

Estranged Minds and Their Corpuscles: Bacon, Helmont and Locke on Dysfunctional Thinking

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Only connect!

E.M. Forster, *Howards End*

What a phantasmagoria the mind is and
meeting-place of dissemblables!

Virginia Woolf, *Orlando*

If both the past and the external world
exist only in the mind, and if the mind
itself is controllable – what then?

George Orwell, *Nineteen Eighty-Four*

Abstract: Between the sixteenth and the seventeenth centuries, a momentous redefinition of the philosophical notion of *intellectus* led several thinkers to devise new solutions to remedy what was increasingly perceived as the human mind's alleged inability to know and control reality. In this article, I concentrate on three cases which, I argue, can be profitably studied as interrelated, for Bacon, Helmont and Locke shared similar concerns about the scope and limits of the human mind. They moved, however, from different premises, suggested that human minds inhabited different universes of particulate matter and, above all, envisioned different solutions regarding the question of mental estrangement.

Keywords: Francis Bacon, Jan Baptista van Helmont, John Locke, thinking, mental illness

Introduction

Between the sixteenth and the seventeenth centuries, a momentous redefinition of the philosophical notion of *intellectus* led several thinkers to devise new solutions to remedy what was increasingly perceived as the human mind's alleged

inability to know and control reality. The crisis of the Aristotelian *intellectus*, especially in its Averroist version (are human beings the subjects of their thinking or does thinking transcend what a human mind can grasp in universal terms?), helped a sense of cognitive dissonance spread across different areas of philosophical knowledge during the early modern period. In this article, I concentrate on three cases which, I argue, can be profitably studied as interrelated, for Bacon, Helmont and Locke shared similar concerns about the scope and limits of the human mind. They moved, however, from different premises and, above all, they envisioned different solutions. Francis Bacon (1561-1626) developed a methodology for gathering knowledge that he believed would lead to a new technology of thinking. This new *organ* for harvesting, ordering and transforming the fruits of mental life, designed to be a reliable echo of the material life of things, hinged on the original self-identity of matter, once freed from the distorting mirror of the imagination (the idols projected by the human mind onto reality) and from the adaptable and compliant interface of the intellect. Jan Baptista van Helmont (1580-1644), a follower of Nicholas of Cusa and medieval German mysticism, and one of the most distinguished among the seventeenth-century Paracelsians, regarded the intellect as an unperishable bearer of intelligible clarity which the human mind could capture or intuit only by rejecting the seductions of conscious reason and discursive logic. Locke, finally, appealed to an idea of consciousness and personality that, despite its Cartesian debts, gestured beyond the very limits of human identity. In this view, the role of memory was crucial, for 'recollection' was seen as the supreme function of consciousness. It was precisely by recalling the past and anticipating the future that memory could shape the story of one's personal life. Here it is worth noting that Locke's account of memory was different from the views held by Helmont and Bacon. While for Helmont memory remained the Platonic mark of intelligible self-identity embedded in the process of cognitive and moral ascent, Bacon looked at memory as a trace of knowledge imprinted in the things themselves (human memory being inevitably exposed to the same shortcomings as the intellect). Memory for Bacon was first of all a record and a testimony of the original formative motions of the universe, sedimented in the most ancient myths of the living cosmos. He called this memory *sapientia veterum*, which I suggest would be correct to call the *vetus organum* (i.e., mythology) and to be paired with the *novum organum* of emended thinking, both being part of Bacon's general programme of logic.

It is now rather common for philosophers and historians of philosophy to look at the *cogito* – the Cartesian originator of the modern notion of conscious self – in terms of *bona mens*, that is, as a paragon of right thinking, intellec-

tual clarity and mental health. Descartes considered the *entendement pur* (to Elisabeth, 28 June 1643) as that condition of self-evidence that solely could free human cognition from the spectres of self-doubt and uncertainty.¹ As confirmed by Kant at the end of the eighteenth century, the reason investigated by philosophers is ‘pure’. Today, too, philosophers – especially those who work on establishing and assessing standards of logical and moral probity – are inclined to study the mind as a faculty that is not supposed to malfunction or fall short of its own criteria of normative judgment. In principle, at least, it shouldn’t. The principal aim of this article, designed as an exercise in comparative history of ideas, is to help elucidate the early modern notion of mental illness by focusing on the philosophy of the dysfunctional mind rather than on medicine or psychiatry.² The three positions on the intellect that were articulated by Bacon, Helmont and Locke during the seventeenth century are here scrutinized to shed light on the pathologies of the mind, and not to assess the canons of its ideal functioning. Bacon will show us how the intellect can act as the great illusionist; Helmont will introduce us to the possibility of using the intellect as an ecstatic gateway to God; Locke, finally, presents the intellect as a most supple identity maker. These are three views in which the intellect is borderline. As a result, the possibility of self-estrangement looms large in the form of delusion, self-loss and dissociation. My decision to concentrate on this particular triptych, besides the very importance of the three authors’ work, depends on the presumption that our knowledge of Locke’s philosophy can be refined if we take into account possible hints that he may have gained from reading Bacon and Helmont.

1. *I Think, therefore I May Be Mad*

For a variety of reasons (including the geographical and astronomical expansion of the known world, the eruption of religious conflicts and demonological conspiracies, unprecedented surges in social and political violence), during the sixteenth century a thinking attitude emerged which increasingly questioned

¹ Descartes to Elisabeth (28 June 1643), in Descartes, *Oeuvres*, III, p. 691; Descartes, *Philosophical Writings*, III, p. 226.

² I have dealt with the early modern history of the psychiatric aspects of intellectual knowledge in Giglioli, “Medical Approaches to the Mind in the Late Middle Ages and the Renaissance”. I also provided an account of the early modern medicine of the mind in “Medicine of the Mind in Early Modern Philosophy”.

the human mind's ability to know and control reality. From Girolamo Cardano (1501-1576) to Michel de Montaigne (1533-1592), the list of the authors who cast doubt on the powers of the mind in its dealings with reality is long.³ One of these questioners was Jan Baptista van Helmont (1580-1644), whose work Locke happened to know, even though it remains difficult to assess the extent to which it influenced the evolution of Locke's thought.⁴ In a short treatise included in Helmont's philosophical omnium gatherum, the *Ortus medicinae*, and entitled *Venatio scientiarum*, 'the hunt for knowledge', which is crucial for understanding its author's theory of the mind and knowledge, a verse from the Gospel of Matthew, 10:36 ('*et inimici hominis domestici eius*: And a man's foes shall be they of his own household') explains how the soul can sometimes detach itself from reason, perceiving the latter as a foreign presence, no longer a vital part of it. Helmont characterized reason as a guest and a stranger (*hospes peregrinus*) which, as a result of the Fall (*naturae corruptio*), had triggered a particular process of alienation leading to all sorts of representational discomforts and finally to illness.⁵

Like Helmont, Bacon aptly reflects this crisis of the intellect issuing from a time that was "out of joint" and whose spirit is well captured by the polyphonic intricacies of Renaissance thought. Bacon never tired of alerting his contemporaries to the danger of delusion to which the human intellect was constantly being exposed. For him, the mind could act as a potential source of self-deception rather than enlightenment. Only through an elaborate and demanding exercise of self-scrutiny could the intellect be turned into a reliable part of the cognitive and political venture underlying the project of the Great Instauration. In the *Novum organum* (1620), he argued how the mind, in its natural state, was neither qualified nor legitimized to represent nature or the

³ The classic book detailing the responses of the early modern philosophers to an age of uncertainty remains Popkin, *The History of Scepticism*. On the generalized state of conflict and tension during the Renaissance, see Davies (ed.), *Aspects of Violence in Renaissance Europe*.

