii.9, 7, 10-11, 15, 16, 17).

As John Sutton comments,

"Misassociation can cause psychogenic antipathies to particular foods; nightmares and irrational fears of darkness; lasting personal hatreds resulting only from 'sight and almost innocent Occasions'; unhappiness at school and aversion to books; conditioned responses; and a whole range of 'intellectual habits and defects'" (Sutton (1998), p. 199; see also Tabb XXXX.)

Indeed, as Kathryn Tabb has stressed, the association of ideas cannot be reduced to a sort of bad habit for Locke; such explanations reach "not the bottom of the Disease" (II.xxxiii.3). In part this is because associations can form without the presence of habit, either by chance, or due to an overwhelming passion. But overwhelmingly, the specifically pathological dimension was not part of the 18th-century discussion, or if it was, the Lockean associationist framework was taken as generally applicable *and* as explanatory of pathological phenomena (as in Le Camus).

Let me turn now to the two major strategies I distinguish as regards naturalistic appropriations (readings but also positive reconstructions) of Locke: substrate-neutral (and associationist), and medico-materialist.

Locke and substrate-neutral investigations of the mind

Substrate-neutral Lockean projects in the mid-18th century did indeed seek to experimentally investigate the logic and association of ideas (for example, David Hartley's and Charles Bonnet's neuro-psychologies which sought to correlate mental vibrations and ideas, or fibres and ideas, respectively¹¹), *while nevertheless* strongly denying that they were materialist projects: they were at least agnostic on the issue (like Locke) and at times even added rather frantic anti-materialist claims, which don't really qualify as arguments (as when Bonnet says that the brain is not the soul but the "house" of the soul). Despite their shared 'connectionist' picture of the mind as a system of neural fibres, vibrations, and various versions of identity-theories between these systems of resonating parts and the association of ideas, only Joseph Priestley is willing to connect such a project to a materialist ontology – connecting the functioning of ideas to a materialist substrate. Although Bonnet sometimes uses materialist language, he is actually more of a faithful Lockean in this regard. Bonnet attributes mental faculties such as memory to the brain, explaining that recalling sensations depends on the communication of motions in the fibres; he uses the language of "belonging" (*tenir au cerveau, appartenir au cerveau*): e.g. memory, "which retains the experience of our sensations," "belongs to the brain"¹².

Again, when Jerome (Hieronymus) Gaub, professor of medicine in Leiden (and author of an influential lecture on *De regimine mentis* in 1747), writes to Charles Bonnet in a letter of March 1761, it is a revealing moment. Gaub explains that he has read Bonnet's famous *Essai de psychologie*, and first worried that it would be a horrid materialist book like La Mettrie's *L'Homme-Machine*, but soon discovered how wonderful it was: he thus begs Bonnet to publish an additional treatise on this topic, "so as to demonstrate that the mechanism of the operations of the soul is so far from favoring materialism, being instead the most convincing proof of the opposite system" (in de Caraman (1859), p. 173). This investigation of the "mechanism of the

¹¹ Hartley's 1749 *Observations on Man* is a 'vibratory' account of mind, in which small vibrations ("vibratiuncles") are impressed in the solid filaments of the nerves by external objects, and these sensations are transmitted by ætherial vibration to the infinitesimal particles that make up the substance of the brain. By their differences in degree, kind and place, these vibrations represent different primary sensations, or "simple ideas" in the brain, which can become complex ideas through associations with other chains of vibrations (Hartley 1749, I, pp. 13-16). Hartley cautiously tries to ward off ideological difficulties: "I do not, by ascribing the performance of sensation to vibrations excited in the medullary substance, in the least presume to assert, or intimate, that Matter can be endowed with the power of sensation" (*ibid*, I, p. 33). That brain-mind relations and indeed the 'identity' between cerebral and mental processes can be fully described mechanistically, "with the same certainty as other effects ... from their mechanical causes" (I, p. 500) is not, for Hartley, tantamount to an ontological commitment to a materialist 'substance metaphysics'.

