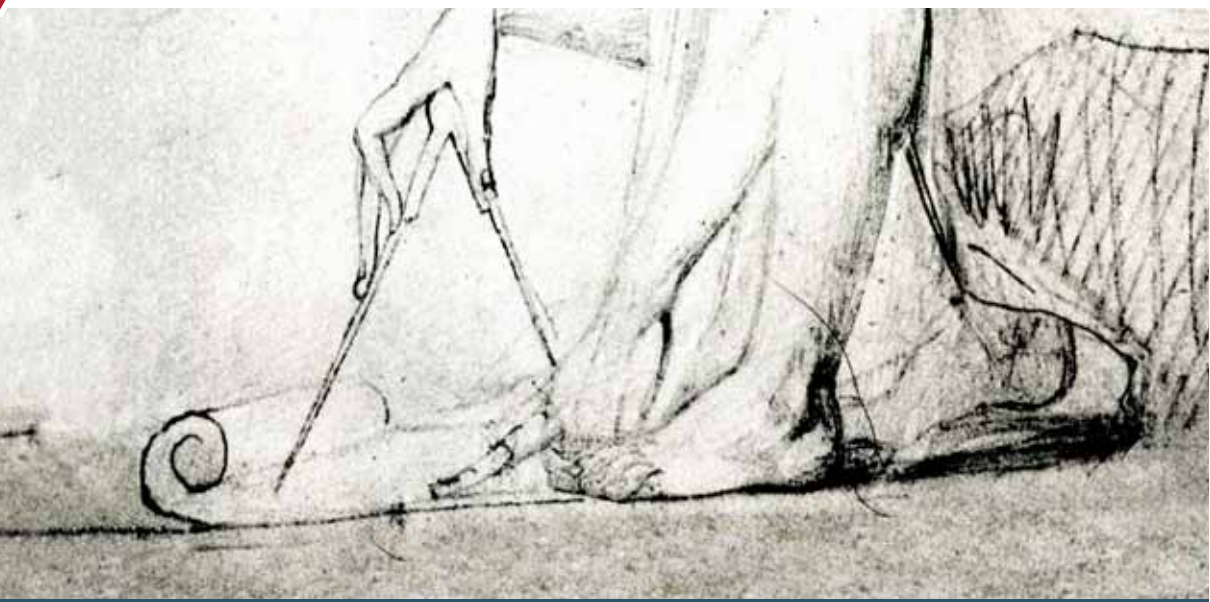
Nodi

Understanding Matter

Volume 1

Perspectives in Modern Philosophy

Edited by Andrea Le Moli *and* Angelo Cicatello



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Understanding Matter

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This volume includes contributions on History of Modern Philosophy originally presented as individual papers at CRF 1st International Conference «Understanding Matter», Palermo (Italy), 10th-13th April 2014.

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The Notion of Matter and the Reformation of Metaphysics

Andrea Le Moli

How do we experience matter? Does it present itself to the senses? Or is it only an empty substratum that cannot be grasped if deprived of all sensible qualities? Is it perceived as a continuum, or rather intellectually reconstructed through mental and logical forms? Or is it that the very idea of a continuum is itself the outcome of mental abstraction? And what about the status of matter in light of contemporary subatomic physics? Is matter an unpredictable flux of pure energy or an organised cosmos of even more basic elements?

The nature of matter has been a central issue for philosophy since its inception. Over the course of centuries of debate, a wide variety of theoretical solutions have been proposed. Indeed, all major historical shifts of thought have prompted fundamental re-thinking of the nature of matter. For instance, the rise of the importance of mathematics in the natural sciences helped shape the transition from positing a 'philosophy of nature' to concentrating on the empirical sciences. Debates about matter were intimately connected with the polemical rejections of materialism and dogmatism in the 18th and 19th centuries. Most recently, contemporary physics has called for a fundamental re-orientation of the traditional paradigm, excluding all cognitive approaches to matter except those which are based on an encounter with matter's physical instances. It is this rather restricted notion of matter which is said to define the breadth of the experience we are said to be able to have of reality in general, and in doing so it defines our experience, as well, of other human beings, thoughts and theories. It is a closed circle which is not often broken.

Despite all this, after a closer look, it must be recognised that the notion of matter has never ceased to be a topic of interest in a variety

of philosophical discussions. Even here and now, within what we may call the perspective of a 'reformed metaphysics', the notion of matter plays a very central role, also determining the way in which science and philosophy do not cease to intertwine.

To cite an example: in the attempt to answer the question, «What would have existed if no man or subject has ever existed to testify to it?», hard sciences are used to evoke precisely the notion of matter as the sum of all the qualities/properties which are independent from perception and experience. So, when we ask, «What of the Moon would still exist even if no man had ever existed to watch it rise and set?» we are asking, which part of the complex experience we summarise under the term 'Moon' would remain if transferred to a domain with no man, that is, into a world completely lacking experience.

To such questions, 'matter', intended as the whole of physical properties of an object, comes as a very common - and apparently correct - answer.

And yet, science can hardly admit what the reason is for the correctness of these assertions. Even in making these statements, science has already entered the realm of metaphysics, compromising its methodological purity and unwittingly adopting that very spirit of inquiry that animates classical philosophy.

As a matter of fact, metaphysics may also be defined as the hypothetical gaze directed at an object deprived of all its contingency and boundness to a particular perspective or point of view. It is the radical shifting of the subject from the vantage of the individual gaze, with the aim of conceiving of things by distinguishing what human thought or perception brings to the experience from what could never have been a result of human activity. In this sense, physics is always meta-physics.

But metaphysics is more than an appendix, attached to something which pretends nonetheless to be different in structure and scope. Metaphysics goes beyond physics by formulating that reality as a whole would not be properly conceived if one referred to the Whole exclusively in physical terms, that is, as the sum of all the independent qualities which pertain to things in themselves.

But a reformed metaphysics also would not dare to think the 'Whole' appeared only under the form of pure thought.

Indeed, what metaphysics bears within itself as the proof of its genuine reformation is the intuition of what the notion of *meta* contains; that is, a special relation to the Whole as such.

Accordingly, the Whole can be conceived only as the unity of the Whole and what seems to resist to be included within it. A higher-order Whole which doesn't own the structure of a self-imposing Totality. This higher Whole appears only as the radical unit of the unifying principle and the issue of resistance generated in it. In this sense, that is within the perspective of a metaphysics which relieves the issue of violence, 'matter' is no longer the Whole of reality/experience, nor a principle radically opposed to the unifying function of spirit. Rather, it is the condition for recognising always more comprehensive forms of unity and harmony by preserving its power to resist every closure of the Whole to a 'mere' Totality.

It is, thus, very exciting to follow the various perspectives described in this book in their historical development, and to discover how much the notion of matter has progressively got rid of the prevalence of aesthetic aspects in favour of pure conceptualisation at the beginning of the nineteenth century. This new dimension, though deeply rooted in the past, arises anew in the transition from English to German Philosophy, so paving the way for the 'revolutions' which will enliven the Contemporary Age.

Understanding Matter

Angelo Cicatello

«The word matter is, in philosophy, the name of a problem», says B. Russell in a famous text dedicated to Leibniz's philosophy.[1]

The theme of matter seems, in effect, to bear within philosophical discourse an element of resistance, something that appears from the beginning in the sign of constitutive hiddenness and impenetrability. Matter *resists*, one might say, a *direct* discourse on matter, by reason of its very nature, or rather the fact that *its* nature, what determines it, what makes it something specific, seems actually to come to it from the outside, from another place, from a principle which is opposed to matter itself. Dichotomies such as matter-form, matter-spirit and soul-body in effect express – at least in the trivially antagonistic form in which they first occur – this condition of matter as that which, as such, falls outside itself, as that which, in itself, has no property because first of all it is without a being *of its own*. That is to say, the being of matter is always already a being that is other than matter, so that determining it means to some extent *altering it*, having to make it something other than itself.

It is not surprising if all this can translate into, and not infrequently has translated into, the idea that it is the very capacity to accommodate, to become something else, that connotes the nature of matter; it is a capacity by virtue of which matter is presented as an inescapable condition for the understanding of all phenomena related to change and movement. And yet precisely the lack of determination, that which in some ways lends itself to describing a defective ontological condition, at the same time makes matter the stable reality that remains identical in that which changes. Being devoid of properties, its being *improper*, saves matter from the fury of becoming, making it

[1] Russell 1900, 75.

the nucleus of an apparently tautological formula that makes the very sense of becoming understandable. The fact is that for something *to change*, it is necessary that *something* should change. In the first proposition, the stress falls on the change in something, while in the second the emphasis is instead on something that changes, that is to say on the fact that only something that, to some extent, remains identical to itself can change. Only that which preserves some ontological memory of itself changes. Matter in a sense is the *memory* that a universe in flux and transformation has of itself. It is the immobile image of what moves.

The Platonic example of *ekmagheion*, as of that on which there is imprinted the impress of everything and that appears gradually ever-changing, remaining the same in not having as its own properties that each time characterise the things which bears the impress, then traces the outline of a universe that has a memory – a memory to be seen precisely as *matter* in which the images of things are impressed, according to a tradition that refers to the receptive idea of *mens-tabula*. It is a sort of original memory, or *prime matter*, ready to receive, to accept the forms of all things, remaining identical to itself in not appropriating any of the forms it receives, and indeed receiving the forms that are imprinted in it in a space, the space of the impress that at bottom constitutes the very absence of matter.

Therefore welcoming like a womb (remaining on the theme of Platonic images), but at the same time resistant in not taking as its own the properties that give it form, matter asks to be thought of on the one hand as the substrate of what is perceptible, and on the other as that which is accessed regardless, as far as possible, of the characteristics according to which so-called material objects are perceived. Matter, taken in itself, does not prove to be something visible, palpable, in the way that, instead, material objects are. Yet it seems to want to impose itself as the reality of what is visible and palpable. The appeal to the sensible as necessary in relation to matter which the objects that we perceive are made of is thus combined, at the same time, with the need to abstract from the sensible, to abstract from what is given directly to our senses.

The transition from material objects to the matter of objects, from the *adjective* to the *noun*, hence the passage that aims to place matter *as such* at the middle of a rigorous discourse, although it constitutes,

and in fact has constituted, an irresistible temptation, is not, in actual fact, so easy, so obvious, but implies a path fraught with difficulty, in some respects aporetic – a pathway that is delineated within the confines between the perceptible and the imperceptible, between the determined and the undetermined, between the obvious and the obscure, between the real and the imaginary. Hence we are talking about homeless discourse, because it is relegated to those extremes zones of being in which the maximally concrete, heavy and solid end up being confused with the evanescent, the ineffable and the abstract.

We can thus follow Aristotle in asking ourselves whether and to what extent matter can be called substance or with Descartes we can confer on it the ontological status of a separate being whose distinctive character, extension, in the end, however, insists on the idea of something whose being is, by definition, a being outside itself, pure exterior space. We may also, with Leibniz, refer to it as to that which at bottom reveals the character of a passive force of resistance, or simply deny its existence with Berkeley and discover that precisely the perspective that promised to hand it to us as an obvious and indisputable datum, the appeal to the veracity of our senses, ends up nurturing the doubts of the sceptic about the existence of a material world, that is to say a world that is *outside* the spirit that perceives it. All these options, in the end, point to the difficulty of nailing to the ontologically reassuring dimension of *per se* what seems instead to have come into being with the vocation of being for something else, and therefore is only accessible through something else.

I do not know if this, which I consider a theoretical provocation to throw out at the start of our work, will simply be denied or will find new developments in the framework of the talks that we are going to hear. What is certain, however, is that this conference, seeing the incredible number and variety of talks, promises to let us have a look at the theme from different perspectives, distant, even, from each other, but all sharing, so at least it seems to me, the desire to face without reservations the difficulty of even simply defining the issue within a specific thematic horizon.

Indeed it can be said that, rather than a theme, it is a "receptacle" in which issues of a different nature are raised, so that the discourse on matter, on the one hand, at the same time becomes the *matter* of speech on the other.

Hence with the title of this conference, *Understanding Matter*, the intention is not to satisfy the naïve *hybris* of a radical question seeking satisfaction in *elementary* answers. Instead the intention is to identify in matter a sort of contrast medium that, through seemingly disparate issues, illuminates the common background of radicality.

In this connection, a glance, even a quick one, at the titles of the talks, organised here in parallel sessions, clearly shows that attempting to *understand matter* intercepts questions about the nature of contingency, the generation and alteration of compound bodies, the relationship between the full and the empty, the relationship between abstract and concrete objects, the age-old mind-body issue. There is thus traced out a long bumpy path that from the metaphysical question about causes and the first principles of being leads to the most amazing developments and outcomes of contemporary physics. Further, matter will be at the centre of a reflection on the difference between natural body and social product, will touch on the question of the relationship between theory and practice, between knowledge and action, will be put through the sieve of questioning aimed at highlighting the ambiguities related to the experience of living, and will touch on issues of a biological nature related both to the lessons of classical philosophy and to areas of research that are closer to contemporary science.

In short, one could speak of a true philosophical fair on matter, if the term did not risk suggesting too strongly the idea of an exhibition of diverse products from all over the world. Here, however, we host scholars who, as such, as scholars, are not simply interested in exhibiting their products, but also in creating a common space of discussion on a theme which remains theoretically, in spite of a history of more than two thousand years, still to be defined.

Materia, attualità, dimensionabilità: Plotino e Averroè nel *De la causa* di Giordano Bruno

Monica Marchetto

1 L'informe «nel quale si uniscono tante forme»: Bruno interprete di Plotino

L'originalità con cui Bruno reinterpreta la filosofia di Plotino nel *De la causa* è stata più volte sottolineata negli studi.[1] Già nel Dialogo secondo del *De la causa*, Giordano Bruno fa riferimento a Plotino, dando quasi l'impressione di trarre proprio dal filosofo greco la sua dottrina dell'intelletto universale. Nell'ambito della sua trattazione della causa efficiente, infatti, Bruno non esita a descrivere l'intelletto universale in un modo che chiaramente richiama la stessa teoria plotiniana della produzione 'silenziosa' del cosmo da parte dell'Intelletto quale è esposta nel trattato sulla Provvidenza: «questo intelletto, infondendo e porgendo qualche cosa del suo nella materia, mantenendosi lui quieto et inmobile, produce il tutto».[2] Poco dopo, Bruno fa anche esplicitamente il nome di Plotino:

> Plotino lo dice 'padre e progenitore', per che questo distribuisce gli semi nel campo della natura, et è il prossimo dispensator [de] le forme. Da noi si chiama 'artefice interno', perché forma la materia, e la figura da dentro.[3]

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1 Cfr. in particolare Chiaradonna 2011 e Dagron 1999, 249-57, 281-93, 344-346.

2 Giordano Bruno, *De la causa, principio et uno*, in Bruno 2002, 653 (d'ora in avanti: DLC). Cfr. Plotinus, *Enneades*, III 2 (47), 2. 15-17: «Νοῦς τοίνυν δούς τι ἑαυτοῦ εἰς ὕλην ἀτρεμὴς καὶ ἥσυχος τὰ πάντα εἰργάζετο· οὗτος δὲ ὁ λόγος ἐκ νοῦ ῥυείς». Majumdar 2007, 98 spiega che per Plotino l'Intelletto produce il cosmo senza deliberare e senza mutare: «Intellect is a cause that does not deliberate but makes in silent self-continence – by 'remaining in itself'».

3 DLC, 653-654.

Ma anche se Plotino effettivamente chiama l'Intelletto 'Padre',[4] egli è ben lungi dal concepire l'intelletto stesso come ciò che da presso o, addirittura, dall'interno elargisce le forme alla materia: piuttosto, l'Intelletto plotiniano dona i λόγοι all'Anima dell'universo, e questa, illuminata dall'Intelletto, a sua volta dirige l'ultimo creatore che è la natura;[5] riempita di λόγοι, che però non sono più quelli originari, la natura conferisce queste stesse ragioni formali alla materia e la plasma operando ciecamente, senza sapere quel che fa. Così, già nella sua concezione dell'Intelletto Bruno ripensa in modo inedito la sua fonte: concependo l'Intelletto non solo come «facultà e parte potenziale de l'anima del mondo»[6] ma persino come «artefice interno»[7] che dispensa direttamente le forme alla materia[8] e, al contempo, esplica

4 Cfr. Plotinus, *Enneades*, II 9 (33), 16. 8-10. Cfr. Sleeman e Pollet 1980, 828.

5 Cfr. Plotinus, *Enneades*, II 3 (52), 17. Cfr. la illuminante interpretazione di Majumdar 2007, 131: «Intellect 'gives' to the 'Soul of the All', 'the one which comes next after Intellect' or World Soul. This in turn gives 'from itself' to 'the soul next after it'. [...] Expressions like 'lowest' soul, ascribed to the soul 'next after' the World Soul, whose making can be hindered and whose contribution to the 'Whole' is matter, indicate that this 'last' soul must [...] be nature. Once it receives the logoi, this 'last soul' makes instantly, 'as if under orders'. It has to make thus, like an automaton of its priors, for that which makes at the level of nature is a noetically blind power that simply manipulates matter – it does not know but only acts». Si badi anche al fatto che per Plotino l'Anima trascende il cosmo che pure amministra (cfr. *Enneades*, IV 8, 2. 32 e Beierwaltes 1989, 218).

6 Cfr. DLC, 652. Sul rovesciamento della gerarchia plotiniana, cfr. Mancini 2000, 115.

7 DLC, 653-654. Si badi al fatto che l'intelletto, ancorché artefice interno, resta tuttavia anche causa estrinseca: nel suo *essere*, esso è distinto dai suoi effetti, mentre, nella sua *azione*, esso è nella materia su cui opera (cfr. DLC, 654-655). Leinkauf scorge in questa duplicità di aspetti non già un momento dualistico, bensì «ein funktional-dynamisches Entfaltungsmodell», riconducibile al classico ternario *essentia-virtus-operatio*, risalente al tardo-neoplatonismo e tramandato nel Medioevo (Bruno 2007, 350). Val la pena altresì di puntualizzare che l'intelletto non è solo causa tanto estrinseca quanto intrinseca, ma è anche principio in quanto forma (DLC, 655-656), ovvero in quanto è facoltà dell'Anima del mondo che informa l'universo e che, a sua volta, è forma, in quanto informa, ma è causa efficiente in quanto dirige e guida col suo intelletto l'universo (DLC, 656-657).

8 A proposito dell'idea bruniana secondo cui l'intelletto sarebbe 'dispensator [de] le forme', Thomas Leinkauf richiama la dottrina avicenniana del '*dator formarum*' nonché la reintepretazione scolastica della dottrina agostiniana (già stoica e plotiniana) delle *rationes seminales* (cfr. Bruno 2007, 346).

quelle stesse forme nella materia,[9] Bruno si distanzia da Plotino e lo piega alle esigenze del suo immanentismo.[10] A Plotino Bruno fa esplicito riferimento anche nel Dialogo quarto allorché egli riporta un passo tratto dal trattato II 4 ('Sulle due materie') delle *Enneadi*:[11]

> Plotino ancora dice nel libro *De la materia* che, «se nel mondo intelligibile è moltitudine e pluralità di specie, è necessario che vi sia qualche cosa comune, oltre la proprietà e differenza di ciascuna di quelle: quello che è comune, tien luogo di materia, quello che è proprio e fa distinzione, tien luogo di forma».[12] Gionge che «se questo è a imitazion di quello, la composizion di questo è a imitazion della composizion di quello.[13] Oltre, quel mondo, se non ha diversità, non ha ordine; se non ha ordine, non ha bellezza e ornamento; tutto questo è circa la materia».[14] «Per il che il mondo superiore non solamente deve esser stimato per tutto indivisibile, ma anco per alcune sue condizioni divisibile e distinto: la cui divisione e distinzione non può esser capita senza qualche soggetta materia».[15] «E benché dichi che tutta quella moltitudine conviene in uno ente impartibile e fuor di qualsivoglia dimensione, quello dirò essere la materia, nel quale si uniscono tante forme. Quello, prima che sia conceputo per vario e multiforme, era

[9] Bruno attribuisce all'Intelletto due specie di causalità: da un lato, esso genera e trasmette le forme e, dall'altro lato, attualizza quelle forme nella materia (cfr. Dagron 1999, 250).

[10] Come sottolinea Chiaradonna, «la distinzione dei tre princìpi ipostatici (Uno sovraessenziale, Intelletto, Anima, quest'ultima a sua volta articolata in livelli differenti e distinta dai *logoi*, i princìpi formatori inerenti ai corpi) è fortemente compressa in favore dell'opposizione tra il principio e la natura esplicata. Ciò vale innanzitutto per la distinzione tra Intelletto e anima. [...] la concezione dell'Intelletto come datore delle forme per il mondo fisico non si trova affatto in Plotino, e men che mai è plotiniana l'idea che l'Intelletto sia un artefice interno alla natura» (Chiaradonna 2011, 225). Si badi però anche al fatto che Bruno distingue tre forme di intelletto: quello divino, quello mondano e quello particolare (DLC, 654): se l'intelletto 'prossimo' è l'intelletto universale che agisce *nel* mondo come efficiente universale, l'intelletto divino non è 'prossimo' (cfr. Bruno 2007, 353). Sul rapporto tra anima e intelletto, cfr. anche Beierwaltes 1989, 214.

[11] Il passo in questione si trova in Bruno, DLC, 710-711. Bruno cita il trattato plotiniano col titolo *De la materia*, che altro non è che la versione italiana del titolo che Ficino aveva dato alla sua traduzione latina di *Enneades*, II 4, ovvero *De materia*.

[12] Cfr. Plotinus, *Enneades*, II 4 (12), 4. 2-7; cfr. Plotinus 1580, 160G-161A.

[13] Cfr. Plotinus, *Enneades*, II 4 (12), 4. 7-9; cfr. 161A.

[14] Cfr. Plotinus, *Enneades*, II 4 (12), 4. 9-11; cfr. 161A.

[15] Cfr. Plotinus, *Enneades*, II 4 (12), 4. 11-14; cfr. 161B.

> in concetto uniforme, e prima che in concetto formato, era in quello informe».[16]

Come emerge chiaramente dal passo in questione Bruno trae proprio da Plotino l'idea che il mondo sensibile sia imitazione dell'intelligibile, come anche l'argomentazione per cui, se questo mondo sensibile è composto di materia e forma, allora anche il mondo intelligibile sarà composto di materia e forma. Com'è noto, Plotino non si limita ad attribuire una materia al mondo intelligibile, ma distingue anche nettamente la materia del sensibile da quella dell'intelligibile; mentre la materia dell'intelligibile possiede le forme tutte insieme e sempre,[17] la materia del sensibile assume incessantemente una forma dopo l'altra;[18] mentre la materia dell'intelligibile è intrinsecamente e stabilmente unita alla forma, la materia del sensibile è invece assoluta indigenza e irriducibile privazione, che la forma riveste estrinsecamente come ornamento che abbellisca un cadavere.[19] Ora, Bruno recepisce da Plotino anche questa distinzione, sostenendo che se la materia della sostanza corporea è tutto quel che può essere solo in tempi diversi, la materia dell'incorporeo è per sempre e in una sola volta tutto quel che può essere:

> secondo la propria raggione, è differente la materia di cose corporali dalla de cose incorporee. Tutto dunque lo che apportate de lo esser causa costitutiva di natura corporea, de l'esser soggetto de trasmutazioni de tutte sorti e de l'esser parte di composti, conviene a questa materia per la raggione propria, perché la medesima materia, (voglio dir piú chiaro) il medesimo che puo esser fatto, o pur può essere, o è fatto, è per mezzo de le dimensioni ed extensione del suggetto, e quelle qualitadi che hanno l'essere nel quanto; e questo si chiama sustanza corporale e suppone materia corporale; o è fatto (se pur ha l'esser di novo) et è senza quelle dimensioni, extensione e qualità; e questo si dice sustanza incorporea, e suppone similmente detta materia. [...] Se dunque vogliamo dir composizione tanto ne l'una quanto ne l'altra natura, la doviamo intendere in una ed un'altra maniera; e considerar che se dice nelle cose eterne una materia sempre sotto un atto, e che

16 Cfr. Plotinus, *Enneades*, II 4 (12), 4. 14-17; cfr. Plotinus 1580, 161B-C.
17 Cfr. Plotinus, *Enneades*, II 4 (12), 5. 1; cfr. 161 C.
18 Cfr. Plotinus, *Enneades*, II 4 (12), 3. 9-10; cfr. 160 E-F.
19 Cfr. Plotinus, *Enneades*, II 4 (12), 5. 15-18; cfr. 161 F.

> nelle cose variabili sempre contiene or uno or un altro; in quelle la materia ha una volta, sempre ed insieme tutto quel che può avere, et è tutto quel che può essere; ma questa in più volte, in tempi diversi e certe successioni.[20]

Bruno è d'accordo dunque con Plotino nell'ammettere una materia anche nell'intelligibile e insieme nel sottolineare la differenza che sussiste tra la materia del corporeo e la materia dell'incorporeo. Quello per cui Bruno si allontana da Plotino e che è tratto peculiare della sua proposta teorica è la tesi per cui non vi sono due materie ma ve ne è una sola, che è soggetto comune dell'incorporeo come del corporeo:[21]

> *Dicsono*. Benché in quel ch'avete detto con brevità, abbiate apportate molte e forte raggioni per venire a conchiudere che una sia la materia, una la potenza per la quale tutto quel che è, è in atto;[22]

Pertanto la differenza che sussiste tra materia del corporeo e materia dell'incorporeo dipende semplicemente dal fatto che questa stessa unica materia universale si contrae da un lato nella materia corporea e dall'altro lato nella materia incorporea:

> sia quantosivoglia diversità secondo la raggion propria, per la quale l'una descende a l'esser corporale e l'altra non, l'una riceve qualità sensibili e l'altra non, [...] anzi l'una e l'altra è una medesima, e che (come è più volte detto) tutta la differenza depende dalla contrazione a l'essere corporea e non essere corporea: come nell'essere animale ogni sensitivo è uno; ma contraendo quel geno a certe specie, ripugna all'uomo l'esser leone».[23]

Ora però, Bruno non può accontentarsi di concepire la materia semplicemente come l'unico soggetto che è comune al corporeo e all'incorporeo. Infatti, concepita la materia come essenza comune, resta aperta

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20 DLC, 712-713. A proposito della contrapposizione tra 'cose eterne' e 'cose variabili', cfr. Bruno 2007, 446: «Die Materie der intelligiblen, unkörperlichen Substanzen hat also immer schon all ihr Sein-Können actu verwirklicht».

21 Bruno stesso riconosce che per alcuni la materia è «comune al mondo intelligibile e sensibile, come essi dicono, prendendo il significato *secondo una equivocazione analoga*» (DLC, 697, corsivo mio). Scopo di Bruno è proprio quello di risolvere l'equivocità platonica e di pensare l'unità delle due materie non più solo secondo il modello gerarchico della partecipazione (cfr. Dagron 1999, 348).

22 DLC, 711.

23 DLC, 713.

la questione dello statuto dell'atto da cui procedono le differenze.[24] Bruno si spinge così fino a concepire la materia universale come ciò che include tutti gli atti e, proprio perché li include tutti, è per sé assolutamente semplice e indivisibile.[25] Se dunque Plotino concepisce la materia dell'intelligibile come il soggetto in cui tutte le forme sono unite, e come una materia viva che possiede tutte le forme insieme e sempre, Bruno giunge a pensare la materia (considerata in se stessa) come vita infinita e come l'unità che tiene implicati tutti gli atti e tutte le forme.[26]

2 La materia come dimensionabilità: Bruno e Averroè

Per Bruno la materia non è informe perché sia priva di forma, bensì perché contiene in sé tutte le forme. Bruno illumina questo nodo teoretico introducendo il riferimento alla dottrina averroista delle dimensioni indeterminate.

Inserendosi nella linea di riflessione tracciata dai tardo-Neoplatonici,[27] nel *De substantia orbis* Averroè si distanzia dalla concezione che

24 «L'unité de la matière, sur laquelle repose la représentation hiérarchique, est bien réelle, mais la démarche analogique par laquelle on compare le supérieur et l'inférieur suppose que l'on signifie cette unité par un genre logique» (Dagron 1999, 365). Ridotte le specie della materia all'unità di un genere, resta dunque ancora da chiarire come sorgano le differenze che contraggono il genere. L'unica via che rimane per fare della materia stessa l'unica sostanza è allora quella di concepirla come attualità: «l'unité du sujet ne permet pas encore de penser la matière come substance, il faut encore faire de ce substrat un être au sens plein, c'est-à-dire un être en acte» (365).

25 Cfr. Ciliberto 1999a, 137; Mancini 2004; Mancini 2000, 139.

26 Cfr. Catana 2005, 45: «Bruno maintains that matter is the source of what is in act and takes up a feature of Plotinus' intelligible matter, namely the idea that in intelligible matter many forms are united in an undifferentiated unity». Cfr. DLC, 710-711 e Plotinus, *Enneades*, II 4 (12), 4. 14-17; cfr. Plotinus 1580, 161B-C. Parallelamente, Plotino finisce con l'essere richiamato da Bruno «come fonte per una concezione che in realtà è agli antipodi rispetto alla sua dottrina della materia sensibile (inerte, priva di potenza causale e incapace di generare alcunché)» (Chiaradonna 2011, 223-32, 226).

27 Già Donati 1998, 22 sostiene, sia pure con qualche riserva, non solo una affinità teoretica ma anche una possibile filiazione della dottrina di Averroè dalla teoria della materia come estensione di Filopono e Simplicio: «Mit diesem Gedanken einer unbestimmten Ausdehnung als grundlegendster Bestimmung der körperlichen Substanz und Körperhaftigkeit schlechthin knüpft Averroes möglicherweise an Theorien an, die bereits in der Spätantike von den neuplatonischen Kommentatoren entwickelt

del rapporto tra estensione e materia aveva proposto Avicenna. Nella sua *Metafisica* quest'ultimo sostiene che, affinché il corpo sia corpo in atto, non è necessario che in esso siano in atto le tre dimensioni;[28] per Avicenna, dunque, il corpo è costituito come tale dalla forma della corporeità, intesa come principio formale nella categoria della sostanza, mentre le dimensioni in atto sono determinazioni accidentali che sono posteriori (in senso ontologico) rispetto alla forma della corporeità e alle forme specifiche che il corpo, già costituito come tale, riceve di volta in volta.[29] A differenza di Avicenna e in polemica con lui,[30] nel *De substantia orbis* Averroè insiste sulla tesi per cui la tridimensionalità indeterminata sarebbe la determinazione formale più fondamentale e costitutiva della prima materia (del mondo sublunare). La materia prima del mondo sublunare secondo Averroè non è mai denudata delle dimensioni indeterminate. Questa dimensionalità indeterminata precede la forma sostanziale e permane immutabile nel passaggio da una forma sostanziale all'altra, mentre le dimensioni determinate sorgono solo dopo che la forma sostanziale è divenuta inerente al soggetto.[31] Pertanto, secondo Averroè, la dimensionalità indeterminata

waren. Ich beziehe mich besonders auf die Auffassungen, die fast gleichzeitig der Christ Johannes Philoponus in seiner polemischen Schrift *De aeternitate mundi contra Proclum* und der Heide Simplikios in seinem Physikkommentar vorgebracht hatten». Donati 2002, 190 sottolinea con maggiore forza il fatto che Simplicio e Filopono non si limitano a intendere la tridimensionalità come la prima e più fondamentale determinazione formale della materia ma riducono senz'altro la materia a estensione indeterminata; per questo motivo nel 2002 Donati preferisce sottolineare l'affinità di Averroè con Proclo piuttosto che con Simplicio e Filopono (cfr. 191). Cfr. anche Donati 2007, 363.

28 Cfr. Avicenna Latinus, *Liber de Philosophia prima*, tr. 2, c.2, 69-82; Avicenna 2002, 145-65.

29 Cfr. Donati 2007, 364. Come rileva A. Hyman, «Avicenna's order is: corporeal form (which is different from indeterminate three-dimensionality), substantial form, dimensionality» (Averroes, *De substantia orbis* [Hyman], 53, n. 36).

30 Cfr. Averroes, *De substantia orbis* [Hyman], 63.

31 Averroes, *De substantia orbis* [Hyman], 53-55. Cfr. Averroes, *Sermo de substantia orbis*, Caput primum. Hyman rileva allora che «Analytically speaking, then, prime matter, according to Averroes receives quantity and form in the following order: first the 'indeterminate three dimension', then the substantial form, and, finally, the determinate dimensions that accompany the substantial form» (Averroes, *De substantia orbis* [Hyman], 53, n. 36). Ciò significa che mentre «Avicenna was of the opinion that the corporeal form is identical with the predisposition for receiving corporeal dimensions, but not with the dimensions themselves», Averroes «maintained that

è ciò che, non essendo per sé affetto dal mutamento sostanziale, al contrario, rende possibile questo stesso mutamento: solo perché la materia prima, che è per sé una e non divisa, riceve per prima cosa la dimensionalità indeterminata, essa diviene divisibile per mezzo della forma sostanziale e, d'altra parte, le forme sostanziali, che sono per sé non estese e non divise, diventano divisibili attraverso la divisione del sostrato. Averroè sostiene che se il sostrato del mondo sublunare non ricevesse la dimensionalità indeterminata prima di ogni forma sostanziale specifica, esso non potrebbe mai ricevere differenti forme simultaneamente (in differenti porzioni di esso) o differenti forme in successione (tramite generazione e corruzione),[32] come invece gli accade.

Ora Bruno si richiama a questa dottrina per sostenere che la materia non è pura potenzialità o mero inerte ricettacolo dei corpi, non è mai denudata e vuota, ma al contrario include e tiene implicate in sé tutte le dimensioni e tutte le forme. Se infatti la materia come tale e per sé non ha *certe* dimensioni (ovvero determinate dimensioni), essa non le ha non già perché – come crede Poliimnio seguendo gli Scolastici[33] – essa sia priva di dimensioni, ma al contrario perché le tiene tutte dentro di sé; pertanto, concependo le dimensioni indeterminate, dunque la dimensionalità in se stessa e indipendentemente da ogni misura determinata, come determinazione formale fondamentale della materia, Averroè mostrerebbe di aver ben compreso che tutti gli atti dimensionali sono implicati e contenuti nella materia:[34]

> Pol. *Dicunt tamen propterea, quod nullas habet dimensiones*. Dics. E noi diciamo, che *ideo habet nullas, ut omnes habeat*. Gerv. Per che volete più tosto che le includa tutte, che le escluda tutte? Dics. Perché non viene ad ricevere le dimensioni come di fuora, ma a mandarle a cacciarle come dal seno. Teo. Dice molto bene: oltre che è consueto modo di

the corporeal form is identical with the indeterminate three dimensions» (Averroes, *De substantia orbis* [Hyman], 41, n. 7).

32 Cfr. Averroes, *De substantia orbis*[Hyman], 60f. Cfr. Averroes, *Sermo de substantia orbis*, Caput primum. Cfr. Donati 2002, 190-191.

33 Cfr. Bruno 2007, 455: «Hier setzt Bruno klar seine Position – 'noi' – gegen Aristoteles und die Scholastik – 'dicunt' – ab». Sulla posizione di Tommaso, Donati 2007, 370.

34 Sul generale fraintendimento della posizione di Averroè da parte di Bruno, cfr. Leinkauf 2007, 459; Mancini 2000, 140. Sul rapporto tra Bruno e Averroè, cfr. Martin 2013, 78; Sturlese 1994; Canone 2004.

> parlare di Peripatetici ancora, che dicono tutti l'atto dimensionale, e tutte forme naturali uscire e venir fuori dalla potenza de la materia. Questo intende in parte Averroe il qual quantumque arabo et ignorante di lingua greca, nella dottrina peripatetica però intese più che qualsivoglia greco, che abbiamo letto: et arebbe più inteso, se non fusse stato cossí additto al suo nume Aristotele.[35]

Infatti, dalla tesi averroista – per la quale l'estensione tridimensionale (intesa come dimensionalità indeterminata indipendente da ogni misura) sarebbe la determinazione più fondamentale della materia, la determinazione, cioè, che rende la materia suscettibile di assumere una molteplicità di forme specifiche le quali, a loro volta, determinano l'assunzione di questa o quella dimensione determinata – risulterebbe chiaramente che la materia non riceve le forme dall'esterno, ma le porta in grembo e, anzi, le esprime traendole dal suo seno.

3 Plotino e Averroè nel *De la causa*

Ma Bruno non si ferma qui. Dopo avere collegato alla sua propria teoria della materia la dottrina averroista delle dimensioni indeterminate, egli si spinge fino a gettare un ponte tra Plotino e Averroè, evidenziando il legame teoretico che unirebbe la teoria della dimensioni indeterminate di Averroè alla teoria della materia di Plotino:

> Dice lui [Averroè] che la materia ne l'essenzia sua comprende le dimensioni interminate: volendo accennare, che quelle pervegnono a terminarsi, ora con questa figura e dimensioni, ora con quella e quell'altra, quelle e quell'altre; secondo il cangiar di forme naturali. Per il qual senso si vede che la materia le manda come da sé, e non le riceve come di fuora. Questo in parte intese ancor Plotino prencipe nella setta di Platone. Costui facendo differenza tra la materia di cose superiori et inferiori: dice che quella è insieme tutto; et essendo che possiede tutto, non ha in che mutarsi: ma questa con certa vicissitudine per le parti, si fa tutto, et a tempi e tempi, si fa cosa e cosa, però sempre sotto diversità, alterazione, e moto. Cossì dumque mai è informe quella materia, come né anco questa, benché differentemente quella e questa, quella ne l'istante de l'eternità, questa ne gl'istanti del tempo; quella insieme, questa successivamente; quella esplicatamente,

[35] DLC, 715-716.

> questa complicatamente; quella come molti, questa come uno; quella per ciascuno, e cosa per cosa; questa come tutto et ogni cosa.[36]

Bruno non tiene conto del fatto che Plotino in verità esplicitamente respinge l'idea che si possa attribuire grandezza alla prima materia[37] – il che già in sé aprirebbe un solco incolmabile tra Plotino e Averroè – e invita il suo lettore a cogliere l'intuizione comune che collegherebbe il pensiero di Averroè a quello di Plotino. Come Averroè, anche il filosofo greco avrebbe compreso che la materia è l' 'informe' in cui tutte le forme sono unite,[38] e che dunque la materia è in potenza tutti gli atti dimensionali (le dimensioni determinate) e tutte le forme particolari, non perché abbia la potenza di ricevere dal di fuori tutti questi atti e forme, ma perché li tiene tutti implicati in sé e dal suo stesso seno li esprime. Applicando alla teoria delle due materie di Plotino le nozioni cusaniane di complicazione e esplicazione, Bruno puntualizza qui che questo 'informe', per Plotino, sarebbe 'differentemente' a seconda del suo darsi come materia dell'intelligibile o come materia del sensibile: come materia dell'intelligibile, esso sarebbe tutte le cose insieme complicatamente e nell'istante dell'eternità, mentre come materia del corporeo sarebbe tutte le cose solo in successione ed esplicatamente. Se però, nonostante ogni differenza, «mai è informe quella materia, come né anco questa»,[39] Bruno crede di poter dedurre dalle stesse premesse plotiniane la conclusione secondo cui la materia non è mai vuota potenza puramente ricettiva.