⁴ On Helmont's philosophy, see Giglioni, *Immaginazione e malattia*; Hedesan, *An Alchemical Quest for Universal Knowledge*. On Locke's knowledge of Helmont's work, see Anstey, "John Locke and Helmontian Medicine".

⁵ Helmont, *Venatio scientiarum*, in *Opera omnia*, p. 21: "Recordataque mens verbi divini, quod *domestici eius* sint *inimici eius*, nauseam super Ratione concepit. ... Inde ergo, initio coepit anima rationem non amplius ut partem aut potestatem sui contemplari, sed velut peregrinam hospitem, ab esse mentis plane decisam atque neutram. Idque postquam anima per fidem sciret se a corpore semel separatam non amplius rationis indigam, hanc proinde esse caducam mortalemque, imo et cum morte nobis advenisse, in naturae corruptione" (All translations from Bacon's and Helmont's Latin are mine). On the early modern view of the human mind disfigured by the original sin, see Harrison, *The Fall of Man*.

good. As with Helmont, one reason for being suspicious of the mind depended on theological apprehensions: the human intellect had been profoundly disfigured by the Fall. To this desolate landscape, Bacon added a further reason, of a metaphysical order, detailing the troublesome condition of the human mind. Bacon maintained that the ultimate foundation of reality was to be found in the appetite for self-preservation, believed to be universally diffused in nature. In this account, the intellect was viewed as the most sophisticated mechanism devised by nature to allow the human animal to adapt itself to a constantly changing reality. The mind was therefore not an ideal platform that could secure the knowledge of the true nature of things. As clearly argued in Book 4, Chapter 3 of *De augmentis scientiarum* ("The Growth of Knowledge"), the primordial force shaping the world of nature was desire, which Bacon described as an unconscious activity (*perceptio sine sensu* and *sine anima*) rather than as a form of substantial self. If the rationale behind the universal tendency of natural appetite was to follow everything that could grant the self-preservation of the system, the intellect, far from being a device that reflected the true nature of things, was in fact dangerously prone to indulge itself and easily become prey to the seductive power of vital illusions. When not carefully calibrated to adjust desire to reality, consciousness was therefore a perilous source of misapprehensions and misbeliefs.⁶

For this reason, in the *Novum organum* Bacon undertook a most severe critique of the intellect considered in its natural condition as *sibi permissus*, that is, as a cognitive power left to itself and to its representational devices. Significantly, it was only at the end of the *Novum organum* that Bacon hinted at the possibility for the intellect to become *emancipatus*,⁷ that is, to overcome its state of minority and turn into a free and responsible agent. Only at that point, after mastering a considered exercise of the senses, following a reliable plan of action, using experimental tests and technological implementations, the intellect could regain a direct and unadulterated contact with nature

⁶ Bacon, *De augmentis scientiarum*, in *Works*, I, pp. 605-11. Sophie Weeks has explored the nexus of mind and madness in Bacon in her "Francis Bacon's Doctrine of Idols". Significantly, a section of this article is devoted to "John Locke on Universal Madness" (pp. 36-39).

⁷ I agree with the kind and generous anonymous reader of this essay who noted that my reading of Locke's medicine of the mind is "a very 'Essay'-centric vision". In my partial defence, I can say that the primary aim of this article was to concentrate on Locke's view of thinking as a movement of ideas that is both cohesive and expansive and that therefore positively allows for the Woolfian "meeting-place of dissemblables". A further investigation detailing the extent to which habit and application can (and perhaps should) shape the activity of thinking in one's social behaviour will certainly involve a close reading of Locke's *Conduct of the Understanding*.

and reality. The method outlined by Bacon in the *Novum organum* was the path that the mind was supposed to undertake to pass from the *intellectus sibi permissus* to the *intellectus emancipatus*, i.e., from what we may call intellectual license (constantly rekindled by the seductions and distractions of *phantasia* and *ingenium*) to an idea of cognitive responsibility based on a critical assessment of reality, a strategy which Bacon encapsulated in the practice of *historia*. For Bacon, *historia* meant both an experimental scrutiny of nature (*historia naturalis*) and a dispassionate account of human action (*historia civilis*).⁸

The situation is different when we approach Locke's theory of knowledge and the mind. Here the intellect is presented as the power that guarantees human beings the certainty of being reliable thinking subjects. It is a vigorous affirmation of personal identity pivoted on consciousness. This ensures human nature to overcome precisely the pitfalls of self-deception that are always lurking in the making of one's identity (the madness of reason addressed by Locke in the *Essay*).⁹ Locke is an original interpreter of the Cartesian solution, and like Descartes he defends the autonomy of the intellect, which therefore cannot be characterized as colluding with an *hospes peregrinus*, that is, an extraneous force in the Helmontian sense (an internal enemy which represents the principle of otherness), nor as a power that is *sibi permissus*, i.e., as an activity that is usually left at the mercy of its own representations in the Baconian sense. Locke agrees with Descartes when he looks at the mind as a source of self-evident consciousness. There is, however, a fundamental difference with Descartes, and this marks the originality of Locke's position: for the latter, consciousness is not a substance but a stream of representations, where stream is to be intended as a metaphor that captures the temporal flowing of our thinking and the coalescing of representations. Locke's concept of mental life, in rejecting all forms of innate and pre-existing realities, assumes that thinking is a succession of ideas accruing to one other. Here is the crucial – but also the most fascinating – point in the Lockean theory of personal identity: How can we defend a view of personal identity based on a relentless flow of ideas? As this type of identity does not rest on substances (be they material or immaterial), it then becomes necessary – I would say imperative – for Locke to look at self-sentience as an activity of self-recognition. Only this can prevent the

⁸ On Bacon's idea of *historia* as a way of doing philosophy, see Giglioni, "Historia and Materia"; Giglioni, "Philosophy According to Tacitus".

⁹ Locke, *Essay*, II.xxxiii.4, p. 395.

whole world from sinking into a representational mayhem. The human self is therefore that ballast that saves the Lockean world from going really mad.¹⁰

The disconnect of self and nature is not a problem for Bacon, for whom selfhood – the state of being present to oneself – begins with nature itself, at the very level of the primal motions and propensities of matter (its appetites, in fact). In this case, the ability to discern and recognize differences is of decisive importance. According to Bacon, the existence of *discrimina* – differences – in nature demonstrates that natural entities themselves have the capacity for *discretio*, otherwise the *discrimina* that are objectively observed in nature would be either not real or imposed on nature by an external force. Real differences in nature are therefore the result of natural forces working from within matter and these forces have the power and ability to discriminate and differentiate objects. In *De augmentis scientiarum*, Bacon calls this tendency *perceptio absque sensu* and *absque anima*, a perceptual state of matter that does not require a unifying sentient self. Past philosophers, he argues, thought that “the soul is indiscriminately instilled in all bodies”. These philosophers failed to see how there could be a movement capable of distinguishing different realities without assuming the existence of sentience (*sensus*) or how there could be sentience without assuming a soul (*anima*).¹¹ They maintained that, firstly, motion by itself was not sufficient to explain the operations of the soul; therefore, some ability to recognize differences – sentience – had to be added; secondly, they argued that the soul was to be understood in terms of an incorporeal substance. On the contrary, in Bacon’s theory of the soul motions are appetitive tendencies and no substantial self is needed. These postulates lead to a metaphysics of life characterized by states of perception that are not accompanied by conscious experience and are present everywhere in nature. This *perceptio absque sensu* – as Bacon defines this state – can be called natural (i.e., unconscious) perception. According to Bacon, this solution had the advantage of avoiding two opposite but related drawbacks: that everything in nature is endowed with consciousness and that there can be no consciousness without a soul *qua substantia*.