¹² *Essai analytique sur les facultés de l'âme*, in Bonnet, OHNP, vol. VI, ch. XXV, § 793, at p. 380, and ch. XXI, pp. 267-268; further connectionist-type details abound in ch. XXII.

soul” would, again, be a deliberate extension of a Lockean psychological project, *while – explicitly – not falling into materialism.*

Similar language occurs in various authors of the period: thus D’Alembert famously praised Locke in the “Discours préliminaire” of the *Encyclopédie* for “reducing metaphysics to what it should be, the experimental physics of the soul” (D’Alembert (1751), p. xxvii). There were various discussions of ‘experimental physics’ in this period, and also works on ‘physics of the soul’, such as Guillaume-Lambert Godart’s *Physique de l’âme humaine* (1755). Godart explained that ‘physics’ should be understood in the broadest sense, as in *phusis*: a genetic account of the growth and development of the soul (i.e. the mind), and he noted that such studies of the mind or the passions could indifferently be entitled ‘physics’ or ‘physiology’ (Godart (1755), p. iv). Indeed, the ‘experimental physics of the soul’ was not understood literally as a ‘physics’, any more than the Newtonian-influenced vocabulary of ‘physical histories of the mind’ in the Scottish Enlightenment (cf. Hatfield (1994), pp. 383-384). Mechanistic psychologies could be and indeed were for the most part neutral when it came to the physiological underpinnings of the processes they sought to model.

What is difficult to pinpoint is any particular point at which ‘mind’ replaces ‘soul’ as a concrete instance of terminological naturalization, as it were. This becomes common by the mid-18th century but occurrences can be found much earlier: the 17th-century ‘Epicurean physician’ Guillaume Lamy casually points to this when he says “I used the words *soul* and *mind* interchangeably . . . because they are the same thing”; Lamy adds, in a technical flourish which seems rather dated now, that he is using ‘mind’ primarily for “the portion of the Soul contained in the nerves,” and ‘soul’ for the “spirits contained in the brain.” Even Mersenne writes, “l’âme ou l’esprit.” It has also been noted that Descartes was not consistent in his usage of ‘mind’ (*mens*, *esprit*), sometimes even conceding that he did not distinguish between ‘mind’ and ‘soul’, or using them interchangeably.¹³ This terminological shift also overlaps with a ‘disciplinary’ shift in the study of logic and the mind as an integrated whole, in ‘facultative logic’, a development in which Locke also played a key role, as described by James Buickerood.¹⁴

In the case of Hartley, Bonnet, Priestley and also some of the German authors such as Johannes Tetens, known as the ‘German Locke’ (Tetens (1777); cf. Vidal (2011), p. 141), Locke served as a more or less significant basis for a mechanistic and substrate-neutral science of mind.

¹³ Lamy, *Explication* (1678), ch. VII (conclusion), in Lamy (1996), p. 176; Mersenne (1657), I, prop. XXV, pp. 62-63. Descartes does prefer ‘mind’ in the Latin version of the *Meditations*, but he did not observe this usage throughout his writings. In the French version of the Synopsis to the *Meditations* he writes of ‘the mind [*mens*, *esprit*] or the soul [*âme*] of man’, and notes in parentheses that he does not distinguish between them (AT IX, 10). He uses *mens* and *anima* interchangeably in Latin e.g. in *Principles* IV, 196-198.

¹⁴ Buickerood (1985); thanks to Philippe Hamou for this reference. Granted, Locke did not want to reify operations of the mind, but Buickerood has in mind more the study of the *operations* of the mind (like in Port-Royal Logic). And Locke definitely speaks often of the study of our mental (or “natural”) faculties.

In contrast, authors calling for a ‘medicine of the mind’ or a unification of the study of the physical and the moral (a.k.a. the ‘mental’), often under the banner of materialism, did not advocate such neutrality.