Integrando originalmente il pensiero di Averroè e quello di Plotino nel suo proprio orizzonte teorico, e facendo riferimento non solo ai

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36 DLC, 716.

37 Su questo punto, cfr. Catana 2005, 46.

38 Come sottolinea Sturlese, Bruno «riferisce la teoria della materia come dimensioni non determinate del *De substantia orbis*; infine viene a saldare questa teoria con quella plotiniana della materia di "cose superiori"» (Sturlese 1994, 321-22). Bruno getta quindi un ponte tra Averroè e Plotino, 323: «Secondo Bruno il concetto di materia del *De substantia orbis* supera quello aristotelico, puramente astratto, di materia come potenza pura e nuda, trasformando questa in un principio fisico reale con un ruolo attivo nella produzione della forma [...] la coincidenza di potenza ed atto intravista da Averroè nella materia del mondo sensibile, Plotino l'ha affermata per la materia celeste [...]. Forte delle due autorità così saldate, Bruno giunge ad una seconda, decisiva conclusione, all'affermazione cioè dell'identità della materia di "cose superiori" e di "cose inferiori"».

39 DLC, 716.

propri principi, ma anche a «gli principii de l'altrui modi di filosofare»,[40] Bruno giunge quindi a inferire la sua tesi fondamentale, quella per cui la materia «non è quel *prope nihil*, quella potenza pura, nuda, senza atto, senza virtù e perfezzione»;[41] al contrario, essa è forma in quanto *possibilità assoluta di ogni forma* e, nel suo essere potenza, essa è già attualità;[42] essa è infatti attualità infinita implicita che è fonte di ogni attualità finita esplicata.[43]

40 DLC, 716.
41 DLC, 716-717.
42 Cfr. Leinkauf 2007, LXXXIV-LXXXIX.
43 Cfr. DLC, 721. Sul concetto bruniano di attualità come circolo dell'implicazione e dell'esplicazione, cfr. Mancini 2000, 140-141.

Materia invisibile: la dottrina degli effluvi in Campanella, Gilbert, Boyle

Silvia Parigi

> Le cose che colpiscono i sensi prevalgono su quelle che non li colpiscono immediatamente, anche ove queste ultime siano più importanti. Perciò l'indagine viene quasi a cessare con il venir meno degli aspetti visibili delle cose, perché l'osservazione delle cose invisibili è esigua e quasi inesistente. Così, ogni attività degli spiriti inclusi all'interno dei corpi tangibili rimane nascosta, e sfugge agli uomini. [...] La stessa natura dell'aria comune e di tutti i corpi più sottili di essa (che sono molti) ci è quasi sconosciuta.[1]

Questo passo baconiano riassume efficacemente alcuni significati che la dialettica visibile–invisibile assunse nell'età moderna: uno, il più noto, è quello che consiste nel mostrare, o rendere manifesto, ciò che precedentemente era ignoto o invisibile: l'America, le fasi di Venere, le macchie solari o i satelliti di Giove, gli *animalculi* microscopici. La volontà di ampliare il dominio del visibile e del manifesto attraversa l'età moderna, che è un'età di *scoperte*. Non è certo un caso che divenga consueto, nel Seicento, il paragone tra Cristoforo Colombo e Galileo Galilei.[2]

Ma il rapporto tra visibile e invisibile ebbe anche un altro ambito di significato, che, pur avendo svolto un ruolo molto importante nelle opere cinque–seicentesche, non ha ricevuto, finora, molta attenzione negli studi di storia della scienza: si tratta dei *fenomeni occulti*. Un vero e proprio ossimoro, dato che non si tratta di eventi od oggetti invisibili e ignoti, ma di *fatti* innegabili, *dati* empirici, che tuttavia appaiono misteriosi, singolari, meravigliosi *perché le loro cause sono invisibili e sconosciute*.

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[1] Bacon 2002, 50.
[2] Cfr. Parigi 2004.

Proprio al contrario delle celebrate *scoperte* compiute durante la rivoluzione scientifica, in questo caso non si tratta di rivelare mondi – telescopici, microscopici, geografici – dei quali non si sospettava l'esistenza, ma di essere capaci di stupirci di fenomeni familiari, sia per esperienza diretta, sia per le numerose testimonianze tramandate. Come afferma il gesuita Caspar Schott nella *Physica curiosa* (1662), non bisogna necessariamente stupirsi delle cose «nuove e peregrine», perché «si nascondono aspetti meravigliosi nelle cose che abbiamo ogni giorno davanti agli occhi».[3]

I fenomeni occulti o, per usare un termine molto diffuso nel XVII secolo, 'curiosi', sono *effetti visibili di cause invisibili*, eventi osservabili di cui si ignorano le ragioni; essi si mostrano disobbedienti alle regole codificate di una natura conforme a leggi, collocandosi ai confini di molte discipline, senza essere oggetto di nessuna, perché si trovano ai limiti della natura stessa: «oltrepassano l'umano, perché la natura oltrepassa l'umano, ma non è divina».[4]

Si tratta di un'intera classe di fenomeni naturali, che comprende diversi generi ed effetti della simpatia e dell'antipatia – le qualità occulte universali – accomunati dall'apparente azione a distanza: l'attrazione del magnete, dell'ambra gialla e dei corpi elettrici, la rotazione del girasole, l'emorragia spontanea e inarrestabile che si produce nel cadavere di un uomo morto di morte violenta in presenza del suo assassino, lo sguardo letale del basilisco e quello del lupo, che se guarda per primo un uomo lo fa ammutolire, e ancora i diversi generi di *fascinatio* – d'amore, d'odio, nonché la *ligatura ad impotentiam* –, i prodigiosi effetti del morso della tarantola e del cane rabbioso, il passaggio delle voglie dal corpo materno al feto, le cure magnetiche – come la polvere di simpatia, l'unguento armario, la *transplantatio morbis*,[5] i fenomeni di rabdomanzia riconducibili al *baculum divinatorium*,[6] il potere paralizzante della torpedine marina e dell'echeneide, che arresta le navi.

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[3] Schott 1662, «Praeloquium ad Lectorem», senza indicazione di pagine: «Latet in his, quae ab oculos nostros versantur quotidie, quod miremur. Est in Naturae majestate, quod humanam pascat curiositatem».

[4] Aristotele 1996, 1180; Aristotele 2003a, 139.

[5] Parigi 2011b.

[6] Parigi 2011a.

Questi temi vennero affrontati, senza soluzione di continuità, dalla magia naturale del Cinquecento e dalla 'fisica curiosa' del Seicento, resistendo alla rivoluzione scientifica. Sia la magia, sia la fisica ripresero questo vasto repertorio tematico dalla storia naturale, una disciplina che, a partire dalle sue origini pliniane e fino a Georges–Louis Leclerc de Buffon, consistette nella raccolta e nella descrizione, con intenti classificatori, dei più diversi generi di fenomeni naturali.

Per quanto strano possa sembrare, quei fatti «inconsueti, ma non per questo meno constatabili empiricamente»[7] venivano spesso equiparati, nei secoli XVI e XVII, ai fenomeni gravitazionali, luminosi, elettrici e magnetici: i medesimi autori – filosofi naturali e metafisici, teologi, demonologi e medici – esaminavano gli uni e gli altri nelle stesse opere. Scorrendo l'elenco delle esperienze curiose, ci si accorge che si tratta in gran parte di fenomeni 'magnetici', che riguardano sia la natura, sia l'uomo.

C'è un duplice *trait–d'union* che lega fatti apparentemente diversi e lontani: in primo luogo, essi sembrano implicare una misteriosa azione a distanza. Proprio per questo, costituiscono una sfida prima all'aristotelismo, caratterizzato dal motto secondo il quale: «nihil agit in distans nisi prius agit in medium», e successivamente al meccanicismo seicentesco, che tenta di spiegare con l'urto e l'incastro dei corpuscoli tutto ciò che sembra accadere per un'azione a distanza.

Inoltre, per un lunghissimo periodo di tempo, dall'età di Marsilio Ficino fino a quella di Isaac Newton, tutti quei fenomeni vennero spiegati in virtù dei concetti di *spirito* e di *effluvio*. Per usare le parole di Daniel Sennert (1572–1637), professore di medicina a Wittenberg, autore importante e prolifico nel campo della filosofia naturale:

> Vi sono, infatti, molti effluvi occulti, in virtù dei quali si producono numerosi effetti mirabili nelle cose naturali; poiché ignoriamo la natura di quegli effluvi, neghiamo spesso fenomeni che sono verissimi, e vediamo molti effetti, dei quali non riusciamo a trovare le cause.[8]

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7 Pacchi 1973, 99.

8 Sennert 1611, lib. II, parte II, cap. XII, in Sennert 1950, I, 369a: «Nam sunt multa occulta rerum effluvia, per quae multi et admirandi in rebus naturalibus effectus fiunt, quorum natura cum ignoremus, multa saepe, quae verissima sunt, negamus, multosque effectus quidem videmus, quorum tamen causas reddere non possumus». Si veda Parigi 2011c e la bibliografia lì citata.

In questo saggio, verranno analizzati alcuni tentativi di spiegazione dei *mirabilia naturae* – mirabili non perché non fossero evidenti, ma perché le loro cause erano occulte. Le spiegazioni che ne vennero proposte non potevano che essere congetturali, e chiamarono in causa *entità invisibili* – come, appunto, gli spiriti e gli effluvi – destinate a rimanere tali, malgrado i tentativi di renderli visibili compiuti da autori come Robert Boyle. Le tesi che sosterrò sono le seguenti:

1) Nella spiegazione dei fenomeni occulti, dal Rinascimento al Seicento, quello che cambia non è tanto la terminologia – i concetti di *spirito* (a sua volta considerato sinonimo di *specie* e *raggio*, *eidolon*, *vapore* e *atmosfera*) e di *effluvio* continuano, infatti, a venire usati indifferentemente –, quanto il significato dei termini. Gli spiriti e gli effluvi sono esalazioni dei corpi: ma, soprattutto a partire dalla *Physica* di Pierre Gassendi (1658), essi cessano di essere considerati i veicoli universali di forze, simpatie e antipatie occulte, per assumere una composizione corpuscolare, capace di agire penetrando nella *textura* porosa dei corpi. Il significato di *effluvio* tende a differenziarsi progressivamente da quello rinascimentale di *spirito* in virtù dell'interpretazione corpuscolaristica, in termini di atomi, pori e *textura* dei corpi, che del primo termine dettero Gassendi e poi soprattutto Boyle.

Occorre aggiungere che il corpuscolarismo degli effluvi non ammette, come si vedrà, un'interpretazione rigidamente meccanicistica. Il concetto di *textura*, infatti, unito a quello di effluvio, risulta perfettamente compatibile con la teoria della *materia actuosa* – dotata, cioè, di proprietà non riducibili alle mere caratteristiche quantitative delle particelle che la compongono, o all'incastro di parti piene e parti vuote, ma composta di corpuscoli dotati di un principio di movimento autonomo e perenne.[9]

Questo concetto era estraneo alla filosofia naturale cartesiana, mentre è presente nell'opera di Gassendi. E non è certo un caso se, mentre Cartesio aveva dedicato loro appena qualche riga dell'edizione francese dei *Principia* (1647),[10] le «cosiddette qualità occulte» sono oggetto di un'attenta e articolata trattazione nel quattordicesimo capitolo della *Physica* di Pierre Gassendi: *De qualitatibus vocatis occultis*. Proprio

[9] Cfr. Benitez et al. 2000. Sulla non coincidenza della teoria corpuscolare della materia con la filosofia meccanica, si veda Clericuzio 2000.

[10] Descartes 1994, vol. II, parte IV, CLXXXVII, 375–376, nota 2.

questo capitolo costituisce, a mio avviso, l'*incipit* della 'fisica curiosa' sei–settecentesca, che finisce così per costituire un aspetto della filosofia corpuscolare.

2) La teoria degli effluvi, pur avendo lo scopo di fornire una spiegazione dei fenomeni curiosi contrapposta a quella basata sulle qualità occulte della simpatia e dell'antipatia, si fonda a sua volta sulle dottrine magiche del *consensus mundi* e dell'aria come luogo e ricettacolo universale degli spiriti di ogni genere, «effluvio universale della terra», secondo l'espressione di Gilbert, nel quale confluiscono le esalazioni prodotte dalle singole cose. Questi due concetti segnano il passaggio – e al tempo stesso evidenziano la continuità – tra la magia naturale e la fisica, più o meno curiosa. Non basta, quindi, trasformare le qualità occulte – «agenti magici o spirituali senza apparente contatto corporeo» – in effluvi, per trasformare *ipso facto* un'azione da 'occulta' in 'fisica', né è corretto affermare che l'ipotesi degli *effluvia* era destinata a trasformarsi nella «moderna teoria atomistica».[11]

Nel breve spazio di questo articolo, il confronto sarà limitato a tre autori: Tommaso Campanella, William Gilbert e Robert Boyle. Nel primo, il concetto di effluvio non è ancora distinto da quello di spirito, vapore o esalazione, e i fenomeni magnetici vengono spiegati all'interno di una concezione magica del mondo, anche se comincia ad affacciarsi l'idea di una *proporzione* necessaria perché gli spiriti possano agire, passando da un corpo all'altro. Gilbert è il primo a utilizzare, nel Seicento, gli effluvi – concepiti come materiali, ma non corpuscolari – all'interno di un'opera che prende decisamente le distanze dalle 'follie' e dalle 'favole' della magia naturale. Gli effluvi costituiscono, per Gilbert, un modello esplicativo intermedio tra le qualità occulte della simpatia e dell'antipatia e il corpuscolarismo. Boyle, infine, è l'unico, nel Seicento, ad esporre una vera e propria *teoria* degli effluvi corpuscolari.

[11] Come sostiene, a proposito di Boyle, Chalmers 1937, 1042 e 1050.

1 Gli effluvi in un mondo animato: Tommaso Campanella

Tommaso Campanella scrive il *De sensu rerum et magia* intorno al 1590; l'opera esce a Francoforte, edita da Tobias Adami, nel 1620.[12] William Gilbert aveva pubblicato, nel frattempo, il *De magnete* (1600): Campanella afferma di averlo letto, ma di non averci trovato nulla che lo spingesse a cambiare opinione (*nolui opiniones meas mutare*).[13]

Lucidamente, Campanella individua la differenza essenziale tra la propria trattazione dei fenomeni magnetici e quella di Gilbert nel 'disprezzo' dimostrato da quest'ultimo per le simpatie e le antipatie. Si tratta di una differenza che concerne, al di là dei fenomeni magnetici, una visione del mondo: nel*De sensu rerum et magia*, Campanella difende energicamente la dottrina dell'animazione universale. Sia il mondo nella sua totalità, sia le sue singole parti – dal cielo alle stelle all'anima dell'uomo – sono dotati di una *virtus sensitiva* e motrice che è, in ultima analisi, di natura tattile. Il cosmo è dunque attraversato da un gioco incrociato di simpatie e antipatie, amicizie e avversioni tra i liquidi, le pietre e i metalli, le piante, gli animali e il corpo umano, legato al macrocosmo da una rete di 'simboli' che permettono, a chi li conosce, di comprendere 'tutto', anche se non 'del tutto' (*qui symbola animadvertit, omnia intelligit, licet non omnino*), perché «scientia haec infinita est».[14]

Nel *De sensu rerum* vengono esplicitate le dottrine magiche del *consensus mundi* e dell'aria come luogo e ricettacolo universale degli spiriti di ogni genere, che verranno reinterpretate da Gilbert, da Boyle e da altri autori seicenteschi in termini di effluvi, corpuscolari o meno.

> Non c'è dubbio, per gli scrittori sacri, che l'aria sia la parte meno pura del cielo, sempre infestata dai vapori e dal freddo, dall'ombra della terra. [...] È noto che lo spirito degli animali esala di continuo nell'aria, nella debolezza indotta dalla fatica e dalla fame, e nella repentina ricostituzione prodotta dal vino spiritoso, nonché dagli odori, si dimostra che lo spirito è aereo, e si nutre d'aria. Infatti, lo spirito viene subito oppresso dall'aria infetta, langue, e a fatica riesce

12 Campanella 1620. Cfr. Ernst 2002; Walker 2002, parte III, cap. VII.
13 Campanella 1620, lib. I, cap. VIII, 'Appendix', 30; cfr. anche lib. III, cap. XIII.
14 Campanella 1620, lib. IV, cap. XX, 369. Cfr. Bianchi 1982.

> a svolgere le operazioni vitali [...] poiché l'aria comune a tutti è infetta dai vapori fetidi che esalano dalla terra impregnata dalle piogge dopo una tremenda calura, oppure dalla moltitudine dei cadaveri o delle acque stagnanti.[15]

Il senso è aereo, ed esala verso il proprio simile, cioè nell'aria:

> Perciò l'aria vede con la luce, ode con i movimenti, odora con i vapori, gusta con la sottigliezza, con la pressione e con il freddo, con il calore tocca, si duole, gode, senza organi tutto sente e consente, e tutti questi sensi sono diverse modalità del tatto.[16]

Richiamandosi a Plinio e a Virgilio, Campanella attribuisce all'aria un'immanente «anima comune, che è a disposizione di tutti, tramite la quale tutti comunicano gli uni con gli altri»:[17] la stessa *cogitatio* è un «moto dello spirito» che, per quanto sottile, viene trasmesso all'aria, e per suo tramite può essere avvertito da altri uomini, «unde multa divinant in aspectu, et sermone, et nesciunt qua ratione».[18] Oltre ai vapori e agli odori, fetidi o grati, l'aria è piena di pensieri, intenzioni, e presagi di cose future, percepiti soprattutto dai melanconici, resi più sagaci dalla bile nera.[19]

«Aer per poros et respirationem communicat cum spiritu nostro in capite»: perciò gli animali e gli uomini, soprattutto se affetti da qualche malattia, presentono i cambiamenti di tempo «ex aere (*sic*!)

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15 Campanella 1620, lib. III, cap. VI, 216: «Dubium non extat apud scriptores sacros, quin aër sit pars coeli minus pura, infestata semper vaporibus et frigore, et umbra terrae. [...] Spiritus animalium in aere continuo exhalare palam est, in debilitate relicta ex labore et fame, et in repentina instauratione ex spirituoso vino, et ex odoribus, ostenditur spiritus esse aereus, aereque nutriri. Nam et infecto aere statim aggravatur spiritus, languescit, et vitae operationes aegre operari potest [...] quoniam aer omnibus communis, infectus est vaporibus foetidis ex terra exhalantibus post dirum aestum madefacta pluviis; aut ex multitudine cadaverum vel aquarum stagnantium». Tutte le traduzioni sono nostre.

16 Campanella 1620, lib. III, cap. VI, 218: «Ergo aer luce videt, motibus audit , vaporibus odorat, tenuitate gustat, compressione et frigore, caloreque tangit, dolet, gaudet, absque organis totus sentit, consentitque, et sensus hi omnes tactus sunt modi varii».

17 Campanella 1620, lib. III, cap. VII, 219: «Ergo immanet aer sicut anima communis, quae omnibus praesto est, et qua omnes communicant invicem».

18 Campanella 1620, lib. III, cap. VII, 219.

19 Campanella 1620, lib. III, cap. X.

mutatione».[20] Lo spirito è lo strumento universale delle azioni, e «agere est similitudinem suam effundere»:[21] così si spiegano le mirabili operazioni della natura.

> Come il senso del cane rabbioso si moltiplica nel morso, rendendoci canini, e il ragno tarantino con il morso modifica interamente la nostra struttura, così la remora fa in un legno idoneo, proporzionato alla sua passione; il leone teme il gallo, e il tamburo fatto di pelle di pecora subisce l'azione del tamburo fatto di pelle di lupo.[22]

La polarità magnetica viene inclusa da Campanella tra i fenomeni di amicizia e di odio:

> Il magnete attrae lo stupido, insensato ferro, e si indirizza costantemente al polo, per un mirabile istinto; la donnola, pur non volendo, spinta dall'istinto si getta nelle fauci del rospo, e viene divorata; un toro in fuga si ferma e si calma, se s'imbatte in un fico, per un istinto di natura. [...] Tutti questi esempi mostrano che c'è un senso e un consenso di tutte le nature.[23]

L'animismo più sfrenato – che spinge lo Stilese ad affermare di avere imparato per esperienza (*ego quoque experimento didici*) che il magnete 'mangia' la limatura di ferro come l'uomo si nutre di animali imperfetti – coesiste con la concezione degli spiriti – tra i quali rientrano gli odori, i vapori e la *virtus attractiva* – che emanano dai pori del magnete e di altri corpi magnetici, come il rospo, la remora e la torpedine, e si insinuano nei *pori* di altri corpi *proporzionati* o *amici*, come la donnola, la *macchina* della nave e la mano del pescatore, modificandone la struttura (*temperies* o *complexio*). Il corpo del leone abbonda di spiriti crassi, derivati dal suo naturale calore e dai cibi

20 Campanella 1620, lib. I, cap. VIII, 29.

21 Campanella 1620, lib. IV, cap. XI, 314.

22 Campanella 1620, lib. III, cap. XIV, 'Appendix', 258–259: «Et veluti sensus rabidi cani multiplicatu (*sic*!) in nobis, et reddit nos caninos, et aranea tarantina temperiem morsu immutat totam: Sic remora facit in ligno idoneo, proportionatoque ipsius passioni: Sicut leo aptus est pati a gallo, tympanum pecudis a lupino».

23 Campanella 1620, lib. I, cap. VIII, 25-26: «Nam magnes trahit stupidum, insensatumque ferrum, et ipse ad polum mirabili instinctu perpetuo dirigitur: Et mustela instinctu impulsa nolens ori bufonis illabitur, devoraturque; et taurus fugax, si ficulneam invenerit, sub ea instinctu naturae quiescit, deposita ira. [...] Haec exempla declarare omnia sensum et consensum omnium naturarum».

crudi; dal gallo, invece, emanano e si spargono nell'aria spiriti tenui e 'acuti', che 'penetrano' gli spiriti del leone, e li dominano (*redduntque reverentes*): per questo il grande e selvaggio leone teme il piccolo e innocuo gallo, come l'uomo teme i serpenti e i ragni, ed è atterrito dai rumori acuti, che generano nell'aria un moto capace di 'penetrare' il nostro spirito, di 'pungerlo' e ferirlo.[24]

Nell'opera di Campanella non è presente una teoria degli effluvi, e neppure una vera e propria dottrina degli spiriti, nei loro rapporti con la simpatia, l'antipatia, la *virtus attractiva* e l'azione a distanza. Si parla di 'pori' e di 'moti', che permettono al simile di «godere del simile», di «sentire e consentire», senza mai introdurre il necessario correlato di quei concetti: i corpuscoli.[25] Le apparenti azioni a distanza avvengono tramite la ricezione e la trasmissione degli spiriti nell'aria, o tramite la moltiplicazione degli spiriti, che hanno il potere di trasformare ciò in cui si imbattono (*alia in se convertere*), mutando la *temperies* degli uomini: ad esempio, il morso della tarantola o del cane rabbioso introducono nel corpo umano uno «spirito ardente», capace di alterarne la *complexio*, mutandola in quella dell'animale che lo ha morso.

«Ex eiusmodi sympathia et antipathia in mundo sensum, consensumque esse declaratur»: proprio questo «senso e consenso», la «simpatia e antipatia» vengono da Gilbert 'quasi disprezzate'. È questa la principale critica mossa da Campanella all'autore inglese, che pure – in modo contraddittorio, secondo Campanella – attribuisce al magnete un'anima, la cui *sphaera activitatis* è addirittura più estesa di quella dell'anima umana. Campanella rifiuta le spiegazioni date da Gilbert delle virtù elettrica e magnetica, ma le considera le uniche degne di essere discusse: «quae alii scriptores de magnete tradunt, negligenda sunt».[26] L'attrazione avviene, per Campanella, esclusivamente per una somiglianza di natura, ed esemplifica il «mundi consensum in suis partibus»: come il girasole si volge verso il sole, la farfalla vola verso la luce e i corpi umidi sono attratti dalla luna, così tra i poli celesti, quelli terrestri e quelli magnetici c'è una «simpatia di posizione». L'o-

24 Campanella 1620, lib. I, cap. VIII, 28-29.
25 Campanella 1620, lib. IV, cap. X, 301.
26 Campanella 1620, lib. I, cap. VIII, 35.

pera di Gilbert finisce per rafforzare la convinzione campanelliana che «sensum cunctis inesse rebus».[27]

2 Gli effluvi e la «philosophia magnetica»: William Gilbert

Nella 'Prefazione' al *De magnete* (1600), rivolgendosi al «candido lettore, studioso di filosofia magnetica», Gilbert sottolinea la novità della propria opera, che poggia su esperimenti 'sicuri', dimostrati «con fatica, notti insonni e grandi spese», e perciò si differenzia dalle 'opinioni' e dalle probabili 'congetture' dei filosofi, introducendo un «novus philosophandi genus». La 'scienza magnetica' è per quanti ricercano le cause ignote dei fatti più comuni, come di quelli più rari, non soltanto nei libri, ma nelle cose stesse. Gilbert prende decisamente le distanze dai «pagliacci letterati, grammatici, sofisti, retori da strapazzo», e afferma di mirare all'intelligibilità e alla chiarezza: se talvolta userà parole nuove, non lo farà, come gli alchimisti, allo scopo di nascondere e rendere oscure le cose, ma, al contrario, per portare alla luce ciò che è nascosto, ignoto e quindi ancora privo di un nome. Mentre rivendica l'indipendenza delle proprie teorie dall'autorità degli antichi, Gilbert non dubita che Aristotele, Tolomeo e Galeno adotterebbero, nel XVII secolo, le nuove opinioni[28]

> Ci sono due generi di corpi capaci di attrarne visibilmente altri con moti percettibili ai nostri sensi: i corpi elettrici e quelli magnetici. I corpi elettrici attraggono per mezzo di effluvi naturali umidi; i corpi magnetici, in virtù di efficienze formali, ovvero di una forza innata primaria.[29]

Prima di esporre le proprie teorie, Gilbert – procedendo in modo inconsapevolmente baconiano – intende sgombrare il campo dalle 'illusioni' degli autori antichi e moderni riguardo ai fenomeni magnetici: da Plinio e Tolomeo a Giorgio Agricola, da Galeno e Dioscoride al suo

27 Campanella 1620, lib. I, cap. VIII, 35.

28 Gilbert 1600, «Praefatio» (senza indicazione di pagine). Cfr. J. Henry 2001.

29 Gilbert 1600, lib. II, cap. IV, 65: «Cum vero duo sint corporum genera, quae manifestis sensibus nostris motionibus corpora allicere videntur, Electrica et Magnetica; Electrica naturalibus ab humore effluviis; Magnetica formalibus efficientiis, seu potius primariis vigoribus, incitationes faciunt». Tutte le traduzioni sono nostre.

traduttore cinquecentesco, Pietro Andrea Mattioli, che si è limitato ad aggiungere favole nuove, fino a Cardano, che non ha lasciato nulla che sia «degno di un filosofo». Tutti quelli che hanno cercato le cause dei moti magnetici nelle stelle (come Ficino, Paracelso e Fernel) o negli atomi, non hanno fatto altro che brancolare nel buio. Fracastoro, che pure viene giudicato un filosofo «di stampo non comune» ha sognato «montagne magnetiche iperboree», che attraggono gli oggetti ferrosi verso 'poli magnetici' non coincidenti con i poli terrestri. L'unico filosofo – nonché l'ultimo, prima di Gilbert – le cui ricerche sul magnete, considerato «una mistura di pietra e ferro, quasi pietra ferrea, o ferro lapideo»,[30] abbiano avuto qualche utilità, è stato Giovan Battista Della Porta, anche se il settimo libro della *Magia naturalis* assomiglia piuttosto a un repertorio di meraviglie, elencate senza conoscere adeguatamente i «moti magnetici», e corredate da 'falsissimi esperimenti'.[31]

«Talibus sese nugamentis et fictis fabellis delectant philosophi plebei»: quanto a lui, è convinto che

> quando la natura del magnete sarà stata svelata nel discorso che segue, e sarà stata messa alla prova dalle nostre faticose esperienze, allora le cause reali, benché nascoste e recondite, di questo grande effetto verranno portate alla luce, rese evidenti, dimostrate; allora ogni oscurità svanirà del tutto; ogni minima radice di errore sarà estirpata, buttata via e dimenticata; e, una volta gettate le fondamenta della grande scienza magnetica, essa apparirà in tutta la sua novità, così che gli intelletti elevati non possano più essere illusi da opinioni vane.[32]

Tali fondamenta sono costituite da un'applicazione della teoria degli *effluvia*, in chiave antimeccanicistica e anticorpuscolaristica, alle attrazioni elettrica e magnetica, delle quali vengono evidenziate le analogie e le differenze. Per questa parte della sua opera, Gilbert è

30 Della Porta 1589, 129. Questa definizione è riportata in Gilbert 1600, lib. II, cap. III.

31 Gilbert 1600, lib. I, capp. I, 6 e XIV.

32 Gilbert 1600, lib. I, cap. I, 7: «Sed postquam magnetica natura sequenti oratione reserata fuerit, et nostris laboribus et experimentis exculta, abditae et reconditae tanti effectus causae certae extabunt, probatae, ostensae, et demonstratae; simulque omnes caligines evanescent, omnesque errorum fibrae evulsae, neglectae iacebunt; et fundamenta inclitae philosophiae magneticae iacta, de novo apparebunt, ut excelsa ingenia non amplius otiosis opinionibus eludantur».

fortemente debitore verso il *De subtilitate* di Cardano, anche se prende polemicamente le distanze dai suoi precursori, che si sono occupati di quei fenomeni senza fare esperimenti e senza fornire dimostrazioni, contribuendo a rendere più oscuro l'argomento, trattato in termini «esoterici, astrusi, reconditi, occulti, da venditori di miracoli», «perché pochi filosofi sono autentici ricercatori, o hanno una conoscenza di prima mano delle cose»: la loro sterile filosofia poggia solo «su qualche parola greca o poco comune».[33]

L'attrazione esercitata dall'ambra (o *elektron*) si differenzia da quella del magnete sia perché la 'forza elettrica', a differenza di quella magnetica, deve essere 'risvegliata' per frizione, affinché la sostanza si riscaldi; sia perché la prima viene arrestata dall'interposizione di corpi, anche leggeri come un foglio di carta, mentre l'attrazione magnetica agisce attraverso i corpi interposti. Inoltre, una calamita può sollevare grandi pesi, mentre i corpi elettrici (non solo l'ambra, ma anche il diamante, lo zaffiro, il carbonchio, l'opale, il berillo, il cristallo di rocca) attraggono preferibilmente corpi leggeri, come le pagliuzze. D'altra parte, mentre il magnete attrae solo il ferro o un altro magnete, la forza elettrica è più generale, estendendosi a tutti i corpi leggeri.

Le differenze tra i movimenti elettrici e quelli magnetici dipendono dal fatto che i primi sono causati dalla materia di un corpo, e i secondi dalla sua forma: poiché la forma è più nobile, ha maggiori virtù o poteri; la materia, invece, è come «confinata in una prigione». L'emissione di effluvi materiali può spiegare, quindi, solo l'attrazione dei corpi elettrici, mentre gli effetti dei corpi magnetici sono dovuti alla propagazione di una 'forza' immateriale: sia gli effluvi, sia la forza sono circoscritti ad un *orbis virtutis*. La «sfera di influenza» di un corpo – concetto, questo, che sarà di fondamentale importanza per la storia del magnetismo – ha la stessa forma del corpo che circonda: sferica, nel caso della *terrella*; oblunga, se la pietra calamitata ha questa forma.[34]

La teoria degli *effluvia* viene usata da Gilbert per *negare l'azione a distanza*; è lui stesso, però, a rilevarne alcune contraddizioni. Innanzi-

[33] Gilbert 1600, lib. II, cap. II, 48: «quod ipsi philosophi plurimi nihil quaerentes, nullo rerum usu valentes, otiosi, et inertes, nihil suis monumentis proficiunt». Cfr. Cardano 2004, tomo I, 480-481.

[34] Gilbert 1600, lib. II, cap. VII.

tutto, se il postulato è che *tutti* i corpi emettono «radiazioni di effluvi», (*ex omnibus rebus minutissima corpora effluant*[35]), che bisogno c'è di strofinare i corpi elettrici, per liberarle? E perché i fenomeni magnetici non riguardano tutti i corpi? L'emissione continua di *effluvia*, inoltre, non comporta una perdita di sostanza, e quindi una diminuzione del peso dei corpi?[36]

La generalità del postulato permette di includere anche i moti gravitazionali tra quelli magnetici: infatti, se l'aria viene definita come «l'effluvio universale della terra» (*aër, qui est universale huius globi et telluris effluvium* ovvero *commune effluvium telluris*[37]), essa avrà il potere di riportare a terra quei corpi che ne fossero eventualmente separati. Quindi, perché gli effluvi emessi dai corpi producano effetti percepibili ed evidenti, occorre che essi si differenzino dall'aria circostante; altrimenti, finirebbero per dissolversi nella mescolanza degli effluvi emessi dalla terra e dai corpi terrestri, compreso il magnete.

È proprio ciò che accade nel caso degli effluvi elettrici, che hanno una natura umida – *pingue* e *glutinosa*, secondo Cardano – mentre i corpi densi, nei quali prevale la materia terrestre, emettono effluvi privi di potere attrattivo. Gli effluvi sono umori molto tenui e sottili, più rarefatti dell'aria: perciò, la loro propagazione ha bisogno di un mezzo nel quale l'umidità non prevalga, di un'atmosfera pura, di un'aria spazzata da venti settentrionali; altrimenti, l'umidità impedirebbe la fuoriuscita degli effluvi, bloccandoli alla loro origine e ricacciandoli, per così dire, dentro i corpi.

Proprio a causa della loro estrema sottigliezza, la fuoriuscita continua degli effluvi non pregiudica la conservazione della massa corporea: è come per gli odori, che esalano continuamente senza che il corpo ne sia consumato. Gli effluvi assomigliano a odori o vapori, hanno una natura continua piuttosto che discreta, e circondano i corpi, 'abbracciando' quelli vicini – che vengono attratti fino ad unirli – con una forza tanto maggiore, quanto più essi si trovano nelle immediate vicinanze dei corpi elettrici, e rientrano nella loro sfera di influenza.

35 Gilbert 1600, lib. I, cap. I, 3.

36 Questo – che fu un problema costante per i teorici degli *effluvia* – risaliva ad Epicuro, che attribuì al 'bombardamento' continuo di particelle presenti nell'aria circostante la mancata 'diminuzione' di un corpo, malgrado la continua emissione di *eidola* dalla sua superficie: cfr. Epicuro 1989, 47; Chalmers 1936 e Chalmers 1937.

37 Gilbert 1600, lib. II, cap. II, 51 e 57. Cfr. G. Freudenthal 1983.

Gli effluvi, simili a bastoncini (*materiales radii*[38]), si diffondono in tutte le direzioni: finché il loro potere attrattivo permane, i corpi vicini vengono risucchiati; quando esso viene meno, oppure un corpo si allontana dalla sfera di influenza dell'elettro, è la forza gravitazionale – cioè il campo magnetico terrestre – a prevalere.

Quando passa a spiegare i movimenti magnetici, Gilbert inizia con una precisazione terminologica che, come spesso accade, equivale a una presa di posizione teorica:

> Dopo aver trattato i corpi elettrici, dobbiamo adesso esporre le cause della coizione magnetica. Dico coizione, e non attrazione, perché il termine attrazione si è erroneamente insinuato nella filosofia magnetica, per l'ignoranza degli antichi.[39]

Gilbert non nega di avere usato quel termine, e di voler continuare ad usarlo per comodità, ma tiene a precisare che, ogni volta che parla di 'attrazione', interpreta questo termine nel significato di 'coizione'. Anche in questo caso, viene premessa una critica delle teorie precedenti: Gilbert rifiuta gli incastri di particelle e vuoti introdotti da Epicuro e ripresi da Lucrezio, nonché la teoria galenica, destinata ad avere tanta fortuna nel secolo XVII, del potere magnetico posseduto dai rimedi che permettono di espellere veleni, o di curare le ferite. Considera 'chiacchiere' le teorie di Cardano, che attribuisce alla natura fredda del ferro il suo potere di essere magnetizzato, o il ricorso di alcuni aristotelici alla 'forma sostanziale' del ferro e della calamita; ritiene 'assurde' teorie – come quelle dei maghi – che parlano di «lotte, sedizioni e congiure in una pietra».[40]

Il magnetismo non deriva, a giudizio di Gilbert, dalla causa formale di ciascun corpo, bensì dalla «forma delle prime e principali sfere»: il sole, la luna, le stelle, la terra; è una «forma primaria, radicale e astrale», unica, che «conserva e ordina la sua sfera»; è «quella autentica potenza magnetica, che chiamo forza primaria» (*vera est illa potentia*

[38] Gilbert 1600, lib. II, cap. III, 60.

[39] Gilbert 1600, lib. II, cap. III, 60: «De electricis posteaquam disputavimus, magneticae coitionis causae aperiendae sunt. Coitionem dicimus, non attractionem, quod male vocabulum attractio irrepsit in magneticam philosophiam, ex veterum ignorantia».

[40] Gilbert 1600, lib. II, cap. III, 62–63.

magnetica, *quam nos primarium vigorem appellamus*[41]). La terra, quindi, ha una natura magnetica, identica nel tutto e nelle singole parti, posseduta secondo una «mirabile proporzione originaria». Il magnetismo è una *forza*, che

> non deriva dal cielo nella sua totalità, né viene da esso generata per mezzo della simpatia, di influenze, o di qualità occulte; né deriva da qualche astro in particolare. C'è, infatti, nella terra un'autonoma forza o energia magnetica, così come il sole e la luna hanno ciascuno la propria forma; un piccolo frammento della luna si dispone, secondo le leggi lunari, in modo tale da conformarsi alla forma e al contorno della luna, o un frammento del sole al contorno e alla forma del sole, proprio come una calamita fa con la terra o con un'altra calamita, tendendo naturalmente verso la prima e attraendo la seconda.[42]

La forza magnetica, a differenza di quella elettrica, non agisce soltanto sulla superficie dei corpi, ma penetra al loro interno, attraversa gli ostacoli e persino la fiamma: quindi, mentre gli effluvi elettrici sono materiali – anche se non corpuscolari – non si può propriamente parlare di effluvi magnetici, per quanto «tenui e spirituali» li si voglia immaginare. L'energia magnetica non può assomigliare a un odore, come il 'vapore' del piombo, che penetra nell'argento vivo «liquido e fluido», determinandone la solidificazione, e polverizza un corpo «solido e denso» come l'oro. I chimici «non hanno torto» quando affermano che un corpo non può cambiare la struttura di un altro corpo senza penetrarlo: ma, nel caso dei corpi magnetici, la capacità di trasformare la sostanza materiale non è accompagnata da alcun mutamento evidente: non vi è dunque alcuna emanazione materiale che esce dal magnete e penetra il ferro, bensì soltanto una 'forma primaria' comune ad entrambi i corpi, accomunati dall'essere parti della terra, un «accordo delle parti perfette e omogenee delle sfere cosmiche con il tutto».[43]

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41 Gilbert 1600, lib. II, cap. IV, 65.