¹⁰ The topic of the mind in Locke’s philosophy is too vast a subject to be contained in a footnote. Here I only mention a few distinguished studies among many: Weinberg, “Locke on Consciousness and Reflection”; Thiel, *The Early Modern Subject*; Strawson, *Locke on Personal Identity*; Tabb, “Madness as Method”.

¹¹ Bacon, *De augmentis scientiarum*, p. 611: “omnibus sine discrimine corporibus animam infundi putaverint: neque enim videbant, quomodo motus cum discretione fieri potuerit absque sensu; aut sensus adesse absque anima”.

Interestingly, in this discussion Bacon and Locke share the same objective: there should be a way of conceptualizing the activity of thinking without attributing this process to a soul, that is, without presupposing a substantial immaterial spirit as the subject of thinking. The difference, however, is that Bacon explains thinking as a most refined state of cognitive balance whose beginnings are to be found in the original state of perceptual reactivity that is ubiquitously diffused in nature in the form of primordial tendencies towards self-preservation, while for Locke, precisely because thinking cannot be the property of a substantial soul, it consists in the very exercise of conscious thought. In Bacon as well as Locke, function prevails over substance. Both perspectives, though, are confronted with the risk of cognitive dispersion.

In Locke's *Essay* we can find at least five models of identity, which are all different ways to explain why in nature coalescence seemingly prevails over disintegration. The first four converge towards the notion of human being: identity of substance (the "mass of matter"); identity of life (plant as a "living body"); identity of sentience (which the human animal shares with non-human animals and which corresponds to Bacon's sensitive soul); human identity. Here one might wonder why humans have the privilege of enjoying an extra layer of identity when compared to non-human animals. Human identity seems to point to a unique type of sameness in nature, i.e., the human species as being defined by the union of an anatomical body with an incorporeal spirit (Bacon called this type of spirit *spiraculum vitae*). To these four layers, Locke adds the identity of the person, which a certain type of human being, the human being who is capable of being present to himself through time, shares with other intellects, for example the angels and, above all, God. It remains rather difficult to understand how these identities can be united without them ending up in a tangle of multiple essences.¹²

We can describe the stages of this developmental model of identity as a process of increasing unification. The keywords are cohesion, disposition, continuity, communication, accountability and ownership. We start from the cohesion of the parts forming a body, already evident at the level of the "mass of matter". We then move to the vital disposition which is linked to living beings ("Common Life to all the Parts so united"). This second level presupposes a life circle that keeps the parts of a whole together. The third stage of unification requires organization. A fourth criterion of identity derives from the notion of continuity ("the same continued life"), for identity is lost every time interruptions and breakages occur.

¹² Locke, *Essay*, II.xxvii, pp. 328-48.

The most tenacious type of continuity, despite apparently being more fragile than the bond characterizing a stone, is the presence to itself that the remembering mind is capable of establishing every day when it wakes up. Communication is needed to extend and transfer the same life to the ever changing parts of a body, thus distributing self-awareness (thoughts, memories and aspirations) to the ever-changing agglomerations of ideas: "the same self, as far as the same consciousness can extend to actions past or to come... can be transferr'd from one thinking Substance to another".¹³ Finally, at the end of Locke's demonstration, accountability – that is, one's ability to account for his or her actions – becomes the characteristic that defines personal identity, together with ownership, i.e., the ability to appropriate and possess thoughts.

We can therefore say that for Locke consciousness is transferable and annexable. This is certainly the most intriguing aspect of Locke's theory of personal identity. The crucial question for Locke's ontology then becomes where to look for the glue, the 'cement', to use Locke's specific term.¹⁴ Just as extended life unites a multiplicity of substances (which is the type of identity created by the continuity of life and made evident by plants), so one's consciousness unites a multiplicity of lives and substances. In theory, says Locke, we can have a self (person) who embraces several human beings (the "remote existences" of which he speaks in *Essay*, II.xxvii.23), or a human being who contains several selves: one person by day and one by night. Perhaps, that particular individual mentioned by Locke, who holds a position of responsibility in society while being convinced that he is Socrates, is an example of the temporal and spatial stretchability of Lockean consciousness, at least in principle.¹⁵ A consciousness of this kind is not so much the punctual and instantaneous act of intuitive immediacy described by Descartes, but a condition of inner consciousness that, precisely because it is able to stretch from one end to the other of the recollecting power of the mind, watches over the continuous interruptions of the self. This memory is in fact a kind of imagination that is both retentive and anticipating, capable of leaps because it is able to build bridges over a reality of the senses which is not always present to the mind of an individual. The kind of conscious thinking that forms one's personal identity can thus present and re-present itself and, above all, appropriate different segments of one's own life.

¹³ Locke, *Essay*, II.xxvii.10, pp. 335-36; II.xxvii.12, pp. 338.

¹⁴ See, for instance, Locke, *Essay*, II.xi.13, pp. 160-61: "incoherent *Ideas* have been cemented together so powerfully, as to remain united".

¹⁵ Locke, *Essay*, II.xxvii.14, p. 339.

Seen in this light, consciousness can therefore be described as the “cement” that unifies the mental life of human beings. Indeed, on a deeper level, based as it is on the actions and reactions of ideas, consciousness is the universal glue that holds the cosmos together – a cosmos generated by the human mind through ideas, and not, as is the case with Bacon, by movements of attraction and repulsion (*perceptiones*) embedded in the very fabric of matter, or by the network of imaginations that all vital principles (the *archei*) establish in nature, as in Helmont’s *Ortus medicinae*.¹⁶ If, ultimately, the force that unifies reality is consciousness, the view, if not strictly anthropocentric, can be said to be ‘post-human’, since consciousness represents a degree of awareness that adds a higher level of identity (as self-presentation) to the characteristic identity of human nature – what Locke calls personal identity. Locke, who in doing so dissociates human reason from consciousness, defines the latter as that which “unites remote existences into one person”. Here are Locke’s words:

Nothing but consciousness can unite remote existences into the same person: the identity of substance will not do it; for whatever substance there is, however framed, without consciousness there is no person: and a carcass may be a person, as well as any sort of substance be so, without consciousness.¹⁷

The cosmic glue in the Lockean universe is then a process of appropriation through conscious thought. Through memory understood as recollection, the mind makes objects of consciousness out of raw experience, be that external or internal. Remembering is the ability to own “remote existences”. Lockean identity has the power to receive and colonize these “existences”. Conversely, if I do not perceive an experience as mine, that is, if I do not remember it, that experience falls out of the scope of my being me:

For, whatsoever any substance has thought or done, which I cannot recollect, and by my consciousness make my own thought and action, it will no more belong to me, whether a part of me thought or did it, than if it had been thought or done by any other immaterial being anywhere existing.¹⁸

This is the back-and-forth movement of conscious thought which we may describe as conscious appropriation. The fact is that appropriations of con-

¹⁶ Bacon, *Sylva Sylvarum*, in *Works*, II, p. 602.

¹⁷ Locke, *Essay*, II.xxvii.23, p. 344.

¹⁸ *Ibid.*, II.xxvii.24, p. 345.

sciousness can be legitimate or illegitimate, healthy or pathological. Illegitimate appropriations may be called pathological when they verge on insanity, a possibility which, as has been said, is continually open in the Lockean universe of mental expansion, a world that hints at a variety of mental misappropriations and embezzlements. This striking emphasis on the power of consciousness as a recollecting assimilation of experience can be described as a Cartesian heresy, gesturing towards a form of panpsychism that has finally got rid of the view of *cogitare* as a *res*. It is a result that is much more radical than the 'nullibism' blamed on Descartes by Henry More.¹⁹ Having freed itself from the ontological constraints of material or immaterial substances – the two *res* of Descartes's metaphysics – Locke's consciousness holds to the Cartesian understanding of *cogitare* (consciousness) while changing it into an expansive and connective activity which could be defined as expanding fungible thinkability. In Locke's explanation, the conscious mind as a self appropriates and possesses ideas in order not to be possessed by them; through them the mind expands the range of its action and colonize the ever expanding bounds of what can be thought. This is a sharply different position from both Bacon's and Helmont's views. Baconian ideas are laws of material transformation (*formae*) that coordinate the appetitive motions shaping the bodies of nature (including the human body). Helmontian ideas are representational devices that possess the imaginations of the countless vital principles while these are busy shaping bodies.