Locke as predecessor of a (materialist) medicine of the mind

The second line of development is in fact more of a literal version of the ‘physiology of the understanding’ which Kant feared, because it is an attempt to integrate the psychology of association in a medico-materialist account of mind and body. Such projects aim to provide an account of the material substrate of mental life. This substrate can of course be ‘cashed out’ in diverse ways, from earlier neurophysiologies of animal spirits to psychophysiology of nervous fibres, sometimes articulated with mechanistic analyses of the passions. The latter occurs in the writings of the Paris physician Antoine Le Camus, author in 1753 of a *Médecine de l’Esprit* which, in a rather patchwork, sometimes confused manner, seeks to trace, e.g. mental pathologies at the functional level back to cerebral and/or *passionnel* disturbances at a structural level, with an important reference to Locke.¹⁵ Sometimes one and the same author lent support to both projects unwittingly: Gaub, in his 1747 lecture on mind and body in medicine, portrayed a very ‘unified’ relation between the two, even if he unhappily denied that this favored materialism, as La Mettrie happily claimed: “although the healing aspect of medicine properly looks toward the human body only, rather than the whole man, it does refer to a *body closely united to a mind* and, by virtue of *their union*, almost continually acting on its companion as well as being itself affected in turn” (Gaub (1747/1965), p. 70).

Le Camus praises Locke by name, calling him the “Chef des Philosophes” (and a few pages later gives his version of the empiricist slogan, “connaitre, c’est sentir”) but then immediately deplores that Locke left out all the anatomical and physiological detail of how the senses work (which he claims he will provide: Le Camus (1753), chapter 1, § 1, p. 13)! In fact, Le Camus fills in the blanks with rather traditional mechanistic language: “the functions of the soul united with the body [are] mechanical.” In concluding his work, he explains that he has sought to describe “all the physical causes which, as they variously modify bodies, thereby also differentiate minds” (Le Camus (1753), II, p. 307). What seems new is Le Camus’s emphasis that this mechanico-instrumental dimension is literally a means to repair mental pathologies, “correcting the vices of the mind,” which are not themselves seen as material (pp. 308, 311), but even further, to enable the ordinary individual to, as it were, maximize her potential and become a *grand esprit*, freed

¹⁵ It is also possible, if we treat the invocations of Locke as sometimes a kind of fashionable empiricist window-dressing, to see these kinds of projects as reenacting, in more materialist terms, the situation of Descartes’ *Passions of the Soul* (thus a kind of ‘left-wing Cartesianism’, to use Jean Deprun’s term: Preface to Meslier (1970), e.g. p. lxxxviii).

from other causal chains preventing her from achieving such potential, in a kind of crude Spinozist ‘emendation’ method (pp. 311-312), working – he reiterates – on the level of “various physical causes” (p. 311). That is, there are “various physical and mechanical means” by which “animal functions can be regulated, and their faults corrected” (*ibid.*). Thus by “carefully manipulating (*en menageant avec prudence*) these various physical causes,” we can achieve intellectual and psychological improvement (“correcting the vices of the mind”). Le Camus boldly states that with such clear methods for (self-)improvement, the benefit “for both the citizen and the State” is obvious (*ibid.*). These latter aspects do not seem to be present in Locke himself although a comparison with the *Conduct of the Understanding* could be fruitful (see Tabb, *passim*, and Tabb and Wright ms.).

Some fifty years later, in his influential *Rapports du physique et du moral* (1802, based on lectures given in the 1790s), Pierre-Georges Cabanis reprises this idea of a Locke who is the great predecessor of a kind of sensationist-based, medically informed materialism, but who needs to be supplemented in precisely those terms. He referred to Locke as a physician (Cabanis (1802), Premier mémoire) but mainly discussed the doctrines of sensation in Locke and Condillac and commented that they were only missing a proper study of the structures and functions that subtend the senses, basically, the brain (Cabanis (1802), in Cabanis 1956, vol. 1, pp. 141, 165, 196, etc). He praised Locke for moving the study of man away from metaphysical hypotheses (bringing together “l’homme moral” and “l’homme physique”), by providing the impulse for the “greatest and most useful revolution in philosophy” (namely, proving “clearly and directly” that “all ideas come from the senses or are the product of our sensations”¹⁶), but judged that Locke did not carry this project far enough.