42 Gilbert 1600, lib. II, cap. IV, 65: »Haec nec a coelo toto derivatur procreaturve, per sympathiam, per influentiam, aut occultiores qualitates; nec peculiari aliquo astro: est enim suus in tellure magneticus vigor, sicut in sole et luna suae formae; frustulumque; lunae, lunatice ad eius terminus, et formam componit se; solareque; ad solem, sicut magnes ad tellurem, et ad alterum magnetem, secundum naturam sese inclinando, et alliciendo».

43 Gilbert 1600, lib. II, cap. IV, 67–68.

Non aveva dunque torto Talete a ritenere che l'*archè* sia la terra, e a considerarla animata, poiché essa sola possiede «*questa stupenda energia innata*, che non esiste negli altri elementi».[44] La natura autonoma, non indotta, dei movimenti magnetici – nella terra, negli astri e nella *terrella* – sembra indicare la presenza di un'anima, «l'atto immateriale di una forma».[45]

Non c'è dubbio che nel *De magnete* si trovi il primo tentativo esplicito e pienamente consapevole di sottrarre il magnetismo al dominio delle qualità occulte, anche se la spiegazione gilbertiana del magnetismo in virtù di una 'forza formale', animata e cosmica, finisce per assomigliare pericolosamente – come gli rimproverava Campanella – a quelle dottrine delle virtù occulte che Gilbert disprezzava. E infatti, quasi mezzo secolo dopo, una concezione analoga si troverà nel *Magnes*, *sive de arte magnetica* del poligrafo gesuita Athanasius Kircher (1641),[46] che però inclinerà verso gli aspetti meravigliosi dei fenomeni magnetici — ignorati dai suoi confratelli italiani[47] — con un'energia almeno pari a quella che Gilbert aveva impiegato nell'espungerli dalla sua trattazione.

3 Gli effluvi e i corpuscoli: Robert Boyle

Nella *History of Particular Qualities* (1670), Boyle intende rispondere a quella che gli appare la maggiore difficoltà della dottrina corpuscolare, cioè l'esiguo numero di princìpi (la materia e il moto locale), dai quali deriverebbe un grandissimo numero di qualità. A suo parere, a quei princìpi debbono esserne aggiunti altri, che, contrariamente alle sue stesse intenzioni, non sono *tutti* né *totalmente* ricavabili dai primi: accanto al moto e alla quiete, alla grandezza e alla figura, alla posizione e all'ordine delle particelle di materia – che, combinati insieme, costituiscono le *textures* porose delle sostanze – ci sono gli *effluviums*, emanazioni emesse da un gran numero di corpi a causa

44 Gilbert 1600, lib. II, cap. IV, 68: «in tam stupendo (ab aliis naturis diverso) vigore insito». Il corsivo è nostro.
45 Gilbert 1600, lib. II, cap. IV, 70.
46 Kircher 1641.
47 Si vedano, ad esempio, Garzoni 2005; Cabeo 1629.

del calore o dell'azione di altri agenti, i quali agitano le particelle più sottili e meno coese, provocandone la separazione.[48]

Tra i princìpi che producono la varietà delle qualità ce n'è uno palesemente non meccanicistico: la natura nel suo complesso (*the universal fabrick of things*[49]). Ciascun corpo, infatti, non deve essere considerato come se fosse posto nel vuoto, né come avente relazioni soltanto con i corpi più vicini, ma deve essere pensato nella sua collocazione universale, immerso in una moltitudine innumerevole di corpi più lontani o più vicini, grandi e piccoli, agenti particolari o universali.

Un anno più tardi, Boyle torna sull'argomento, nelle *Systematical or Cosmical Qualities of Things* (1671): per qualità 'sistematiche' o 'cosmiche' di un corpo, egli intende quegli attributi che non derivano dalle proprietà meccaniche delle parti che lo costituiscono, ma da 'agenti ignoti' (*unheeded agents*), presenti nella macchina del mondo, che, in virtù di «strumenti non percepiti» (*unperceived means*), possono produrre effetti rilevanti e visibili.

> A system so constituted as our world is, whose fabrick is such that there may be divers unheeded agents, which, by unperceived means, may have great operations upon the body we consider, and work such changes in it, and enable it to work such changes on other bodies, as are rather to be ascribed to some unheeded agents, than to those other bodies with which the body proposed is taken notice of to have to do.[50]

Quando Boyle si avventura nell'occulto, non lo fa per compiacersi dell'oscurità, ma perché è convinto, come Amleto,[51] che tra cielo e terra ci siano più cose di quelle presenti nella filosofia scolastica, e in quella meccanicistica. Questo fa di lui un *moderno*, anche quando le sue dottrine non assomigliano a ciò che è stato successivamente ritenuto 'vero' o 'scientifico'.[52]

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48 Boyle, *The History of Particular Qualities*, capp. I–III, Boyle 1965-66, vol. III, 292 ss.

49 Boyle, *The History of Particular Qualities*, capp. I–III, Boyle 1965-66, vol. III, 298 ss.

50 Boyle, *Of the Systematical or Cosmical Qualities of Things*, Boyle 1965-66, vol. III, 306. Questo passo è riportato da J. Henry 1994, che difende in modo convincente un'interpretazione non meccanicistica di questo, e di altri passi boyleani; cfr. anche Wilson 2002.

51 Questo suggestivo paragone chiude il saggio di John Henry.

52 Debus 2002, vol. II, cap. VII, 473 ss. analizza le influenze paracelsiane ed helmontiane sulla filosofia naturale di Boyle.

Dal confronto tra la *universal fabrick of the world* e il «consenso del mondo» di cui parlava Tommaso Campanella, basato sulle azioni a distanza della simpatia tra le cose simili e dell'antipatia tra quelle dissimili, emergono differenze che vanno ben oltre la portata semantica - meccanicistica o vitalistica - del sostantivo. Boyle, a differenza di Campanella, è consapevole di stare utilizzando un concetto poco chiaro, che necessita di estrema cautela teorica: egli deve limitarsi - cosa che del resto fa spesso, anche nella parte sperimentale della sua filosofia - ad accenni e suggerimenti (*suspicions*) riguardo agli *unheeded agents* responsabili delle qualità occulte, o 'cosmiche', dei corpi: potrebbero essere, ad esempio, «peculiar sorts of corpuscles that have yet no distinct name»,[53] oppure potrebbe trattarsi di effluvi sottili («unobserved sorts of effluvia in the air»).

Questi effluvi sono ignoti, per il momento, ma Boyle rifiuta di considerarli agenti occulti: con uno dei suoi efficaci paragoni, egli osserva che anche quegli «sciami di vapori che si muovono in una data direzione tra il nord e il sud» erano sconosciuti, prima che Gilbert dimostrasse che la terra è un grande magnete.[54] Parlare di ipotetici effluvi e 'qualità cosmiche' non equivale affatto a reintrodurre le qualità occulte degli scolastici nella nuova filosofia, meccanica e sperimentale, della quale Boyle si considera a buon diritto un esponente:

> lest you should think, that under the name of cosmical qualities I should introduce chimaeras into natural philosophy, I must betimes advertise you that you will meet with divers particles in the following discourse, fit to shew that these qualities are not merely fictitious qualities, but such whose existence I can manifest, not only by considerations not absurd, but also by real experiments and physical phaenomena.[55]

Gli effluvi hanno un posto importante nella filosofia naturale boyleana: ad essi sono specificamente dedicati gli *Essays of the strange Subtilty, great Efficacy, determinate Nature of Effluviums* (1673), seguiti, un anno più tardi, dai *Suspicions about some Hidden Qualities in the Air*.

53 Boyle, *Cosmical Suspicions*, Boyle 1965-66, vol. III, 316.

54 Boyle, *Cosmical Suspicions*, Boyle 1965-66, vol. III, 316 parla di «a swarm of steams moving in a determinate course betwixt the north pole and the south».

55 Boyle, *Cosmical Qualities*, cap. II, Boyle 1965-66, vol. III, 307. Cfr. J. Henry 1986 e J. Henry 1994.

Il presupposto – che Boyle condivide, oltre che con William Gilbert, con Kenelm Digby e con il gesuita Caspar Schott[56] – è che anche i corpi duri e solidi più 'insospettabili' emettano effluvi e abbiano atmosfere; tali effluvi sono composti di 'corpuscoli invisibili', intermedi tra i corpi visibili e le sostanze immateriali, e possono spiegare la maggior parte dei 'fenomeni difficili' della natura meglio delle forme sostanziali, di cui gli aristotelici forniscono descrizioni pertinenti piuttosto a sostanze spirituali, pur considerandole materiali.

Non soltanto i liquidi evaporano, ma anche i corpi solidi e pesanti emettono 'aliti': questo è un postulato sia della filosofia atomistica di Leucippo, Democrito ed Epicuro, sia della filosofia cartesiana, che sostituisce al moto originario dei corpuscoli quello della materia sottile. È da notare che Boyle include tra i corpuscolaristi molti 'peripatetici moderni', che spiegano le operazioni magnetiche con l'emissione di particelle.[57]

Boyle 'sospetta' che l'aria non sia dotata soltanto delle qualità note a tutti del caldo, del freddo, del secco e dell'umido, e di quelle meno ovvie, da poco scoperte dai filosofi e dai chimici, come la gravità, l'elasticità e la capacità di rifrangere i raggi luminosi; oltre a queste, vi sarebbero, nell'aria, qualità 'nascoste', attribuibili ad 'effluvi eterogenei', provenienti dai corpi terrestri - sia solidi, sia fluidi - ma anche dalle profondità della terra o dai corpi astrali (considerati 'magneti celesti').

> The sun and planets (to say nothing of the fixed stars) may have influences here below distinct from their heat and light. On which supposition it seems not absurd to me to suspect, that the subtil, but corporeal, emanations even of these bodies may (sometimes at least) reach to our air, and mingle with those of our globe in that great

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56 Cfr. Digby 1970, 165: «every body whatsoever, doth yield some steame, or vent a kind of vapour from it selfe»; Schott 1664, vol. I, cap. I, 217: «Nam non terra tantum, et aqua, sed res aliae quaecunque, ut flores, fructus, animalia, mineralia, liquores omnes, aliaque quaevis mista, calore seu solis ac stellarum, seu subterraneorum ignium, seu innato ac proprio, agitata ac resoluta, emittunt in aere effluvia sua: quae aliud non sunt, quam corpuscula quaedam minima instar atomorum».

57 Boyle, *Notes about the Atmospheres of Consistent Bodies here below*, Boyle 1965-66, vol. III, 278-279, 281. Sulla concezione boyleana degli effluvi, cfr. Anche Thorndike 1923-1958, vol. VIII, cap. XXVIII, 174 ss.

receptacle or rendesvous of celestial and terrestrial effluviums, the atmosphere.[58]

L'aria non è quindi un corpo elementare (*a simple and elementary body*), ma un «confuso aggregato di effluvi».[59] Questa dottrina assomiglia molto a quella di Gilbert; rispondendo a un'obiezione che Gilbert stesso aveva sollevato, Boyle non esclude che, quando un corpo emette una grande quantità di effluvi capaci di riempire, per rarefazione e dispersione, uno spazio molto esteso, la sua massa (*molis*) o peso possa subire un 'esiguo decremento'.[60] Non arriva, però, come Henry Power nella *Experimental Philosophy* (1664), a calcolare la perdita di peso subìta da una cipolla dopo due mesi e mezzo per la «continua dispersione di odore».[61] Le qualità dell'aria, per Boyle, non devono essere concepite, scolasticamente, come «abstracted beings», ma, concretamente, come «corpuscoli dotati di qualità, o capaci di generarle nelle sostanze in cui penetrano, o nelle quali abbondano».[62]

Nel periodo di tempo che intercorre tra Tommaso Campanella e Robert Boyle, la dottrina, neoplatonica e magica, della presenza dello spirito (o degli spiriti) nell'aria si trasforma nella teoria corpuscolaristica degli effluvi, la quale a sua volta finisce per confluire nella teoria 'scientifica' della natura composita dell'aria, che cessa di venire considerata un elemento, per diventare un fluido elastico.

A differenza dei filosofi scolastici e 'meccanici', Boyle rende universale l'emissione di effluvi: a quelli emessi dai corpi misti sublunari, si aggiungono gli effluvi sotterranei e le esalazioni dei 'magneti celesti'. Con la presenza di 'ignoti effluvi' – o 'esalazioni velenose', emesse dai luoghi sotterranei soprattutto in occasione di frane o terremoti – in tempi e luoghi determinati, si potrebbero spiegare, ad esempio, le epidemie che scoppiano improvvisamente in alcune regioni, e sono

58 Boyle, *Suspicions about some Hidden Qualities in the Air*, Boyle 1965-66, vol. IV, 85; cfr. anche *Cosmical Qualities*, Boyle 1965-66, vol. III, 307.

59 Boyle, *Hidden Qualities in the Air*, Boyle 1965-66, vol. III, 85. Sulla concezione boyleana dell'aria, e sul dibattito in corso nella seconda metà del Seicento riguardo alla sua composizione, cfr. Frank 1983, capp. V, IX, X; Guerlac 1977, 245–274.

60 Boyle, *Essay of the Strange Subtilty of Effluviums*, Boyle 1965-66, vol. III, 662, 670 ss.

61 Power 1966, b. I, *observat.* XXV, 29. Cfr. Cowles 1934.

62 Boyle, *Hidden Qualities in the Air*, Boyle 1965-66, vol. IV, 85: «corpuscles endued with qualities, or capable of producing them in the subjects thay invade and abound in».

talvolta circoscritte a determinate specie di animali o categorie di esseri umani: Dionigi di Alicarnasso parla di una pestilenza che uccideva solo le vergini, e Cardano di un'altra che, a Basilea, mieteva con oculatezza le proprie vittime solo tra gli svizzeri, risparmiando gli italiani, i francesi e i tedeschi. Ma basta che l'aria si muova, o che la terra emetta effluvi di qualità contraria, perché la peste si sposti in un altro luogo, oppure si esaurisca.[63] L'ultima grande ondata epidemica, ad esempio, è cessata all'improvviso in Egitto proprio mentre infuriava in Europa, nel mese di giugno, perché è stata spazzata via da venti boreali: con i «cambiamenti d'aria» si potrebbe spiegare la presenza intermittente della peste in Egitto.[64]

Proprio la presenza di effluvi – non generale, e quindi non riconducibile a leggi universali – permette a Boyle di introdurre un'importante distinzione tra le 'leggi' o 'regole generali' della natura («laws more properly so–called»), che tuttavia Boyle non concepì mai come formule matematiche, e i «customs of nature», comportamenti abituali, limitati nel tempo e nello spazio.[65]

> I have some time suspected that there may be in the terrestrial globe itself, and the ambient atmosphere, divers, whether laws or customs of nature, that belong to this orb, and may be denominated from it, and seemed to have been either unknown to, or overseen by both scholastical and mathematical writers.[66]

L'incontro degli effluvi corpuscolari – inclusi quelli sotterranei e astrali – con la *texture* dei corpi, determinata dalle particolari figure e grandezze dei pori, può spiegare anche le volgari simpatie e antipatie:

> For what we call sympathies and antipathies depending indeed on the peculiar textures and other modifications of the bodies, between whom these friendships and hostilities are said to be exercised, I see

63 Boyle, *Hidden Qualities in the Air*, Boyle 1965-66, vol. IV, 94. Si vedano anche *Of Celestial and Aerial Magnets*, Boyle 1965-66, vol. IV, 98; *Cosmical Qualities*, Boyle 1965-66, vol. III, 307; *Cosmical Suspicions*, Boyle 1965-66, vol. III, 318–319 e 321–322; *An Experimental Discourse of some Unheeded Causes of the Salubrity and Insalubrity of the Air*, Boyle 1965-66, vol. V, 40.

64 Boyle, *Usefulness of Experimental Natural Philosophy*, part II, sec. I, *essay* V, cap. XIV, Boyle 1965-66, vol. II, 179 ss.

65 R. Boyle, *Cosmical Suspicions*, Boyle 1965-66, vol. III, 318.

66 R. Boyle, *Cosmical Suspicions*, in Boyle 1965-66, vol. III, 318.

> not, why it should be impossible, that there be a *cognation* betwixt a body of a *congruous or convenient texture*, (especially as to the shape and size of its pores,) and the effluviums of any other body, whether subterranean or sidereal.[67]

Secondo certi autori 'mistici', la pietra filosofale (*philosophical magnet*) attrarrebbe lo *spiritus mundi*: ma Boyle, che non capisce le loro 'astrusità', preferisce ricondurre l'attrazione magnetica a un contatto di effluvi, anche se «non osa negare» (*I dare not deny it to be possible*) la possibilità di un'attrazione a breve distanza, nel caso di quei corpi elettrici e magnetici, capaci di «andare a prendere» (*fetch in*) i vapori (*steams*) che passano nelle loro vicinanze.[68] Vi sono corpi, cioè, che si comportano come magneti, e possono quindi essere considerati «*receptacles*, if not also *attractives*, of the sydereal, and other exotic effluviums, that rove up and down in our air».[69]

Gli effluvi possono spiegare le attrazioni a distanza *per invisibilia*, come quelle elettrica e magnetica, nonché l'azione delle *sympathetick medicines*:[70] la polvere di simpatia, l'unguento armario e la *transplantatio morbis*. Essi possono essere interpretati meccanicisticamente sia in termini di pressioni esercitate sulla massa di aria circostante, che spingerebbe il corpo attratto verso il magnete o il succino, sia in termini di incastri tra i corpuscoli che compongono gli effluvi e i pori dei corpi attratti.

Boyle elenca diligentemente le diverse ipotesi in campo: il 'vento' elettrico di Cabeo, il quale ha proposto una spiegazione meccanicistica «though a Peripatetick and commentator on Aristotle»; le 'particelle striate' o le fasce sottili di materia eterea dei cartesiani; «certain rays or files of unctuous strings», che secondo Gilbert e Digby, una volta cessata l'agitazione dei corpuscoli che li compongono per effetto della condensazione, si contraggono, elastici come le corde di un liuto, e portano con sé i corpi leggeri ai quali si sono 'agganciati' con le

67 R. Boyle, *Hidden Qualities of Air*, Boyle 1965-66, vol. IV, 95. Il corsivo è nostro.
68 Boyle, *Hidden Qualities of Air*, Boyle 1965-66, vol. IV, 96. L'azione a breve distanza degli effluvi magnetici era stata ipotizzata anche nella *Usefulness*, part II, sect. I, *essay* V, cap. XIII, Boyle 1965-66, vol. II, 172.
69 Boyle, *Hidden Qualities in the Air*, Boyle 1965-66, vol. III, 95. Il corsivo è nostro.
70 Boyle, *Usefulness*, part II, sect. I, *essay* V, cap. XI, 164 ss. Cfr. Parigi 2011b.

loro estremità.[71] Quello che sta a cuore a Boyle non è tanto stabilire una volta per tutte quale sia l'ipotesi *vera* riguardo alla natura e alle cause dei fenomeni elettrici (ciò che è impossibile sperimentalmente, anche se la teoria dei 'viscous strings' gli appare la più probabile), quanto piuttosto *escludere*, sulla base di *tutte* le ipotesi proposte, che l'elettricità sia una qualità occulta, che deriva dalla forma sostanziale dei corpi.

Nel primo dei tre saggi espressamente dedicati agli effluvi, Boyle, dopo aver ribadito la compatibilità di tale ipotesi con le teorie fisiche più diffuse e accreditate nel suo tempo – quella atomistica e quella, cartesiana e aristotelica, della divisibilità infinita della materia –, riporta gli esperimenti che ha fatto per 'dedurre' i corpuscoli invisibili dai loro effetti visibili: la trasformazione dell'acqua in vapore per mezzo di una eolipila, ma anche la «sfera di attività» dei corpi, cioè la grande quantità di spazio che può essere riempito da una piccola quantità di materia rarefatta, costituiscono altrettante prove dell'esistenza di effluvi sottili.

Boyle racconta di avere applicato cantaridi essiccate sul proprio collo, e di avere provato un forte dolore alla vescica, che viene attribuito ad «effluvi materiali» (*material effluxes*) penetrati nella massa del sangue attraverso i pori della pelle. In modo analogo si spiega il ben noto potere paralizzante della torpedine marina: l'apparente azione a distanza, attraverso esalazioni 'scagliate' (*darted*) nell'aria, non cessa di imbarazzare Boyle, che preferisce attribuirla all'emissione, da parte dell'animale, di 'aliti velenosi' (*poisonous steams*) i quali, introducendosi attraverso i pori della pelle del braccio, vanno a ledere le «parti nervee e muscolari» dell'arto, paralizzandolo.

Molti esempi e racconti analoghi si possono trovare – dice Boyle – negli scritti sulle 'qualità occulte', nessuno dei quali, significativamente, viene citato: lui si limita a fare ancora un unico riferimento agli effluvi magnetici, capaci di attraversare ogni genere di corpi senza

[71] Boyle, *Of the Cause of Attraction by Suction*, cap. I, Boyle 1965-66, vol. IV, 129 ss.; *Experiments and Notes about the Mechanical Production of Magnetism*, Boyle 1965-66, vol. IV, 340 ss.; *Experiments and Notes about the Mechanical Origin or Production of Electricity*, Boyle 1965-66, vol. IV, 345, 346, 349. Cfr. Hall 1965, 250–251. L'autrice propone un'interpretazione meccanicistica della filosofia naturale boyleana anche in Hall 1958; una diversa interpretazione è stata recentemente avanzata da Clericuzio 1990 e Clericuzio 2000, cap. 4.

incontrare resistenza.[72] Non rinuncia, però, ad includere, tra le prove sperimentali della meravigliosa sottigliezza degli effluvi, quegli 'odorable steams' che i piedi di alcuni animali lasciano sul suolo, e che si disperdono in un'ampia porzione di atmosfera, risultando sensibili al delicato olfatto dei cani, nonché il contagio (*fomes*) di malattie epidemiche, come la peste, che può rimanere racchiuso anche per anni in determinati oggetti o indumenti, senza consumarne la materia.[73] Altrove aveva elencato – tra le prove *a posteriori* dell'emissione universale (sia da parte delle sostanze fluide, sia da parte dei corpi 'consistenti') di quelle «colonies of particles» che costituiscono i vapori – le esalazioni odorose emesse da sostanze aromatiche come la menta, l'assenzio, la ruta, ma anche dai corpi elettrici e dal marmo bianco lavorato, nonché i sali volatili che si ottengono per distillazione e le virtù mediche delle pietre: ad esempio, le proprietà antiemorragiche dell'ematite.[74]

Nel saggio sulla natura degli effluvi, Boyle attacca i filosofi 'volgari', che si sono astenuti da tale ricerca adducendo come pretesto l'invisibilità delle emanazioni, di cui a stento si sono degnati di ammettere l'esistenza. Sorprendentemente, l'autore che fa eccezione, e con il quale Boyle ingaggia una disputa, è Aristotele. La sua dottrina, e sulla sua scia, quella degli Scolastici, è però molto superficiale: nelle *Meteore*,[75] Aristotele si limita infatti a distinguere due generi di esalazioni, emesse rispettivamente dalla parte terrestre e da quella acquea del 'nostro globo': le esalazioni calde e secche, emesse dalla terra, vengono chiamate anche 'fumi', mentre quelle calde e umide, emesse dall'acqua, sono i 'vapori'. Tale distinzione, come le altre classificazioni aristoteliche, non è utile per tre motivi: sia perché lascia fuori più di quello che include – in questo caso, tutte le esalazioni emesse dai corpi misti, tanto varie quanto i corpi stessi –; sia perché le differenze tra l'uno e l'altro genere di emanazioni – come quelle tra

72 Boyle, *Strange Subtilty of Effluviums*, capp. I, III, IV, VI, Boyle 1965-66, vol. III, 661, 664–665, 669, 674.

73 Boyle, *Strange Subtilty of Effluviums*, cap. VI, Boyle 1965-66, vol. II, 674-676.

74 Boyle, *The Atmospheres of Consistent Bodies*, Boyle 1965-66, vol. III, 279, 286–287.

75 Aristotele 2003a, lib. I, cap. III, 340b. Boyle non riporta fedelmente il passo di Aristotele, che aveva distinto, nell'aria, una parte – quella più vicina alla terra – umida e calda, perché contiene esalazioni terrestri e vapori acquei, e un'altra parte – quella contigua al fuoco – calda e secca.

'cornuti' e 'bipedi' – sono minori di quelle riscontrabili all'interno di ciascun genere; sia, infine, perché le classificazioni aristoteliche non danno informazioni sulla specifica *natura* di ciò che descrivono: come la definizione «privo di corna» – valida per l'uomo, per l'aquila e per l'usignuolo – non dice nulla sulla natura di tali animali, così parlare di esalazioni calde e fredde, secche e umide non aiuta a comprendere gli effluvi emessi da sostanze così diverse come l'oppio, il tabacco, le cantaridi o l'argento vivo.[76]

Ma la *pars construens* del saggio boyleano appare tutt'altro che decisiva: a suo avviso, gli effluvi hanno una natura corpuscolare, sono vari come i corpi che li emettono, e probabilmente ne condividono la natura. Le sue congetture possono essere però dimostrate *rendendo visibili gli effluvi*, come accade nelle operazioni chimiche di distillazione, sublimazione e condensazione: il caso più semplice è quello del vapore acqueo, che vaga invisibile nell'aria, finché non si condensa, a contatto con una superficie fredda, oppure precipita sotto forma di pioggia o di rugiada, rivelando la sua natura acquosa. Ci sono, inoltre, gli olii essenziali, ovvero gli effluvi condensati delle sostanze vegetali, che conservano il colore, l'odore e il gusto delle sostanze che li hanno emessi.

Persino il tatto, tradizionalmente considerato il più ebete (*dull*) dei sensi, più grossolano nell'uomo rispetto alla maggior parte degli altri animali, può avvertire gli effluvi, presentendo, in certi casi, l'avvicinarsi di una tempesta o un semplice cambiamento meteorologico, perché sia le parti sotterranee, sia i corpi terrestri e celesti impregnano abbondantemente l'aria di esalazioni – destinate, questa volta, a rimanere invisibili, ma sensibili ad animali o persone (di solito, malati, feriti o gentildonne) dal temperamento (*complexion*) più delicato.[77]

La cautela di Boyle è l'equivalente soggettivo dei «customs of nature»: egli si guarda bene dall'asserire che tali fenomeni siano *costanti*; gli basta che siano *consueti*. Ma è convinto che, se avessimo organi di senso più acuti, potremmo distinguere la varietà degli effluvi come vediamo le diverse specie di uccelli, o come percepiamo, al microscopio,

76 Boyle, *Of the Determinate Nature of Effluviums*, cap. I, Boyle 1965-66, vol. III, 689 ss.

77 Boyle, *Of the Determinate Nature of Effluviums*, cap. III, Boyle 1965-66, vol. III, 691–692; cap. IV, 693–694. Lo stesso concetto era stato espresso nella *Usefulness*, part II, sect. I, *essay* V. cap. XIV, 176.

molte differenze di grandezza, figura e colore nei granelli di sottile sabbia bianca, indifferenziati ad occhio nudo: in tal caso, potremmo ricondurre la varietà degli effluvi a differenze di grandezza, figura, moto e persino di colore.[78]

Pochi anni prima, Henry Power, nella *Experimental Philosophy*, la prima opera di microscopia pubblicata in Inghilterra, si era dichiarato convinto che i progressi della diottrica avrebbero prima o poi consentito la visibilità degli *effluvia*:

> If the dioptricks further prevail, [...] we might hope, ere long, to see the magnetical effluviums of the loadstone, the solary atoms of light (or *globuli aetherei* of the renowned Des Cartes), the springy particles of air, the constant and tumultuary motion of the Atoms of all fluid bodies, and those infinite, insensible Corpuscles (which daily produce those prodigious (though common) effects among us): and though these hopes be vastly hyperbolical, yet who can tel how far mechanical industry may prevail; for the process of art is indefinite, and who can set a *non–ultra* to her endevours?[79]

Malgrado le sue fiduciose aspettative, che gli facevano sperare di poter osservare, prima o poi, al microscopio «the aerial *genii*, and even spiritualities themselves», Power dovette confessare di non possedere occhi così acuti, o lenti abbastanza perfette da vedere gli effluvi corporei: non solo quelli emessi dal magnete, ma neppure quelli più grossolani che esalano dai corpi elettrici e aromatici.

Le frequenti oscillazioni di Boyle sulla natura e sul modo di agire degli effluvi invisibili – riguardo ai quali è attingibile solo un sapere incerto e congetturale – dipendono dalla necessità di rendere conto dell'apparente azione a distanza, che sembra indubitabile nei casi di contagio, e in molti altri, raccontati sulla base dell'autorità di Daniel Sennert e Pietro Andrea Mattioli. I vapori delle sostanze oppiacee, se inspirati, inducono un sonno letargico, mentre quelli emessi dalle sostanze purgative sono più efficaci della somministrazione delle sostanze stesse; non solo il morso, ma anche il semplice alito, o l'odore del cane rabbioso trasmettono la rabbia; la pietra chiamata dai chimici *realgar*, usata anche dai pittori, provoca il gonfiore del volto, il deliquio,

78 Boyle, *Determinate Nature of Effluviums*, cap. IV Boyle 1965-66, vol. III, 693.
79 Power 1966, «The Preface to the Ingenious Reader», senza indicazione di pagine.

le vertigini; vi sono velenose piante americane sulle quali non si posano gli uccelli. Gli stessi chimici, se non prestano la debita attenzione nelle operazioni di distillazione e di sublimazione di sostanze come lo zolfo, l'antimonio e l'arsenico, possono essere colpiti dai vapori nocivi che si sprigionano da tali sostanze. Questi odori e vapori non devono essere considerati *species*, alla maniera degli Scolastici, bensì «sciami di effluvi» *invisibili* emessi nell'aria, di cui Boyle intende mostrare le azioni e le operazioni *visibili*, tramite gli esperimenti chimici che descrive.[80]

L'ultimo argomento affrontato è quello del modo di agire, ovvero dell'efficacia, degli effluvi, che viene fatta dipendere sia dal numero dei corpuscoli, sia dalla loro natura 'penetrante' – per la quale essi possono insinuarsi nei pori di un corpo e dilatarli, agendo come cunei e alterandone così la struttura (*texture*) –, sia dalla velocità del loro moto, senza dimenticare il loro accordo con i «catholic agents of the universe».

Tra gli effetti prodotti senza contatto apparente dagli effluvi, Boyle elenca la luce, sulla cui natura corporea o incorporea è in corso un acceso dibattito; le convulsioni, simili a quelle epilettiche, e altri disturbi del sistema nervoso – sia maschile, sia femminile – prodotte da alcuni odori in certi soggetti; l'acidità della birra, causata dai tuoni; gli aborti indotti dai fumi di candele. Lui stesso ha calmato alcune isteriche facendo loro odorare tabacco o sali di ammoniaca, e ha utilizzato suffumigi di corna di cervo contro l'epilessia, con frequente (non costante) successo.[81] I suffumigi possono rivelarsi più efficaci ove non vengano aspirati con la bocca o con le narici, ma con altre parti del corpo, come la vagina e l'ano: Paracelso e Jan Baptiste van Helmont raccomandano, per le malattie dell'utero, il fumo emesso dalle verruche presenti sulle zampe dei cavalli.[82]

Boyle è convinto che trascurare gli effluvi, negandone l'esistenza o l'efficacia, sarebbe un errore, e avrebbe conseguenze negative sia per la filosofia naturale, sia per la medicina – disciplina nella quale non è lecito rifiutare quei rimedi che agiscono in modo invisibile, o in

[80] Boyle, *Determinate Nature of Effluviums*, cap. V, Boyle 1965-66, vol. III, 702–703; *Of the Great Efficacy of Effluviums*, cap. III, Boyle 1965-66, vol. III, 680.

[81] Boyle, *Of the Great Efficacy of Effluviums*, capp. I, V–VI, Boyle 1965-66, vol. III, 678, 684–688; *Usefulness*, part II, sect. I, *essay* V, capp. XIII e XIV, 171, 176–177.

[82] Boyle, *Usefulness*, 178.

virtù di qualità non manifeste: anche se sfuggono al senso più 'agile' e 'delicato', cioè la vista, gli effluvi sottili hanno una portata teorica, e un'utilità pratica, che prescindono dai tentativi – ai quali tuttavia non si deve mai rinunciare – di renderli visibili.[83]

Nell'ispirato *Epilogo* dell'opera campanelliana *De sensu rerum*, il mondo veniva paragonato sia a una «statua, imago, Templum vivum Dei», sia ad un *codex* scritto: «beatus qui legit in libro hoc, et ab eo discit rerum quidditates».[84] La similitudine testuale – che si affaccia, senza intaccare il predominio di quella iconica – introduce una distanza tra il mondo e Dio, e rimanda a quei «simboli che permettono, a chi sappia interpretarli, di comprendere 'tutto', anche se non 'del tutto'». Chi possiede questa 'scienza' è capace di 'ben filosofare':

> Et sane qui bene philosophatur, ex coloribus, saporibus, consistentia, figuris, actionibus, usibus, et proprietatibus rerum, inveniet arcana innumera ad quemcumque cupierit usum.[85]

«Nihil est in natura proprietatibus destitutum», aveva affermato Pierre Borel, autore di un fortunato libro di segreti[86] , negli stessi anni in cui Galileo e Descartes teorizzavano la traduzione del *codex mundi* in linguaggio matematico, espungendone le qualità soggettive. Se il mondo è un libro, dirà Boyle, i suoi caratteri sono simboli geroglifici, con le cose al posto delle parole, e le qualità delle cose al posto delle lettere.

> For each page in the great volume of nature is full of real hieroglyphicks, where (by an inverted way of expression) things stand for words, and their qualitis for letters.[87]

L'immagine della natura scelta da Boyle – un libro arduo da leggere anche per un filosofo, perché scritto in caratteri ideografico–qualitativi – non è molto diversa da quella baconiana della selva; ma l'intento, condiviso da entrambi i filosofi, è quello di provare comunque a orientarsi,

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83 Boyle, *Great Efficacy of Effluviums*, cap. I, Boyle 1965-66, vol. III, 677; *Usefulness*, part II, sect. I, *essay* V, cap. XIII, 170.
84 Campanella 1620, 370-371.
85 Campanella 1620, lib. IV, cap. XIV, 325.
86 Borel 1656, *cent.* II, *obs.* XC.
87 Boyle, *Usefulness*, part I, *essay* II, 29.

di cercare di decifrare caratteri sconosciuti, procedendo per tentativi ed errori; rendere manifesto ciò che è occulto, visibile ciò che è invisibile, invece di rifugiarsi nell'oscurità, o dichiararla insuperabile, perché costitutiva della natura. I *mirabilia* esistono, ma le loro cause occulte devono essere ricercate, possono essere *ipotizzate* e persino, in talune circostanze, *mostrate*. Non è un caso che Boyle dichiari più volte la propria avversione per i termini fittizi (*empty names*) di 'simpatia' e 'antipatia', e non li usi mai, o rifiuti l'analogia neoplatonica, magico-ermetica e paracelsiana tra macro e microcosmo.[88]

È molto difficile, tuttavia, eliminare dalla dottrina degli *effluvia* ogni riferimento alle qualità occulte: non si può che ammirare, a questo riguardo, la coerenza insita nella drastica posizione di Descartes, il quale – proponendo un cosmo interamente visualizzabile, nelle sue parti più piccole come nel suo insieme più vasto – eliminava senza appello, insieme alle qualità occulte, l'ambigua ricchezza della natura 'curiosa'.

[88] Boyle, *Usefulness*, part I, *essays* IV e V, 37 e 54.

From Extension to Individual Bodies. Descartes' Complex Theory of Matter

Fabrizio Baldassarri[1]

Descartes liberated matter from its hylomorphic captivity: forms (and qualities) are rejected,[2] and matter emerges as *res extensa*. A mechanical physics is therefore elaborated by Descartes. In *The World*, for example, he reduces forms and qualities to his mechanics: both of them «can be explained without the need to suppose anything in their matter other than motion, size, shape, and arrangement».[3] Furthermore, matter acquires the status of substance. Although his mechanical physics appears to be able to respond to every inquiry, it is not devoid of such difficulties, which threaten to undermine Descartes' scientific programme. Scholars and philosophers have debated the problem raised by matter as extended substance within Descartes' philosophy.[4] In this paper, I will focus on the connection between matter and singular bodies, and especially on his definition of individuality within corporeal substance. In fact, Descartes' conception of nature as extended matter gives rise to a homogeneous world[5] in which nature remains the same: since changes are mechanically ruled, matter itself never changes.[6] Nature is therefore fixed and knowable, but the individuality of bodies cannot be determined.[7] Nonetheless,

[1] I would like to thank prof. Theo Verbeek, and Dr. Massimiliano Savini for their precious suggestions in the construction of several parts of this research.

[2] Cf. Fioravanti 1995, Des Chene 1996, Ariew 2011, 127-156.

[3] Cf. Descartes, *Le Monde*, V, in Descartes 1969-1978, XI, 5. English translation in Gaukroger 2004, 18.

[4] Cf. Lewis 1950, Brown 1989, Garber 1992, Grosholz 1994, Buzon 1995, Slowik 2001, Rodriguez-Pereyra 2008, Alexandrescu 2009b, Hattab 2009.

[5] Cf. *Le Monde*, V, in Descartes 1969-1978, XI, 28-29.

[6] Cf. *Le Monde*, VII, in XI, 37. See Verbeek 2000.

[7] Cf. Gilson 1944, 205, Lewis 1950, 3-8.

Cartesian physics also requires a definition of singular bodies[8] and of singular qualities to attain scientific knowledge, which seems impossible because singularity is submitted to extended matter and varieties are only contingent.

A change in his philosophy could however be revealed. While in *The World* Descartes fails to describe singular bodies within the identity of matter, for both scientific incompleteness and philosophical idleness;[9] in the *Principia philosophiæ* he proceeds beyond mere aggregate[10] in the explanation of the unity and individuality of bodies, thus enabling a less precarious corporeal individualism and providing support to his science. The scope of my paper is to look through his theory of matter from *The World* to the *Principia*, in order to find the required definition of singular bodies within his mechanical physics and its implementation in his scientific programme.

1 *Le Monde*. Missing individuality

Descartes' physical theory is directly engaged with the problem of knowing bodies. *The World* is therefore entrusted with explaining bodies' 'essential differences'.[11] Nonetheless, his physics develops in a way that seems far from making this knowledge easier. Few rules construct his definition of matter: the plenum, the indefinite divisibility,[12] and the mechanical laws. Extension qualifies matter, being its essence.[13] Moreover, Nature is matter[14] and «all bodies

8 Cf. Carraud 1996, 159.

9 Verbeek 2000, 152-3.

10 Cf. Pasnau 2004.

11 Descartes to Mersenne, 5 April 1632, in Descartes 1969-1978, I, 243. Cf. *Le Monde*, III, in XI, 12: «il y a moyen d'expliquer la cause de tous les changements qui arrivent dans le monde, et de toutes les variétés qui paraissent».

12 Cf. *Le Monde*, III, in XI, 12; e Gaukroger 2004, 10. Descartes to Mersenne, 30 September 1640, in Descartes 1969-1978, III, 191. See also Smith and Nelson 2010.

13 Cf. *Le Monde*, VI, in Descartes 1969-1978, XI, 36: «la quantité de la matière [...] ne diffère non plus de la substance [...] son étendue, ou la propriété qu'elle a d'occuper de l'espace non point comme un accident, mais comme sa craie forme et son essence». Ariew 2011, 144.