It is precisely at this juncture that references to Bacon and Helmont, far from being odd and out of place, may shed much needed light on the discussion. Like Locke, Helmont had worked out a metaphysics of ideas in which representations are seen as combining and recombining themselves in innumerable different ways. Like Locke, again, Helmont had turned the Platonic meaning of ideas into functions of representational activity. The difference, though, – and in this respect Helmont's view is closer to Bacon's – lay in the assumption that the faculty of representation belongs to every vital principle, starting with the ones that control the smallest parts of matter, the *minima*. As we are going to see in the next section, Helmont's cosmology of *minima vitalia* and Bacon's cosmology of *minima perceptiva* lay the foundations of a unified view of the universe which Locke's corpuscles fail to accomplish but, much more importantly, are not intended to accomplish.

¹⁹ On More's nullibism, see Henry, "A Cambridge Platonist's Materialism"; Reid, *The Metaphysics of Henry More*, pp. 185-236.

The accuracy with which Locke surveys all the instances in which human beings seem to abandon the correct use of their reason may look like a rather reckless flight of the philosophical imagination. As readers, while being thrown into the jumble of reincarnated, resurrected, split, forgetful and pre-existing characters, we share Locke's curiosity and doubts in his attempt to find out where to draw the limits of a human self. In the end, though, common sense prevails, as perhaps it should be the case. Consciousness, says Locke, "unites substances, material or spiritual, with the same personality". He agrees that "the more probable opinion is, that this consciousness is annexed to, and the affection of, one individual immaterial substance".²⁰ This "probability" dissolves all the spectres of monopsychism, panpsychism, metempsychosis and psychopannychism that up to that point had been flitting about before our eyes during Locke's demonstration of personal identity in Book 2, Chapter 27 of the *Essay*. Above all, it removes the spectre of Helmontian selves containing multitudes of selves (as many as the vital principles – the *archei* – that make up a body).

On this specific subject, Locke's distance from Bacon is of a different order, but as significant and illuminating. Common sense for Bacon means the possibility that an *organ* external to human consciousness (be this a method, an experiment, the practice of *historia* or technological innovation) may restore (*instauratio*) the proper relationship (*commercium*) between mind and nature, for consciousness left to itself cannot be trusted, in addition to being a frivolous and unproductive exercise. We speak today of the extended mind (after the renowned article by Andy Clark and David Chalmers published in 1998).²¹ Bacon and Locke propose different solutions to the problem of how the mind can and should be extended: Locke does so by appealing to an idea of consciousness and personality that goes beyond the limits of human identity; consciousness is precisely that power of the mind that allows thinking subjects to become steady functions of representational energy independently of their substance (regardless of whether this substance is corporeal or incorporeal). By contrast, Bacon claimed that the power of humankind to extend its cognitive grasp of reality depends on a new technology of thinking, which he understood as mirroring and echoing the material life of things. Here the model is the original identity of matter, free from the distorting mirror of the imagination (the idols) and from the adaptable and compliant interface of the intellect. Unlike Bacon, Locke appealed to an idea of consciousness and personality that pointed beyond

²⁰ Ibid., II.xxvii.25, p. 345.

²¹ See Clark and Chalmers, "The Extended Mind"; Clark, *Supersizing the Mind*.

the limits of human identity. In this view, the role of memory was crucial, for 'recollection' was the supreme function of consciousness. Precisely by recalling the past and anticipating the future, memory could shape one's personal story.

2. *Chemistry of Mental Estrangement*

If there are times when the human mind turns into an unreliable source of misrepresentations, this is not only because of its internal malfunctioning. There can also be circumstances in which the very link that the mind entertains with reality becomes tenuous. The circumstances I am referring to in this case are of a material nature. We therefore need to briefly investigate the properties and reactions that characterize the motions in matter and how these motions affect one's perceptual acquaintance with reality. This is especially important in Bacon's and Helmont's case, for human perception of things results from an overarching view of nature in which each single thing, inanimate or animate, is endowed with perception. Of course, the nature of material reality also matters to Locke, for whom the need to demonstrate how the mind is suitable to reality is even more urgent. Do associations of ideas reflect how corpuscles associate in nature? In other words, we need to explore the chemistry of mental activity. It should be noted that speaking of chemistry in this specific context is all the more appropriate because Bacon, Helmont and Locke can all be said to be corpuscularian thinkers who, in different ways, were conversant with the latest progress of chemical philosophy and who looked at changes in reality in terms of combination and recombination of material parts.²²

Helmont is the author of an extremely influential summa of natural philosophy and theology in which, following the example of Paracelsian medicine, he advanced a chemically based explanation of all cognitive processes. Thinking, for Helmont, is heavily implicated in the activity of the imagination, and imagination, in turn, is a vital and cosmic function that underpins all aspects of nature. More specifically, imagination acts as a ferment that promotes change

²² The early modern period is a time of mechanical, chemical and vital lines of enquiry. Sometimes these lines overlap, intersect and hybridize. In this article, when I speak of chemistry, I use the word in its more general and ordinary meaning and I deliberately shy away from antiquarian and taxonomic accuracy. By chemistry I mean a theory of natural bonding which explains how the particulate features of reality connect with each other: Bacon through natural perceptions, Helmont through active images, Locke through ideas.

in matter.²³ Every single natural being results from the activation of biochemical reactions originally set up by God when he made the universe. Helmont argues that the main constituents of these reactions are ultimately two: matter and energy. Matter (that is, water) is a universal undifferentiated substratum (*succus genericus*); energy (that is, perception) is knowledge as a teleological principle of action imparted by God at the moment of creation (*scientia*). Helmont adopts the Paracelsian notion of *scientia* and he considers it to be an intrinsic property of material bodies. In other words, *scientia* can be found everywhere in nature before turning into a property of the human mind:

God naturally infused His knowledge (*scientia*) of ends and forms into nature's efficient cause as every single thing in nature needs some generic sap as their matter and an internal principle of generation that is seminal, efficient, organizing and directive. Accordingly, every single corporeal thing needs these two principles, nothing more.²⁴

As in Helmont's case, Bacon's chemistry rests on the adoption and adaptation of Paracelsian ideas. In particular, Bacon's Paracelsianism is indebted to the exegetic attempts that the Danish philosopher and physician Peder Sørensen (1542-1602), Latinized as Severinus, made to clarify the intricacies of Paracelsus's philosophy.²⁵ Traces of Severinus's *Idea medicinae philosophiae* ("A Model of Philosophical Medicine"), a fascinating compendium of Paracelsian ideas published in 1571, are scattered in Bacon's accounts of physics. Like Helmont's *succus* and *scientia*, Bacon's ultimate constituents of natural life are matter and energy, more specifically, the mud of the earth (*limus terrae*) and the divine breath of God's spirit (*spiraculum*).²⁶

Limus and *spiraculum* are also involved in the explanation of the origin and functioning of the soul in nature. And yet, when discussing issues concerning thinking, knowledge and methodology, Bacon never appears to be particularly interested in grappling the ontological specifics of the human soul. In this, Bacon acts very similarly to Bernardino Telesio (1509-1588), whose doctrine

²³ Giglioni, *Immaginazione e malattia*, pp. 43-96.