This second line of development, which views Locke as contributing to a kind of ‘medicine of the mind’ is, in its way of insisting on an actual material substrate, a species of monism, albeit rarely an explicit substance monism in the metaphysical sense. Again, the specific nature of the material substrate can be diversely filled out: some feel that it is a neuropsychology that is missing, others a ‘physics of the mind’, and others still a kind of post-humoral, mechanistic account of the passions and/or sensations. One may find it further removed from Locke than the first set of theories and programmatic statements about studying the ‘mechanisms of the soul’, but it should be emphasized that this more monistic project of turning empiricism into a materialistic medicine of the mind takes seriously the idea that our senses are a source of knowledge, while insisting that the actual functioning of our sensory organs needs to be a part of this story.

¹⁶ Cabanis (1802), Preface. Cabanis reiterates the idea that what empiricism is missing, in its core claim that ideas come from the senses, is an account of the functioning of the sense organs themselves.

Conclusion

It is not obvious for the historian of philosophy to know how to handle a situation in which an author – here, Locke – is more or less deliberately misread, with fruitful consequences – including because it is unclear to what extent Locke might have been willing to endorse some of these naturalization projects. Whether or not he could have embraced philosophical materialism, Locke did not seem concerned with or interested in the idea of a ‘science’ replacing a philosophical discourse (the same is true in his radical disciple Anthony Collins, whose discussions of the mind are entirely ‘conceptual’ in nature, including when they make use of the ‘animal minds’ *topos*), although as we saw in the first passages I cited, he does connect empirical considerations and the more metaphysical issue of the nature of matter itself.

Ironically, Locke himself is not as univocal as we might think; as John Sutton has shown provocatively (Sutton 2010), it is possible to study interrelations between the analysis of associative mechanisms and ‘fantasy’ in Locke, and other, more neurophysiological accounts of the functioning of animal spirits. Sutton points to an under-studied aspect of Locke’s chapter on association (added in the 4th edition of the *Essay*), where contrary to the prohibitions stated above, Locke allows that “Custom settles habits of Thinking in the Understanding, as well as . . . of Motions in the Body; *all which seems to be but Trains of Motions in the Animal Spirits*, which once set a-going continue on in the same steps they have been used to . . .” (*Essay*, II.xxxiii.6). Locke also acknowledged that “the Constitution of the Body does sometimes influence the Memory; since we oftentimes find a Disease quite strip the Mind of all its *Ideas*, and the flames of a Fever, in a few days, calcine all those Images to dust and confusion, which seem'd to be as lasting, as if grav'd in Marble” (*ibid.*, II.x.5).¹⁷

As noted earlier, naturalistic readings of Locke in the 18th century were not concerned with whether association was strictly a pathological mechanism, or not. They wanted to get from Locke at least a blueprint, if not more, for a positive science of mind. This was also how Priestley read (or deliberately misread) Locke in the later 18th century – as providing a Lockean neuropsychology:

“The outlines of Mr Locke’s system are that the mind perceives all things that are external to it by means of certain impressions, made upon the organs of sense; that those impressions are

¹⁷ Martin Lenz has pointed out to me that the way in which custom ‘settles our habits’ is not itself part of the prohibition, which applies just to the neurophysiological details). On different philosophical appropriations of the animal spirits in the period, see Sutton (1998) and Wolfe (2018b); on Locke’s sensitivity to a kind of ‘cerebral plasticity’, particularly as an explanation of mental illness, see Tabb (forthcoming). Sutton and Tabb differ in how they read Locke’s ‘hidden’ invocation of animal spirits: Sutton sees the presence of a genuine neurophysiological account while Tabb considers that Locke’s prudence and desire to avoid essentialist commitments applies here as it does elsewhere.

conveyed by the nerves to the brain, and from the brain to the mind, where they are called sensations, and when recollected are called ideas . . .” (Priestley (1774), Introduction, p. 4)