14 *Le Monde*, VII, in Descartes 1969-1978, XI, 37.

[...] are made from the same matter».[15] Individuals are therefore submitted to matter.

First of all, the world belongs to the imagination of a unique and identical piece of matter, which stands uniform and identical, stripped of every quality and form. The world is homogeneously constituted by extended matter,[16] which is sufficient to wrap and conceive the characteristics of nature. Both Descartes' rejection of substantial forms, qualities and theories of elements, and his equivalence between matter and space, provide stability to physics and overcome Scholasticism's arbitrariness and unintelligibility. Metaphysically, matter's changes lie within God's immutability,[17] also removing sceptical arguments.[18]

Nevertheless, given the unity, homogeneity and undistinguished condition of extended matter that can receive any variety without creating new substances, a knowledge of essential differences and singular bodies would seem hard to achieve, for the notion of *individua* is contradictory and has lost its point of application in Cartesian philosophy.[19]

In fact, as a consequence of the definition given in *The World*, Descartes claims that even «when a vessel is full of gold or lead, it contains no more matter than when we think it empty»;[20] accordingly, there is no such difference between matter occupying spaces. Nevertheless, he does not annihilate singular bodies by reducing variety to homogeneity. The indefinite divisibility of matter provides Descartes' theory with the condition for understanding particularity and diversity: homogeneous matter can be differentiated into singular bodies. In a fragment of a 1631 letter to Villebressieu, Descartes illustrates that «there is only one material substance that receives from an external agent the action or the mode for local movement, from which different

15 *Le Monde*, IV, in XI, 17; in Gaukroger 2004, 13.

16 Cf. *Le Monde*, VI, in Descartes 1969-1978, XI, 33, and Gaukroger 2004, 22-23: «perfectly solid body, which uniformly fills the entire length, breadth, and depth of this great space in the midst of which we have brought our mind to rest».

17 Cf. *Le Monde*, VII, in Descartes 1969-1978, XI, 37-38. Verbeek 2000, 152, Buzon and Carraud 1994, 30.

18 Cf. Joukowsky 1991; P. Henry 1992; Gori 2003.

19 Cf. Lewis 1950, 39.

20 *Le Monde*, IV, in Descartes 1969-1978, XI, 21 and Gaukroger 2004, 15.

figures and modes derive transforming matter in what we see».[21] He underlines the identity of matter, whose attribute is extension; but he adds two 'modes' by which matter can exhibit differentiation: figures and movement. Both of them are causes of the variation of bodies. The philosopher stresses this claim again in *The World*, whose third chapter discusses the movement of bodies[22] and the figure of their interior particles, concluding that their structure accounts for the differences displayed by bodies. Thus, the configuration of quantity yields the explanation of bodily variation: particularities come from matter's disposition, arrangement, size, shape and motion.[23] The laws of nature rule the interaction of three elements, the mechanism of which shapes different bodies.

Thus, the differentiation of bodies is mechanically defined and reduced to the unity of matter, eliminating agency.[24] The variations of matter are regularised and subordinated to its identity. Despite the fact that «matter may be divided into as many parts and shapes as we can imagine, and that each of its parts can take on as many motions as we can conceive», matter arranges itself in an order «in which one will be able to see [...] all the things [...], both general and particular, that appear in the actual world».[25] All bodies are contained in the identity of matter: not only nature as a whole, but all bodies as well are reduced to extended matter.

In sum, the variation of bodies is mechanically re-ordered by Descartes to matter homogeneity by means of matter itself. The defi-

21 Descartes to Villebressieu, Summer 1631, in Descartes 1969-1978, I, 216.

22 *Le Monde*, III, in XI, 10-11 and Gaukroger 2004, 9: «there are innumerable different motions which endure perpetually in the world. After having noted the greatest of these – those which bring about the days, months, and years – I take note that the terrestrial vapours unceasingly rise to and descend from the clouds, that the air is forever agitated by the winds, that the sea is never at rest, that springs and rivers flow ceaselessly, that the strongest buildings eventually fall into decay, that plants and animals are always either growing or decaying: in short, that there is nothing anywhere which is not changing».

23 Cf. *Le Monde*, V, in Descartes 1969-1978, XI, 26.

24 Cf. VII, in XI, 48: «nous ajouterons [...] que Dieu n'y fera jamais aucun miracle, et que les Intelligences, ou les Ames raisonnables que nous y pourrons supposer ci-après, n'y troubleront en aucune façon le cours ordinaire de la Nature».

25 *Le Monde*, VI, in XI, 34-35 and Gaukroger 2004, 23.

nition of substance is not related to individual distinction[26] and the knowledge of particular bodies does not produce as many substances as bodies themselves.

Nevertheless, something else is required to complete Descartes' physical knowledge of particular bodies. He, however, fails both to provide matter with metaphysical stability[27] and to provide individual bodies and their qualities with actual existence. At this stage, his theory of matter develops within a paradoxical and aporetic condition. It lacks a certain logic of individuation, for in *The World* matter itself, «not shape or spatial location or some other spatial feature, is the principle of individuation».[28] This is contradictory, because matter would stand either for bodies in particular or a body in general. In sum, difficulties accompany this theory, resulting in the absence of both a description of particular bodies and an explanation of their relationship: matter does not seem to be instantiable.[29] Although extended matter provides marks for defining distinctions of things via its modes, this does not mean that individuality has been recognised, for there is «no logical connection between the concept of individuality and the concept of distinction».[30] In *The World*, the knowledge of bodies therefore appears to be uncertain and contradictory.

The principles of *The World* are claimed within the *Essays* as well. Although in *Les Météores* Descartes intends to explain the nature of things, his differentiation of bodies still belongs to the relationship of particles of «the same unique matter», which «could be divided within infinite modes, which [particles] differentiate among them as stones of different figures taken from the same rocks are different».[31] Here, Descartes describes particular bodies (vapours, exhalations, salt and precipitations), explaining their external variety via their internal

26 Cf. Lewis 1950, 48: «la substantialité n'est donc pas nécessairement liée à la distinction des individus, et les apparentes apories proviennent d'une confusion entre les deux notions».

27 Cf. *Le Monde*, VII, in Descartes 1969-1978, XI, 38 and Gaukroger 2004, 25: «without my going any further into these metaphysical considerations, however, I will set out here two or three of the principal rules».

28 Grosholz 1994, 47.

29 Cf. Gracia 1988, 156-8.

30 Cf. 34.

31 Descartes, *Les Météores*, in Descartes 1969-1978, VI, 231-239.

structure. Nonetheless, an actual solution to the problem arisen before is hard to find within these pages, for matter cannot be instantiable.

2 *Principia philosophiæ*. The individuality of matter

Only in his following works does Descartes deal with those problems. In the *Meditationes de prima philosophia*, he provides the metaphysical foundation for his theory of matter (repeated in his letter to Gibieuf[32]). Knowledge of bodies, and thus material aggregation itself,[33] is grounded on ideas. With the example of the stone, Descartes claims the univocity of human knowledge and of individual things,[34] «which I perceive clearly and distinctly [by means of their] sizes or extension in length, breadth and depth; shape, which is function of the boundaries of this extension; position, which is a relation between various items possessing shape; and motion, or change in position; to these may be added substance, duration and number».[35] Knowledge comes from the judgments of reason, which are guaranteed by God,[36] and not from imagination alone. Subsequently, «everything which I clearly and distinctly perceive to belong to that thing really does belong to it».[37] In the sixth Meditation, Descartes demonstrates the existence of material things and connects their experience to intellectual evidence.[38]

In the *Principia philosophiæ*, Descartes adds to this metaphysical guarantee[39] a physical investigation on the modes of matter, by way of which he completely surmounts the aporetic difficulty previously underlined, and accomplishes his scientific programme. He holds his theory of extended matter to a spatial and temporal location; since,

32 Descartes to Gibieuf, 19 January 1642, in Descartes 1969-1978, III, 474-478.
33 Descartes, *Meditationes de prima philosophia*, Synopsis, in VII, 14.
34 *Meditationes de prima philosophia*, III, in VII, 41-42.
35 *Meditationes de prima philosophia*, in VII, 43.
36 *Meditationes de prima philosophia*, IV, in VII, 53.
37 *Meditationes de prima philosophia*, V, in VII, 65.
38 Cf. *Meditationes de prima philosophia*, VI, in VII, 81.
39 Cf. *Meditationes de prima philosophia*, V, in VII, 69: «if I were unaware of God [...] I should thus never have true and certain knowledge about anything, but only shifting and changeable opinions». Cf. Buzon and Carraud 1994, 32: «Les principes de la physique sont garantis par la métaphysique, non déduit d'elle».

after repeating that matter is «extension in length, breadth and depth [that] constitutes the nature of corporeal substance», Descartes claims that knowledge comes through its attributes: «shape is unintelligible except in an extended thing; and motion is unintelligible except as motion in an extended space».[40] Subsequently, the equivalence of extended matter is submitted to a representation[41] and to spatial and temporal settings. They are required for better knowledge of material things, thereby leading to a new definition of matter individuality. Despite being provided with mathematical and geometrical constructions (extended matter establishes a geometrical physics), in the *Principia*, Descartes manages to define individualities in corporeal substance by building a scientific system of spatio-temporal location within matter.[42]

First, he defines the principles of knowledge and relates them to physical knowledge. He underscores three kinds of distinctions: real, modal and conceptual distinction. Real distinction consists in the conceivability of things' independence,[43] these are really distinct from other parts and can be recognised by ideas. The second distinction[44] indicates both a distinction between modes and substance, and a distinction between the two modes of the same substance. Thus, modes together – not only movement, but also figure, disposition, «shape, position, duration, number and so on»[45] – are used to differentiate particular bodies. The third is «a distinction between a substance and some attribute of that substance without which the substance is unintelligible».[46] This distinction involves an analytical connection between the two terms.

Then, he defines the principles of material things, which are the rules of extended matter. Accordingly, the principles of physics which ensure that matter is extended are connected to the principle of knowledge, for ideas are our access to physical knowledge. Through ex-

40 *Principia philosophiæ*, I, art. 53, in Descartes 1969-1978, VIII-1, 25.
41 Cf. Carraud 1996, 173.
42 Cf. Gracia 1988, 150-5, Woolhouse 1993, 79-88, Schmaltz 2009.
43 Cf. *Principia*, I, art. 60, in Descartes 1969-1978, VIII-1, p. 28. *Secundæ responsiones*, in Descartes 1969-1978, VII, p. 132. Cf. Landucci 2002, 83-111.
44 *Principia*, I, art. 61, in Descartes 1969-1978, VIII-1, 29-30. Cf. Ghisalberti 1996.
45 *Principia*, I, art. 69, in Descartes 1969-1978, VIII-1, 33.
46 *Principia*, I, art. 62, in VIII-1, 30.

tended matter, reality is intelligible and quantifiable. On the contrary, matter would be unintelligible if it «lacks extension, [but also] shape and motion». Therefore, extension cannot be removed from nature without annihilating both matter and our knowledge, since «all the properties which we clearly perceive belong to an extended thing».[47]

After this metaphysical foundation, Descartes affirms the mechanical instantiation of matter by means of spatio-temporal location through the example of rarefaction and condensation. Although extension remains the same, qualities change as the modes of body change, «reducing or closing the gaps»; the «extension of a body is no less than when it occupies more space in virtue of the mutual separation of its parts»,[48] but it is wider. Therefore, «all the properties which we clearly perceive in [matter] are reducible to its divisibility and [...] mobility».[49] Although this mechanism organises matter differently, this implies a variation within the body and, therefore, the possibility of defining its instantiation.

Descartes complicates his theory. On the one side, being the only attribute of matter, everything has to be reduced to extension,[50] which stands identically to itself since it does not diverge from the bodies contained in space. By so doing, Descartes re-affirms the unity of matter and the unnecessary relationship between the definition of substance and individual bodies (as he had already claimed in *The World*). But on the other side, Descartes distinguishes between «a generic unity»[51] attributed to extension itself, which concerns space and not the singular bodies occupying it, and a particular extended space concerning bodies, that changes «whenever there is a new body» in it. The extension constituting the nature of a body is therefore the same as that which constitutes the nature of a space but they are different, as the nature of a species differs from the nature of an individual, according to Descartes.

Let us use an example from the text itself. If we remove the qualities of a stone, «nothing remains in its ideas except that it is something

47 *Principia*, II, art. 1, in Descartes 1969-1978, VIII-1, 41.
48 *Principia*, art. 6, in VIII-1, 43. Descartes to Mersenne, 11 October 1638, in II, 384.
49 *Principia*, art. 23, in VIII-1, 52.
50 Cf. *Principia*, art. 8, in VIII-1, 44: «there is no real difference between quantity and the extended substance».
51 *Principia*, art. 10, in VIII-1, 45. Cf. Garber 1992, 134-136. See E. Grant 1981.

extended»;[52] extension in general, being the place occupied by the stone, is the same «whether it is the extension of [it] or of wood, or of water, or of air or of any other body».[53] Nonetheless, this concerns only the generic unity, the unity of matter, whereas it is possible to recognise the body of the stone (or its particular space) by distinguishing it from the extension of other bodies by means of both body representation and spatio-temporal location. Indeed, both the internal space, designating its shape, and the external place, determining its position, allow for the instantiation of matter and its individualisation. Thus, the individuality of bodies appears to be possible within the substantial identity of matter.

According to the definition *strictu sensu*, «motion is the transfer of one piece of matter, or one body, from the vicinity of the other bodies which are in immediate contact with it, and which are regarded as being at rest, to the vicinity of other bodies». Hence, motion is a translation, a movement of «whatever is transferred at a given time»,[54] by which singular bodies are instantiated within the unity of substance. Even though bodies are made of many parts theoretically identical to themselves and to the space outside, movement gives coherence to those parts of matter, transforming them into portions of a singular body. A ship is a useful example: although it is formed of different parts and of relative movement, immersed in equal matter, it is a body for it has its own location and coherence: all those parts move together.

Consequently, whereas generic unity of bodies comes from the extension of matter, for matter is unified, specific unity comes from its modes, through which it is possible to acknowledge different bodies. Unity is both external, by means of what Descartes called surface, «the boundary between the surrounding and surrounded bodies, which is no more than a mode»,[55] and internal by means of cohesion, already defined by Gueroult as «the rest of parts, [...] the force of rest, the force of resistance on the motion that would disaggregate them»,[56] that is the aggregation of parts[57] composing «a single piece of mat-

52 *Principia*, art. 11, in Descartes 1969-1978, VIII-1, 45-46.
53 *Principia*, art. 12, in VIII-1, 46-47.
54 *Principia*, art. 25, in VIII-1, 53-54.
55 *Principia*, art. 15, in VIII-1, 48.
56 Gueroult 1980, 212.
57 Cf. *Principia*, II, art. 55, in Descartes 1969-1978, VIII-1, 71.

ter».[58] Despite being formed of different singular parts, the ship is an individual body or a single piece, because it occupies or changes place during motion without changing space (in Cartesian terms: geometrical extension is saved); both its surface and its internal structure remain the same, though the ship as a whole is moving or its pieces are changed.

3 «Heraclitean flux» and the «Ship of Theseus» within Descartes' mechanical physics

Thus, dynamical and structural individualities issue from the modes of extension by way of the spatio-temporal location of matter. Descartes discusses both of these in the Correspondence, where they are applied to scientific issues against sceptical examples.[59] Dynamical individuality is claimed against the theory of the Heraclitean flux, which implicates material dispersion and the impossibility of providing a stable identity to things. The most famous example was Montaigne's metaphor for the *monde-branloire*.[60] Descartes rejects this scepticism, because the flux does not contradict the chance of knowing the identity of bodies, since as much subtle matter «flows inside as goes outside»[61] each body. According to Cartesian physics, the numerical identity [*idem numero*] is logically preserved by the permanence of the material quantity, but also by the identity of space: although the parts change, the body as a whole is still the same, because it occupies the same extension. Indeed, the numerical identity does not belong to the singular parts composing the body but to its surface and to its internal structure. This is the famous example of a river flowing without rest but remaining the same river. In fact, Descartes claims that «also the Loire is the same river of ten years ago, although water has run along, and although there are no parts of the same earth around the water».[62]

58 *Principia*, art. 31, in Descartes 1969-1978, VIII-1, 57.
59 Cf. Gori 2014.
60 Cf. M. de Montaigne, *Essais*, III, 2 in Montaigne 2004, 804-805.
61 Descartes to Mersenne, 9 February 1639, in Descartes 1969-1978, II, 496. Cf. Descartes to Mersenne, 25 December 1639, in II, 635.
62 Descartes to Mesland, 9 February 1645, in IV, 165.

Furthermore, structural individuality is claimed against the sceptical paradox of the ship of Theseus, which raises the question of whether or not an object whose components have been replaced remains the same. According to Descartes, the components of a ship[63] are similar to the parts of bodies, whose substitutions do not transform the body itself if neither the surface nor the internal structure takes a different organisation. Even though replacing parts of these bodies would mean a complete change of the entire body over a long lapse of time, this does not necessarily provoke a transformation of the internal structure, since new parts take the identical space of the former. Despite the substitution, the body does not change its structural extension but only changes 'superficially' and without transforming the peculiarity and individuality of the object. These changes do not undermine the mechanical structure, whose aggregation, cohesion, organisation and order remain the same and provide the individuality of objects.

On the contrary, bodies differ «because the little parts of matter that compose one of them have different structure and shape from the parts composing another body».[64] Individuality is therefore known through mechanics and chemistry, since internal structure is at work in defining the nature of bodies.[65] One example is the wax of the *Meditationes*, which remains the same because its chemical nature has not changed;[66] other examples are provided in the fourth part of the *Principia*, where Descartes studies minerals and metals. Only their internal structure, shape and figure enable qualification of bodies: the definition of weight,[67] lightness, fluidity, solidity, pliability and flexibility is a consequence of the internal disposition of parts. Metals are recognisable and distinguishable by their structure: the magnet is defined through the disposition of its peculiar parts that allow its attractive action and distinguish it from iron and steel.[68]

63 Cf. Descartes to Mersenne, 27 July 1638, in II, 268.
64 Descartes to Newcastle, 23 November 1646, in IV, 570.
65 Cf. Joly 2011, 89-132.
66 Cf. Lewis 1950, 58.
67 Cf. *Principia philosophiæ*, IV, art. 25, in Descartes 1969-1978, VIII-1, 215. Descartes to Mersenne, 13 November 1629, in I, 73.
68 Cf. *Principia*, IV, art. 139, in VIII-1, 279-280; art. 140, in VIII-1, 280.

He continues by giving a number of biological examples, plants, animals and humans who «change the constituent parts of their bodies as they absorb nutrition and they grow, while at the same time maintaining their identity as the same individual body»:[69] their transformations contrast the notion of *corpus meum*, but their individuality is mechanically fixed. On the one hand, inasmuch as bodies change only externally, individuality is guaranteed by their internal structure; on the other, inasmuch as bodies change internally, individuality is guaranteed by the external surface. In sum, cohesion is either external or internal and works mechanically to preserve the unity and individuality of bodies despite their changes.

Human bodies are identical to themselves «as long as they own the required disposition to conserve their union»,[70] though their external shape has changed and their internal parts have been transformed. Being ruled by mechanics, nutrition accounts for their growth without changing their union, which is a mechanical union for plants and animals and a substantial union of soul and body for human beings. Transformations are not consequences of any occult entity but of the mechanical configuration of elements, which allows scientific knowledge.

4 Conclusive remarks

In conclusion, individual bodies are ruled by Descartes' mechanical theory of extended matter. In the *Principia philosophiæ*, the difficulties of that theory are solved by means of a more precise definition of the modes of extension and by spatio-temporal location. The metaphysical foundation of physics is decisive: real distinction is given within intellectual evidence and ideas contain the knowledge of things. Descartes therefore grounds a stable order for bodily variation.

In sum, the unity of extended matter contains the possibility of differences between bodies and, by means of its modes, allows Descartes' scientific programme to be achieved, overcoming sceptical doubts and traditional definitions. Corporeal individuality and bodily varieties are understandable, particular bodies are knowable and, eventually,

69 Garber 1992, 177.
70 Descartes to Mesland, 9 February 1645, in Descartes 1969-1978, IV, 166.

collectable within the natural history of the *Principia*. And scientific evidence is attainable.

Extensio, *Materia* and *Corpus* in Spinoza's Philosophy

Federica De Felice

The interest that Spinoza has recently aroused in areas other than philosophy, such as those of medicine and neuroscience, is well known.[1]

I will try to outline Spinoza's conception of matter, as it emerges from some of the most significant passages of his *Ethica* and his letters. Spinoza's doctrine was so 'revolutionary' that this led over the centuries to its being identified as one of the highest form of materialism.[2] Are we allowed to define Spinoza as a materialist philosopher? As frequently happens, the simplicity of the question implies problems which cannot be ruled out in order to give a convincing answer. I think that the 'materialistic' interpretation of Spinoza is wrong if it is about understanding Spinozism as a consistent materialism. Rather, it is possible to identify tenable concepts that allow us to place Spinozism in a theoretical development that continues in the history of dialectical materialism. Yet, the presence of these factors that allow us to consider Spinoza as the precursor of materialism does not remove either the presence of elements going in the opposite direction - which have made it possible to use Spinozism in idealistic and romantic ways (the Spinoza-Renaissance of the end of the century) - or the consistency of some of his sources (Jewish philosophy, scholastic-Cartesian tradition, Renaissance philosophy).

Which are the elements that allow us to place this author on the line of development of modern materialism (even if this does not imply that he has to be entirely included in it) and, above all, what

1 See Damasio 2000.

2 On this subject the references are many. Among those interpreters that have contributed the most to this conception are Deleuze 1968, Negri 1998, Althusser 1998 and Giancotti 1995.

is Spinoza's conception of matter? To answer these questions it is necessary to focus on Spinoza's definition of substance.

1 God as *res extensa*

At the end of the theory of substance, after highlighting indivisibility as one of its main properties, Spinoza emphasises the identity shared between the concept of God and that of substance (ETH I, prop. 14, cor. 1) and refers to the extension of God, as well as thought, as either his attribute or an accident of it (ibid., cor. 2). With even more precise and explicit language, the first and the second sentences of the second part claim that «Cogitatio attributum Dei est, sive Deus est res cogitans» and «Extensio attributum Dei est, sive Deus est res extensa» (ETH II, prop. 1 e 2).

Spinoza shows full awareness both of the criticism to which he exposes himself along with his theory and the scandal he is going to cause. In the scholium to proposition 15 of Part I he deals with those objections by showing analytically that they are all based on a false assumption - that of divisibility and hence the finitude of corporal substance - which, once removed, would eliminate all the imperfections resulting from it, so that nothing more prevents its attribution to the essence of God. This attribution, on the other hand, prevents him from running with a blatant absurdity (as Spinoza himself thinks), namely, the creation of matter from nothing (this is the *a nihilo nihil fit* principle, rightly pointed out by Jacobi, *Über die Lehre des Spinoza in Briefen an den Hernn Moses Mendelssohn*, as the basic principle for the assumption of the *causa sui* concept) - (ETH I, prop. 14 and dem; prop. 11 and dem).

The scholium to proposition 25 (Part II) states that «eo sensu quo Deus dicitur causa sui, etiam omnium rerum causa dicendus est», i.e. adds the corollary, «Res particulares nihil sunt, nisi Dei attributorum affectiones, sive modi, quibus attributa certo, et determinato modo exprimuntur» (ibid.). With reference to this corollary, the first definition of Part II states: «Per corpus intelligo modum, qui Dei essentiam, quatenus, ut res extensa, consideratur, certo, et determinato modo exprimit». If any doubt about the overcoming of every distance between God and the world remains, proposition 24 of part V intervenes to

delete it, by saying that, «Quo magis res singulares intelligimus, eo magis intelligimus Deum». The definition of the extension (or matter) as an attribute of God - given Spinoza's conception of the attribute as constitutive of its essence - is equivalent to raising matter to the rank of the spirit by recognising its equal dignity and overcoming what was considered an unbridgeable distance, as well as stopping identifying the source of evil in matter.

This conception, according to which the extension is one of the infinite attributes of God, namely the «ontological principle of the substance, insofar as it is constitutive of its reality, and its principle of intelligibility, insofar as it let us know it as it is»[3] is to be found exclusively in Spinoza.[4] What exactly is new? Certainly neither to conceive extension as a raw material - a concept that was shaped from Descartes and Hobbes - nor to consider it as an attribute of God, as H. More already did.[5]

Arguably, the novelty consists in conceiving the extension as matter and, as such, considering it as an attribute of God, constitutive of its

[3] Gueroult 1968, 47.

[4] Zac 1963, 57-85 makes an accurate analysis in order to determine similarities and differences between Spinoza's conception of the extension and that of his contemporaries of Jewish tradition, as well as, while not neglecting to detect any of the possible aspects of analogy, confirming the originality of Spinoza's concept of extension as an attribute of God. The bibliography on the attributes definition is vast. For a new proposal, see Keizer 2012, 479-498.

[5] R. Descartes, *Principia Philosophiae* 1, in Descartes 1969-1978, VIII-1, 25: «Sed una tamen est cujusque substantiae praecipua proprietas, quae ipsius naturam essentiamque constituit, et ad quam aliae omnes referuntur. Nempe extensio in longum, latum et profundum, substantiae corporeae naturam constituit; et cogitatio constituit naturam substantiae cogitantis»; Th. Hobbes, *De Corpore* II, VIII in Hobbes 1966, I, 39: «Extensio corporis idem est quod magnitudo ejus, sive id quod aliqui vocant *spatium reale;* magnitudo autem illa non dependet a cogitatione nostra, sicut spatium imaginarium, hoc enim illius effectus est, magnitudo causa; hoc animi, illa corporis extra animum existentis accidens est [...]»; letter from H. More to Descartes, March 5th, 1649, in Descartes 1969-1978, V, 301-302: «Equidem possum dare concipere substantiam extensam, quae nullam ullo modo habeat tangibilitatem vel impenetrabilitatem [...]. Per veram extensionem intelligis, quam tangibilitas et impenetrabilitas comitatur. Hanc ipse etiam nego in Deo [...]. Sed concedo, quamvis nondum vi coactus, in omni spatio aliquam substantiam inesse; neque tamen corpoream; cum extensio, sive praesentia, divina possit esse subjectum mensurabilitatis. Verbi gratia, praesentiam, sive extensionem, divinam occupare assero unam alteramque orgyam, in hoc, vel ilio vacuo, nec tamen omnino sequi Deum esse corporeum».

essence. That is to say - and this is a point of divergence from S. Zac - that God is matter and it is therefore equivalent to saying that bodies, insofar as they are like all other special things, express the essence of God in a certain and determined way; are modes of God regarded as 'extended thing'; that is, are God himself under one of the forms of his infinite being. That God is matter and bodies are his modes of being God means that they are God himself in certain forms: this had neither been said before, nor was it said by Spinoza's other contemporaries, even Hobbes. This is the very first argument that undermines the conception of God as pure spirit, creator of matter but separate from it, and removes both the infinite distance that western theology has placed between God and his creatures and the brand of indignity to matter. In doing so, at the end of a wide discussion on the concept of indivisibility of matter, Spinoza makes a significant statement: «Et hoc quamvis never existed, nescio, cur divine nature indignant Esset [matter]». Although the arguments in support of the invisibility of matter as substance were not valid - Spinoza says - there is no reason to believe that matter is unworthy of divine nature.

In the century in which Galilei (Spinoza was born a year before the case against the scientist) was forced to recant his scientific theories as they were contrary to the sacred truth of the Scripture, and despite the sincere efforts of reconciliation made by the scientist, only an unshakable confidence in the progressive and liberating value of truth, of which he believed himself to be the depositary, may have led Spinoza to support a thesis perverting the sacred order of priority and setting a prerequisite for the definition of a materialist conception of reality.

2 Extension, Matter, Motion

In many passages of the *Short Treatise*, Spinoza writes of an extension *sive* matter: therefore there is a coincidence between the concept of extension and that of matter. Now, while emphasising the enormous importance that, in my opinion, Spinoza's conception of extension as an attribute of God plays in the history of western thought, it should be noted that, in defining the concept of extension or matter, Spinoza lacks a scientific and comprehensive theory of matter.

The small essay of physics interposed between proposition 13 and proposition 14 of Part II of *Ethica* offers a few examples that can be attributed to a mechanical conception of the relationship between bodies as well as the organicistic nature of the body as a whole. The cues provided by the letters LXXXI and LXXXIII are of particular interest as a sign of this incompleteness. As is known, in the first letter, Spinoza - responding to Tschirnhaus who asked him about the demonstrability *a priori* of the existence of bodies and about the concept of infinity - rejects the Cartesian concept of extension as quiescent mass because it is unsuitable to account for the existence of bodies: «Materia enim quiescens, quantum in se est, in sua quiete perseverabit, nec ad motum concitabitur, nisi a causa potentiori externa; et hac de causa non dubitavi olim affirmare rerum naturalium principia Cartesiana inutilia esse, ne dicam absurda».[6]

In the second letter to Tschirnhaus, who continued to ask for clarification - by noting that Descartes did not conceive the extension as quiescent matter (*materia quiescens)* because he argued that motion was excited by God, and assuming that Spinoza did not want to tell his real thoughts - Spinoza replies by countering the Cartesian theory, repeated in the same terms as the letter LXXXI, with his own conception of matter as an attribute: «Quod petis, an ex solo Extensionis conceptu rerum varietas a priori possit demonstrari, credo me jam satis clare ostendisse, id impossibile esse; ideoque materiam a Cartesio male definiri per Extensionem; sed eam necessario debere explicari per attributum, quod aeternam, et infinitam essentiam exprimat» (G, IV, 334, 22-26).

He fears, however, that he did not provide convincing evidence as he continues: «Sed de his forsan aliquando, si vita suppetit, clarius tecum agam», and he is also aware of not having developed a clear theory on the subject as he concludes: «Nam huc husque nihil de bis ordine disponere mihi licuit» (*Ibidem*, 26-28). Less than a year later, he died without having the opportunity to deepen the question posed by Tschirnhaus, whose clarification would have required a revision or at least a better explanation of the theory. What it is not clear enough is the 'ambiguous' position that Spinoza assigns to the *motus*. I will explain it better.

6 Spinoza, *Opera* IV, 332, 18-21, in Spinoza 1925 (G).

We said that extension is an attribute of God, that is part of its essence, *Natura naturans*; extension should not be understood as *materia quiesciens* but as an attribute that is - I add it from Spinoza's words - *actuosa essentia*, dynamic principle, activity, in other terms 'matter in motion, which has nothing to do even with the intelligible space of Jewish ancestry.[7]

Yet it is precisely this point, that is, Spinoza's conception of motus, that makes the interpretation of matter problematic since it does not inhere to the extension but is derived from it.

Motion mediates the relationship between bodies, that is, between modes of extension and itself belongs, such as the finite modes, to the *Natura naturata*. Although it belongs to the *Natura naturata*, that is, what comes from the necessity of God's nature but is not its very essence, motion occupies, however, a special role across the whole of reality, in the relationship between substance and modes: in the theological language of the *Short Treatise* (I, IX) it is a 'son of God'; in the more mature and less imaginative language of the LXIV letter to Schuller, it is what follows immediately from God, and by which other things are derived (see propositions 21 and 22 of part I of *Ethica*). I discuss neither the complicated and controversial issue of the role that immediate infinite modes (*intellectus infinitus*, *motus et quies*: *Short Treatise*, *Ethica*, *letters*) and mediate infinite modes (*facies totius universi*: EP LXIV) play in Spinoza's overall system, nor the reason why he has introduced them in an intermediate position between substance and the finite modes, as if the concept of immanent causality were not enough to make that relationship clear.[8] I would like to pay attention to an element that does not seem consistent with the theoretical framework so far exposed.

By placing motion not at the level of the cause (where we can find the substance essence which is expressed under the extension attribute), but at the level of the effect, Spinoza makes problematic the

[7] Wolfson 1958, vol. I, chap. VIII; Gueroult 1968, chap. VI and App. n. IX.

[8] For a discussion on infinite modes, see I, 309-324, Curley 1969, 54-74; Schmaltz 1997; Della Rocca 2008, 70-74; Melamed 2012; Schmitt 1910; Richter 1913, 90-111; **HUAN_DieU** Gebhardt 1921, 178-234; Schmitt 1922, 155-173; J. Freudenthal 1927, 108-145; Robinson 1928, 196-215, 217-219, 308-312; Gueroult 1968, 308 f. Matheron 1969; Curley 1969, 58-74; Lennox 1976, 479-500; Jarrett 1977, 83-105; Macherey 1979, 180-198. More recently, see Ward 2011, 19-46.

interpretation of matter: if it is true that motion defines the modality of the unfolding of the substance causality as extension, then why not place it in the substance essence itself?

As regards motion, what is already said in letter VI to Oldenburg and in the *Tractatus theologico-politicus* should be added. Both of these texts are important. Letter VI - one of the few texts of Spinoza's which deals with scientific argument - contains (as is well known and as the subtitle says) annotations on the book by R. Boyle, *De Nitro*, *Fluiditate et Firmitate* and in the second section (*De Fluiditate*) § 1 (G, IV, 28), distinguishes between «notiones ex vulgi usu factas, vel quae naturam explicant, not ut in se est, sed prout to sensum humanum refertur», which should not be counted among the «summa genera», and those that, with a singular and suggestive expression, are defined as «notiones castae» «quae naturam, ut in se est, explicant».

Notions of this kind are motion, rest and their laws. This means that the pure concepts of motion and rest, and the laws according to which motion and rest unfold, give us a scientific understanding of physical nature by making us know how it is in itself; they therefore express essence. Similarly, a passage from chapter VII of the *Tractatus theologico-politicus* says:

> in scrutandis rebus naturalibus ante omnia investigare conamur res maxime universales et toti naturae communes, videlicet motum et quietem; eorumque leges et regulas, quas natura semper observat, et per quas continuo agit, et ex his gradatim ad alia minus universalia procedimus» (G, III, 102, 21-25).

Motion and rest are herein indicated as real entities, universally present in physical nature; their laws and rules are laws that, without exception, physical nature observes, and according to which all natural phenomena occur.[9] From the unfolding of motion and rest according

[9] The universality of these laws is limited to the physical world; therefore, strictly speaking, they cannot be identified with the «leges naturae universales» which are compared to the «decreta Dei, quae ex necessitate perfectione naturae et divinae sequuntur» contained in Chap. VI of the TTP (G, 82, 35 to 83, 1-2). These are the laws of nature of God himself, which as a whole constitutes the fixed and immutable order that rules the unfolding of the substance in all the modes of his infinite attributes; so they include not only the laws that are the subject of natural sciences, but also the 'infinita cogitandi' potential that unfolds itself through the infinite

to certain determined laws follows the «facies totius universi», which appears therefore as a system of finite modes (bodies and ideas) in relation to each other.

Yet, the clear awareness of the role of motion would have perhaps led Spinoza to a radicalisation of those which have remained simple 'elements' of materialism, whose importance should not be underestimated.

If God is *res extensa*, matter, that of Spinoza is a material God as well as any other material bodies, and the matter of which the divine essence is made is the same as that studied by physicians, the same studied by Galileo with its necessary laws, laws that for Spinoza do not differ from the God decrees, for his God has neither intellect nor will; what theologians call God decrees - whose inscrutableness they swear upon - are laws that are necessary, unchangeable and *scrutabilissime*.

The God of Spinoza is of course neither only matter, nor matter that has any form of ontological priority in respect to the attribute of thought or to the other infinite attributes that express the substance essence or God. That is why, in my opinion, it is not correct to define Spinoza's theory as materialism without any further explanation. It must be said, however, that his conception of matter as an attribute of God sets him at the starting point of a line that flows into modern materialism and that this very doctrine, together with the replacement of the doctrine of creation with that of immanent causality, is one of the elements that innovates God's conception to the point of making it unrecognisable.

If the answer that Spinoza gives to Tschirnhaus makes any sense, then the statement that matter is an attribute has a well determined meaning, from which follow inevitable consequences about the re-

series of the finite modes and that must unfold all the infinite attributes of God in the infinite series of its finite modes. Yovel suggests considering the infinite modes as the metaphysical place of natural laws and tends to treat the two concepts as interchangeable. I believe that, on a logical and analytical basis, both distinctions, between «leges naturae universales» = «God decrees» (which govern the whole of reality), and the laws that govern motion (i.e. the laws of physical nature) and that between the infinite modes and the laws of nature, must be firmly maintained. The infinite modes (immediate) are metaphysical entities or real - in which the attributes of the substance are expressed immediately - that unfold according to the laws. For motion and rest, these are laws of nature; intellect can also be found, as Yovel suggests, in the laws of association.

lationship between substance-modes. This attribute expresses the substance essence. But essence is equal to power: «ostendimus, Dei potentiam nihil esse, praeterquam Dei actuosam essentiam; adeoque tam nobis impossibile est concipere, Deum non agere, quam Deum non esse» (ETH II, prop. 3, schol.). God acts for the sole reason of being; the substance is dynamic principle that, starting from the constitutive forms of his being (attributes), proceeds and continues in an infinity of forms that, all together, shape the universe. For this reason, the problem of inference of the plurality from the one does not exist: plurality is in the heart of matter, which includes infinite and continuous qualitative determinations. The process of finitude has already taken place within the substance essence, since each of the attributes, of which the substance consists, expresses the substance essence under a certain form; is *infinitum in suo genere*, not absolute. The process that moves from the attributes towards the modes is not one which degrades or weakens the being, but it is a structuring and infinite pluralisation of being's modes as spontaneous explanation of its power.

Within this process - which is an expression of the essence / power of substance - all modes are confined: immediate infinite, mediate infinite, finite. Spinoza's insistence on the concept of «being in God» (a concept through which ETH, II, prop. 45, schol. indicates the existence of things as they follow from the eternal necessity of God's nature) cannot be meaningless. Although it is said that some things were produced immediately by God and others through these, namely, that God is the next absolute cause of some things and remote from others, it must be firmly held that all of them are in God because God is the immanent cause of all; indeed, precisely: «eo sensu, quo Deus dicitur causa sui, etiam omnium rerum causa dicendus est» (ETH I, prop. 25, schol.) for «Res particulares nihil sunt, nisi Dei attributorum affectiones sive modi, quibus Dei attributa certo, et determinato modo exprimuntur» (*ibidem*).[10]

It is only a mistake of the imagination to conceive the modes of substance, i.e. the plurality, separated from the substance (EP XII). The intellect understands the body; this is a sign of the presence of the multiple finite in the infinite unity of substance:

[10] In this sense see Giancotti 1995, 279-306.

> Praecipue si ad hoc etiam attendatur, quod materia ubique eadem est, nec partes in eadem distinguuntur, nisi quatenus materiam diversi mode affectam esse concipimus, unde eius pates modaliter tantum distinguuntur, non autem realiter» (ETH, I, prop, 15, schol.).[11]

3 A glimpse to the mind-body relation

The doctrine of the relation between mind and body lies in strict dependence on the doctrine of the relation between extension and thought as substance attributes: «essentiam hominis constitui a certis Dei attrìbutorum modificationibus» (ETH II, pr. 10, cor.). More precisely: «hominem Mente, et Corpore constare, et Corpus humanum, prout ipsum sentimus, existere» (*ibidem*, pr. 13, cor.).