²⁴ Helmont, *Causae et initia naturalium*, in *Opera omnia*, p. 33: "causae efficienti naturali sua a Deo naturaliter sit infusa finium et habitudinum scientia. Res nimirum singulae in natura succum aliquem genericum desiderant pro materia ac denique seminale, efficiens, dispositivum, dirigens principium internum generationis". On the corpuscular framework of Helmont's chemistry, see Newman, "The Corpuscular Theory of J. B. Van Helmont"; Newman and Principe, *Alchemy Tried in the Fire*.

²⁵ On Severinus, see Shackelford, *A Philosophical Path for Paracelsian Medicine*.

²⁶ Bacon, *De augmentis scientiarum*, p. 604.

of *spiritus* keeps away from discussions concerning the soul as the principle of immaterial identity. The clearest and most systematic account of the soul in Bacon can be found in *De augmentis scientiarum*, in the place mentioned above (Book 4, Chapter 3). Here the human *anima* is said to be the source of a most elaborate universe of mental constructions, for all fields of learning have been drawn out from the “repositories” (*thesauri*) of this soul. Bacon’s account of the human soul is divided into two sections: one deals with the rational part, “which is divine”, and the other with the irrational part, which human animals share with non-human animals (“communis est cum brutis”). Philosophically speaking, the two types of soul correspond to two different templates (*formae*) and processes (*emanationes*) established by God at the moment of creation (*in prima utriusque creatione*): human souls originated directly from God’s breath of life (*spiraculum Dei*); non-human souls evolved from the “wombs” of matter, that is, from the natural elements (*matrices elementorum*).²⁷ These wombs are a clear borrowing from Paracelsus’s cosmology.²⁸ In nature, the two kinds of souls only coexist within the human being, which, from this point of view, represents a unique instance in the created world. Bacon explains that, when adapted to humans (*qualis est in homine*), the irrational soul becomes “an organ of the rational soul” and can simply be called *spiritus*.²⁹ And yet the irrational soul in human beings share with non-human animals the characteristic of being derived from the mud of the earth (*limus terrae*). Bacon, however, is keen on making unequivocally clear that the union of divine breath and material life (the two souls) makes the human being an undivided and unified substance because *spiritus* in man works as a pneumatic tool that is under the control of the conscious self.³⁰

Bacon’s chemistry of the soul is therefore predicated on *spiritus*, which is the pneumatic counterpart of life in every tangible body. In this way, Bacon grafted Telesio’s neurophysiology of pneumatic matter onto the trunk of Paracelsian cosmology:

²⁷ Ibid. Bacon adds that the two origins have distinct exegetic foundations in the biblical text: “Nam de Animae Rationalis generatione primitiva ita ait Scriptura, *Formavit hominem in limo terrae, et spiravit in faciem ejus spiraculum vitae*. At generatio Animae Irrationalis, sive Brutorum, facta est per verba illa, *Producat aqua; Producat terra*”. See Genesis 2:7: “Formavit igitur Dominus Deus hominem de limo terrae et inspiravit in faciem ejus spiraculum vitae et factus est homo in animam viventem”; Genesis 1: 20: “Dixit etiam Deus producant aquae reptile animae viventis”; 1:24: “Dixit quoque Deus: Producat terra animam viventem in genere suo”.

²⁸ On Paracelsus’s idea of natural wombs, see Dane, “Invisible Wombs”.

²⁹ Bacon, *De augmentis scientiarum*, pp. 605, 607.

³⁰ Ibid., p. 605.

The sensible soul – that is, the soul of non-human animals – should be regarded as corporeal, rarefied by heat and made invisible. I call it vital air (*aura*), produced by the union of a fiery and aerial nature, so as to be able to receive impressions through the suppleness of the air and to launch actions through the force of fire. This soul is fed in part by oily, in part by moist elements. It is enveloped by a body; in higher animals it is mostly located in the head, running through the nerves, restored and repaired by the spirituous blood inside the arteries.³¹

The intersection of the material with the immaterial soul is a particularly delicate business and it takes place in the exercise of sensorimotor functions (*de motu voluntario* and *de sensu et sensibili*). According to Bacon, no real progress has been done in these fields because the material non-human soul has been investigated as a function rather than as a physical component.³² On the contrary, Bacon insists that only a close study of the matter of the soul (*substantia corporea et materiata*) can help us detect the tendencies (*nixus*) that make bodies move and react. Interestingly enough, this is a reversal of Aristotle's approach to the study of the soul: from objects and faculties to substance.

The chemistry of the soul, that is, the study of the bonds that account for the association of vital and cognitive functions, reveals that underneath sentient awareness a deeper tendency to making or breaking ties between the parts of matter shapes bodies by arranging and rearranging corpuscles. Bacon encapsulates his chemistry of the soul in the model of *perceptio reciproca*: all things in nature are endowed with the power of perception (*vis percipiendi*), which Bacon describes as “a certain ability to select (*electio quaedam*) between favourable things to be embraced and unfavourable and hostile things to be avoided”. He corroborates his hypothesis by enumerating a series of natural phenomena that betray the presence of finer perceptions (*perceptiones subtiliores*) in matter:

as when the loadstone attracts iron, a flame leaps upon naphtha, one bubble joins another when they are close to each other; a white body radiates light; the

³¹ Ibid., p. 606: “Anima siquidem sensibilis sive brutorum plane substantia corporea censenda est, a calore attenuata et facta invisibilis; aura (inquam) ex natura flammea et aërea conflata, aëris molitiae ad impressionem recipiendam, ignis vigore ad actionem vibrandam, dotata; partim ex oleosis, partim ex aqueis nutrita; corpore obducta, atque in animalibus perfectis in capite praecipue locata, in nervis percurrans, et sanguine spirituo arteriarum refecta et reparata”. On Bacon's Paracelsianism, the historiographic starting point remains Rees, “Francis Bacon's Semi-Paracelsian Cosmology”.

³² Bacon, *De augmentis scientiarum*, p. 610: “Neque mirum, cum Anima ipsa Sensibilis hactenus potius pro entelechia et functione quadam habita sit, quam pro substantia”.

body of an animal assimilates beneficial substances and discharge superfluities; a part of a sponge (even when it is lifted up above water) draws water and expels air, and so on.³³

And yet there is no need to invoke any subtlety in nature, for, Bacon continues, fine perceptions work on the fine particles of matter:

No body placed close to another body changes this body or is changed by it unless an exchange of perceptions (*perceptio reciproca*) precedes the activity of these bodies. A body perceives the passages through which it penetrates, it perceives the force of another body to which it yields; it perceives the removal of another body by which it was detained when it withdraws into itself; it perceives the tearing apart of its continuity to which it timely resists. In sum, perception is everywhere.³⁴

Indeed, Bacon argues that the perception of nature is way subtler than any corresponding power in the domain of animal, sentient perception. The air, for instance, “perceives heat and cold so sharply that its perception is far subtler than the one resulting from human touch, which, nevertheless, is held as the criterion to judge hot and cold”.³⁵

Bacon criticizes previous philosophers for failing to understand that the difference between vital perception and conscious sensation is one of the most important matters in philosophy (*res maxime fundamentalis; res nobilissima; res magni prorsus momenti*). They either ignored it or were carried away by it, to the point of attributing sentience to all bodies and making sentient beings of trees, as is epitomized by the myth of Polydorus. On the contrary, they should have carefully examined the difference between perception and sentience while investigating the process of digestion and assimilation, the circulation of the blood and the sensations of pain and pleasure. Excessively concerned with the risk of anthropomorphizing reality, philosophers missed the opportu-

³³ Ibid.: “Neque nos de subtilioribus perceptionibus tantum loquimur, veluti cum magnes ferrum allicit; flamma ad naphtham assilit; bulla bullae approximata coit; radiatio ab objecto albo dissilit; corpus animalis utilia assimilat, inutilia excernit; spongiae pars (etiam super aquam elevata) aquam attrahit, aërem expellit; et hujusmodi”.