Similarly, Condillac takes over the Lockean account of association (in his case, as explaining mental illness, as Locke thought) but adds a description of how this occurs in terms of the grooves dug by the animal spirits in the brain (Condillac (1746), § 81-83, 86).¹⁸

In denouncing the project of a “physiology of the understanding,” Kant wanted to rule out an empirical science of the laws of the mind, on an understanding of ‘science’ as a mechanistic, Newtonian-type investigation of the physical universe. One can see Kant as a proto-phenomenologist in this respect; in fact, Husserl himself used a variant of the expression, ‘naturalization of the soul’, in his final work, the *Crisis*, when discussing Hobbes’ naturalism, which Husserl termed ‘physicalism’. For Husserl, the latter term implies “the naturalization of the mental,” which he views as a trend extending via Locke to the whole of modernity, up until the present day.¹⁹ Interestingly, thinkers such as Hartley and Bonnet *do* want to arrive at laws (including neuropsychological laws), but without materialism, despite their lack of concern over issues such as the localization (or ‘spatialization’) of the soul.

Thinking of Gaub’s ‘mechanism’ or ‘physics’ of the soul and Bonnet’s psychophysiology that goes through contortions in order to not be materialist or suspected of materialism, we may need a category for eighteenth-century approaches to the ‘problem’ of brain and mind, i.e. the relation between mental processes and cerebral processes, or the seat of the soul, amongst the different possible approaches in the period – one which is neither immaterialist nor materialist, not transcendental but perhaps empirical, building on Locke’s ‘history’ of the mind. Gary Hatfield remarks amusingly that

“In the standard narrative, the heroes of the Enlightenment are materialists. If psychology is to be made a science, the story goes, mind must be equated with matter and thereby rendered subject to empirical investigation. The problem is that no one bothered to tell the early practitioners of natural scientific psychology that they had to be materialists in order to be natural scientific psychologists” (Hatfield 1994, p. 390).

And we can apply Hatfield’s point about the emergence of scientific psychology in the 19th century to our earlier period and its more or less materialist ways of appropriating or extending Locke’s project.

In fact, despite his theological commitments, Locke’s own more substrate-neutral approach and the way it is extended by Bonnet and others (in the first strategy I’ve outlined) is closer to the way psychology as an experimental, causal science gets off the ground – closer than

¹⁸ For more discussion of Priestley’s naturalized and materialist version of Locke see Wolfe (2019); on Condillac, see Tabb and Wright (ms.).

¹⁹ The phrase is *Naturalisierung des Psychischen* (which the translation oddly renders as the naturalization of ‘that which pertains to the soul’): Husserl (1954), pp. 63-64.

explicitly materialist projects, as Hatfield observes.²⁰ Aside from claims which may sound too positivistic about “who is closer to real science,” it is definitely a fact about discourse that many other figures I’ve not discussed in the later 18th and early 19th century, including people who belong to the history of psychology like Jean Trembley (Vidal 2011, p. 144f.) go out of their way to praise Locke’s approach *over and against* materialism.

I have tried to describe how different possible explanations of the functioning of the mind could be articulated: metaphysical commitments such as materialism, empirical genealogies of the ‘furnishing of the mind’, to use a Lockean phrase, and embryonic neurophysiologies. And I have emphasized the difference between two notable ways of articulating these explanations: mechanistic and substrate-neutral sciences of the mind (as in Bonnet, and Gaub’s hopes) and substantial-materialist accounts (as in Le Camus, Cabanis and some of Gaub’s *De regimine mentis* – the parts La Mettrie liked). What Kant feared, came true, but ironically some of the thinkers who brought it about, like Gaub and Bonnet, were as anti-materialist (and worried about category mistakes) as he was.

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²⁰ The possibility of a ‘naturalization of the soul’ and/or a ‘science of the mind’ is quite independent from the issue of metaphysical materialism (discussed by Jolley and Hamou), despite the fact that they often are conjoined).

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