The problematic that this relation had in Descartes is lost. The condition of mode common to body and soul cancels, on the other hand, the very roots of the soul's substantiality and puts the question about the possible survival of the soul after the body's death on a different basis: «Primum, quod actuale Mentis humanae esse constituit, nihil aliud est, quam idea rei alicujus singularis actu existentis» (*ibidem*, pr. 11); it follows that «Objectum ideae, humanam Mentem constituentis, est Corpus, sive certus Extensionis modus actus existentis, et nihil aliud» (*ibidem*, pr. 13).

This means that the object of the human mind is not any body, but a specific body, namely the human body, consisting of a certain proportion of motion and rest, which distinguishes it from other bodies. Furthermore, this body must exist in actuality so that the mind can be given; when the body no longer exists in actuality, the mind vanishes. The same argument is present in *Short Treatise*, pref. 2 note.

According to Spinoza, the relation between mind and body is so organic as to induce him to point out that the determination of a greater reality and the excellence of the mind in respect to another would require more detailed knowledge of its object, that is, of the human body. Without this, he merely states a general principle:

> quo Corpus aliquod reliquis aptius est ad plura simul agendum, vel patiendum, eo ejus Mens reliquis aptior est ad plura simul percipìendum; [...] et quo minus alia corpora cum eo derh in agendo concurrunt,

11 See Goldenbaum 1994, 266-267.

eo ejus mens aptior est ad distincte intelligendum» (ETH, II, prop. 13, schol.).

If the mind is nothing else but the «idea of the body», insofar as there cannot be any idea without an object, it follows that there can be no mind without the body, which is the idea. There is no survival of the individual soul after the death of the body: thus the immortality of the soul is denied. This is clearly another element of the «proto» materialism of Spinoza. However, Spinoza says that «aliquid remanet, quod aeternum est» (ETH V, prop. 23).

According to common opinion, this eternal something that remains after the death of the body is mistaken for the duration and is attributed to the imagination, that is, to the memory that is believed to survive after the death of the body (*ibidem*, prop. 34, schol.). On the contrary, it is imagination, on which passion puts its roots, that perishes, but what is eternal is the intellect (*ibidem*, prop. 40, cor.), namely the mind, because its essence is defined as intelligence and, as such, part of the infinite and eternal intellect of God.

Putting aside what I would not hesitate to consider a metaphor, namely, that which once denied the concept of immortality as survival of the individual soul to the body as a principle independent and separable from it, the eternity that Spinoza attaches to the human mind does not seem to me different from that form of permanence that pertains to every idea or knowledge, inasmuch as - even when it is denied or overtaken by further acquisitions - it is included in the common heritage of all human knowledge. This is not different from the kind of eternity that we can attribute to the body as a mode of the attribute of extension, if it is true that: «totam naturam unum esse Individuum, cujus parte, hoc est, omnia corpora infinitis modis variant, absque ulla totius Individui mutatione» (ETH II, schol. lemma 7 post. pr. 13). This statement may raise doubts and appear too simplified, since it seems to ignore the enormous problems (both in the sense of theoretical influence and in the inner coherence of Spinoza's system) that lies behind the concept of the infinite intellect of God, that seems to reintroduce the idea, which was rigorously refuted, of God as a person: an example is the discussion of the theory of divine freedom and determinism.

I do not want to underestimate the importance of this problem, but I deliberately choose an approach to the texts aimed at highlighting the progressive elements for a reading-oriented materialism.

The concept of *mens* in Spinoza seems to us important since, defined as a cognitive function related to the body, it means a refusal of the soul as a spiritual principle independent from the body, subject to values and responsibility, with an individual and otherworldly destiny, a dualism that Descartes had desperately tried to maintain in order to avoid materialism and to deny free will and teleology. Moreover, Spinoza's conception of mind as the «idea of the body» and the famous proposition 7 of Part II of *Ethica* («ordo et connexio idearum est idem ac ordo et connexio rerum») make possible the «geometrisation of passions» and, above all, the geometrical analysis of affections.

4 Conclusion

Although in Spinozism there are traces of what may be called a materialistic *Weltanschauung*, the grinder of lenses cannot be understood without reservations for, while identifying matter as one of the aspects of reality/nature by putting it on a par with ontological dignity, reality does not identify with it. For Spinoza, physics has a 'metaphysical wrap'.[12]

Matter is all reality in a materialistic approach and all phenomena and events (including knowledge) are due to it, as to its cause. For materialism is the being (ie the reality, mechanistically determined) that determines thought; for Spinozism the being, that is the reality or infinite substance, thereby self-determines the whole of reality (i.e., the activity of thought and matter) in an order that is identical and unique, but that takes place on two parallel and non-interacting series. The structure of reality is, therefore, the possible object of true knowledge, a knowledge that is not only adequate, but that gives us a reliable account of reality by discovering its objective laws.

All this is possible because *a priori* the identity of the order, according to which mental and physical processes take place independent of each other, guarantees the correspondence of the true idea with its meaning, namely its being an authentic mirror of known reality. It

[12] See Marshall 2009, 897-919.

is undoubtedly a metaphysical solution, an assumption of the unity of the substance, regulated by laws that take place in parallel within its spheres of expression, known to us as extension and thought. Free from the metaphysical casing, this theory contains a principle (the recognition of matter), that will be the bedrock for the future materialistic way of thinking, which implies the denial of God's personality, the subversion of God's conception, the premises of atheism.

Matter and primary Matter in Leibniz

Adrian Nita

Matter occupies a central place in Leibniz's metaphysics, given that matter is an Aristotelian principle rather than a simple Cartesian extension.[1] From this point of view there is some continuity between Leibniz's writings from youth to maturity. It is also true that some ideas are hard to accommodate with the general view on Leibniz: some papers leave an impression of discontinuity, a fact that leads some commentators to say that Leibniz has many theories of matter,[2] as is the case with the two theories of soul-body,[3] time and space.[4]

The problem I will analyse in this paper is not concerned with the continuity or discontinuity of matter (I will give an answer *en passant*), but about one affirmation from a piece of correspondence with Arnauld: in a letter dated 9 October 1687, Leibniz says that all is full of life, and the number of the souls is greater than the number of atoms.[5] In order to see the meaning of this idea, and so in order to have a basis for understanding matter, I will present, in the first part of this paper, an historical view on matter and primary matter; in the second part, I will discuss the sentence concerning the number

1 Leibniz, *Specimen Dynamicum* (1695). In Leibniz 1969, 441 (L). Other abbreviations used: Leibniz 1923- (A); Leibniz 1962 (GM); Leibniz 1960-1961 (GP).

2 Russell 1900, cap. VII, par. 35.

3 Russell 1900, cap. XII, par. 89-91.

4 Rescher 1967; McGuire 1992; Arthur 1985.

5 «Car je croy plustot que tout est plein de corps animes, et chez moy il y a sans comparaison plus d'ames, qu'il n'y a d'atomes chez M. Cordemoy, qui en fait le nombre fini, au lieu que je tiens que le nombre des ames, ou au moins des formes est tout a fait infini, et que la matiere estant divisible sans fin, on n'y peut assigner aucune partie si petite, ou il n'y ait dedans des corps animes, ou au moins d'une entelechie primitive ou (si vous permettes qu'on se serve si generalement du nom de vie) d'un principe vital, c'est a dire des substances corporelles, dont on poura dire en general de toutes, qu elles sont vivantes» (GP II, 118).

of material parts, and in the third part, I will take a systematical and positive approach to the problem.

1

In the writings from his youth (1663-1679), Leibniz wants to reconcile Aristotle with Descartes, including in the problem of understanding matter. In *De transubstantione* (1668), he sustains that the matter is mass extended where there is nothing but extension and resistance. Matter is what is the resistance and impenetrability of things. «It must be proved that there are no entities in the world except mind, space, matter, and motion. A thinking being, I call mind. Space is a primary extended being or a mathematical body, which contains nothing but three dimensions and is the universal locus of all things. Matter is a secondary extended being, or that which has, in addition to extension or mathematical body, also a physical body, that is, resistance, antitypy, solidity, the property of filling space, and impenetrability, which consists in its being constrained either to give way to another being of this kind which strikes it or to stop it. Motion therefore comes from this quality of impenetrability. So matter is a being which is in space or coextensive with space».[6]

Leibniz seems to be closer to Descartes, given his attachment to the possibility of understanding all in the world in terms of size, shape and motion; at the same time, he is close to Aristotle given that matter is a material principle, that is what is united with a formal principle in order to have a substance in an Aristotelian sense of the term.[7]

In his Parisian sojourn (1672-1676), Leibniz steps further towards his separation from Descartes and notes the necessity of a separation of the idea of space from the idea of matter. Matter is, rather, discrete, because the objects from our world are individual, so we perceive places that will occupy an object in different moment of time: «Matter alone can be explained by a plurality without continuity. And matter seems in fact to be a discrete being. For though it is assumed to be solid, matter taken without a cement, through the motion of another body, for example, will be reduced to a state of liquidity or divisibility.

6 Leibniz to Thomasius, 20/30 April 1669; GP I 22; L 100.
7 Aristotle, *Metaphysics*, VII, 1, 1028 b.

Hence it follows that it is composed of points. This I prove as follows: every perfect liquid is composed of points, because it can be dissolved into points, namely, by the motion of a solid within it. Matter therefore is discrete being, not continuous. It is merely contiguous and is united by motion or by some mind».[8]

Adopting the substantial forms in 1678-1679,[9] Leibniz had a solid ground to build a theory where matter appears explicitly as a material principle: matter is what is united with a form in order to give a substance, or more concrete, a primary matter is united with a substantial form in order to give a corporeal substance.

The idea of divisibility without end is also sustained and represents the basis on which Leibniz sustains a separation from the indivisibility of substantial forms; if one divides matter, one will find a substantial form united with a primary matter. In this way, the primary matter appears as the passive primitive force of the entity.[10]

If one considers matter separate from form, from the necessity of understanding matter, matter gives the phenomenal aspect of the entity and the substantial form will be the primitive unity, the core of potentiality responsible with unity, being and the reality of things.[11] In order to underline this aspect, Leibniz uses the term «secondary being» to name a being that receives its unity, being and reality from something simple, that is an entelechy, substantial form or soul.[12]

Leibniz sustains, unlike Descartes, the existence of entelechies everywhere in the world, even in the smallest parts of things, and so he can complete his Cartesian philosophy with an Aristotelian idea.

We can see an interesting aspect of this view: if prior to 1678 matter seems to be as it was conceived by mechanical philosophy, some difference, even gap,[13] appears with the idea that matter contains something active, and not the form, as was in the Aristotelian line of thought. This is the treatment of the idea of body, which begins to be explained on Aristotelian grounds and not at all on Cartesian grounds.

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8 *De arcanis sublimium vel de summa rerum*, AVI, 3, 473-474; L 158.

9 On the adoption of substantial forms, see: Fichant 1998; Garber 2009; Nita, forthcoming.

10 Leibniz to Arnauld, October 9, 1687; GP II, 111-129.

11 Leibniz to Arnauld, October 9, 1687.

12 Leibniz to Arnauld, October 9, 1687.

13 Garber 2009.

Putting metaphysics in accord with a new dynamical theory,[14] after 1678-1679, the system of Leibniz came to be a perfect synthesis (in a Hegelian sense) of some Cartesian ideas with some Aristotelian ideas.

In his writings after the adoption of the terms «monad» (1695-6[15]) and «organism» (after 1704[16]), the understanding of matter in terms of force is more strongly sustained and can offer a basis for a metaphysics that is, undeniably, a sign of Leibniz's identity; Leibniz is not Aristotelian, Cartesian or Aristo-Cartesian anymore, but he is Leibnitian. Even if in youth and maturity Leibniz was sometimes close to Aristotle, sometimes close to Descartes; even if he tried to reconcile the Aristotle-scholastic ideas that use forms excessively to Descartes, who uses matter excessively, in his monadological age Leibniz comes to an understanding of matter that succeeds in separating him very clearly from his precursors. The Hegelian synthesis between his two predecessors (Aristotle and Descartes) can be seen very clear in *Specimen Dynamicum* (1695), where Leibniz explains existence as a whole through force: there is active force, useful in metaphysics, that is an entelechy, soul or substantial form, and passive force, that is responsible for the phenomenal, physical aspects of things. Each of them is primitive and derivative: «Active force, which may well be called power, as it is by some, is of two kinds. The first is primitive force, which is in all corporeal substance as such, since I believe that a body entirely at rest is contrary to the nature of things. The second is derivative force, which is exercised in various ways through a limitation of primitive force resulting from the conflict of bodies with each other. Primitive force, which is nothing but the first entelechy, corresponds to the soul or substantial form, but for this very reason it relates only to general causes which cannot suffice to explain phenomena. Passive force is likewise of two kinds - primitive and derivative. The primitive force of suffering or of resisting constitutes the very things which the

14 On dynamics, see: Fichant 1995; Fichant 1974; Gueroult 1967.

15 In the sense of simple substance, real unity, the term «monad» appears in 1695 in a letter to l'Hopital from 12/22 July 1695, so that in mid 1697 the term enters definitively into Leibniz's vocabulary (for further details, see Garber 2009, 335-338). According Michel Fichant, the term «monad» appears in 1696, in a letter to Fardella (see Leibniz 1857, 326; for further details, see Fichant 2003, 17).

16 Smith 2011, 102. On the «organism», see: Smith 2006; Nunziante 2002; Ishiguro 1998; Duchesneau 1998; Pasini 1996; Wilson 1995.

Scholastics call materia prima, if rightly interpreted. It brings it about, namely, that one body is not penetrated by another but opposes an obstacle to it and is at the same time possessed of a kind of laziness, so to speak, or a repugnance to motion, and so does not allow itself to be set in motion without somewhat breaking the force of the body acting upon it. Hence the derivative force of suffering thereafter shows itself in various ways in secondary matter».[17]

Only through this cooperation between physics and metaphysics can we hope to obtain a good understanding of things in full accord of science and religion, i.e. knowledge and piety.[18] Leibniz arrives at the two kingdoms, of efficient laws and of final laws; they do not communicate in the full sense of the term, given that the corporeal world has no causal influence upon the metaphysical world, but they are in harmony.

As a demonstration of the essential role played by matter, Leibniz uses sufficient reason: if one understands the body only in terms of mechanical philosophy, through size, shape and motion, it will not be possible to discern one part of matter from another. Per a contrario, in each part of matter there is a formal principle and individuation is given by the substantial form. In this unity, the true formal atom, there is the law of entity, or, from a logical point of view, the predicates of the subject.[19]

In *De ipsa natura* (1698) and other writings following this work, the understanding of matter leads Leibniz to see that an entity can be explained in terms of a relationship between dominant monad and subordinate monad,[20] and so he replaced the image of substance as something from substantial form and primary matter. This understanding of matter in terms of subordinate monad underlines both the phenomenal character of the entity and also the characteristic of

17 *Specimen Dynamicum* (1695), GM VI, 236; L 436.

18 L 441.

19 L 440.

20 According to Brandon Look, the expression «monas dominans» appears in the letter to De Volder from 1703 (see Look 2002). Other scholars, as A. M. Nunziante, sustain that is not so easy to see the exact moment, but some references can be seen even in 1695-1700 (see Nunziante 2011). In my paper *Mind-Body Problem: the Controversy between Leibniz and Pierre Bayle* (forthcoming), I advanced that the distinction between dominant monad and subordinate monads is prefigured in the correspondence with Bayle from the last decade of the seventeen Century.

multiplicity: the body receives its unity and being from a true unity, from something absolutely simple.[21]

It is obvious that the body, even if material, is not a simple material compound that would answer to the orders coming from the central unity. The body is a plurality of substances, an aggregate if we see it in a phenomenalist manner, but the body has unity if one underlines the fact that each portion of matter is full of vital principles.[22]

In his letter to de Volder, from 20 June 1703, Leibniz gives an explanation that has raised many controversies in the domain of Leibnizian studies: «If you think of mass as an aggregate continuing many substances, you can still conceive of a single pre-eminent substance or primary entelechy in it. For the rest, I arrange in the monad or the simple substance, complete with an entelechy, only one primitive passive force which is related to the whole mass of the organic body. The other subordinate monads placed in the organs do not make up a part of it, though they are immediately required by it, and they combine with the primary monad to make the organic corporeal substance, or the animal or plant».[23] In my interpretation, the five classes of notions sustain a relationship between form and matter at different levels and from different points of view: at a basic level, Leibniz sustains the important idea of unity between form and matter; from another point of view, there is a prime entelechy and the aggregate of substances, a fact that explains the phenomenality of the world; if one sees the world from a monadological point of view, one can see an active force (entelechy) united with a passive primitive force.

It is obvious that Leibniz has all elements in order to explain existence as a whole: the explanation of substance from the union between primary matter and a substantial form is metamorphosed in the union between a dominant monad and innumerable subordinate monads.

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21 *De ipsa natura sive de vi insita actionibusque Creaturarum, pro Dynamicis suis confirmandis illustrandisque* (1698), GP IV, 512; L 504.

22 Leibniz to De Volder, June 20, 1703.

23 Leibniz to de Volder, June 20, 1703; L 530.

2

From this presentation, however short,[24] the lines of force of the theory of matter are obvious; the most important seem to be the following four: 1. the divisibility of matter is without end; 2. the accord between the kingdom of nature and the kingdom of grace; 3. primary matter is primitive passive force; 4. the balance between active principles and passive principles.

In order to understand Leibniz's idea that the number of entelechies is greater than the number of material parts (or greater than the number of atoms for the adepts of atomism), we can start with the divisibility of matter. I think that the law of continuity is a true principle, in a hard, Aristotelian sense: it is a true affirmation, obeying universality and necessity. In its application to matter, the law of continuity leads directly to the impossibility of material atoms. In exchange, substantial forms (entelechies, souls, monads) obey the law of continuity in the sense that there is an unending hierarchy of these forms; but each of them, taken separately from primary matter, is unique, indivisible and is the expression of individuality.

The affirmation from the Parisian sojourn, in my opinion, on the discontinuity of matter has to be taken with much precaution: things are individuals; they exist in space and time; they occupy some portion of space. It is obvious that between any two things there is still place for other things. In this sense, it is obvious that the law of continuity is also valuable in this respect. So, only in the case that one sees the affirmation from a certain point will the discontinuity be able to be sustained; but if one sees matter from the point of view of the place that is occupied by things, the law of continuity is also valid for matter.

But if matter is divisible without end, how could we understand that the parts of matter are less than the number of entelechies? A first suggestion is that there is primary matter united with substantial forms only at some levels of existence. In the parts at the bottom and the parts at the top, it is possible to find only matter or only substantial forms. But this suggestion is contrary to the idea of the balance between active principles and passive principles, that is, between the

[24] In order to see other details on the theory of matter, see the excellent paper Garber 2011.

natural world and the moral world. In his correspondence with Pierre Bayle, Leibniz sustains the parallelism that there is between soul and body at the level of the whole of existence, so, between the world of souls and the world of bodies. Even if there is no direct, causal influence, the two kingdoms are interconnected, and they cannot exist separately: «J'ai expliqué l'accord qui est entre l'ame et le corps par une comparaison qui seroit entre l'accord de ces deux Etres et celuy de deux pendules de differente structure qui se rencontreroient tousjours exactement pour marquer la même heure au même temps. Ce qui se pourroit faire de trois façons 1. en les attachant tellement ensemble qu'elles fussent obligées de faire leur vibrations en même temps; 2. en chargeant un homme exprès pour les accorder; 3. en les faisant si exactes et si bonnes d'abord, qu'elles puissent s'accorder par leur propre structure. Ce qui est sans doute le meilleur. Ainsi l'ame et le corps se peuvent accorder 1. par une influence de l'un sur l'autre conformement au sentiment commun des Ecoles, mais qui est inexplicable; 2. par le soin que Dieu predroit continuellement de les accorder ensemble, selon le systeme des causes occasionnelles, en sorte que l'estat de l'un donneroit occasion à Dieu de faire sur l'autre des impressions convenables, ce qui seroit un miracle perpetuel conforme à la sagesse divine et à l'ordre des choses; 3. par un reglement exact de chacun de ces deux estres à part soy, en sorte qu'ils puissent accorder en vertu de leur propre nature, ce qui est le plus beau et le plus digne de Dieu, et c'est mon systeme de l'harmonie preétablie».[25]

A second suggestion can be that there are immaterial beings; for instance, angels have no body in the full sense of the term; their substantial aspect is given by the elements that play the role of the body for natural beings.

I am inclined to think that this theological sense of a solution does not help very much. There are many places where Leibniz maintains that forms must be united with a primary matter in order to give a true, full being. An incomplete being, like a rock, is another kind of being if one wants to compare it with an angel: «As for *spirits* or rational souls, although I find that what I have just been saying is true at bottom of all living beings and animals (that is, that the soul

25 Leibniz, *Extrait du Dictionnaire de M. Bayle article Rorarius p. 2599 sqq. de l'Edition de l'an 1702 avec mes remarques*, GP IV, 530-531.

and the animal begin only with the world and come to an end only with the world), yet there is this peculiar thing about rational animals, that their little spermatic animals, as long as they are only this, have only ordinary or sensitive souls, but as soon as the elect among these, so to speak, arrive at human nature through actual conception, their sensitive souls are raised to the level of reason and to the prerogative of spirits».[26]

A third suggestion is that of Thomas Aquinas and other scholastic philosophers who sustain that there are a large number of substantial forms in addition to the number of individuals. There is a substantial form for Socrates, Aristotle etc., but also there is a substantial form of human, a substantial form of biped, a substantial form of a living being and so on.

But it is obvious that this case of inflation of substantial forms will also lead to an inconsistency between the major ideas of understanding matter. If there must be perfect accord between the kingdom of nature and the kingdom of grace, then the perfect parallelism between body and soul brings it about that what happens in the body has a reply at the level of the soul. In other words, the representative nature of the substantial form needs a content, needs something to be represented. «The perceptions in the monad arise from each other according to the laws of the appetites or of the *final causes of good and of evil*, which consist in observable perceptions, whether regulated or unregulated, in the same way that bodily changes and external phenomena arise from each other according to the laws of *efficient causality*, that is, of motion. Thus there is a perfect *harmony* between the perceptions of the monad and the motions of the body, pre-established from the beginning between the system of efficient causes and that of final causes. It is in this that the accord and the physical union of soul and body consist, without either one being able to change the laws of the other».[27] In this way, it is not enough to say that a substantial form for man, for example, represents the actions of men, because there is no man in general, but there is the man Socrates, the man Plato etc. The fact is that Leibniz admits in his ontology only individual things, and these as bundle of proprieties make the perfect parallelism between

26 *Monadologie* 82; L 651.

27 *Principes de la nature et de la grace* (1714); L 637.

the world of bodies and the world of souls, based on a symmetrical and homogeneous relation.

I will leave, for the moment, this negative approach to the problem and focus on some positive aspects; and in the final part of the paper, I will take up the problem again and propose a solution.

3

Given the balance between active and passive principles, a balance is needed between efficient laws and final laws. In *Specimen Dynamicum*, Leibniz maintains that the maximum in the kingdom of the power and the best in the kingdom of wisdom take place together.[28]

The understanding of balance in the terms of accord shows the importance of understanding matter in a dynamical sense. As a passive primitive force, primary matter needs to be accorded to active force, that is, to substantial form. But the accord means, on another understanding, a harmony of the two domains, of the two kingdoms: they correspond to one another as if the world of souls were an immaterial automaton and the world of bodies were a material automaton. This harmony is the explanation that the two kingdoms can be labeled as a unity: «I have compared the soul with a clock only with regard to the regulated precision of its changes, which is only imperfect even in the best clocks, but which is perfect in the works of God. And one can say that the soul is a most exact immaterial automaton. When it is said that a simple being will always act uniformly, a distinction needs to be made. If to act uniformly is to follow perpetually the same law of order or of succession, as in a certain scale or series of numbers, I agree that in this sense every simple being and every composite being acts uniformly. But if uniformly means similarly, I do not agree».[29]

But what sustains this dynamical balance? I am inclined to think that Leibniz would say that the accord is due to the existence of a isomorphism between the two kingdoms: the domain of nature and the domain of grace are in balance in the sense that they have a similar

28 *Specimen Dynamicum* (1695), GM VI, 246.

29 *Eclaircissement des difficultés que Monsieur Bayle a trouvées dans les systeme nouveau de l'union de l'ame et du corps* (1698), GP IV, 522; L 495.

structure;[30] in measurable terms, the same quantity of active force is equal to the quantity of passive force.[31] The matter, in its quality of primary matter, is understood as a passive primitive force. Even if it keeps the passive aspect given by the resistance that opposes it to penetration, the primary matter has an active aspect, given that it is a primitive force.

It is obvious that the balance between the kingdom of nature (that is material, obeying the laws of movement) and the kingdom of grace (that is metaphysical, obeying the final laws) is normal, if we regard things from the view of a system of forces in balance: any change of force in a part of the system will lead to a change in another part of the system. So, in order for the system to remain in balance, if the active force is greater with one unity (i.e. the number of substantial forms is greater with one unity), then the passive force needs to be greater with one unity (i.e. the number of material parts has to be greater with one unity).

To conclude, I can now say that Leibniz's sentence about the number of entelechies that is greater than the number of material parts is a sentence that raises many precautions. In a strong sense, the sentence underlines the idea that the number of entelechies is very high; it is not the case that the only beings endowed with substantial form are those we can see in our everyday existence. Beyond this interpretation, Leibniz's sentence, in a soft way, is rather a figure of style, a kind of metaphor: Leibniz wants to say that all is full of life *as if* the number of the souls is greater than the number of the atoms.

Leibniz feels, in the context of his correspondence with Arnauld, the need to underline the necessity of a consideration of the substantial forms reported by Cartesian philosophy and with Aristotelian philosophy. We can see, therefore, that it is not the case that an exaggeration in minus (the Cartesian eliminating of substantial forms) needs to be replaced with an exaggeration in plus (in the case that the sentence of Leibniz was accepted).

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30 *Extrait du Dictionnaire de M. Bayle article Rorarius p. 2599 sqq. de l'Edition de l'an 1702 avec mes remarques*, GP IV, 537.

31 *Meditatio principio individui* (1676).

Living in a Material World
Hylas' Matter in George Berkeley's *Three Dialogues between Hylas and Philonous*

Michael Mendyka

Throughout western philosophy, *matter* seems to be a fundamental ontological constituent of the world. On the one hand we find that *matter* seems universally accepted and has no need for further explanation. Yet, upon review it turns out that what *matter* is cannot easily be described. In the history of philosophy there were thinkers who were puzzled by this confusion and decided to call the entire concept of *matter* into question. To address the discrepancy between *matter* as a philosophical commonplace and the *desideratum* for a definition and explanation of this term, I will analyse the description of *matter* by one of its strongest opponents, the immaterialist George Berkeley.

In 1710, the Irish philosopher George Berkeley published his *Treatise Concerning the Principles of Human Knowledge*. In this book, the young philosopher advanced a radical criticism of a notion of *matter* that had been established by Robert Boyle and supported by philosophers like Nicolas Malebranche, René Descartes or John Locke. However, in the years that followed Berkeley's publication, he found that his immaterialism had been ignored, misconceived and even ridiculed. In the light of the many objections that were voiced against Berkeley's immaterialism he decided to author a defence of his philosophy, entitled *Three Dialogues Between Hylas and Philonous*.

Recently, researchers such as McCracken and Tipton[1] and Winkler[2] have shown an increased interest in Berkeley's thought and the concept of *matter* he opposed. Furthermore, the ontological frame-

[1] McCracken and Tipton 2000.
[2] Winkler 2005.

works laid out by early modern philosophers such as Descartes and Locke are at the heart of our understanding of *matter* today. Therefore, this paper intends to examine the term *matter* and to determine the extent to which Descartes and Locke are represented in the *Three Dialogues*. Berkeley's immaterialistic criticism is brought forward by his *alter ego* Philonous, a firm objector of *matter*. On the other side, Hylas' telling name derives from the Greek ὕλας for *matter*. He is a representative of materialistic philosophy. To define *matter*, this paper elaborates on Hylas' line of argumentation. In the following pages, I argue that Hylas advocates the philosophical concepts of not one but several early modern thinkers such as Descartes and Locke. To verify this hypothesis, this paper examines Hylas' notion of *matter* in Berkeley's *Dialogues*.

This paper has been divided into three parts. In the first part, I compare Hylas' different statements in the *Dialogues* to carve out his concept of *matter*. The second section of this paper will examine the similarities between this concept and the ontology of Descartes and Locke. Finally, the conclusion gives a brief summary and evaluation of the findings regarding their significance for the understanding of *matter*.

1

The purpose of this first section is to review Hylas' definitions of *matter*. As straightforward as this may seem, precision is imperative here. After all, even the softly-spoken and patient Philonous accuses Hylas by saying, «you are unwilling to have your notion of corporeal substance examined».[3] A comparison of Hylas' statements shows that an abundance of synonyms for *matter* occurs in the conversation between Hylas and Philonous. This plethora may be grouped into three categories: *matter*, *sensible things* and *substance*. The table .1 illustrates the synonymous relations between words of these three divisions.

The table demonstrates that an overlap exists concerning the use of the word (*material*) *substance*. This might lead one to infer that the categories *matter* and *substance* have the same meaning. As was

[3] Berkeley 1952, 132.

matter	sensible things	substance
(material) substance	objects external objects sensible qualities	(material) substance (material) substratum unthinking substance corporeal substance unperceiving substance

Table .1:

pointed out in the introduction to this paper, precision is indispensable. Even though several of these terms have similar denotations, I aim to elaborate on the slight differences in meaning and their philosophical consequences. Based on this division into *matter*, *sensible things* and *substance*, I will discuss each of these categories in turn and point to what the difference between *matter*, *sensible things* and *substance* is for Hylas.

Turning now to the first category, *matter*, it soon becomes obvious that in the *Dialogues*, both philosophers quickly diverge on the question whether *matter* exists. As Hylas asks at the beginning of the *Dialogues*:

> *Hylas* - Can anything be more fantastical, more repugnant to common sense, or a more manifest piece of scepticism, than to believe there is no such thing as matter?[4]

Noteworthy about this exclamation is the use of the term *sceptic* which, to Berkeley, who saw his entire philosophy as an anti-sceptic project,[5] might have proven the gravest accusation. The reason why Hylas is so zealous in his attack is his assumption that *matter* is something that is perceived by every person at every moment. How can a philosopher seriously call something so commonplace into question?

Already, a misunderstanding in this dialogue occurs which requires a small detour. Calling something into question that is seen, felt or otherwise permanently experienced would indeed pose a manifest piece of scepticism. So, to clarify his position, Philonous makes an

[4] 117.
[5] 35.

important distinction. He introduces the term *sensible* thing. This is the most general term in the *Dialogues*. In Berkeley's epistemology, the human spirit compounds a *sensible thing* from different sensations.[6] In the existence of these *sensible* things, Philonous seems to have found a common denominator between himself and Hylas as the following quote shows:

> *Philonous* - This point then is agreed between us - That *sensible things* are those only which are immediately perceived by sense. You will farther inform me, whether we immediately perceive by sight anything beside light, and colours, and figures; or by hearing, anything but sounds; by the palate, anything beside tastes; by the smell, beside odours; or by the touch, more than tangible qualities.
>
> *Hylas* - We do not.[7]

After this initial concession, the brunt force of Hylas' accusation of scepticism seems weakened. After all, the existence of something that can be universally seen, felt, smelled and heard is no longer disputed. But, if we read the excerpt from the *Dialogues* a little further, we come across Philonous' catch. After all, whether *matter* is a sensible object remains yet to be seen:

> *Philonous* - It seems, therefore, that if you take away all sensible qualities, there remains nothing sensible?
>
> *Hylas* - I grant it.
>
> *Philonous* - Sensible things therefore are nothing else but so many sensible qualities, or combinations of sensible qualities?
>
> *Hylas* - Nothing else.[8]

Already, the hidden agenda behind Philonous' initial concession becomes obvious. To him, the non-existence of *matter* can be maintained without sceptical or paradox consequences. The point Philonous is trying to make is that while *sensible things* exist beyond doubt, there is no sensory connection to such a thing as *matter*. During the following discourse, Philonous points out to Hylas several instances where he

6 Berkeley 1952, 49.
7 120.
8 120.

mistakes mere qualities (mainly the sensible quality of solidity) for *matter*. However, he is not alone in this misconception. The connection between *matter* and perceivable qualities has been addressed by several of Berkeley's opponents. In *The Life of Samuel Johnson*, the biographer James Boswell recorded the following dispute about Berkeley's immaterialism:

> After we came out of the church, we stood talking for some time together of Bishop Berkeley's ingenious sophistry to prove the non-existence of matter, and that everything in the universe is merely ideal. I observed, that though we are satisfied his doctrine is not true, it is impossible to refute it. I never shall forget the alacrity with which Johnson answered, striking his foot with mighty force against a large stone, till he rebounded from it - «I refute it thus».[9]

This excerpt from James Boswell's *Life of Dr. Samuel Johnson* describes an episode between Boswell and the English poet, essayist and moralist Dr. Samuel Johnson. It provides us with an account of a similar mistake made by the great English thinker while discussing immaterialism with George Berkeley. Even though this 'refutation' probably shattered Johnson's metatarsal, Berkeley's immaterialism remained unharmed. Hylas sees *matter* as perceivable. Likewise, Johnson holds the view that the sensory quality of *solidity* is a proof of the existence of *matter*. However, both examples show that *matter* (unless used synonymous with *solidity*) is not subject to direct sensory perception.

In the dispute over *matter*, two tenets have been mentioned already. Firstly, we have the *sensible things*, which are acknowledged by both Philonous and Hylas and therefore by immaterialists and materialists alike. Furthermore, the term *matter* is discussed. *Matter* is seen as something that can be directly perceived. In the *Three Dialogues between Hylas and Philonous*, this is seen as a misconception between *matter* and *solidity*. Because of Philonous' constant argumentation, Hylas successively loses ground to his philosophical adversary and abandons the notion of perceivable *matter* altogether. Additionally, a shift of attention can be observed. At the beginning of the *Dialogues* the predominance of perception in epistemology is shared by Hylas

[9] Boswell 1986, 122.

and Philonous. In contrast to this, Hylas now refuses to accept perception as the only source of knowledge. He puts forward that «to *exist* is one thing and to be *perceived* is another».[10] Accordingly, Hylas' last resort to prove Philonous a sceptic is the employment of a new term and a new concept: *substance*.

Hylas argues that *substance*, in contrast to *matter*, is a non-sensible entity. It, rather, functions as an ontological base that supports the sensible qualities. His line of argumentation for the existence of *substance* consists of two points.

Firstly, Hylas claims that while most qualities like heat, taste or sound are perceived via the senses and perceived rather subjectively, certain kinds of qualities exist objectively and independently of perception. This is one of the rare occurrences where Hylas offers a lecture for Philonous: «You must know sensible qualities are by philosophers divided into *primary* and *secondary*».[11] According to this distinction, unlike heat, taste or sound, the qualities motion and extension exist independently of the mind. This opens up another possibility to uphold the existence of *substance* as the carrier of two unperceivable primary qualities.

Secondly, Hylas insists that while we may not be able to perceive *matter* directly and thus frame an actual idea of *substance*, we nevertheless can prove its existence via deduction:

> *Hylas* - I do not pretend to have any proper positive idea of it. However, I conclude it exists, because qualities cannot be conceived to exist without a support.
>
> *Philonous* - It seems then you have only a relative notion of it, or that you conceive it not otherwise than by conceiving the relation it bears to sensible qualities.
>
> *Hylas* - Right.[12]

To convince Philonous of the existence of *substance*, Hylas employs the method of a syllogism. In this deduction he infers the reality of *substance* from the existence of *sensible things* (here: *ideas*). It can be rephrased as follows:

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10 Berkeley 1952, 121.
11 137.
12 150.

Major premise: Ideas, without a support (*substance*) cannot exist.

Minor premise: I comprehend ideas.

Conclusion: Therefore a support (*substance*) exists.

By this syllogism, Hylas seems to have proven the existence of *substance*. Although the major premise of this syllogism must have seemed disputable to Philonous, he raises no objection. Even though Philonous strictly follows this reasoning, his conclusion is diametrically different from that of Hylas. For now I would like to leave this contradiction unresolved, as it is of great importance at a later point.

In spite of this methodological concordance, Philonous rightly points out that Hylas does not know the *substance* by perception. His syllogism regards the conceptual connection between *sensible things* and *substance*. Consequently, he possesses a relational knowledge of *substance*. Thus, at the end of the first part of this paper, the possibility of a *substance* existing independently of the mind and acting as a foundation of sensible qualities is not entirely ruled out. Overall, the analysis of the terms *matter*, *sensible things* and *substance* indicates that despite these terms' semantic overlap in the *Three Dialogues between Hylas and Philonous*, they represent distinct ontological concepts.

2

Having defined the differences between these concepts, the second part of this paper will analyse their origins. It is apparent that in his dispute with Philonous, the materialist Hylas does not philosophise haphazardly. In fact, he follows well-trodden paths established by thinkers such as John Locke and René Descartes. Based on the different aspects of *matter*, this paper aims to retrace the broader materialistic concepts that are advocated by Hylas.

Apart from others philosophers, the rationalist René Descartes and the empiricist John Locke are seen as the main influences on Berkeley's immaterialism. George Berkeley is traditionally deemed a British empiricist. However, this classification is rather misleading. Berkeley was born and raised in Ireland. With his parents of Anglo-Irish descent, he is 'half-English' at most. Moreover, applying Michael Ayers' argumentation in his famous essay, *Was Berkeley an empiricist*

or a rationalist[13] to Hylas' materialistic positions in the *Dialogues*, I am going to demonstrate that in this area, he is only half empiricist at most.

Returning now to Hylas and Philonous, we find that the experiencing 'I' is the epistemological centre of Berkeley's world. This focus on perception is a common denominator between Hylas and Philonous and is expressed in Berkeley's *Principles of Human Knowledge* in the famous tenet: «*esse* is *percipi*».[14] It underlines perception as the epistemological foundation in Berkeley's immaterialism. Hence, the existence of *sensible things* is undisputed between Hylas and Philonous. However, this concord is extremely short-lived and the two philosophers begin to disagree. In the course of the *Dialogues*, Hylas changes his mind quickly, several times. This is a literary device used by Berkeley to enable him to address various objections against his immaterialism voiced by different philosophers. In order to achieve a better understanding of Berkeley's notion of *matter*, we have to look behind Hylas' façade and resolve the literary persona into distinct philosophical concepts of *matter*.

In Berkeley's philosophical works, a plethora of Lockean nomenclature can be found. This is due to Berkeley's *modus operandi* that he describes in his *Principles* as: «Think with the learned and speak with the vulgar».[15] With view to the understanding of *matter*, this quotation offers two possible interpretations:

Firstly, Berkeley has always associated vulgar or common language with Lockean philosophy. Therefore, assimilating Lockean terms such as *matter* and *substance* can be seen as Berkeley speaking «with the vulgar».