³⁴ Ibid., pp. 610-11: “Nullum siquidem corpus ad aliud admotum illud immutat, aut ab illo immutatur, nisi operationem praecedat perceptio reciproca. Percipit corpus meatus, quibus se insinuat; percipit impetum alterius corporis, cui cedit; percipit amotionem alterius corporis, a quo detinebatur, cum se recipit; percipit divulsionem sui continui, cui ad tempus resistit: ubique denique est perceptio”.

³⁵ Ibid.: “Aër vero calidum et frigidum tam acute percipit, ut ejus perceptio sit longe subtilior quam tactus humani; qui tamen pro calidi et frigidi norma habetur”.

nity to detect and describe the vital force (*perceptio simplex*) animating nature as a whole through a network of mutual responses (*perceptio reciproca*). For Bacon, *perceptio reciproca* in matter means that a primordial state of mutual recognition involves all parts of matter. Matter understood as one continuous and pliant substratum performs its vital functions and shapes itself into forms through the smallest concentrations of corporeal substance, the *minima*: “every natural action takes place through *minima*”.³⁶ Before the Cartesian division of labour between the mind and nature, Bacon’s reactive *minima* of matter and perception call us to mind Francis Glisson’s *minima* of natural perception and Leibniz’s *petit perceptions*.³⁷

Unlike Helmont and Bacon, Locke is fully acquainted with Descartes’s epoch-making changes in cosmology and metaphysics, and he responds to it. Within the universe of the *res extensa*, matter has a structure that, for Descartes, too, is supposed to be particulate. Thinking though is one and continuous, and it does not reflect in any way the nature of material and quantitative extension. It is therefore all the more interesting to see whether Locke’s endorsement of physical corpuscularianism impacted on the way in which he looked at mental associationism. Can there be a link between the clustering of corpuscles in the external world of matter and the patterns of associations and dissociations within the stream of one’s mental life? The level of Locke’s commitment in his involvement with chemical medicine has been detailed in the past years by scholars interested in showing how Locke was indeed influenced by Helmont’s physics and how original his position was with respect to Boyle’s natural philosophy.³⁸ Here my aim is to see whether the models of corpuscular physics that were available at the time affected Locke’s understanding of mental identity.

As discussed in the previous section, in his seminal enquiry into the philosophical category of identity, Locke distinguishes between material mass, vegetable nature, animal nature, human nature and individual self. The progression from one level of identity to the other signals a shift from physical

³⁶ Bacon, *Novum organum*, p. 210: “Cum enim omnis actio naturalis per minima transigatur, aut saltem per illa quae sunt minora quam ut sensum feriant, nemo se naturam regere aut vertere posse speret nisi illa debito modo comprehenderit et notaverit”.

³⁷ On the complicated but fascinating historiographic case detailing possible knowledge exchanges between Glisson and Leibniz, I refer to Giglioni, “Glisson-Leibniz-Reid-Maine de Biran”.

³⁸ On Locke’s involvement with medicine, see Dewhurst, *John Locke (1632-1704)*; Romanell, *John Locke and Medicine*; Milton, “John Locke’s Medical Notebooks”; Walmsley, “*Morbus* – Locke’s Early Essay on Disease”; Milton, “Locke, Medicine and the Mechanical Philosophy”; Crignon, *Locke médecin*.

agglomeration to incorporeal coalescence, for the “cohesion of particles of matter” is different from the kind of unity that characterizes the life of plants, animals (human and non-human) and, above all, selves.³⁹ It is precisely the kind of expansion and annexation of conscious activity which, according to Locke, underpins the growth of a self that seems to question the possibility of connecting physical corpuscularianism and mental associationism.⁴⁰

Ideas are the counterpart of corpuscles in the mental universe. Locke’s view of thinking as a most intimate relationship between consciousness and ideas is spelled out at the very beginning of Book 2 of the *Essay*:

Every man being conscious to himself that he thinks and that which his mind is employ’d about whilst thinking being the *ideas* that are there, ’tis past doubt that men have in their minds several *ideas*.⁴¹

Minds have ideas and their presence is revealed by the mental activity of consciousness. This point, though, is no mere circle or tautology. The opening statement of Book 2 is loaded with meaning, so much so that the rest of the book can be read as the unfolding of the many implications involved in this seemingly anodyne statement. Locke appeals to “every one’s own observation and experience” to shed light on the nature of human thinking. Thinking is viewed as a stream of consciousness issuing from a seamless flow of ideas.

If everyone who undergoes the experience of thinking perceives that they have ideas, what is then the nature of this particular kind of ownership? Ideas for Locke cannot be there from the beginning; they have been acquired. As he rules out any possibility that ideas are innate, to better understand the way in which the mind acquires and therefore *has* ideas, he resorts to the physiology of perception, that is, to the functioning of the senses. Ideas depend on how the senses react to external or internal objects. Locke’s account of ideas, thinking and consciousness presupposes a view of sentience as reactivity. In this respect, this view is similar to both Bacon’s and Helmont’s descriptions of natural cognition as a process of vital responsiveness. Ideas coalesce because sentient beings are organisms capable of reacting to and recording external and

³⁹ Locke, *Essay*, II.xxvii.4, pp. 330-1.

⁴⁰ On Locke’s corpuscularianism, see Alexander, “Boyle and Locke on Primary and Secondary Qualities”; Downing, “The Status of Mechanism in Locke’s *Essay*”; Anstey, *John Locke and Natural Philosophy*. On his associationism, see Dromelet, Tabb and Wolfe, “Doctrines of the Association of Ideas in Early Modern Thought”.

⁴¹ Locke, *Essay*, II.i.1, p. 104.

internal impressions (which, Locke says, are “all the materials of thinking”).⁴² Any similarity, though, ends here as Locke’s ideas are acts of self-knowledge rather than depictions of things. Bacon’s and Helmont’s ideas are perceptions of things which, while perceiving things, also transform them. By contrast, Locke’s ideas are perceptions of perceptions and do not alter the reality they represent. In line with Descartes’s redefinition of the principles of physics and optics, there is no natural resemblance between mental representations and the natures of things.

For Locke, having ideas depends on having sensations. Things have a “real but unknown constitution” resulting from a specific arrangement of particles.⁴³ Ideas are the ways in which the sensible qualities (secondary qualities) are translated into states of mental activity. More specifically, sensible qualities are “the powers of several combinations” of the primary qualities (such as mass, size, shape and motion).⁴⁴ Ideas allow the mind to replicate in the form of representations the reality of corpuscular matter. These replicas are causally determined by the corpuscles and represent these corpuscles and their innumerable combinations; they do not, however, resemble the way these corpuscles are in themselves. There is therefore an ineliminable divergence between ideas and corpuscles and this divergence distances the mind from the reality of matter.

In addition to be reliable but ultimately inaccurate replicas of corpuscular reality, ideas are instantaneous acts of self-recollection. As perceptions of perceptions, ideas are the building blocks of memory, “it being impossible for any one to perceive, without perceiving, that he does perceive”.⁴⁵ Ideas as perceptions of perceptions are mental objects, that is, “whatsoever is the object of the understanding when a man thinks”.⁴⁶ Locke describes ideas as “bare appearances”.⁴⁷ As such, they are indications of mental states and manifestations of cognitive energy. The stream of consciousness which the mind is made

⁴² Locke, *Essay*, II.i.1, p. 104. Through sensations, the senses translate the sensible qualities of the sensed things into perceptions. See *ibid.*, II.i.3, p. 105: “First, *Our Senses*, conversant about particular sensible Objects, do convey into the Mind, several distinct *Perceptions* of things, according to those various ways, wherein those Objects do affect them: and thus we come by those *Ideas*, we have of *Yellow, White, Heat, Cold, Soft, Hard, Bitter, Sweet*, and all those which we call sensible qualities, which when I say the senses convey into the mind, I mean, they from external Objects convey into the mind what produces there those *Perceptions*. This great Source, of most of the *Ideas* we have, depending wholly upon our Senses, and derived by them to the Understanding, I call *SENSATION*”.

⁴³ Locke, *Essay*, III.iii.17, pp. 417–18.

⁴⁴ *Ibid.*, II.viii.22, p. 140

⁴⁵ *Ibid.*, II.xxvii.9.

⁴⁶ *Ibid.*, I.i.8, p. 47.

⁴⁷ *Ibid.*, II.xxvii.7, p. 386.

of develops therefore from the coming together of numberless mental objects, each of them carrying a sense of the self.

The relationship between corpuscles and ideas in Locke is therefore different from the relationship of *minima* and ideas in Helmont and Bacon. Helmont calls ideas *obiecta* but they are representations that can activate processes of bodily transformation, including pathological degenerations.⁴⁸ For Bacon ideas are natural (not mental) objects. Bacon looks at ideas as *formae*, that is, as patterns of activity determined by self-organizing motions in matter, some more persisting and lasting than others. Bacon's natural *schematismi* and *texturae* are made by the perceptions *simplices* and *reciprocae* in matter. The smallest portions of matter that are fashioned by these acts of minute perception may be called *minima perceptiva*. On the contrary, ideas for Locke are mental (not natural) objects. The physical constitutions of material objects are translated into the ideas in one's mind, but no exchange of cognitive energy takes place between the two participants in the transaction: the corpuscles and the ideas.

Locke likens consciousness to ownerships of ideas in one's mind. This ownership, however, originates from the coming together of innumerable ideas (each of them being an act of conscious thinking) merging into one stream of conscious experience. Ideas are no preexisting entities in reality. As already said, Locke is no proponent of innatism like Helmont with his *imagines seminales*, nor does he recognize the existence in nature of active templates of material reactions, like Bacon with his *perceptiones simplices*. And yet the mind emerges only after ideas have begun accumulating and assembling. Therefore, the question whether ideas come before the mind represents itself again. Indeed, one may even ask whether in some circumstances ideas hold minds hostage. Bacon and Helmont, as we have seen in the first part of this article, think that this is possible because ideas are self-active catalysts of change in matter and they can initiate processes that the mind fails to control. For Locke, any satisfactory answer to these questions needs to explain how these ideas as acts of conscious thinking hold together. What is the 'cement' that connects ideas together and transforms perceptions and then knowledge into an ontologically coherent and cohesive universe? For Bacon this cement is natural perception diffused at every level in nature, understood as an unconscious force that connects all things together through tendencies of attraction and repulsion.

⁴⁸ Helmont explains the nature of *obiecta* as representational pathogens especially in the tract entitled *Divisio morborum*, premised by the diagram depicting the *Morborum phalanx secundum causas occasionales*. See Helmont, *Opera omnia*, pp. 536-38.

For Helmont, the cement is the imagination of the countless vital principles ceaselessly structuring and restructuring the universe. Unlike Bacon and Helmont, Locke thinks that this issue is especially urgent because both corpuscles in matter and ideas in minds do not have attractive or repulsive forces of their own. Habit, custom and retention are mechanisms that can help explain the coming together of ideas into one's stream of consciousness. Do they occur through mechanical repetition or are they cemented together by chance? If this is the case, why isn't folly the norm, as ideas agglutinate together following the fortuitous juxtaposition of external and internal perceptions?

The line separating personal from composite identity in the Lockean model seems extremely tenuous to me. As a result, differently from what happens in Descartes's *Meditationes metaphysicae*, madness hovers from one end to the other in the *Essay concerning Human Understanding*. The range of case studies is rich. There is the person who thought he was Socrates (even when he continued to perform important professional functions).⁴⁹ There is a discussion concerning the possibility that individuals suffering from post-traumatic stress completely lose the use of their memory and therefore find themselves in the condition of Pythagoreans and Platonists, who say they do not remember the pre-existing life before their souls descended into their respective bodies.⁵⁰ I would not exclude the Brazilian parrot from this variegated sample of clinical cases, were it not for the fact that the identity of the non-human animal could alter the boundaries that Locke sets between animal identity, human identity and personal identity.⁵¹ If the grand master of sceptical ceremonies in Descartes's text is the *Malin Génie*, in Locke this function is performed by madness, that is, by the many madmen and madwomen who we then discover are the vast majority of the human animals who fail to reach the level of healthy self-awareness, or to be personally identical to themselves and therefore legally capable of understanding and willing. This is lucid madness precisely because it is based on the associative mechanism of ideas. Ideas have a natural tendency to associate and create strange bodies of knowledge, which can be complexes of reasonable beliefs, but they also can produce actual teratological combinations. Since we start from the flow of ideas, the personal identity that results from these flows is constitutively flexible and changeable, exposed to short or long-term memory loss, as memory is interrupted every day in sleep or distorted in dreams.

⁴⁹ Locke, *Essay*, II.xxvii.14, p. 339.

⁵⁰ Ibid.

⁵¹ Ibid., II.xxvii.8, p. 333.

Conclusion

In this article, I argued three main points focusing on Bacon's, Helmont's and Locke's theories of the mind and their link with cosmology. First, Bacon, Helmont and Locke advanced philosophically pliable notions of the mind in which the possibility of cognitive self-obfuscation is deemed to be part of the very work of knowledge production. Locke included the discussion of mental illness and dissociative disorders as integral to a correct understanding of the experience of thinking, unlike Descartes, who, too, described thinking as inner experience, but did not see any philosophical or psychological point in observing altered states of consciousness. Above all, Bacon, Helmont and Locke alerted us to the danger that our mind may turn into the great gaslighter every time the fictive powers of mental representations are not harnessed by a reliable method of self-scrutiny. The second point I made is that Bacon, Helmont and Locke shifted the emphasis in their investigations from the subject of thinking as a substance to the activity and the power of the represented object. In different ways, they all moved the discussion towards a new understanding of the mind as a functional device. Finally, their special attention to the phenomenon of mental fallibility betrays quite distinct ontological views of reality. For Bacon reality is the result of the converging together of myriad appetitive tendencies in matter, which Bacon often simply calls material *motus* shaping expansive and pliable matter through combinations of material *minima* and elementary perceptions. For Helmont reality is the intelligible perfection of divine nature which, after the Fall, has been irredeemably obfuscated by distorting images and imaginations. For Locke, finally, reality is what the mind makes of things, and since the mind is a changeable agglomeration of ideas that keep merging into larger clusters of representations or contracting into smaller collections, its identity is as mutable and fluid as these galaxies of ideas.