On the other hand, the scholar of early modern thought Wayne Waxman investigated the parallels between early modern thinkers in his book *Kant and the Empiricists*. In his chapter on Locke, Waxman provides us with an alternative interpretation.[16] He introduces the distinction between two types of materialism. The first is called *vulgar materialism*. Here, *matter* is directly perceivable. Furthermore, no

13 Ayers 2005.
14 Berkeley 1952, 50.
15 Berkeley 1948, 317.
16 Waxman 2005, 185.

distinction between primary and secondary qualities exists. Therefore, the existence of *sensible things* is preserved independently of our perceptions. This kind of materialism is referred to as vulgar because it is shared by common people without philosophical reflection. In his chapter, Waxman juxtaposes the *vulgar materialism* with a *learned materialism*. This school of thought is characterised by the persuasion that sensible qualities have to be distinguished from an unperceivable *matter*.

The questions remain, why and how does Berkeley include nomenclature from a philosophy he deems vulgar? This depreciation could be limited to either his parlance in general or his materialism in particular. To answer this question, Locke's *matter* in his famous *Essay Concerning Human Understanding* has to be analysed. A reading of the *Essay* reveals that the concept of *matter* it contains can hardly been called vulgar. Firstly, Locke's position can be best described as a mechanistic materialism. He believes in *material substances* which are never present in our inward perception (*sensation*) or outward perception (*reflection*). In Chapter 23 of Book Two of his *Essay*, Locke introduces a distinction between «a notion of pure substance in general»[17] and «complex ideas of particular substances«.[18] This differentiation deviates considerably from Hylas' initial material realism. In general, therefore, it seems that Locke's materialism can by no means be classified as vulgar.

As a matter of fact, rather the later, refined elements of Hylas' argumentation seem to be inspired by the British empiricist. The primary/secondary quality distinction which Hylas produces to defend *substance* and attributes to undisclosed 'philosophers' is an example of Lockean thought personified by Hylas. The British empiricist carved out this distinction in Chapter 8 of the second book of the *Essay Concerning Human Understanding*

> Take away the Sensation of them; let not the Eyes see Light, or Colours, nor the Ears hear Sounds; let the Palate not Taste, nor the Nose Smell, and all Colours, Tastes, Odours, and Sounds, as they are such particular Ideas, vanish and cease, and are reduced to their Causes, i.e. Bulk, Figure, and motion of Parts.[19]

17 Locke 1964, 192.
18 212.
19 77.

As far as this part of Locke's *Essay* is concerned, striking resemblances to the primary/secondary quality distinction of Hylas' become evident. To summarise the influence of John Locke on Hylas in Berkeley's *Three Dialogues*, it can be stated that aspects of his refined materialism can be found epitomised by Hylas. In spite of Berkeley's identification of Locke with the 'vulgar', these borrowings are extremely sophisticated.

3

The previous part of this paper assessed Locke's influence on the *Dialogues*. However, a large and growing body of literature has investigated the impact of René Descartes on the philosophy of George Berkeley. C. J. McCracken and I. C. Tipton[20] have written the most complete analysis of influences of Berkeley. In an investigation into Cartesian thought represented in Berkeley's philosophy, McCracken and Tipton classify the substance dualism as a major influence on Berkeley's immaterialism. However, these two scholars have not analysed the *Three Dialogues between Hylas and Philonous* in much detail. Having discussed Lockean fragments in the *Three Dialogues*, the final section of this paper addresses the topic of Cartesianism represented by Hylas.

Descartes is known as the originator of substance dualism (or Cartesian dualism). Firstly, the dualism he carved out in his *Meditations* includes a *material substance*. As Descartes puts this: I have a distinct idea of the body insofar as it is merely an extended, non-thinking thing.[21] This extended, non-thinking thing (*res extensa*) bears a strong resemblance to the *material substance* we are already familiar with. In addition to that, Descartes assumes a second, *mental substance* (*res cogitans*).

I am, therefore, precisely only a thinking thing, that is a mind, soul, intellect or reason - words the meaning of which was formerly unknown to me. But I am a genuine thing and I truly exist. But what kind of thing? I just said: a thinking thing.[22]

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20 McCracken and Tipton 2000, 13-25.
21 Descartes 2010, 72.
22 20.

The main differentiator between these two *substances* is their attribute. This is what unchangeably defines a *substance*. For *extended substance* this is the extension. For the *mental substance* this is thought. Descartes further differentiates this concept by introducing different modes for these *substances*. In contrast to a *substance*'s attributes, those are interchangeable. The modes for extended substance include the relative position in three-dimensional space as well as motion. A *res extensa* can change its motion and position, yet it cannot change the fact that it is extended. Likewise the *res cogitans* cannot change the fact that it thinks. However, the actual thoughts are interchangeable. Again, Descartes' *res extensa* mirrors Hylas' idea of *material substance*.

Lastly, an important concession has to be made. To attribute Hylas' primary/secondary distinction solely to John Locke would be misleading. As a matter of fact, Descartes' *Principles of Philosophy* included a rudimentary form of this distinction as well, though by no means as refined as in Locke's *Essay*. The French rationalist created a hierarchy of qualities by pointing out:

> it must certainly be concluded regarding those things which, in external objects, we call by the names of light, color, odor, taste, sound, heat, cold, and of other tactile qualities, [...]; that we are not aware of their being anything other than various arrangements of the size, figure, and motions of the parts of these objects which make it possible for our nerves to move in various ways, and to excite in our soul all the various feelings which they produce there.[23]

When Hylas' line of argumentation is re-examined in the light of the ontological framework of Locke and Descartes, two inferences can be made. Firstly, a Cartesian, refined materialism with similarities to Locke is advocated by Hylas in the *Three Dialogues between Hylas and Philonous*.

Up to this point, the question of a solution of Hylas' syllogism and the relation between the ideas of *sensible things* and *substance* has remained unanswered. The answer to this question leads us to the second inference. To account for an unperceivable support for ideas, Hylas' relies on a Lockean *material substance*. However, Descartes' *res cogitans* offers an alternative solution to this problem. In fact, the

[23] Descartes 1984, 282.

thinking *substance* is arguably the most consequential borrowing from rationalist thought in Berkeley's philosophy. Philonous, Berkeley's *alter ego*, solves the problem by referring to a *spiritual substance*. Similar to the *res extensa*, this Berkeleyean *substance* does include thought. However, perception is the actual attribute of this *substance*. The common support of ideas is their being perceived by a *spiritual substance*. This notion lies at the centre of Berkeley's '*esse* is *percipi*'-hypothesis. Taking all this into account, it can be inferred that the shifts and modifications of Hylas' position in the course of the *Three Dialogues Between Hylas and Philonous* correspond with the authors' intention to be able to address possible materialistic objections from different schools of thought.

I conclude that an analysis of Berkeley's *Dialogues* reveals how Hylas does not live in one specific material world. Neither does he represent one particular early modern thinker. The literary figure *Hylas* is, rather, a chimera, compounded of the concepts and ideas of several philosophers. Likewise, his notion of *matter* is ambiguous. Hylas does not provide one clear cut definition of this term. In the course of the *Dialogues*, his notion of *matter* is gradually diminished from an initial strong substance realism to representationalism and ultimately to a Berkeleyean immaterialism. Yet, a study of Hylas and the *Dialogues* proves nevertheless beneficial to the understanding of *matter*. His progression of positions provides a rich continuum that can be used to classify early modern as well as contemporary thinkers.

Providing Matter for Immaterial Objects. Ideas, Symbols and Experience in § 55 – 62 of Kant's *Critique of Judgment*

Luigi Filieri

The aim of this work is to discuss the symbolic exhibition of the ideas of reason in Kant's *Critique of Judgment* as a development of the question of the a priori synthesis considered in the *Critique of Pure Reason* and in the *Critique of Practical Reason*. I will focus on the connection between the faculties and on the mediation of the schematism considering the *Critique of Judgment* as a work that, over its vision as a treatise on aesthetics, completes the critical research. The theoretical functions of the sensible intuition, the pure concepts of the understanding and the ideas of reason are the main themes of an analysis oriented to explain the structure of the *Judgment* in terms of experience's legitimacy and knowledge's foundation.

1 In the beginning was the antinomy

The § 55 – 60 of Kant's *Critique of Judgment* constitute the *Dialectic of Aesthetic Judgment*, the section through which the legitimacy of judgments of taste is proved. Kant begins from the point in which their possibility could result contradictory. The focus is on a claim to universality: something dialectical can be found in these *rationalizing* judgments only insofar as they are proved objectively valid and effectual. Only a deduction could guarantee a transcendental legitimacy to the principles of taste. Transcendental legitimacy means objectivity, conformity to necessary laws and real effectual experience. Even if the deduction is structurally complete at § 55 (AA V, 337), the *Dialektik der ästhetischen Urteilskraft* works as an explanatory section: the antinomy

of taste brings to the fore the essential issues of Kant's reflection. The commonplaces of taste[1] explain the structure of the antinomy:

- *Everyone has his own taste*. The principle of this judgment is subjective, it is related to gratification or pain, without the right to the necessary agreement of other subjects;
- *There is no disputing about taste.* There is no determined concept able to ground the objectivity of judgments of taste. *No decision can be reached by proofs*.

The aim of the analysis is to understand *how* a judgment of taste can attain universal validity, to find a proof that is objectively able to be agreed by every subjective look, since an objective acknowledgement entails a judgment legitimated to result universal. In this dialectical context the universal validity of judgments entails the legitimacy of an experience in its development, then an effectual, universally valid knowledge. These considerations give the following form to the antinomy of taste:

- A judgment of taste is not grounded on concepts because otherwise we would have proofs to determine a content objectively;
- A judgment of taste is grounded on concepts because otherwise we could not discuss it nor pretend a necessary agreement.

Is an objective proof needed to pretend an agreement that is thought as subjective? The search for a *Bestimmungsgrund* implies the necessity of a determining ground for judgments which refer to the reflective faculty of judgment and not to the determinant one. The difference between *reflektierende Urteilskraft* and *bestimmende Urteilskraft* consists in a lack of a universal principle: a determination entails the subsumption of a *particular element* under a *universal principle*, when the latter is available (e.g. a pure concept). On the contrary, a missing universal principle is the purpose of the reflective judgment: the *universal* is not available, it must be found. The conceptual determination is grounded by the principles of the understanding but if we have to

[1] Kant 1790, AA V, 338 [205].

consider the objectivity of taste and, consequently, the legitimacy of reflective judgments, then we need *more*.

Hence, what kind of determination is possible for judgments of reflection? How can a principle be determined without a conceptual reference? The answer to this question is completely linked to the solution of the antinomy. Kant presents a terminological distinction: the word *Begriff* can be understood in different ways (AA V, 339) and the *determination* related to this word similarly entails different possibilities of significance. A determinant judgment operates through the unity of the categories, pure concepts whose objectivity is linked to a concept for an object in experience. The form of the antinomy teaches us that the judgment of taste needs a concept to raise claim to necessary validity for everyone. Kant distinguishes between concepts determined in intuition and concepts that are undetermined and indeterminable through reference to a singular intuition. In judgments of taste the intuition (matter) is not merely referred to a concept of the understanding (form) because the concept of beauty cannot result objectively determined. Nevertheless the necessity of a concept cannot be questioned. Is it really possible to look for a *Bestimmungsgrund* for judgments which could be connected to such an indeterminable concept?

If we set the equation:

> *determination (synthesis under pure concepts) = [means] knowledge (in proper sense)*[2]

we should exclude every possible claim to knowledge for the whole *reflektierende Urteilskraft*, since the concepts of taste cannot be determined nor, in this way, known. A (reflective) judgement of taste needs concepts even if it is not grounded on determined objects. We have to give a deeper meaning not only of the words *determination* and *knowledge* but above all of the *connection* through which the former is necessary for the latter. An intuition under a principle of unity implies a synthetic connection (a conceptual determination). If it is true that every possible determination leads to a knowledge content, it is also true that not all knowledge merely rises in a conceptual form. The concept of 'freedom' cannot be determined, and then shown, as a

[2] Kant 1781, AA IV, 63.

concept like 'tree', for instance. The *undetermined and indeterminable* concept for a reflective judgment is that of a general subjective purposiveness of nature for the power of judgment (AA V, 340). It is a concept of reason, not of the understanding. Moreover it is supersensible *(übersinnlich)* and not determinant in reference to sensibility. Nevertheless it should work as a determining ground. The antinomy of taste could result on a proper level solved by the above mentioned distinction between these concepts but its sense is not fully explained yet. The determining functions of the understanding cannot be excluded from a reflective judgment even though its determining ground provides no determination. Kant's thoughts draw a parallel between two issues. One is the exclusion of determination as impossible for judgments which do not aim to concepts for objects, and another is the exclusion of a knowledge content from reflective judgments just because they are not determinant. A reflective judgment is invariably *cognitive*, since it provides knowledge: not all knowledge consists in a determination of objects. Since a concept, then a judgment, implies a function for the unity of a connection, the nature of this connection is the deciding factor of this analysis. If we consider what a pure concept of the understanding really is, we can say that it is a function of unity that is linked to the transcendental apperception; this unity cannot be excluded. We should, rather, consider that a supersensible *(übersinnliche)* function of unity is maybe active on a third level (the first and the second could be, respectively, the pure forms of intuition and the apperception). Instead of merely conforming to the laws of understanding, a reflective judgment is connected to a principle which needs no determined object to be real. We cannot define a judgment as knowledge-less just because it implies no determination; furthermore we cannot exclude this determination just because the determining ground of a reflective judgment does not determine any object.

Let us try to consider what kind of concept is required for each kind of judgment. A determinant judgment connects pure concepts and intuitions to ground the possibility of a concept for an object in experience. The unity of the pure concepts of the understanding conveys the unity of an operation that is *recognizing* every possible representation as belonging to the same necessary principle of unity. The consciousness of this act constitutes the transcendental subject, the *I think*. A valid cognition and a real experience are thus established:

an object can be experienced because the understanding can build its concept through the *a priori* synthetic connection of a sensible given with a function of unity. The matter of such connection is the intuition which is referred, on a first level, to the pure forms of space and time and, on a second level, to the conceptual function of the understanding, then to the apperception. What is different in a reflective judgment? It is impossible to produce a determined concept because no evidence could be given for the objectivity of the concept of beauty. We can define a tree, a book, even a geometrical theorem referring the corresponding intuition, either sensible or pure, to each concept. Is there an intuition available to determine the concept of beauty as objectively valid in experience?

A reflective judgment refers to an undetermined supersensible concept which should provide a universal validity in reference to the unity of intuition. An undetermined objectivity is only possible under the perspective of a connection, a judgment, with a determining but undetermined ground. The latter aims for objectivity without a direct objectual reference in experience. This perspective does not question, but rather confirms, the necessity of categories and intuitions. A determination is properly founded on the unity of the connection between concept and intuition for the possibility of an object in experience. Kant's search for the *Bestimmungsgrund* of reflective judgments shows that the content of this ground is *übersinnlich* and active in a way that is different from that of the concepts of the understanding. Thus, the unity of judgment is not in doubt. The problem concerns the connection between a function of unity and a possible synthesis of intuitions as the condition for a reflective judgment which would be objective in its own claim and nonetheless undetermined. Even if a reflective judgment is not founded on determined objects (which are realised through *determining* concepts), it does not mean that the operations of the understanding are not active and not, on a proper level, determinant. The pure concepts are conditions of possibility for objects; they are rules to determine them as such. Conceptual determination cannot be excluded since it implies a *clear* use of the categories. The empirical object of an 'eagle' is something determined. This does not apply to the concept of 'freedom', which is neither empirical nor determined. Such a concept is rather objectually (but not objectively) indeterminable. A possible cognition of this concept should be ex-

cluded since no object can be determined for it. The only possible option is to prove a not-objectual, undetermined objectivity. The terms of objective determination are clear; now, the question concerns other possible connections and references.[3]

2 Matter and reason

A pure concept of the understanding is not an idea of reason; let us try to understand why. The distinction between aesthetic ideas and ideas of reason (AA V, 341-342) states that, in general, an idea is a representation that is referred to an object under a certain principle (either subjective or objective). The nature of the principle determines the nature of the connection. However, this connection cannot be a cognition in terms of objectual determination. This first definition opens up two possibilities: 1) a cognition, through an object, of something different from this object (but still knowledge); 2) a cognition, through a determined concept, of something objectually indeterminable (but still objective). The text of the first remark (§ 57) explains how the nature of the principle makes an idea *aesthetic* or *of reason*:[4]

- aesthetic ideas entail a reference to intuition under the subjective principle of the harmony between the faculties;
- ideas of reason have no reference to a possible intuition in experience and therefore they should not contain any possible knowledge.

An aesthetic idea is *what an idea of reason can become* to result knowable even if it is objectively indeterminable.[5] This form of experience is

[3] Nuzzo 2005. The author draws «the figure of a chiasm between four terms» (322). The terms under consideration are: 1) the pure concept of the understanding; 2) the given sensible intuition; 3) the idea of reason; 4) a lacking intuition. We will see that this lack of matter is necessary for an aesthetic judgment to be effectual. At this point Kant's discussion of the antinomy has turned to «the nature of the 'concept' involved in the activity of the judgment of taste taken as aesthetic judgment (i.e., neither as empirical nor as cognitive judgment)» (314). As I shall argue, an aesthetic judgment entails the reference to a knowledge content and it can be then considered *cognitive* even if this possible knowledge is not related to determined objects.

[4] Kant 1790, AA V, 341-344 [209-213].

[5] Gibbons 1994, 112: «The productive imagination not only follows reason's principles, but stimulates its use. In setting reason 'in motion', aesthetic ideas provide a non-

grounded on an aesthetic possibility. The aesthetic idea is an intuition of imagination without an appropriate concept and an idea of reason implies a supersensible concept without an appropriate intuition. At this point the theoretical structure of the assumption is fundamental:

aesthetic idea: reference to an object (intuition) under a subjective principle;

idea of reason: reference to a concept (what concept?) under an objective principle.

Thus, an aesthetic idea (which is, however, a pure concept of reason) refers to an intuition while an idea of reason (which is, like the aesthetic one, a concept, a form) refers to another concept, a *Begriff*, under an objective principle like that of determination. On a first level, an idea refers to an object (matter), on a second level a concept refers to another concept (form). The principles of this reference are, respectively, subjective and objective. If the second concept to which an idea refers is that of understanding, it is clear then that the objective principle of determination (which is peculiar to understanding) is the reason why such an idea cannot be shown. A pure concept of the understanding refers to an intuition that would become, in the case of an idea, the reference point of something that is essentially unavailable to refer to a given manifold, at least not directly. As previously said, differently from the concept of 'tree', the concept of 'freedom' cannot be determined, and consequently shown. The reference to an intuition (which can be determined) is necessary to express an idea even if it happens without an objectual determination of its content (it would be impossible for something that is supersensible). The problem of a connection between elements that result heterogeneous is that of *schematism*. This procedure mediates between the understanding and the sensibility but a schematism without a determined concept implies

cognitive exhibition of ideas of reason». I think that the mentioned exhibition is, however, a form of knowledge and in regard to this account Gibbons specifies that a schema without a determined concept provides a connection between intuitions and pure thoughts which «*demonstrates the multiplicity of ways in which thought about the empirical world – as well as about ideas that transcend that world – is possible*» (113). This wide range of exhibition possibilities is the aesthetic knowledge horizon for the pure concepts of reason.

a normativity which complies with a demand that is higher than, and not opposite to, that of the understanding. Therefore, on a first level (understanding), the aesthetic idea refers to an object empirically determined. Then, on a second level, this first reference is used to exhibit a concept of reason without a determined object for it. At the first level the reference concerns some concepts and objects, at the second it concerns *another reference.* We will see why and how this distinction is essential. An indeterminable form thereby receives a matter that has been determined by another form. Having stated this, Kant gives another definition (AA V, 342) of the ideas in question: the aesthetic idea would be an *inexponible representation of imagination*, whereas the idea of reason would be an *indemonstrable concept of reason*. *Inexponible* and *indemonstrable* are two expressions that are related to the lack, respectively, of concept and of intuition. Could Kant really refer the intuition to the imagination instead of connecting it to sensibility? The imagination is not the function through which intuitions are given as such but it is rather the function through which the same intuitions can reach the unity of the concept. This function needs unity and this need cannot be eluded. The intuitions belong to imagination insofar as this function binds them to the concept. The pure concepts of the understanding can determine an object as long as their reference to the given intuition (either pure or sensible) can always take place, insofar as the manifold is indeed available. This reference provides the concepts with their objective reality. An intuition can always be set under a pure concept of the understanding and the thought of this necessary correspondence represents the condition that determines the concept of an object and produces, afterward, an experience and a knowledge content. A concept of reason is *indemonstrable* on the basis of this missing reference.[6] Coherently with the previous argumentations Kant clarifies that:[7]

[6] This lack of matter is the essential matter of the reflective judgment. Nuzzo 2005, 314 defines aesthetic ideas to which taste refers as «the counterpart of reason's ideas». This definition, I think, entails a knowledge problem: the question of a possible connection between a pure concept of reason and a lacking intuition is that of the objective reality of pure thoughts, then that of the claim to universality whose legitimacy grounds the existence of the pages we are reflecting upon.

[7] Kant 1790, AA V, 343 [212].

- in the case of an idea of reason *the imagination fails with its intuition to attain to the given concept*;
- in the case of an aesthetic idea *the understanding fails with its concept to attain to the completeness of the internal intuition which imagination conjoins with a given representation.*

The possible connection between concept and intuition is a matter of *schematism* but the nature of a concept of reason is not the same as a concept of the understanding. Kant sets another equation:

> *exhibiting an intuitive representation of imagination = [means] bringing it to concepts*[8]

An aesthetic idea is an *inexponible representation of imagination*, since it cannot be conceptualized. If this representation is connected to the imagination, it is oriented to assemble. The lack of unity that is peculiar to the conceptual functions leads the imagination to look for other possible connection. This kind of virtual potential of the imagination does not run out in the singleness of an object that is also made possible through its own function. The unity of this object and its intuitive matter are always liable to be referred to something else, to something *more*. The change is in the ground of reference: we are discussing the failure of both the understanding and the imagination as functions that are no longer able to accomplish their original task. This distinction between the level of functions and the level of the respective products is fundamental to the structure of these argumentations and to its subsequent development. The definition of genius makes things clearer (AA V, 344). This faculty of the aesthetical ideas follows the principle of a finalistic disposition of the imagination (which is seen as something assembling intuitions that are given through the sensibility) to reach an agreement with understanding and reason. This change of level cannot be eluded because it is a decisive factor for the legitimacy of a universally valid, though subjective standard. The necessary reference to the given intuition is neither invariably, nor exclusively determinant. If no intuition can be related to the ideas of reason, we still have to explain how the judgments of

[8] Kant 1790, AA V, 343 [212].

reflection, which aspire to the validity of a not objectively-determined experience, can refer to those intuitions without the conceptual unity of the understanding. The central argument revolves around this demonstration: the reality of a reflective judgment does not consist in the materiality, either pure or empirical, of a determined object. A cognition that is beyond determination remains possible as far as the principles of reflection show that a real experience means more than a series of objects.

The principle of the aesthetic judgment cannot be objectively determined, rather it is aesthetically expressed through the correspondence between the imagination and the possible *mediated*, schematic connection between a concept of reason and no sensible intuition. The distinction between a connection of faculties and a connection of their products is relevant. If the levels under consideration were confused, no possibility of understanding how an undetermined principle could grant a determining ground without a determined concept would be left. A real finality, thought as a determined concept, would simply be an external rule that is unable to guarantee autonomy to the judgment: it would be an *a priori* standard that is found in nature and not in the structure of the subject. An ideal finality makes the aesthetical judgment legislative *in* and *through* itself. The determining action of the subject is here essential, not the determination of the object itself. Aesthetical is, then, the possible correspondence between imagination as the faculty that guides the intuitions to the unity that is thought in a concept and the principles of judgment as conditions for the legitimacy of such correspondence (AA V, 347). Thus, it makes sense to talk of intuitions of imagination and not of sensibility: the central theme is not the given manifold, but rather its destination to a unity that is above the pure concept even if not opposed to it.

3 More

With the term *example* Kant defines those intuitions related to an empirical concept. A pure concept needs a *schema*, the mediation of a transcendental time determination which permits the subsumption of the manifold (AA V, 351). The ideas of reason are pure concepts too, but nothing as heterogeneous as an intuition could ever directly correspond to such concepts. A rational concept cannot be verified

through intuitions and this means that 1) a given manifold could also be available; 2) this manifold is not adequate to refer to a concept of reason. Thus, the problem is to adapt intuitions to rational standards, rather than the availability of intuitions as such: the matter is still intuitive but the form is rational. It is made neither to determine an object in experience nor to verify its own reality through it. The schematic procedure sets the connection between concept and intuition; besides, it provides the matter for a form that realizes these both elements in their own proper function. A concept, and a given intuition, need something completely heterogeneous to execute their respective essential function. How is the intuitive matter understood under a concept of reason?

Intuitions are unable to reach and verify a concept of reason. The principle of a possible correspondence between a concept of reason and something that could provide its *Versinnlichung* (i.e. a rendering in terms of sense) develops in terms of *symbolic hypotyposis*. The word *hypotyposis* describes the subsumption of an intuitive content under the pure concepts of the understanding, a particular element under a determined universal principle. A judgment of taste (which is reflective) has no determined principle and this means that: 1) the functions of understanding are not the principles of taste; 2) the same functions are not completely excluded, in any case. A symbol is a kind of intuitive exhibition that functions through an indirect reference. However, this aspect does not exclude the *direct* reference realized through the schema[9] (properly speaking this is an indirect reference too, since it is mediated by a third element between concept and intuition). The direct connection realized through the categories is requested to discuss the possible symbolic, aesthetic *Versinnlichung* of an idea. A symbol is always a symbol *of something else* and it refers to an object that is determined. The determination of an empirical

[9] This means: 1) the schematic way of proceeding is not completely alternative to the symbolic hypotyposis (a symbol codifies a connection as well as a schema); 2) the schematic connection between the categories and the given manifold (a conceptual determination) is necessary to refer an object to a pure concept of reason as its symbol. La Rocca 2003, 255 clearly illustrates how the symbolic hypotyposis entails the legitimacy of the schematism in its function of translation from the iconic to the conceptual code. A schema without an object is however conformed to transcendental laws, even if this conformity assumes multiple forms.

object is not excluded in the reflection: the laws of the understanding are integrated with the freedom of imagination in its synthesis. A need of a unity drives the symbolic exhibition of ideas, reconsidering and not suppressing the functions of the understanding.

The wings of the eagle can cause thoughts of freedom but they are, nevertheless, *wings.* They are objects that are determined through a synthetic, and schematic, connection between the given intuitions and the functions of the understanding: they are empirical objects. The problem of a symbolic hypotyposis is, then, placed on a different theoretical level and this is the reason why, in so doing, the judgment has to perform a double function:[10]

- the application of a pure concept of the understanding to a sensible given intuition (the objective determination);
- the application of the mere rule of the objective determination (reflection on the function of connecting *itself* and not on its possible products) to an indeterminable object which has its symbol in the determined object of the understanding (symbolic hypotyposis).

The exhibition that is developed by means of a direct connection between concept and intuition is called *indirect*. This intuition determines an object upon which the reflective judgment inserts itself referring to concepts of pure reason, providing them a matter and realising a cognition. This reflective reference is not a determination since this aesthetic reality is not merely linked to the materiality of an empirical object. The intuitive matter is oriented to a connection under a concept of reason to give it a real exhibition in a judgment (and nonetheless never an object). The necessity of matter is never put in doubt, rather it is *strengthened by reflection*.

The categories are the necessary means to realize that object that is liable to be indirectly referred to the thought of an idea. As a consequence, a concept of reason can be expressed through the matter of a given intuition, but only in terms of an indirect reference. An intuition, as provided by sensibility, cannot be subsumed under a concept of reason while the imagination can be referred, *in its function*

[10] Kant 1790, AA V, 352 [222].

to bring intuition together, to the understanding *in its law of unity.* This is unjustifiable in terms of products. The reflective judgment works in analogy, neither by contradiction nor by disregarding the determinant action of the understanding in connection to sensibility. The aesthetic reference provides the conditions for a practical determination (AA V, 353) of those concepts to which no intuition could ever directly correspond. The unity of this determination does not entail the singleness of a knowledge content: we cannot ever have *the* symbol of something because we can only have *a* symbol which is liable to be considered as such not for the content of its determination but only through an analogy with it.[11]

A *schematic hypotyposis* determines the organic structure of a bird, the composition of rocks, the equation for wind intensity and so on. But if the wings of the eagle are symbols of freedom, then the potential of the *a priori* synthesis is reflected on those same faculties that provide its conditions, under the subjective principle of the agreement between nature and our capacity to judge it. This makes possible to know something that in its own essence could never be expressed by a determined object, involving an undetermined but objective experience that is achieved through the *hypotyposis* of a power and not of the results of its action. Kant says that intuitions are necessary for the reality of concepts but what is necessary is first of all the possible reference of a manifold to a function of unity.[12] In these theoretical passages lies the *gemeinschaftliche und unbekannte Art* (intimate and obscure manner) that realizes the connection of the theoretical faculty with the practical one.

A science of beauty, namely a cognition structured in laws and determined objects, is impossible just because these laws and the cor-

[11] The schematic-synthetic potential of a symbol does not run out in the determined concept to which is however related. It amplifies itself through multiple references which produce a meaning that cannot be linked to the singleness of a determined form since it is rather oriented to an endlessly wider network of possibilities (La Rocca 2003, 258).

[12] Makkreel 1990, 121-123: «Rational ideas transcend nature, and aesthetic ideas surpass it by transforming and enriching it». This difference between the verbs *to transcend* and *to surpass* contributes to define the symbolic hypotyposis as «a reflective specification in which the imagination relates reason to sense by means of formal analogies found through reflection on rational concepts and empirical intuitions».

respondent objects are not the main purpose of the reflective judgment. Something like the laws of thermodynamics could not ever be demonstrated about the concept of beauty. Nevertheless the principles of taste are *practically* determinant, since they are able to give real expression to concepts which stand beyond the power of the understanding. In so doing the imagination is free but not unlimited in its function: no freedom could be admissible without laws. Those to which imagination conforms its action are conditions for the possibility of a judgment which is reflective, but nonetheless made to raise claim to universality. It is important, again, to stress the relation between the free function of imagination and the laws of the understanding: a symbol implies a reference to a determined object under an indeterminable concept and without the former nothing could be thought as a symbol for the latter. The legitimacy that only the understanding can guarantee is fundamental for the imagination, since without its laws and without its determining unity no claim to universality could be grounded and no real expression could be thought for the ideas of reason.

Based on this analysis, I conclude considering Kant's definition of taste. The *critical faculty that judges of the rendering of moral ideas in terms of sense* (AA V, 356) is linked to the aforementioned laws and to the resulting freedom of imagination. The sensibility is increased by revealing an *ideal potential of perception* and the intuition becomes the matter of a symbol that is able to show more than a determined object could ever contain.[13] No doubt should be left about a presumed, and here rejected, passivity of sensibility. A capacity to receive entails an activity. This *ideal improvement* of sensibility establishes the possibility to receive more than a *given* matter which would be a mere passive element. The finalistic representation of nature reflects the finalistic disposition of our cognitive faculties, a disposition that cannot be

[13] Makkreel 1990, 121 speaks about an «excess of intuitive content that cannot be contained within the concepts of the understanding». This excess endorses the theory of a multiform conformity provided by a symbolic hypotyposis and clarifies in which terms a schema can operate without a concept. Whatever could be related to the thoughts about 'freedom', 'justice' and other pure concepts of reason is excessively extended to find expression in the singleness of a determined object. Thus, the problem is not the expression but the legitimacy of its ways: consequently a cognition cannot be questioned insofar as its conditions can be grounded. The *reflektierende Urteilskraft*, providing a knowledge horizon for the pure concepts of reason, provides a deeper comprehension of the critical grounds of conceptual determination.

statically hypostatised in the form of objective causality (differently from § 61 – 62 with regard to the teleological, but still formal, finality).

The increase of sensibility is referred to those concepts to which no intuition could ever be related insofar as *phenomena* are reduced to laws that permit a deeper evaluation of their significance, not a reduction of their value. Imagination, which has previously been defined as the faculty of intuitions, is also defined as the faculty of presenting concepts (AA V, 366): its function is still the same, that of bringing intuitions together under a function of unity and present concepts, even rational, and exhibiting them in terms of sense.

Materia e metamorfosi. A partire dalla morfologia goethiana

Rosa Maria Lupo

> Della natura non dovremmo conoscere altro che quel che di vivo ci circonda immediatamente. Abbiamo un vero rapporto con gli alberi che fioriscono, verdeggiano, fruttificano intorno a noi, con ogni arbusto al quale passiamo davanti, con ogni filo d'erba sul quale passeggiamo.
> J. W. Goethe, *Le affinità elettive*

È la fine del Settecento quando Goethe annota che la morfologia «riposa sulla convinzione che tutto ciò che è deve anche annunciarsi e mostrarsi».[1] Questo principio fondamentale (*Grundsatz*), secondo il quale la manifestatività si istalla al cuore dell'essere degli enti per il fatto che essi siano, attraversa l'intero dell'ente: dagli elementi fisici e chimici fino alle espressioni spirituali dell'uomo tutto quel che è si sorregge su un bisogno manifestativo, su una necessità fenomenica. In altri termini: ciò che è non può che manifestarsi. In forza di tale principio, che oggi non esiteremmo a definire un assunto di ontologia fenomenologica, «noi ci indirizziamo nel contempo verso ciò che ha una forma».[2] Tutto ciò che si mostra, essendo, ha una forma o, piuttosto, giunge a manifestazione grazie ad una forma che non è solo la maniera esteriore o l'aspetto meramente estrinseco tramite cui qualcosa si dà a vedere. Secondo un'accezione ontologica molto più forte, per forma è da intendersi quel modo d'essere essenziale delle cose che le destina, in quanto datità manifestative, alla recettività del soggetto: ciò che ha una forma può essere percepito o intuito dal soggetto.

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1 Goethe 1987, 349.
2 349.

Attorno a questo principio si organizza ogni sfera ontologica, quella dell'inorganico come quella del vegetativo, dell'animale e dell'umano ed ognuna è aperta a noi o sul piano della percezione sensibile immediata o a livello noetico: «Appare (*es erscheint*), in quanto ciò che è, al nostro senso interno ed esterno».[3] Dal principio della manifestatività necessaria dell'ente tramite il suo venire alla vista in una forma (*Gestalt*) Goethe arriva anche a dedurre la tesi sulla dinamicità intrinseca alla forma: «La forma è un che di mobile, in divenire, transeunte».[4] La morfologia si costituisce, quindi, come una teoria della trasformazione, della *metamorfosi*, del «muoversi della forma», della natura flessibile e non statica del fenomeno e, in particolare, di quell'ambito fenomenico dove ciò si dà a noi come immediatamente visibile: la natura.[5]

Si tocca qui un punto nevralgico sia sul piano ontologico sia su quello gnoseologico. L'idea di una forma che sia soggetta ad un mutamento – soprattutto se esso arriva a compiersi nel modo estremo della 'sostituzione' – porta, infatti, a domandarsi se una struttura dell'essere di tipo 'metamorfico' non implichi il costante sovvertimento dell'identità d'essere di ogni fenomeno e l'impossibilità della sua conoscibilità.[6] Ad una rapida occhiata, il paradigma ontologico prevalente nel corso della storia della filosofia è quello centrato sulla stabilità dell'identità che fa da argine al rischio di un'inguaribile ferita ontologica consi-

[3] Goethe 1987, 349.

[4] 349.

[5] Nella *Metamorfosi delle piante* Goethe asserisce che la metamorfosi non solo è un «fenomeno», ma è altresì una «legge della natura (*Naturgesetz*)» che struttura l'essere dei fenomeni secondo una triplice scansione di movimenti ordinati, disordinati e contingenti (cfr. Goethe 1983, 56). La metamorfosi indica, dunque, una natura dialettica della forma che si presenta come molteplice (*Mannigfaltigkeit der Gestalt*) giacché ciò che concorre a formare l'essere di un organismo o di un ente può strutturarsi secondo relazioni proporzionali diverse fra le sue parti o i suoi elementi.

[6] Allegra sottolinea che il cambiamento come variazione mantiene ancora ferma l'identità della cosa, laddove il cambiamento come sostituzione implica un raddoppiamento ontologico, in quanto non vi è più una sola cosa, ma piuttosto due (cfr. Allegra 2010, 10). In questo secondo caso, la sostituzione abolisce qualsiasi persistenza dell'ente; non abbiamo una metamorfosi, ma semmai, più propriamente, un passaggio che prevede una rottura d'essere nel venire meno di un qualcosa che c'era prima per l'apparire successivo di un qualcos'altro differente e non continuo ontologicamente con quel che c'era prima. Di contro, «ciò che è notevole nel fenomeno metamorfico è *proprio* la compresenza di mutamento e conservazione» (14). Insomma, la continuità e il mutamento richiesti devono essere tali che la metamorfosi sia «qualcosa che accade ad uno stesso, anche se lo trasforma in altro» (20).

stente nella continua dispersione d'essere cui ogni fenomeno sarebbe consegnato se mancante di un nucleo ontologico 'forte', stabile, permanente. Un mondo fenomenico non ancorato ad una stabilità ontologica è una realtà che oggi definiremmo 'debole' tanto sul piano ontologico quanto su quello epistemico: se, infatti, non vi è un qualcosa di sostanziale che individui ogni fenomeno in quanto quel fenomeno e non altro in modo determinato sotto il segno di una continuità diacronica della sua identità ontologica, si profila un costante stallo conoscitivo in cui ogni sapere del reale ha solo il tratto della provvisorietà e della contingenza.

La lezione morfologica goethiana, pur costruendosi attorno al principio metamorfico della forma, prevede una sorta di punto di arresto e di 'fissaggio' dell'essere, senza con ciò cedere alla tentazione della rigidità ed immobilità dell'essere che nega quel tratto di imprevedibilità dei fenomeni nel loro apparirci, stupirci, commuoverci. Dalla prospettiva goethiana emerge, tuttavia, una struttura del reale che non è ontologicamente centrata solo sul primato del 'formale'. Ad una lettura più attenta, la morfologia attesta piuttosto che nella realtà la forma *è materialmente vincolata*: i vincoli *materiali* della forma sono la condizione stessa della fenomenicità della forma come anche di ogni metamorfosi.[7] In questi termini, l'ontologia morfologica goethiana non offre solo un interessante ripensamento della relazione classica fra materia e forma, ma consente, a mio avviso, anche una radicalizzazione della morfologia in chiave fenomenologica, nella misura in cui la visione di Goethe anticipa straordinariamente, proprio per il suo modo di declinare la relazione inscindibile forma-materia, il pensiero fenomenologico-ermeneutico contemporaneo. Ciò è forse paradossale, se si considera che il pensiero filosofico successivo a Goethe o a lui coevo riserva al pensatore tedesco scarsa attenzione nella convinzione che poco o addirittura nulla egli abbia da offrire alla riflessione. Il poeta

[7] Ancora secondo Allegra «la metamorfosi fa problema proprio perché è la trasformazione [...] della forma stessa» (23). Nonostante ciò è, però, ancora possibile pensare ad una soluzione che non metta in campo il vincolo della forma alla materia, ma individui sia nella flessibilità della forma sia nella «natura e nel ritmo della trasformazione» l'argine alla distruzione dell'identità: «[L]a trasformazione continua e regolare della forma non oscura praticamente la persistenza dell'identità; anzi, tutta la storia di mutamenti che hanno segnato man mano la nostra identità sta, visibile, nella forma» (24).

inquieto è, però, un pensatore incredibilmente ardito: egli parla di una realtà 'plastica' in cui l'essere si scopre strutturalmente attraversato da una differenza tale che ogni determinazione non è mai definitiva, ma è sempre suscettibile di trasformazione e rideterminazione senza che ciò, tuttavia, scalfisca l'identità ontologica del fenomeno che nella forma appare.[8] L'intento della mia analisi è, allora, quello di estendere il campo di validità delle osservazioni goethiane in chiave ontologica rispetto alla relazione materia-forma per trarre fuori quelle che in Goethe restano ancora delle articolazioni inespresse. Su queste basi tenterò, quindi, di enucleare una tesi ben precisa circa la materia come vincolo della forma.

Anticipo subito quello che è uno dei pregi dell'ontologia goethiana. La dottrina di Goethe permette di tenere insieme una visione in movimento del reale, in quanto 'reale plastico', e la possibilità di percorrere ancora la via, seppure a tratti interrotta, di una scienza della realtà fenomenica o, per lo meno, di una sua indagine che riesce a stare dietro al nostro bisogno euristico, sia pur soddisfacendolo in modo provvisorio. Questa sorta di compatibilità – di cui Goethe parla nei termini di un «reciproco influsso fra l'uomo e la natura»[9] – rende possibile comprendere la resistenza della realtà al concetto ed il suo contemporaneo prestarsi, però, ad esso, entrando come fenomeno in relazione con l'uomo. Tale duplicità risospinge l'uomo sempre oltre, nella «possibilità di un perfezionamento illimitato» nel quale, tuttavia, viene frenato «l'irresistibile impulso [dell'uomo] di subordinare a sé gli oggetti», ossia i fenomeni che, invece, sono per sé ingovernabili.[10]

[8] In questo senso Goethe si colloca in linea con quel tipo di ontologia che in qualche modo prevede «la persistenza di una sostanza minima, [...] dotata di un deciso potere plastico» (Allegra 2010, 72). Ciò lascia emergere «un senso peculiare di 'materialismo'» in cui la persistenza dell'essere non è tanto data dalla materia per sé, quanto dalla presenza di un qualcosa che «preserva la successione ininterrotta della storia individuale in quanto è in grado di fare da matrice della storia stessa» (73). Questo qualcosa, come vedremo, è in Goethe l'*Urpflanze* (ma anche l'*Urtier* o l'*Urmensch*) nel senso di una forma fattuale incarnata, dunque vincolata materialmente, che consente l'identificazione ontologica di un individuo concreto all'interno del processo metamorfico in cui esso è inserito. Il vincolo materiale si fa, dunque, carico di quelle «istanze di continuità capaci di determinare la natura essenziale e la riproposizione dell'ente» (81).

[9] Cfr. Goethe 1983, 40.

[10] Cfr. 40: «L'uomo spinto a osservare, quando comincia a sostenere una lotta con la natura, prova dapprima l'irresistibile impulso di subordinare a sé gli oggetti. Ma

In questo mantenere sempre aperto il campo della propria indagine l'uomo fa esperienza di un 'doppio infinito': infinito è l'essere che non si cristallizza mai in un esito compiuto – quindi infinita è la forma, ma infinita è anche la materia che, come l'essere, è molteplice e costantemente in divenire –; infinito è il processo euristico sempre perfettibile, nella misura in cui la materia è di suo restia a qualsiasi completa concettualizzazione ed è piuttosto una modalità dell'essere opaca, misteriosa ed imprevedibile rispetto alla cui intelligibilità concettuale l'uomo, appunto, si approssima *ad infinitum*.

In un brano del *Viaggio in Italia* risalente al 17 Aprile del 1787 Goethe racconta dell'interruzione del suo sogno poetico, il progetto di comporre la *Nausicaa* sorto in lui alla vista dello splendore del «giardino pubblico alla marina» (l'odierna Villa Giulia) a Palermo. Questa interruzione si dà a favore dello studio del mondo della vita, che si offre al suo sguardo come oggetto di una necessità investigativa a partire dalla bellezza di cui egli è spettatore. È, dunque, la stessa la natura che Goethe si trova data ed aperta a lui e medesima è la commozione che ogni volta lo assale. Alla fine, tuttavia, è il poeta che prende congedo dal suo sogno nel riconoscimento che anche l'immaginazione creatrice necessita di farsi accogliente della datità fenomenica della natura che ne costituisce la fonte di ispirazione per non ridursi ad «inseguire chimere al di là della nostra portata, della nostra capacità».[11] In altri termini, l'occhio del Goethe poeta non può che comportarsi come quell'«occhio dello spirito (*Auge des Geistes*)» che è già «un vedere orientato, un vedere di secondo grado, una seconda vista»[12] che prende corpo all'interno di un «atteggiamento conoscitivamente orientato, vale a dire un atteggiamento che disponga l'occhio in modo peculiarmente differente, a cogliere cioè nel fenomeno il suo nucleo originante, strutturante, costitutivo».[13] Ad uno sguardo siffatto l'«immanenza

ben presto questi gli si impongono con una tale forza, che egli capisce quanto abbia ragione di riconoscerne il potere e di rispettarne l'azione. E, appena si convince di questo reciproco influsso, ha coscienza di un doppio infinito: dalla parte degli oggetti, la molteplicità dell'essere e del divenire, e di rapporti che s'intrecciano in modo vivente; da parte sua, la possibilità di un perfezionamento illimitato, sia e in quanto egli adatti la sensibilità e il giudizio a forme sempre nuove di ricezione e reazione».

11 296.

12 Pinotti e Tedesco 2013, 11.

13 11.

fenomenica» si mostra come «l'oggetto più proprio dello sguardo morfologico».[14] Di fronte ai fenomeni ed alla loro apertura, quindi, è come se si attivasse nel soggetto un'attitudine, un desiderio conoscitivo peculiare, una forma di amore per il sapere che non è direttamente orientata al sapere in quanto tale, bensì appunto alle *Erscheinungen* stesse, nello spirito di una 'fenomenofilia'.[15] Se da un lato restano indubbiamente aperte le questioni di taglio trascendentale che orientano la domanda sul 'come' conoscere, dall'altro lato però si riconosce che sono le cose stesse che appaiono ad interpellare il soggetto, nella variabilità della loro apparizione, ed a spingerlo a calibrare il suo impegno euristico e conoscitivo in chiave morfologica, istituendo la questione della forma come la questione-madre nell'indagine ontologica sulla realtà. Direi che è qui, dal punto di vista metodologico, che va individuata la differenza fra un paradigma morfologico *à la* Goethe ed uno trascendentale *à la* Husserl. Per Goethe lo studio delle forme richiede che la questione trascendentale resti subordinata alla questione della forma; per Husserl la questione eidetica come questione sull'*eidos* in quanto forma, essenza dei fenomeni è dipendente dall'enucleazione di una teoria della conoscenza (*Erkenntnistheorie*) che spieghi in che modo il soggetto non sia solo recettore della fenomenicità dei dati a livello di sintesi passiva, ma sia altresì rielaboratore del materiale che gli si dà nelle sue *Erlebnisse* tramite i suoi atti di coscienza (*cogitationes*) a livello di sintesi attiva. Tanto in Goethe quanto in Husserl, nondimeno, resta comune il principio che ogni *Erscheinung* è datità di un essere in sé degli enti che popolano il mondo e che l'apprensione della forma nel suo apparire come fenomeno è apprensione della cosa in sé nel suo offrirsi allo sguardo dello spirito tramite quei tratti portatori della fenomenicità della forma che sono di natura materiale. Ciò significa: le essenze non sono pure idealità che si manifestano in dimensioni non

14 Pinotti e Tedesco 2013, 11.

15 Cfr. 30. Allegra sottolinea che proprio nel caso goethiano «[n]on ha senso distinguere tra produzione poetica e scientifica», proprio perché in Goethe è comunque unico l'«occhio dello spirito» che per via estetica o per via scientifica è diretto ai fenomeni: «Una sensibilità archetipa e platonizzante spiega la predilezione per la morfologia, colta dall'intuizione estetica e scientifica: fondamentale è il ruolo dell'osservatore, educato a cogliere l'entità al di là delle sue trasformazioni. Tale approccio è dunque segnato dall'insistenza sull'impegno dell'osservatore nella sua relazione con l'osservato» (Allegra 2010, 128).

temporali e non spaziali, ma si realizzano come forme che risultano date perché si danno in una materia che fa da condizione del darsi dei fenomeni nella loro essenza, cioè nella manifestatività della loro forma.

Nel brano del *Viaggio in Italia* del 17 Aprile del 1787 non troviamo *in nuce* solo l'idea goethiana dello sguardo morfologico come luogo metodico del dispiegarsi di una dottrina della forma colta anche nella sua condizione imprescindibilmente materiale. In esso è possibile attestare anche la convinzione goethiana che lo sguardo morfologico è lo sguardo di colui che è, appunto, 'amico dei fenomeni' in quanto destinatario, sul piano sensibile come sul piano intellegibile, del mostrarsi di essi nel loro essere. Conviene soffermarsi a questo punto sul brano per capire che tipo di movimento prende avvio nel Goethe morfologo di fronte alla possibilità di una intellegibilità della forma che accade sul piano di una recezione sensibile.

Tracciamo il contesto della nostra lettura. Il 17 Aprile del 1787 alla Villa Giulia di Palermo accade qualcosa di tanto sperato, ma inatteso per l'ancor giovane Goethe, avido ricercatore ed osservatore instancabile. Il giardino si presenta a lui come una sorta di stupefacente laboratorio botanico a cielo aperto. La percezione della possibilità concreta di mettere mano a un ampio progetto scientifico – che in effetti egli già coltiva nel suo animo e che diviene, nel corso di un ventennio, l'elaborazione di una matura proposta ontologica sul reale nella sua fenomenicità, ossia sul reale *tout court*, e non solo sulla vita – sbriciola così quasi di colpo il rapimento poetico provato appena dieci giorni prima:

> Stamane andai al giardino pubblico col risoluto e calmo proponimento di tener dietro ai miei sogni poetici, quando fui afferrato alla sprovvista da un altro fantasma che già da qualche giorno mi inseguiva furtivo. Molte piante, che ero abituato a vedere in cassette o in vasi, o addirittura chiuse dentro i vetri d'una serra per la maggior parte dell'anno, crescono qui felici sotto il cielo libero; e nel compiere perfettamente la loro determinazione (*indem sie ihre Bestimmung vollkommen erfüllen*), esse diventano per noi più manifeste (*werden sie uns deutlicher*). Di fronte a tante forme nuove o rinnovate si ridestò in me la vecchia idea fissa (*die alte Grille*) se non sia possibile scoprire fra quell'abbondanza la pianta originaria (*die Urpflanze*). Una simile pianta deve pur darsi (*Eine solche muss es denn doch geben*)! Come riconoscere altrimenti

> che questa o quella forma è una pianta, se tutte non fossero formate in conformità ad un modello (*wenn sie nicht alle nach einem Muster gebildet wären)*?
>
> Mi sforzai dunque a indagare in che cosa si distinguessero tante diverse specie; e le trovavo sempre più somiglianti che differenti, e se volevo applicar loro la mia terminologia botanica vi riuscivo abbastanza bene, ma non me ne veniva alcun frutto: non facevo che accrescere il mio rovello senza progredire d'un passo. Vedevo sconvolti i miei piani poetici; il giardino d'Alcinoo scompariva e mi si schiudeva invece il giardino del mondo (*ein Weltgarten hatte sich aufgetan*).[16]

Nel brano, di cui propongo una traduzione più marcatamente fenomenologica in alcuni punti a mio avviso cruciali, è contenuto un intero progetto di ricerca. Vi è senz'altro ben più di un sogno e di un tormento, a differenza di quanto afferma Friedenthal: «La sua *Nausicaa* rimane un frammento, la *Urpflanze* diviene il suo sogno, e il suo tormento per molte decadi».[17] C'è piuttosto già la traccia di una via che, nell'indicare la necessità di occuparsi dell'aspetto formale per giungere all'essenza della natura e della vita che la natura reca in sé, non dimentica l'impossibilità di discernere ciò che nella natura rende visibile, manifesta, la sua stessa forma, la sua essenza: la materia. A contatto con l'osservazione empirica in Goethe è come se si sbloccasse un'intuizione, indubbiamente problematica, ma anche parimenti felice.[18] Goethe pone, infatti, la necessità ontologica di una datità originaria, di un fenomeno originario pensato come *Urpflanze* a partire da cui al soggetto si apre, giunge alla vista e si forma (*sich auftun*) il giardino della vita, della natura. Questa datità originaria non sembra, quindi, essere pensata come una idealità astratta. Diverse sono le questioni che a questo punto si dischiudono: cos'è propriamente l'*Urpflanze*? Un 'primo da cui' esistente materialmente come una pianta precisa da cui tutte le altre deriverebbero (e forse in con-

16 Goethe 1981b, 266-267. Tr. it. (parzialmente modificata) in Goethe 1993b, 295-2096.

17 Friedenthal 1963, 318.

18 Goethe stesso ricorda quando ripercorrendo la storia dei suoi studi di botanica afferma: «Prestai attenzione a tutte le forme così come esse mi si presentavano e nelle loro modificazioni, e così nell'ultima meta del mio viaggio, in Sicilia, mi divenne completamente chiara l'*identità originaria* di tutte le parti della pianta (*die* ursprüngliche Identität *aller Pflanzenteile*)» (Goethe 1981a, 164).

formità ad una prospettiva evoluzionista di linea darwiniana)?[19] O è quell'identità che si costituisce nel comporsi delle parti materiali della cosa, della pianta, che assume solo nell'unità restituita come unità materiale la forma, ossia la propria essenza, quindi la propria determinazione? Certamente Goethe non dice soltanto che è possibile scorgere in ogni pianta il compimento della determinazione che è propria di ognuna, cosa che appunto sembra rispondere alla seconda domanda. Egli parla anche della possibilità di una forma originaria al modo di una datità originaria, 'incarnata', quindi in una materia – appunto perché si dà – che possa essere assunta a modello per la comprensione della struttura formale e, quindi, essenziale di ogni pianta. Anche se esordisce dicendo che l'idea dell'*Urpflanze* aleggia in lui come un fantasma, quindi al modo di una parvenza, di uno *Schein*, e non di un fenomeno dato (*Erscheinung*), l'esperienza delle datità concrete, materiali lo rinvia sempre alla necessità ontologica di una forma originaria, di un 'fenomeno originario' (*Urphänomen*),[20] che egli arriva anche a pensare come 'fenomeno puro'. Questo fenomeno, tuttavia, non può essere posto come ciò che è semplicemente dedotto dalla ragione umana e ipostatizzato o fissato in un concetto per via d'astrazione e tramite l'operazione epagogica della ricostruzione del tratto comune ed universale a tutti i casi empirici concreti ed individuali riscontrabili, giacché proprio tramite una simile operazione «si sacrifica il frammento empirico all'idea del fenomeno puro».[21] Provan-

[19] Cfr. su questo Pignatti 2006, 143-154. Cassirer sottolinea il carattere 'dinamico', ma non 'storico' della dottrina goethiana della metamorfosi che «non ha l'intenzione di stabilire alberi genealogici della specie» (Cassirer 1958, 236). Intesa così la teoria della metamorfosi non autorizza a determinare l'*Urpflanze* come il prototipo originario da cui discendono le altre piante.

[20] Di *Urphänomenon* Goethe parla come di qualcosa iscritto nella materia, e non semplicemente come di un'ipotesi o del frutto di una deduzione astraente al pari di un concetto della ragione. In *Zur Farbenlehre*, infatti, egli scrive che i fenomeni originari non sono manifesti (*offenbaren*) alla nostra percerzione o intuizione per tramite delle parole o delle ipotesi dell'intelletto («*nicht durch Worte und Hypothesen dem Verstanden*»), ma essi sono datità originarie reali, in cui è già data la cosa. Nella manifestazione (*Erscheinung*) non c'è nulla che giaccia dietro il fenomeno, al modo di una presunta cosa in sé («*weil nichts in der Erscheinung über ihnen liegt*»). Cfr. Goethe 1981b, 368.

[21] Goethe 1983, 135. In questo senso Goethe specifica che il fenomeno puro si deve mostrare «in una serie costante di fenomeni» che certamente il soggetto deve in qualche modo epurare di tutti i caratteri accidentali legati alla più cieca contingenza.

do a seguire l'ipotesi di un fenomeno reale dato, originario e principio d'essere di tutti gli individui appartenenti al genere, che noi possiamo riconoscere come genere solo a partire dall'individuazione dei tratti di questo esemplare originario come caso primo di tale genere, dobbiamo conseguentemente dedurre che una simile *Urpflanze* ha per lo meno il tratto dell'eternità. Ciò significa asserire che quanto meno c'è un darsi della materia che è sempre *eterno*. Questa caratterizzazione non è da intendersi, forse, nel senso banale che l'esemplare originario sia destinato ad una esistenza eterna, come quell'esemplare lì individualmente rintracciabile fra le tante piante. Un simile caso sarebbe abbastanza inverosimile, perché comunque può verificarsi un evento che porti alla scomparsa dell'esemplare originario, ma non per questo di certo scomparirebbero tutte le altre piante esistenti o, più in generale, il genere delle piante. Dovremmo pensare, pertanto, ad un riprodursi sempre identico di quel caso di pianta originaria, che – si badi bene – è posto come un *unicum*. Per Goethe sembra, cioè, che debba darsi un solo esemplare di *Urpflanze*, non una molteplicità. Anche questa possibilità non suona meno problematica, perché una siccità o un'improvvisa gelata o qualsivoglia altra interazione con l'ambiente in cui tale pianta crescesse e si riproducesse potrebbe, in linea di principio, comportare una sua modificazione strutturale, come Goethe non ignora: «Altitudine, profondità, luce, ombra, secco, umido, o come altrimenti si chiamino le condizioni esterne, di tutto ciò i generi hanno bisogno per sbocciare in tutto il loro numero e vigore; essi mercanteggiano, sì, con la natura».[22] Non si vede perché questo 'mercanteggiare' non possa riguardare, allora, anche la pianta originaria, se essa è una datità del mondo reale. In altri termini, non si comprende perché la pianta originaria come datità fenomenica non debba sottostare alla medesima «legge delle circostanze esterne» o alla «seconda legge» della

Così si «isola l'impuro, sviluppa l'incerto, e scopre l'ignoto» (Goethe 1983, 135), ossia proprio tutto quello che è tale perché ha materia. Negli *Aforismi* dichiara, poi, tutto il pericolo del metodo induttivo (cfr. Goethe 1993b, 245: «Induction habe ich zu stillen Forschungen bey mir selbst nie gebraucht weil ich zeitig genug deren Gefahr empfand») per caratterizzare invece il suo metodo come il metodo dell'analogia (cfr. 247: «Induction. Hab ich mir nie, auch gegen mich selbst nicht erlaubt. Ich ließ die Fakten isoliert stehen. Aber das Analoge sucht ich auf. Und auf diesem Wege z. B. bin ich zum Begriff der Metamorphose der Pflanzen gelangt»).

22 50.

metamorfosi[23] cui obbediscono tutte le altre piante, se anch'essa è pur sempre una pianta ed anzi, in quanto originaria, deve *a fortiori* comportarsi come *la* pianta *par excellence*. Eppure Goethe insisterà in vari luoghi che si tratta di una datità reale: egli scorge una datità reale, una *Erscheinung*, un fenomeno, e lo fa – ciò che non può non apparire contraddittorio – imbattendosi nelle singole piante concrete che egli vede di volta in volta. È chiaro a questo punto che egli non sta pensando ad una datità fenomenica, e quindi materiale, dell'*Urpflanze* intesa nei termini di un archetipo eterno individuabile in una pianta singolare determinata come 'questa pianta qui' – come un *tode ti* ci direbbe Aristotele.

È indubbio che Goethe depreca l'errore dell'uomo che cerca una chimera distogliendo lo sguardo dalle datità fenomeniche presenti al mondo e scambiando un concetto formale con un caso individuale presente in «carne ed ossa» (*leibhaft*, direbbe Husserl), 'con foglia e stelo' (forse direbbe Goethe). Tuttavia, è utile sondare le implicazioni di una simile idea dell'*Urpflanze*, perché essa ci mette di fronte lo scenario ontologico classico di lettura della realtà che Goethe invece rifiuta, anticipando, a mio avviso, in una maniera strabiliante, la critica a quella visione ontologica classica che, molto dopo, Heidegger elaborerà parlando di una struttura onto-teologica della metafisica. L'idea di un primo ente originario – così possiamo pensare l'*Urpflanze* – su cui fondare l'intero dell'ente non è, dunque, tanto peregrina, ma campeggia nei sistemi ontologici di una gran parte della tradizione metafisica e del suo comportamento nell'impostare la questione dell'ente in quanto ente e da qui dell'intero dell'ente.

Quando, per usare la nota espressione di Heidegger, «il dio fa la sua comparsa nella filosofia»,[24] o quando la filosofia fa ricorso all'esistenza di un ente divino, ontologicamente perfetto, per spiegare la totalità di quel che è, essa sta compiendo una precisa operazione basata su un nesso inferenziale. L'ente divino, cioè, non funge semplicemente da causa prima in quanto principio creatore dell'intero dell'ente, secondo la direzione di una ricerca sull'ente che intanto conosce la svolta se-

[23] Cfr. 100. Nell'ipotesi di un riprodursi senza fine della pianta originaria dovrebbe, comunque, rispettarsi per lo stesso motivo anche la 'seconda legge' della metamorfosi che prevede che nella riproduzione si dia una trasformazione (cfr. 109).

[24] Heidegger 2009, 71.

gnata dall'avvento del cristianesimo. La mossa – che per Heidegger corrisponde alla dimenticanza ontologica ed alla riduzione dell'essere all'ente – consiste piuttosto nel fatto che, nella sua origine greca, la metafisica pretende di rispondere alla domanda sull'intero dell'ente guardando ad un ente ben determinato. Siffatto ente, essendo modello paradigmatico dell'essenza dell'ente (ciò che Heidegger chiama la *Seiendheit*, l'enticità), soddisfa già per questo la condizione del fondamento al modo della *Begründung*, della 'fondazione giustificante', vale a dire come quell'*unicum* da cui dipende tutto il resto dell'ente. Una simile struttura di fondazione riposa sul seguente paradigma. Anche se l'esperienza ci mette di fronte sempre a casi di enti diversi con variazioni ontologiche rintracciabili e visibili, è però possibile comprendere cosa ognuno degli enti in quanto ente sia guardando a quell'ente che più di tutti è ente. Esso è l'ente più essente (*das Seiendste*) che per questo assurge al ruolo di *Ursache*, causa prima. Sotto questa struttura si presentano nel loro ruolo di principi ontologici l'*ontos on* di Platone e l'*akrótaton on*/*timiótaton on* di Aristotele. In effetti, un siffatto modo di procedere fondazionale rispecchia la stessa situazione nella quale ci troviamo quando, ad esempio, ci viene chiesto chi sia lo scultore. Anziché darne una definizione, noi indichiamo Fidia o Michelangelo o, per restare all'oggi, Arnaldo Pomodoro e diciamo: «Guarda lui, e lo saprai». Rispondiamo in questo modo perché quello scultore particolarmente valente esprime l'essenza dello scultore in massimo grado. Nondimeno, ad una simile scuola noi non capiremo mai invece quel modularsi individuale di ogni scultore singolare. Procedendo per questa via, non capiremo mai, ad esempio, perché uno scultore come Rodin abbia avuto bisogno di lasciare che le sue statue restassero ancora come riprese nel loro atto di liberazione dal blocco di marmo, laddove per il Canova è indispensabile che la statua si presenti nell'estrema pulizia, nettezza e precisione del suo contorno.

Goethe ritiene necessario porre l'esistenza materiale di un modello *idealiter*,[25] poiché solo questo può sciogliere quella contraddizione che sorge parlando di una datità originaria ben individuabile nel darsi di

[25] Goethe annota ad un certo punto: «*Urphänomenon*. Real, symbolisch Identisch» (Goethe 1993a, 226). Ed ancora: «Urphänomen – ideal als das letzte Erkennbare; real als erkannt; symbolisch weil es alle Fälle begreift; identisch mit allen Fällen» (226). Qui il reale è assunto come conosciuto appunto perché si tratta di un fenomeno dato in 'carne ed ossa'.

svariate datità simili, ma non numericamente identiche. Ciò, tuttavia, non conduce a dimenticare né che nella realtà due piante perfettamente uguali non esistono, né che esistono in generale piante identiche al modello, perché ogni pianta, in realtà, presenta una variazione individuale rispetto ad esso, apprezzabile proprio nel suo comporsi materiale, nell'aspetto materiale tramite cui si rende materialmente visibile: «[La natura] [c]rea forme eternamente nuove; ciò che esiste non è mai stato; ciò che fu non ritorna – tutto è nuovo, eppur sempre antico».[26] Questa ragione porta Goethe a rifiutare la posizione di chi pretende di giungere a un 'sistema naturale': la natura non è un sistema e non è comunque possibile giungere ad una sua conoscenza sistematica, completa e perfetta: «La natura non ha sistema, essa ha vita, essa è vita e successione da un centro ignoto verso un confine non conoscibile. La contemplazione della natura è perciò senza fine».[27] A questo punto dobbiamo tentare la risposta alla seguente domanda: quando Goethe cerca una datità originaria, che è tale perché nella materia, risultando così passibile di tutte le modificazioni di cui una materia può essere portatrice, di cosa è in cerca?

Scartiamo l'ipotesi che egli intenda dire che ci sia una pianta prima da cui derivano le altre in una modulazione che sembra restare meramente esteriore perché sembra riguardare solo la materia, quindi qualcosa come il colore delle foglie o lo spessore e l'altezza del tronco o dello stelo.[28] Goethe ci avverte che ogni pianta reca in sé la traccia essenziale nella sua datità materiale in quanto pianta. Questa datità materiale, tuttavia, non è neutra. Infatti, la materia propria di cui costa ogni singola pianta non è certo indifferente all'essere proprio – ossia alla determinazione e, dunque, all'essenza – di quella pianta in quanto quella pianta: una rosa non sarebbe più una rosa se i suoi petali non fossero vellutati, ma fossero duri e spinosi come quelli del fiore del cardo. D'altro canto, è solo questa materia mai neutra, ma

26 Goethe 1983, 153.

27 144.

28 Gerbert Grohmann, ad esempio, ha chiarito molto bene in che senso la morfologia goethiana non possa essere letta a partire dall'ipotesi di una discendenza ed evoluzione della varietà delle piante a partire dall'*Urpflanze* intesa come un primo esemplare primitivo. La pianta originaria non corrisponde ad una pianta 'fisica', anche se non può essere posta come espressione per indicare una pianta con un'esistenza solamente 'teorica' (cfr. Grohmann 1959).

sempre individualmente determinata ad ospitare e rendere effettivamente esistente come una datità fenomenica quel tratto più generale che siamo soliti per tradizione dire 'forma'. Essa è l'*Urpflanze* di cui andiamo in cerca e tramite cui individuiamo quel che ci sta di fronte come una pianta e non una sedia. Il livello della datità originaria indica, quindi, che ogni fenomeno del mondo naturale ha nella materia la sua condizione di manifestazione,[29] nella misura in cui la materia costituisce quel livello ontologico primo rispetto al quale può avvenire il riconoscimento dei singoli individui. Parimenti essa è la stessa *conditio sine qua non* di ogni esperienza possibile che ha il potere di legittimare la nostra operazione razionale per mezzo della quale ci è possibile sussumere un particolare sotto un genere universale. Questo, però, come ci insegnano già Platone ed Aristotele, non è bastevole per potere dire di conoscere qualcosa, perché, giunti a riconoscere in quell'individuo il caso singolare di una più ampia generalità ontologica, occorre una via diversa – quella cosiddetta diairetica – tramite cui guadagnare la differenza specifica che ci restituisce la distinzione fra cani e gatti, fra betulle e querce, fra rose e gerbere. Questo stesso, volendo ragionare fino in fondo, non è a sua volta ancora sufficiente, perché poi dovremmo cercare tutte quelle differenze che ci rivelano che quel che abbiamo di fronte è una betulla di una strada russa e non di una strada finlandese. A questo livello emerge appunto quel qualcosa che chiamiamo «vincolo materiale della forma». Esso è così immediato che di fatto non procediamo mai abitualmente ponendoci tutte le domande sulle differenze, ma nel vedere qui ed ora per la prima volta questa sedia diciamo che è una sedia e non un tavolo e che è la sedia di un certo locale dove ci rechiamo per la prima volta. È perché ogni forma è vincolata materialmente che noi, cioè, siamo in grado di procedere per differenze e di scorgere le differenti cose che costruiscono, per così dire, la loro differenza proprio nel modo diverso tramite cui ogni volta la forma *idealiter* inabita la materia. Fin qui, tuttavia, Goethe non sembra in effetti aggiungere nulla di nuovo alla lezione dell'ontologia classica. Dove vedere, quindi, la novità della sua morfologia, avendo compreso che l'*Urpflanze* come l'*Urtier* non

[29] Questa struttura di 'ancoraggio' della forma alla materia si presenta più in generale in ogni ente che esiste in una sfera ontologica materiale, come nel caso di quella individuata da Aristotele come l'ambito ontologico dei *techne onta*.

sono altro che il 'concetto' o l' 'idea' di pianta o di animale[30] e, cioè, «l'identità di tutte le parti della pianta»[31] nel senso del principio che compattando la pianta le dà, le permette di esistere come un alcunché di individuale determinato? In una lettera a Herder del 17 Maggio 1787 – ad un mese esatto dalla pagina del *Viaggio in Italia* che abbiamo esaminato – Goethe scrive che l'*Urpflanze* è «un modello e la sua relativa chiave», «una legge che potrà applicarsi ad ogni essere vivente».[32] Sempre a Herder il 28 Agosto dello stesso anno scrive che essa è il «*come* dell'organizzarsi delle cose».[33]

A questo punto occorre fare un passo in avanti di circa dieci anni, arrivando così al periodo cui dovrebbero risalire le annotazioni goethiane ricordate all'inizio circa il carattere fenomenico dell'ente e la natura metamorfica della forma. È già emerso che la metamorfosi è una «legge della natura» (*Naturgesetz*), in cui si rivela la natura dialettica e «per differenza» dell'essere della forma (*Mannigfaltigkeit der Gestalt*). Vi è, dunque, una duplice accezione della forma per Goethe che porta ad abbandonare l'idea che vi sia una dicotomia fra forma e materia come fossero due principi ontologici che si oppongono. Da un lato, la forma è l'aspetto che assume un ente materiale; essa è quindi l'aspetto di una materia, quello di superficie, esteriore, ossia è la materia stessa come viene fuori, come si dà alla vista. Dall'altro, la forma è l'essenza, ma si tratta di un'essenza che esiste come quella materia che si dà a vedere in quel modo. Si tratta, pertanto, di uno stesso da due prospettive diverse. Goethe, infatti, annota: «La materia senza la forma conduce ad un sapere difficile, la forma senza la materia ad una vuota illusione».[34] Quando parla di metamorfosi, Goethe allude al variare della forma secondo la prima accezione di forma che abbiamo appena individuato. Tuttavia, egli è consapevole che la metamorfosi non è una trasformazione solo esteriore, bensì questa 'tras-formazione' tocca il cuore della cosa, quindi la forma nella nostra seconda acce-

30 Così espressamente dichiarato da Goethe nella *Metamorfosi delle piante* (cfr. Goethe 1983, 48).

31 Goethe 1981b, 376.

32 Goethe 1993b, 359. È un modello ed una chiave – aggiunge Goethe – che permette di cogliere l'«intima verità e necessità» (359).

33 433.

34 332 («Stoff ohne Form [fürhrt] zum beschwerlichen Wissen, Form ohne Stoff zu einem hohlen Wähnen»).

zione. Per questo non vi è un sistema della realtà rigido; nulla resta rigidamente stabilito. Cosa può autorizzarci, infatti, a sostenere che l'essenza di qualcosa non è intercettata e modificata dal mutamento dell'aspetto formale – secondo il primo senso di forma – tramite cui essa si dà a vedere, solo perché incarnata, ossia perché data in una materia, che è il solo fronte fenomenico nel quale possiamo attestare la mutazione?

Sulla scorta del calibro plastico del reale Goethe invita ad adottare nella ricerca morfologica un metodo atto a seguire la configurazione d'essere 'mobile' della forma, e ciò proprio per arginare il rischio di una cristallizzazione concettuale sterile. Il concetto di forma, indicante «il complesso dell'esistenza di un essere reale»,[35] se astrae dal carattere mobile proprio della realtà fenomenica, fissa in un che di stabile e chiuso una realtà che in sé è, di contro, dinamica, viva e mai statica.[36] Nel 1807, vent'anni dopo la sua passeggiata a Villa Giulia, egli dichiara espressamente che, osservando tutte le forme, ed in particolare quelle organiche, emerge che in esse non vi è nulla di esistente in modo rigido (*ein Bestehendes*), né alcunché di immobile (*ein Ruhendes*) o di compiuto (*ein Abgeschlossenes*), poiché le forme oscillano in un movimento costante (*in einer steten Bewegung*).[37] Il fondamento di questa mutazione formale, di questa potenzialità che mai si chiude, è tutto 'fisiologico',[38] giacché risiede nella struttura materiale, nella materia di cui costa ogni essere reale (*Wesen*) che abita nell'orizzonte naturale, sia esso un ente vivente organico sia esso un ente non vivente inorganico (ciò che Goethe ad esempio considera come oggetto d'indagine nel campo della mineralogia).

Su queste conclusioni le pagine goethiane non mostrano di essere solo attuali, ma rappresentano un pungolo di ricerca straordinario. Esse si collocano, anzi, come un medio formidabile fra la posizione della metafisica classica – assunta per lo meno seguendo quel filone secondo cui l'essenza delle cose costituisce un sostrato al modo del-

35 Goethe 1987, 42.

36 *Gestalt* è il «termine nel quale si astrae da ciò ch'è mobile, e si ritiene stabilito, concluso e fissato nei suoi caratteri, un tutto unico» (Goethe 1983, 43).

37 «Ora, se esaminiamo le forme esistenti, ma in particolar modo le organiche, ci accorgiamo che in esse non v'è mai nulla d'immobile, di fisso, di concluso, ma ogni cosa ondeggia in un continuo moto» (43).

38 «Der Grund von allem ist physiologisch» (Goethe 1993b, 208).

la forma immutabile ed eterna che cristallizza ed irrigidisce proprio quella realtà che a noi di contro si consegna al modo di un costante fluire e modificarsi – ed una visione assolutamente contemporanea di taglio fenomenologico-decostruttivo non dimentica del travaglio interno all'essere, della sua opacità, del suo presentarsi tramite sfumature ontologiche che non sono mere modificazioni di superficie. Non è un caso che è proprio il versante odierno della ricerca ontologica a rilanciare il tema della datità materiale come unica condizione del darsi reale e non solo intenzionale dei fenomeni. Ora, Goethe avverte che il recettore di questa fenomenicità ineludibile secondo il *Grundprinzip* della morfologia, tuttavia, può far ricorso a strumenti (concetti, parole, linguaggio) che, secondo quanto insegna già il Platone della *Settima Lettera*, sono deboli e deficitari, perché mai per intero sovrapponili alla cosa stessa cui rimandano. Sotto la dicitura *Simbolica* (*Symbolik*)[39] egli, infatti, chiarisce quale sia il compito della ragione: essa deve trasformare il fenomeno (*Erscheinung*) in idea per trasporlo, quindi, in un linguaggio dove, nondimeno, qualcosa del fenomeno è destinato a restare inesprimibile (*unaussprechlich*).[40]

Tutto questo ci potrebbe portare ad abbracciare la tesi che dell'essere è determinante più la materia che la forma, la quale diviene il modo tramite cui la materia si organizza consegnandosi nell'aspetto manifestativo suo proprio tramite la strutturazione individuale della materia per ogni ente. Di certo, comunque, l'essenza di qualcosa è il suo darsi un'organizzazione compiuta in vista del raggiungimento di un compimento ontologico che di fatto non è mai definitivo, ma è tale che giunto a realizzazione resta sempre passibile plasticamente di un'ulteriore ritrasformazione e rimodulazione ontologica.

39 Cfr. 193 ss.

40 Cfr. 204: «Alle Erscheinungen sind unaussprechlich, denn die Sprache ist auch eine Erscheinung für sich, die nur ein Verhältniß zu den übrigen hat, aber sie nicht herstellen (identisch ausdrücken) kann».

Material Potencies: An Investigation into the Matter of Predication

Diana Khamis

Plato's *Timaeus*, at 49a, having discussed what is intelligent in the cosmos, addresses necessity in its treatment of matter. This is done through adding the idea of the receptacle to the scheme of the universe Plato's 'bastard reason' has constructed in the dialogue. The receptacle is introduced as a third element necessary for the creation of the universe, in addition to the 'intelligible pattern' which has been the model for the universe and the resulting «imitation of the pattern», as «another kind, which is difficult of explanation and dimly seen».[1] The receptacle – matter – is something obscure and difficult, and what else could it be, given matter's apparently absolute opposition to the idea? Surely matter is constant becoming, therefore unknowable, therefore dark and obscure – the source of all imperfection! Reassured thus, we turn to the Greek text. What do we see?

> τρίτον δὲ τότε μὲν οὐ διειλόμεθα, νομίσαντες τὰ δύο ἕξειν ἱκανῶς· νῦν δὲ ὁ λόγος ἔοικεν εἰσαναγκάζειν χαλεπὸν καὶ ἀμυδρὸν εἶδος ἐπιχειρεῖν λόγοις ἐμφανίσαι.[2]
>
> The third we did not at the time distinguish, thinking that the two would be enough. Now however, the argument apparently necessitates a difficult and dark [Eidos], to exhibiting which in discourse we must put our hand.[3]

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1 Plato, *Timaeus*, 49A.

2 Plato, *Timaeus*, 49A.

3 Translation mine, modified to highlight Plato using the term 'Eidos' to describe matter. Jowett, for instance, has «There is also a third kind which we did not distinguish at the time, conceiving that the two would be enough. But now the argument seems to require that we should set forth in words another kind, which is difficult of explanation and dimly seen».

What we see is a remarkable statement: the third necessitated in the dialogue, the matter which Plato feels inclined to address, is called an Eidos, an Idea. A «difficult and dark» one, but still an Idea. The Greek 'Eidos' is not quite a technical term, so it has no univocal usage. However, it is not used to refer to notions, opinions or individual thoughts,[4] and it is not a formal or abstract category either. In broadest possible terms, it means rather that which is recognized when a thing is seen, a sort of 'face' of the thing. Moreover, the way Plato refers to this «difficult and dark» idea leaves no doubt – it is intelligible, for although our reason, in thinking about cosmogony, can only be a bastard reason, Plato is still interested in 'exhibiting' this «difficult and dark» Idea, the receptacle, 'in discourse'.

Does this mean then that the receptacle is not matter? Intelligible, an Idea, its discussion quickly followed by a discussion of material elements – the triangles of fire, water, air and earth, out of which everything is composed (and which seemingly are prime matter), it brings us to a pertinent question: what is matter for Plato?