In the end, for Bacon, Helmont and Locke, the main point boils down to the question: Why and how do things coalesce and do not fall apart? This question is of decisive importance with respect to the status of the human mind because for the three authors perception of reality bears on fluctuating identities and cognitive dissonance. For Locke, within the universal cosmos of associative possibilities, the self represents the highest level of coalescence that can be experienced in nature. The fact is that this kind of amalgam is not of a physical kind but it is the expression of a unique ability to appropriate and re-appropriate mental representations. The human understanding is a representational tool, not a biological and chemical process. Baconian and

Helmontian models of chemistry, relying in different ways on the immanentist premises of Paracelsian philosophy of matter (*scientia* is in matter divinely created), look at perception as the unfolding activity of seminal ideas (be that *spiritus* or *archeus*) and as a natural catalyst of chemical reactions. By contrast, Locke does not mix the plane of corpuscular physics with that of associative thinking. In addition, while Locke's model of representational identity remains Cartesian, unlike Descartes Locke theorizes the view of a mental coalescence that functions without assuming the presence of an underlying subject. This means that the agglutinating impulse in nature comes from the ideas themselves, not from the self. This is precisely the reason why minds are unstable entities. But this is also a very delicate compromise, exposed to materialist uses or transcendental apriorism *à la* Kant.⁵²

Like Locke, Bacon interprets thinking as a function, not a substance. The act of thinking is premised on *anima*, which is a force of reactivity that is capable to respond and adjust itself to a totality of other forces that in like manner respond and adjust themselves to a constantly changing surrounding. In line with the Galenic theory of natural faculty, Bacon identifies *anima* with an unconscious and involuntary function consisting in recognition, selection, assimilation and avoidance. Here it should be noted that the epistemological and neuroscientific framework underlying Bacon's mirroring organization of mental faculties and disciplines as is set out in the *Advancement of Learning* and *De augmentis scientiarum* is modelled on Galen's anatomical division of memory, reason and imagination as they are located in the ventricles of the brain. If the Baconian mind inhabits the Galenic brain, the life that fuels and fashions the mental operations is the Galenic natural faculty, that is, the unconscious drive of nature.⁵³

Comparative analyses help us resituate authors and ideas in different contexts and discover unexpected vistas. In this research, this is particularly evident when we include an author such as Helmont within the debate about seventeenth-century views of the mind. A survey of Helmont's Paracelsian medical philosophy is legitimate when assessing the contribution of Bacon's

⁵² On the history of Locke's fortuna in the traditions of eighteenth-century materialism, medicine and empiricism, see the recent studies by Charles Wolfe: "From Locke to Materialism"; "Locke and Projects for Naturalizing the Mind in the Eighteenth Century"; "Rethinking Early Modern Empiricism: The Case of Locke".

⁵³ I have discussed the importance of the Galenic notion of natural power during the early modern period in "Reading Galen's *De Naturalibus Facultatibus*". On Bacon and Galen, see Tonelli Olivieri, "Galen and Francis Bacon".

and Locke's philosophy to the early modern understanding of ideas and representations. Indeed, we might say that, in this respect, two magnificent books focusing on the ways in which humans process ideas and how they construct reality through ideas were written during the seventeenth century: the *Ortus medicinae* by Helmont (1648) and the *Essay concerning Human Understanding* by Locke (1689). One may point out that such a juxtaposition, despite Locke's Helmontian sympathies, look infelicitous, for the two works couldn't be more different from one another. In fact, the contrasting of the *Ortus* with the *Essay* makes us reflect on a characteristic trait of the seventeenth century, that is, the urge that was widely shared to requalify the definition and the role of ideas in human life at a time when the link between representation and reality was being perceived as becoming increasingly tenuous. Bacon's own new *Organum* had been written as an attempt to realign the mind with reality. By pursuing the interweaving paths of Platonic ontology and Paracelsian theory of the imagination, Helmont reached the conclusion that all things in nature were endowed with the ability to represent other things. According to the Helmontian framework, ideas indicated the ways in which nature in every single part of its vast body could record a vital response to the constantly changing circumstances of reality. He called this mutual perception 'magnetism'. A later convert to the cause of Helmontianism, the English anatomist Francis Glisson (1597-1677), a follower of Bacon and a contemporary of Locke, would characterize this attribute of reality as *idea suiipsius* (self-idea), i.e., the ability to self-representation that is inherent in matter.⁵⁴

Positioning himself on a very different wavelength within the ontological spectrum of seventeenth-century philosophy, Locke restricted the use of ideas to the sphere of the human mind. Locke knew Helmont's work and, although he was mainly interested in his clinical approach and chemical remedies, he was certainly aware that Helmont's doctrine of illness and chemical therapy presupposed a universe in which every *res* had *ideae*. Indeed, *res* for Helmont were possessed by *ideae*, sometimes being overwhelmed by external or internal influences carrying upsetting representations of reality. I suspect that Locke must have been at least intrigued by a view in which all accounts – natural and preternatural, healthy and diseased, physical and spiritual – depended on the way in which vital processes regulated by ideas constantly reacted to other processes regulated by other ideas (understood as *obiecta*, that is, as objects of

⁵⁴ Glisson, *De natura substantiae energetica*, p. 90. On Glisson and Locke, see Anstey and Principe, "John Locke and the Case of Anthony Ashley Cooper".

representation).⁵⁵ To brutally sum up: for Helmont, being was tantamount to being moved by ideas; being for Locke was the same as to have ideas. The former is a universal condition of nature, the latter is a state of the human mind.

Here a few remarks concerning Bacon's and Helmont's medicines of the mind are in order. While both authors mistrusted the power and scope of the human mind, the diagnoses and the cures they proposed to remedy the situation were different. They shared the opinion that the mind had been structurally deformed by the poison of the original sin, and they both suggested that a palliative could be found in nature: Bacon believed that nature would be interpreted and put to good use, Helmont regarded nature as *maga* in Plotinian tones, that is, pervaded by forces designed to draw bodies towards each other and towards the greater good of the universe. The differences between the two authors, however, are also evident. While Bacon relied on the senses and man-made tools to escape the self-referential pull of the human intellect, for Helmont the way out could only lie in an ecstatic identification with the divine. After all, within the seventeenth-century general debate concerning dependable sources of cognitive and moral certainty, adjustment to nature and direct intuition were often seen as the most reliable means of procuring sanity. When contrasted with Bacon's and Helmont's therapies, Locke's medicine of the mind reveals its Cartesian underpinnings. The inner and direct vision of the mind is the force that makes conscious understanding the core of a healthy personality. Also, "industry and applications", as Locke insists in his *Conduct of the Understanding*, help enlarging the mental capabilities of human beings, including "men of low and mean education who have never elevated their thoughts above the spade and the plough nor lookd beyond the ordinary drudgery of a day-labourer".⁵⁶ In any case, though, human reason for Locke never turn into a *hospes peregrinus* in the way described by Helmont (that is, as the internal enemy or the principle of unreconcilable otherness), nor can reason be *sibi permissa* in Bacon's sense (that is, left to the unreliable devices of its representational power).

Perhaps because of my interests in the history of medicine, I have been drawn to investigate how human thinking can be shaped by both mental order and mental disorder. In other words, I would not rule out the prospect that the state of mental confusion may shed light on the way we think. As a result, I am becoming increasingly concerned with early modern accounts of that

⁵⁵ I have examined the ways in which, according to Helmont, ideas and *obiecta* may affect the human mind in a pathological manner and shape natural bodies in "The Vorstellungskraft der Gebärmutter"; "Fienus, Bacon, Helmont"; "Contagio e immaginazione".

⁵⁶ Locke, *Conduct*, §§ 18-19, pp. 165-69.

condition known today as clouding of consciousness. Of the discussions that physicians and philosophers were having at the beginning of the modern era concerning the nature of the mind, I like to focus on the impact that medical and chemical views of matter had on the early modern notion of the mind. Bacon, Helmont and Locke are suitable starting points in this investigation. And yet my intent is not psychiatric nor medicalizing. Mental illness is mental activity all the same. The reduplication and compounding of identities is a complication that Locke's theory envisaged from the beginning. One may see this complication as a drawback. I like to see it as a theoretical resource.

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