In what follows, I will answer this question and argue that the Idea of matter in Plato illuminates greatly another «difficult and dark» conception of matter – that used in the work of the philosopher Friedrich Schelling, which in turn would help us illuminate an even more difficult and dark subject within the work of that same philosopher – that of the matter of predication, the very materiality of thought. This problematic, put precisely thus – as an enquiry into the matter of predication – is relevant within transcendental post–Kantian philosophy because of Kant's claim that the appearances, which are constituted through our judgements of them, i.e. through predication, have as their object a «transcendental object = X».[5] This transcendental object = x is that indefinable object which serves as a placeholder for empirical objects, which relates the experiences we have in appearances to objects of appearance and to the ground for appearances. In other words, according to a simplified preliminary understanding of the transcendental object, it is to experience what raw matter is to mate-

[4] In Homer, 'Eidos' usually means 'shape', and a beautiful one at that. In Plato it occasionally means 'shape', 'form', «kind, sort» – generally, something that is seen and recognized. The only systematic study of the use of the word 'Eidos' in Platonic texts I know is in Losev 2013.

[5] Kant 1998, 233.

rial things produced. Since the transcendental object is important for Kant's critical system and, as will be argued, for Schelling as well, the line of investigation into matter from Platonic to Schellingian to the matter of predication will be pursued.

1 Plato

If we set aside the notion of Plato's matter as something unintelligible and perpetually changing – the source of imperfection in our world – we are left with at least two claims Plato makes about matter, both taken from the section of *Timaeus* which deals with 'necessity' in the universe – what is determined, in contrast to the free 'intellect' of the demiurge and the Ideas he uses to create the world. The necessity section of the *Timaeus*, Plato makes clear, deals with matter, with «the nature of fire, and water, and air, and earth, such as they were prior to the creation of the heaven, and what was happening to them in this previous state».[6] Prior to the introduction of mind into the world, there was necessity. The view of matter we get from the following discussion is thus: on one hand, matter is composed of four different kinds of particles – triangles, which are the fundamental constituents of fire, water, air and earth.

> In the first place, then, as is evident to all, fire and earth and water and air are bodies. And every sort of body possesses solidity, and every solid must necessarily be contained in planes; and every plane rectilinear figure is composed of triangles [...].[7]

So it seems that bodies have a corpuscular nature, the corpuscles being these fundamental triangles, four in kind. On the other hand, we have the receptacle which Plato presents as that which is completely formless, completely neutral in order to receive the imprint of the forms, as matter for the form:

> Wherefore, that which is to receive all forms should have no form; as in making perfumes they first contrive that the liquid substance which is to receive the scent shall be as inodorous as possible; or as those who

[6] Plato, *Timaeus*, 48 B.
[7] Plato, *Timaeus*, 53 CD.

> wish to impress figures on soft substances do not allow any previous impression to remain, but begin by making the surface as even and smooth as possible.[8]

The difference, then, between material corpuscles and underlying receptacle for all determination is such, that the corpuscles are among the things that are 'imprinted' on the receptacle; they are parts of the receptacle's material nature,[9] which is why they – the constantly–changing material bodies – are not to be given a determinate name, and are merely to be referred to as things of «such a nature»,[10] the nature in question being material or 'receptacular', while the receptacle, «that in which the elements severally grow up, and appear, and decay, is alone to be called by the name 'this' or 'that'[11] – matter.

In addition to this dual nature of matter in Plato, the expression «difficult and dark idea» suggests that it is also something imperceptible and unchanging. To take the words of Iain Grant, from his brilliant book *Philosophies of Nature after Schelling*:

> Platonic matter consists of two components: the 'difficult and dark Idea', and the medium or 'receptacle of all becoming' (*Tim.* 49 A 4–7). As Idea, it is always existing and unchanging and imperceptible to the senses; as receptacle, it is generated and that in which all generation occurs, yet like the Idea, it is 'dark', imperceptible.[12]

The bifurcation in the nature of Platonic matter lies here, and it must be noted that the two 'components' of matter are not like the separate ingredients of a dish, but rather like two roles something can fulfill. Matter is then what underlies all that is corpuscular,[13] the root of materiality and embodiment – but it is also a genuine Platonic universal – matter itself, that which is not just underlying all particular bodies, but is incorporeal and imperceptible.

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8 Plato, *Timaeus*, 51 A.
9 See Plato, *Timaeus*, 51 B.
10 Plato, *Timaeus*, 50 B.
11 Plato, *Timaeus*, 50 B.
12 I. H. Grant 2006, 34.
13 Without at that becoming an Aristotelian hypokeimenon, as the Aristotelian hypokeimenon is a merely logical substrate, and is not primary (see I. H. Grant 2006).

2 Schelling

It is now our task to show how it is that matter can be both incorporeal and imperceptible and the root of materiality and embodiment. Since German idealism – and not Plato – is the focus of my discussion here, I will set about accomplishing this task through exploring Schelling's understanding of matter – as the foregoing analysis will show, Plato and Schelling illuminate each other in numerous interesting ways.

I would like to leap straight into the thick of Schelling's *Potenzlehre*, his theory of potencies. Ever since the *Outline of a System for a Philosophy of Nature*, Schelling has been inclined to look at nature as composed of actants, or later, potencies.[14] The logic behind this is simple: if a philosophical investigation of nature is to look at the unconditioned in nature, then it inevitably realizes that bodies cannot be unconditioned, because the unconditioned cannot be found in any individual thing. The unconditioned, then, is nature's incessant activity, and bodies are therefore secondary to primary actants that make them up. With the development of Schellingian philosophy, the concept of simple actant transformed into that of potency – a power which makes up all natural phenomena[15] – extension, magnetism, electricity, gravity, etc.

If we reconstruct a rather crude sketch of the theory of potencies Schelling builds up throughout his work – rather crude because the theory of potencies is immensely difficult and dynamic, as Schelling has kept refining it through the years – we get the following. The first potency, the starting point for the *Potenzlehre* is sheer ability, sheer Can. To quote Iain Grant's unpublished translation of the *Presentation of Pure Rational Philosophy* (2013), Lecture 17:

> the Can was posited [...] as a barrier to Being, as what finds egress from all barriers, the limitless and indeterminate in itself, entirely akin to the Pythagorean and Platonic infinite (ἄπειρον), that, of course, is not to be found in appearance. For every Being situated in the infinite, is already in turn held behind barriers and is [thus] susceptible to being conceived. Meanwhile the appearance itself contains the mark

14 Schelling 2004, 5.

15 Which for Schelling is all phenomena – «anything whose conditions simply cannot be given in nature is absolutely impossible» (Schelling 2001, 186).

> that all Being is grounded in something in itself barrier free, striving against all form and rule. Itself impotent, so for itself properly not able to be being, it will nevertheless be the ground and beginning of all becoming, and in Aristotelian terms, the first, namely the material cause of all emergence.

This, then, is Schellingian matter: unlimited, undefined, nothing in particular: the *apeiron*, and also the receptacle. It is the dark principle at the ground of creation, untouched by the light of reason, but from which this light springs.[16]

Is this all there is to Schelling's matter, though? Quite predictably, it turns out it isn't. Just as the unlimited is offset by the limit introduced into it – which is how 'real being' is generated in Plato's *Philebus* – the pure Can, –A, is offset by +A, «that which simply has being».[17] –A wills +A, which serves as an attractor, and thus as a de–terminator. The –A determined by the +A therefore produces ±A as a result – real being, which is simultaneously that which is, and that which has the capacity to be, much like the Platonic *apeiron* into which *peras* is introduced produces real being. In this process, however, the 'material cause', –A, now elevated to being in the end product ±A loses its potency, becomes the 'blind existent' B, the existent which has 'lost itself'. The role of B is that of «the *extaining* existent, for it deprives Being of what is *not able to be*»[18] – i.e., B's role is to exclude that which cannot be from the process of producing being. Just as +A defines by attraction, B defines the resultant being by negation, as it is «without quality, desert and void».[19] The cycle of material production brings the potency–to–be–everything to a state whereby this potency is turned into negative determination. This cycle of production, where –A attracted by +A to become ±A, with the material principle –A turning into blind potency B is reset once B transforms back to potency –A, thus becoming fertile ground for more production, as it «recovers itself and becomes itself powerful».[20] It must be noted, that it is only

16 Schelling 2006, 27.
17 Schelling 1856, 390 (tr. Grant).
18 308 (tr. Grant): «[...] das ausschließlich Seyende, denn es versagt dem nicht seyn Könnenden [...] das Seyn».
19 312.
20 384.

after this transformation – whereby B becomes the ground for another, transforming itself to –A – that it can be called matter in the full sense of the word: that out of which something else is made.[21]

From the above we can conclude, therefore, that the Schellingian material principle is dual, much like its Platonic correlate;[22] it is a dual potency – if it can be extricated from the workings of the other potencies at all. Assuming it meaningfully can – it is on one hand the pure Can, that which is unlimited and can become anything whatsoever, and on the other hand, once it becomes matter for something, it turns to passivity, whose role is to determine becoming in its transformation, 'disabling' certain paths of material development becoming is to take, and thus directing the process of becoming. Matter for Schelling is thus a material principle, a dually operating potency, a force of production – and a force of determination. The unlimited –A and the limiting B,[23] *apeiron* and *peras*,[24] the receptacle and the Idea of matter–itself – the function of these pairs of concepts is remarkably similar, if not outright the same. It remains to see how a similar conception of matter can be traced in predication theory, but before this

21 «[F]or nothing is originally matter, just as nothing is originally object, rather subject is and the operations anterior to world–making [die Vorgänge der Weltbildung] are none other than those through which the resistant principle that itself wants to be is deflected and left to acknowledge itself as matter [...]» (tr. Grant), or. in 363: [...] nichts ist ursprünglich Materie, wie nichts ursprünglich Objekt, sondern Subjekt ist, und die Vorgänge der Weltbildung sind nicht andere als die, durch welche das wiedestrebende, selbst sein wollende Prinzip gebaut und vermocht wird sich als Materie zu erkennen [...]». All matter is either matter in–itself – in which case it is more like the receptacle or the potency –A – or matter for another, in which case it is transfigured potency B.

22 395–396: «Alles Seynkönnen im transitiven Sinn, um den früher gebrauchten Ausdruck hier wieder anzuwenden, steht zwischen einem doppelten Seyn, dem von welchem es herkommt, und dem, welchem es zugeht, darum ist es seiner Natur nach doppelsinnig (*natura anceps*); Zweiheit (duas) im pythagorischen und platonischen Sinn, welche von selbst unbestimmte ist, ἀόριστον δυάν, wie sie auch genannt worden».

23 Both +A and B are determining factors; attractors, just like in Plato there is an Idea of matter – matter itself, and other Ideas. B determines the material becoming qua material, +A determines it qua specific becoming. Ultimately, though, Schelling is more complex than Plato; and Schellingian 'raw matter' can only be extracted at the cost of nuance and at the risk of abstraction.

24 We here have to keep in mind that B is only one kind of possible *peras*, the other being +A.

paper moves on to investigating matter as predication, it is worth the time to take a short look onto why this view of matter is so important.

Interjection: Matter as power

To quote Giordano Bruno, «Certainly, this principle, called matter, can be considered in two ways: first, as potency; second, as substratum».[25] From the above analysis, it is evident that both Plato and Schelling choose to treat matter as primarily potency – and therefrom make its being–substratum a part of its being–potency. And at any rate, even this substratum is, for both Plato and Schelling, not an inert *body* which somehow then acquires its characteristics. Platonic and Schellingian physics are not sciences of the body; they are not somatic. Both philosophers want to demonstrate how the world becomes material,[26] how matter arises – for both nature that we live in is a nature that has been generated, and at least to an overwhelmingly large extent – generated itself. If our philosophical understanding of matter is to be based in the existence of a fundamental body, a fundamental material entity, a mere substratum without potency, then we run the risk of being unable to trace the generation of this substratum – both in the sense that we would not be able to investigate how the substratum came about, but also in the sense that we would not be able to explain the powers this substratum possesses. In other words, we would find ourselves in a dualism of power and body.[27] The question «is power derivative from body or is body derivative from power?» can be answered only in one way if we are to avoid this dualism. Following the Platonic tradition all the way to Schelling, then, we are led to conclude that matter is not reducible to any particular body or kind of body – this is what the discussion in the *Timaeus* and in Schelling's *naturphilosophische* works brings us to. An account which insists otherwise and wishes to keep its discourse of matter strictly somatic cannot but be mechanical. Thinking the construction (and destruction) of matter, however, requires dynamism. It is to an attempt of transposing this dynamism into the transcendental spheres that we now turn.

25 Bruno 1998, 65.
26 I. H. Grant 2006, 28.
27 See on this, brilliantly, all over I. H. Grant 2006, for instance 73–74.

3 The matter of thought

The cycle of potencies crudely sketched in section II of this paper is what Schelling calls the «self–construction of matter».[28] This self–construction is moreover repeated in nature at different levels, and since, according to Schelling, all natural phenomena result from the potentiation of matter, thinking and the structure of predication itself should therefore be a product of the potentiation of matter.[29] If we are to examine the structure of potencies in predication, we are to examine the material principle of predication. In this business we will have an unlikely aid: the work of Immanuel Kant, as I have mentioned above.

In Kant's *Critique of Pure Reason*, our thinking operates in judgment, which is the predication of a concept or category to an object of our appearance. In this operation of predication, the concepts are predicated of a certain object, the object of our appearance. This object of appearance is always «the non–empirical, i.e., transcendental object = X».[30] To quote Kant:

> The pure concept of this transcendental object (which in all of our cognitions is really always one and the same = X) is that which in all of our empirical concepts in general can provide relation to an object, i.e., reality. Now this concept cannot contain any determinate intuition at all, and therefore concerns nothing but that unity which must be encountered in a manifold of cognition insofar as it stands in relation to an object.[31]

The transcendental object then is «something in general», something which is moreover, according to Kant, a mere thought–entity – at some point, Kant calls it «the concept of something in general».[32] However, this is wishful thinking on Kant's part: the transcendental object is present in every unifying manifold of cognition; it is the necessary condition for relating determinations to a certain object,

28 See Schelling, *Allgemeine Deduktion des dynamischen Prozesses* (Schelling 1859, 3).

29 Schelling 1809, 19: «Das Dunkelste aller Dinge, ja das Dunkel selbst nach einigen, ist die Materie. Dennoch ist es eben diese unbekannte Wurzel aus deren Erhebung alle Bildungen und lebendigen Erscheinungen der Natur hervorgehen».

30 Kant 1998, 231.

31 231.

32 348.

something which follows from the unity of apperception. It is thus not a mere concept, and not an idea (an idea being a complex pure concept going beyond any possibility for experience[33]), but a 'ground' for appearances, their foundation, and an integral element of their constitution:

> The transcendental object that grounds both outer appearances and inner intuition is neither matter nor a thinking being in itself, but rather an unknown ground of those appearances that supply us with our empirical concepts of the former as well as the latter.[34]

Moreover, if we follow Kant into his discussion of the transcendental ideal, we will see that the transcendental ideal is also a transcendental object, one whose existence we have to postulate:

> Nevertheless, among the cosmological ideas, the one occasioning the fourth antinomy presses us to venture so far as to take this step [of postulating the object of the idea]. For the existence of appearances, not grounded in the least within itself but always conditioned, demands that we look around us for something different from all appearances, hence for an intelligible object, with which this contingency would stop.[35]

The transcendental object Kant wants to postulate here is the transcendental ideal, which is – along with the transcendental object Kant has been discussing so far, 'the ground' for appearances.[36] In relation to the transcendental ideal, being called 'the ground' means the same thing that it meant in relation to the transcendental object – the transcendental ideal is not a concept, and neither is it even an idea. It is precisely a ground, thus needed for any and all concepts to be generated. It is conceptually indeterminate and infinite[37] – any regulative

33 Kant 1998, 399.

34 431. Also 536: «For since these appearances, because they are not things in themselves, must be grounded in a transcendental object determining them as mere representations».

35 550.

36 556.

37 Kant himself calls it indeterminate: «Now although this idea of the sum total of all possibility, insofar as it grounds everything as the condition of its thoroughgoing determination in regard to the predicates which may constitute the thing, is itself still

ideal that is part of our cognition for architectonic purposes will «fall infinitely short of reaching [the transcendental ideal]».[38] However, there is a difference between the transcendental ideal of pure reason and the transcendental object Kant speaks of throughout the critique. As Kant himself puts it:

> The transcendental object lying at the ground of appearances, and with it the ground why our sensibility has it rather than another supreme condition – these are and remain inscrutable for us, even though the thing itself is given, only we have no insight into it. An ideal of pure reason, however, cannot be called inscrutable, because it has to display no further credentials for its reality than the need of reason to complete all synthetic unity by means of it.[39]

The transcendental object, therefore, is 'inscrutable' – dark and difficult, indeterminable, unlimited. It is that, which, being an object in general, can then be determined in any way – unlimitedly potential, the *apeiron* into which our machinery of cognition introduces a *peras*. It is the material potency of predication.[40] The transcendental ideal, on the other hand, is not 'dark', not 'inscrutable' – it is that, which reason uses to achieve architectonic unity,[41] the fixed, unchanging

indeterminate, and through it we think nothing beyond a sum total of all possible predicates in general, we nevertheless find on closer investigation that this idea, as an original concept, excludes a multiplicity of predicates, which, as derived through others, are already given, or cannot coexist with one another; and that it refines itself to a concept thoroughly determined a priori, and thereby becomes the concept of an individual object that is thoroughly determined merely through the idea, and then must be called an ideal of pure reason» (554).

38 557.

39 574–575.

40 Since our concept of matter is truly «difficult and dark», Kant himself suspects that it originates from the conceptualisation of the transcendental object. «[T]he transcendental object, however, which might be the ground of this appearance that we call matter, is a mere something, about which we would not understand what it is even if someone could tell us» (329).

41 614: «This highest formal unity that alone rests on concepts of reason is the purposive unity of things; and the speculative interest of reason makes it necessary to regard every ordinance in the world as if it had sprouted from the intention of a highest reason. Such a principle, namely, opens up for our reason, as applied to the field of experience, entirely new prospects for connecting up things in the world in accordance with teleological laws, and thereby attaining to the greatest systematic unity among them. The presupposition of a supreme intelligence, as the sole cause

idea–attractor towards which all our judgments and bits of reasoning tend, for reason is a system, and it seeks to build a unity. Moreover, this system – and the determinations it consists of – is directly produced by the limitation «the material for the possibility of all objects of sense has to be presupposed as given in one sum total; and all possibility of empirical objects, their difference from one another and their thoroughgoing determination, can rest only on the limitation of this sum total».[42] The dual complex transcendental ideal–transcendental object is thus the matter of predication.

4 Conclusion

We have so far drawn, out of Plato and Schelling, a certain understanding of matter as potency. Matter, for both philosophers, is a dynamic production composed of two elements: an unlimited (*apeiron*, receptacle, –A) and the limiting factor (*peras*, matter–itself, B) Moreover, through the work of Immanuel Kant we saw that the existence of matter – precisely upon such an understanding of matter – for predication is a transcendental condition for determination. Schelling subscribes to this as well, as is evident by his inheritance of the concept of the transcendental ideal and its appropriation as «the infinite potency to be» that forms the matter of thought:

> [A]s it manifests itself in the immediate content of reason (or the infinite capacity to be), being is just as much *It*self as well as the matter of a different being [*Seyn*]. The potency (the immediate content of reason) is indeterminateness *per se* (τὸ ἀόριστον), insofar as it can be potency, subject, matter (since these are synonymous expressions), or even being [*das Seyende*].[43]

From all the above, finally, two conclusions can be drawn: first, in order to fully understand the mechanism of predication, it is worthwhile to treat it in its becoming and development, as a complex of potencies – just as it is fruitful to treat matter as such a complex. The

of the world–whole, but of course merely in the idea, can therefore always be useful to reason and never harmful to it».

42 Kant 1998, 559.

43 Schelling 2007c, 142–143.

second conclusion is more immediate – our thinking contains a necessarily material component. This is obviously because we are material entities, but also because matter is the real production of novelty, and so is thought. This, hopefully, will serve as a prolegomenon – and a call – to a materialism which, while avoiding all the pitfalls of various dualisms, will also avoid being reductive.

Matter as Ground for Aesthetic Activity in Schelling

Mahmoud Rasmi

1 Introduction

In this paper, I will argue that the ethical is grounded in the aesthetic by medium of reason - whereby I will show how is it that matter, according to Schelling, acts as a ground for aesthetic activity which is grounded in the *naturing* of nature as *natura naturans*. The foundation of the proposed argument will be substantiated by looking closely at Schelling's *On the Deities of Samothrace* and Jung's conception of the collective unconscious. The goal of this paper will be to argue, that aesthetic activity is the condition of possibility of rationalisation; this approach will, accordingly, allow us to conclude that far from having been overcome, mythologies are reverberant and are well grounded in our everyday lives.

Rainer E. Zimmermann writes in *Deriving kalokagathía from Schelling's Grounding of Nature*: «If the concept of *unground* leads into a region of thinking that tends to escape clear conceptualization rather than becoming part of established theory, then this region is probably the adequate field on which the categories of aesthetics and ethics may unfold». And he goes on to add a few lines later: «So it is the cognitive framework of some suitable meta-theory which is at stake here: in order to eventually learn how to actually utilize the meaning implicit in any type of information gained». To conceptualise the 'unsayable' and thereby that which cannot be communicated through abstract discourse is a tedious process; that is because concepts elude discourse. One cannot pinpoint them as such in their pure nakedness. The solution, thus, is not as Bacon thought it might be: that the only way to extract nature's secrets - to unveil Isis - would be through a violent act through which we would be able to gain control over it. Since the 'unground' cannot be clearly conceptualized because of its continuous

eluding of logical discourse, at the bottom of it, therefore, one can be able to access this abundant region - which is non-exhaustive at the end of the day - through the aesthetic sensibility - as Zimmermann has argued, subsequently unfolding an aesthetic object that would be taken as an object of reflection amongst subjects. These subjects, in turn, *as agents of society*, are able to conceptualise that which has been accessed-through aesthetically, forming as such a collective system which would allow them to take a qualitative leap on the evolutional line. *This process of emergence of complexity from chaos is facilitated through mythopoesis as the ultimate form of artistic creation*, which is, moreover, governed by the Schellingian dialectic, in a system which always comes back to itself but is never selfsame. The stress here would be on the process of emergence as mentioned from chaos to complexity, and not as is usually commonly thought amongst the different philosophical traditions as an emergence from chaos to logos. This is precisely due to the circularity of the system which comes back to itself. In other words, chaos and logos are in a continuous intercourse whereby both depend on each other throughout the different stages of the system; it is not, therefore, a linear process such that once logos has emerged from chaos, the latter is totally overcome. The ideas that will be examined throughout the paper will focus on the following:

1. Schelling's *On the Deities of Samothrace*
2. Jung's conception of the collective unconscious and the archetypes.

2 On Schelling's *On the Divinities of Samothrace*

Schelling's philological investigation on the names of the deities of the ancient Cabiri cult which lived on the island of Samothrace is an intent to bring to light an example of a primordial system of humanity.[1] The importance of such a research, Schelling argues, is to excavate the mysteries left by ancient people in order to have a better understanding of «*what once united human beings intrinsically*». Accordingly, he draws on the interpretation and the significance of the Cabiri gods' named Axieros, Axiorkersa and Axiokersos and shows

[1] Schelling 2007b, 19.

their close link with the Greek gods Demeter, Persephone and Hades respectively. These gods are usually linked in an ascending chain such that each one of the gods' essences is actualised. The beginning of the cosmos is thus attributed to Axieros' essence of hunger and malaise from which being as such emerges, followed by Axiorkersa from whose essence that being is extended into nature, after which comes Axiokersos by whose essence the world of spirit emerges. All three of them are potencies of the cosmos, «*through whose preeminent efficacy and government the totality of the world exists, - clear, therefore, that they are worldly, cosmic deities*». It is clear therefore, that these deities are worldly deities, forces through which the universe comes to be and by medium of which it eventually evolves. The fourth deity, Kadmilos, in this sequence is, on the other hand, not a worldly one, prevailing thereby over both Axiorkersa and Axiokersos, and whose essence is to establish a connection between the worldly gods and the demiurge. This demiurge is not a determined deity, though. It is the coming god; the god to be revealed, its revelation in the world is possible because of the mediation of Kadmilos between the meta-worldly god and the world. If we scrutinise closely Schelling's conception of the Cabiri gods - and by referring to the deities as our access into the primordial system of humanities -, it is to be understood, therefore, that the gods are the natural potencies which occur in the world which would eventually be grounded harmoniously in the coming god who would close the previous system of society and pave the way into a renewed flow of ideas into society's panorama. The names attributed would allow us to have a glimpse into the Cabirian system and understand how they made sense of reality. Notwithstanding, these names, which are eventually recompiled into a mythological system are not to be understood allegorically, because they do not intend to represent a natural phenomenon; they are, however, the potencies of nature recapitulated into the linguistic system of societies.[2] By recapitulating itself in the linguistic system, nature is doing nothing but self-recapitulating itself in God.[3]

What does this mean, and what implications does it have on the understanding of the different systems of different societies during

[2] Whistler 2010.
[3] Whistler 2010.

different epochs? It means that, as Schelling clearly contended in the *Philosophy of Mythology*, the gods are posited in the consciousness of people by emerging from an unconscious state to consciousness by medium of art. God as such, therefore, is a chain of emerging forces of nature which are grounded in the basic physical forces of nature and paving the way to the emergence of the meta-worldly god which is the ultimate realisation of freedom in the human consciousness through the mediating god: the faculty of imagination. We will see furthermore how this idea perseveres in the philosophical tradition and a concrete example will be given based on Maturana's conception of autopoesis. Thus, there is a continuous and parallel movement between the naturing of nature (*natura naturans*) and the evolution of human beings as creative agents (being both products of nature and an active agent within it). Understood in that sense, revelation in the Schellingian conception would signify the end of an era, the closing of one system of a certain society, realizing a new leap of self-consciousness impregnated with new ideas and insights: this creative leap is in continuous self-renewal because it is grounded in nature; consequently, there is a close link between nature and the respective linguistic system of human beings whereby the names given to the gods are nothing but nature self-recapitulating itself in them. Accordingly, these gods are tautegorical because they are not explaining nature but they *are* the potencies which they represent; they are the respective potencies which are posited in the human consciousness as Ideal potencies, but which are actualised to become Real potencies in mythology where both the Ideal and the Real become reconciled and identical. Mythology, hence, could be understood as a form of expression through which human beings tend to make sense of reality. Mythology, understood as such, is a form of expression the dynamics of which include an intercourse between the unconscious as nature coming to consciousness of itself and the consciousness of human beings as active agents within nature. The nature of this form of expression is aesthetic, which depends on the aesthetic sensibility of human beings by accessing Reality, because the latter, as *Natura Naturans*, is constantly eluding abstract discourse. The first step, thus, would allow one to access the dynamicity of nature through an act of *mimesis* of the dynamics of creation of nature. This movement cannot

be abstract or logical in essence; it has to be a concrete one by medium of, as argued elsewhere,[4] creative imagination.

Through the proposed conception of mythpoesis we would have gone back to the Greek root of the word *mythos* which is understood as a kind of narrative; the narrative as such is poetical in nature insofar as it is not an explicative logical discourse. This is due to the fact that, as already argued,[5] the events of nature or human activity are understood only *post facto* because of the contingency of nature such that the world-system is not determined and is open to the actualisation of different potencies (the perpetual revelation of the coming God). Emergence, therefore, comprises a movement from a simple into a more complex network within the system such that the emergent becomes a theme around which variations are constructed in a similar manner to a symphony whereby the newly construed themes are new symphonies and the variations recur throughout the musical piece. Accordingly, «*The potencies, in short, are not so much categories or laws as they are metacategories, metalaws on the basis of which all subsidiary objects and all forms of experience have been built up*».[6] Hence Schelling's excavation into the roots of the Cabirian deities with the hopes of encountering one such a primordial, simple system, which underlies the collective system of the different epochs forming the backbone of different cultures around the world. The simple harmony which once existed among the human race is a simple one from which different cultures emerged by time forming a more complex texture among them. In the example of the Cabiri, Schelling provides the best example that showed both the contingency of natural events (cataclysms, catastrophes, etc.) and the proto-type of the dynamics of the actualisation of the potencies within a certain system that end with the revelation of the coming god.

To recapitulate what has been said in this section: we have reached the conclusion by analysing Schelling's *On the Deities of Samothrace*, that mythology is a form of expression, one narrative and poetical in nature, through which humans make sense of their reality. This

4 The argument is present in my Ph. D. dissertation: *Mythopoesis, Aesthetics and Artistic Creation: Towards a Tautegorical Interpretation of the Cinematic Image*.

5 See the note above.

6 Beach 1994, 181.

is due to the fact that nature is both a *Natura Naturans* and a *Natura Naturata*, which means that existence is contingent insofar as the consequent is not grounded in the antecedent, but rather the antecedent is grounded in the consequent.[7] In other words, the course of history is not determined and cannot be explained through a causal chain (Newtonian Universe). Thus, the world-system is always open to a whole new set of possibilities which might not be causally related, hence the grounding of the antecedent in the consequent and not vice-versa. The narrative discourse is the first step into the construction of a corpus which would act as a condition of possibility for possible interpretations: logical, rational and abstract understanding of the different phenomena. Therefore, the rational is grounded in the aesthetic whereby the aesthetic is understood in the general sense and not in relation to any particular art. The example of the Cabiri cult served as an example to show that the gods are neither an allegorical explanation of nature nor a superstitious belief in superpowers that governed the world from without. Rather, the gods are an ascending chain rooted in the physical potencies of the universe, the names of which are self-recapitulations of nature, that pave the way for the revelation of that which is beyond the world, a transcendence, which is represented by the coming God. Said God is merely the culmination of the system in the cyclical movement throughout the epochs. Thus, the actualisation of the ultimate potency, Schelling hints, supposes the end of one era and the beginning of a new one.

In what follows, I will be examining Jung's theory of the collective unconscious and the archetypes in order to shed light on the dynamics of the positing of the unconscious in consciousness and the reverberation of the archetypes in our times. This will allow us to move on to the last section of this paper where a transition is made from Schelling's *Naturphilosophie* to the Philosophy of Mythology.

3 On the Archetypes and the Collective Unconscious

We have seen so far, on the one hand, the importance of the prioritisation that Schelling attributes to nature as a naturing subject, the

[7] On the topic of the antecedent and the consequent see: Schelling 2007a; I. H. Grant 2013a and I. H. Grant 2013b.

self-recapitulation of which results in theogony - and the importance that we understand the gods which are posited in consciousness as symbols which are to be tautegorically interpreted; and on the other hand, that language is grounded first and foremost in a pre-conceptual experience. Human beings, it has been shown, are continuously making sense of reality through images which subsequently and eventually are abstracted and conceptualised forming the lexicon of the language. The proposed view can be further supported by Jung's theory of the archetypes and the collective unconscious.

According to Jung, the concept of the archetype «*indicates the existence of definite forms in the psyche which seem to be present always and everywhere*». These archetypes are symbolic images full of meaning, and their meaning is inexhaustible; moreover, these images always have historical antecedents and they are always inherited by generations throughout time.[8] Jung stresses the concreteness of these images for they are not thought but are, rather, the result of experience whereby one tries to make sense of reality.

The inherited archetypal images, for example the gods of a certain epoch, Jung argues, are sometimes pronounced dead due to the sudden awareness that people would have acquired with respect to the uselessness of these images.[9] When such an event takes place, it is because said people would have started questioning the meaning of these images and the relation that they have to them. In other words, when they start reflecting upon what the archetypal images are that they would have inherited from the ancestors they are acquiring a rational dimension. Nevertheless, the uselessness of these images, Jung stresses, is only insofar as people cannot relate to them *concretely*. Accordingly, the solution would be in the creation of new symbolic images grounded in concrete experience - what we have previously referred to as aesthesis; this process is achieved by another class of archetypes which Jung denominates as the *archetypes of transformation*. This process of transformation can only take place when that which is unconscious is posited in consciousness. According to Jung, consciousness is a safe place for human beings because it is the domain where we can be in control of our fears and the situations which we find our-

[8] Jung 1959, 33.
[9] 13.

selves confronting. Nevertheless, conflicts arise when the unconscious is not posited into consciousness. Notwithstanding, the unconscious which Jung mentions and deals with is not the individual unconscious, but rather the collective unconscious which he defines as:

> In addition to our immediate consciousness, which is of a thoroughly personal nature and which we believe to be the only empirical psyche (even if we tack on the personal unconscious as an appendix), there exists a second psychic system of a collective, universal, and impersonal nature which is identical in all individuals. This collective unconscious does not develop individually but is inherited. It consists of pre-existent forms, the archetypes, which can become conscious secondarily and which give definite form to certain psychic contents.[10]

The unconscious, therefore, is comprised of archetypes human beings inherit from their predecessors which Jung compares to biological instincts. As such we can conclude that the collective unconscious is rooted on the one hand in the physical nature, in the genes, and is passed on to posterity, and on the other hand it is rooted in the human psyche which is comprised of the collective mythologies, religions, arts and literature of respective societies.

This view leads us back to Schelling's examination of the Deities of Samothrace where he argued that the gods are posited into consciousness from the unconscious as a result of nature naturing through us. The unconscious in that case is that which nature is creating within human beings. Nevertheless, human beings are a cornerstone in this process because they complete the whole circle by projecting these images externally through, according to Schelling, mythopoesis. Jung calls this process of externalisation a symbolic process whereby humans experience the archetypes consciously as symbolic images. This process is an «*experience in images and of images*».

4 From *Naturphilosophie* to the Philosophy of Mythology

In the present paper, we have so far been tracing a line of thought in order to show how it is that the mythopoetical narrative, which is a

[10] Jung 1959, 43.

pre-conceptual act of aesthesis, is generated. This view has been in part based on Schelling's *On the Deities of Samothrace*.

> Instead, Schelling constructs a continuum of nature filled out by a plurality of reciprocally interacting forces that stretches from the initial conditions of creation's absolute involution to the ever more complex phenomena of nature, eventually attaining to organic life and its most complex manifestation, human consciousness.[11]

There is always an emergence from a simpler to a more complex system according to Schelling. This emergence is due to the interaction of the potencies of the world which underlie the different systems of the universe, until the most complex manifestation has been posited, and that is human consciousness. It is through human consciousness that freedom is finally achieved whereby freedom is the absolute identity of freedom and necessity manifested in the artistic creation, according to Schelling.

The unity of the universe means that the whole universe becomes a living organism. The mere *telos* of this living organism is to achieve freedom. It is for that reason that the consequent cannot be predicted, but rather the antecedent is grounded in the consequent. That is to say, the movement within nature from the simple to the more complex necessitates that the consequent is grounded in the antecedent insofar as the antecedent comprises the matter and condition of possibility of the consequent. Nevertheless, the movement is free insofar as the outcome is unpredictable and, therefore, it can only be grounded as such after the consequent has been actualised.

> Humanity is incontrovertibly from the lowest of creations, i.e. from the material, from the part of matter in which the innermost root of selfhood - the wanting to be for itself (without the higher potency) of B - is overcome, but it is not therefore necessary that it is partial or parochial essence, it is the universal essence. Because it is the existent, all the potencies of the universe all these separate moments, are determined to be compacted into humanity as the final unity... Humanity is the starting point of a new process.[12]

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11 Matthews 2011, 179.

12 Schelling, *Exhibition of the Process of Nature*, unpublished translation by Iain Hamilton Grant distributed as a reading requirement for the Pittsburgh Summer Symposium in Philosophy, 2013.

Schelling's *Naturphilosophie*, which deals with the real side of the Idea being actualised, paves the way for a philosophy which would deal with the ideal side of the actualisation of the Idea - hence the need to develop a philosophy of freedom, art and mythology. The reason for this is, Schelling argues, that humanity is the limit of nature, which is why philosophies like the philosophy of art, freedom and mythology would be the key to conceptualising, and thereby understanding, how the absolute comes to consciousness of itself through nature as 'natura naturans'. This leap - from the real to the ideal side of creation -, even though emergent, through which a whole new level of complexity is established on the evolutional line, has its foundation, nevertheless, in the 'lowest of creations'. Examined more closely, Schelling's concept of matter, which is not reduced to what is purely physical, becomes the building block for a unified, complex system by medium of which consciousness in nature finally emerges in human beings. Therefrom, the role of human beings, as social agents who are, moreover, aesthetically sensible as to intentionally engage in aesthetic, artistic activity, is to create imitating the dynamics of naturing of nature. The aesthetic activity is grounded in nothing other than matter, through which the Absolute returns back to unity by returning back to itself. In a similar line of thought, Humberto Maturana discusses autopoesis and the generation of order within a living system. In his book, *Autopoesis and Cognition*, he explains the importance of the circularity of the living system (for example the cell's metabolism) and how is it that through this circularity there is margin for evolution insofar as the circularity itself is maintained.[13] Moreover, the main characteristic of the living organism is autopoesis, the capacity to generate and maintain itself, with an open possibility to evolve and develop, maintaining throughout its autonomy and identity along with the capacity for variation. He moreover stresses the importance of the circularity of the system:

> It is the circularity of its organization that makes a living system a unit of interactions, and it is this circularity that it must maintain in order to remain a living system and to retain its identity through different interactions. All the peculiar aspects of the different kinds of organisms are superimposed on this basic circularity and are subservient

[13] Maturana and Varela 1972, 9.

> to it, securing its continuance through successive interactions in an always changing environment.[14]

In a similar manner, human beings are comprised of the building blocks which are the result of millions of years of evolution, until organic life finally emerged. Human beings are rational animals who are able to observe and symbolise nature generating therefore a language of their own by medium of which they are able to self-reflect and thereby become self-conscious. As a rational animal, and part of the overall evolution process within nature, Maturana argues that human beings construct their own rational systems which serve as a reference for their system of values. [15] Maturana suggests that «[m]an is a rational animal that constructs his rational systems as all rational systems are constructed, that is, based on arbitrarily accepted truths (premises)».[16] Maturana's scientific research consolidates Schelling's philosophical views as to viewing the whole universe as a living organism which is autonomous and capable of self-generation, reproduction and evolution. Moreover, the fact that rational systems are a construction of human beings as rational animals is similar to the concept of the mythopoetical narrative through which human beings establish and make sense of their reality by creating a new system of their own insofar as the system of their ancestors would have become obsolete. This in turn is similar to Blumenberg's theory of the absolutism of reality through which human beings try to gain control over their fears. Accordingly, a system of values is generated based on the rational construction of the system within a society. Consequently, truth becomes relative to the system of value underlying a specific rational system of a specific society. Therefore, truth as an absolute category is not an apriori one, but rather something to be achieved in the future through the collective system of values that would have been emerging within different societies - it is similar to how Schelling argued that particular mythologies might be false but the overall movement of them is constitutive of truth. Maturana, similarly suggests that:

> The ultimate truth on which a man bases his rational conduct is necessarily subordinate to his personal experience and appears as an act of

14 9.
15 57-58.
16 57.

> choice expressing a preference that cannot be transferred rationally; accordingly, the alternative to reason, as a universal system of values, is aesthetic seduction in favor of a frame of reference specifically designed to comply with his desires (and not his needs) and defining the functions to be satisfied by the world (culture and material) in which he wants to live.[17]

In other words, Maturana pinpoints that the arbitrariness underlying the choice of human beings in favor of a certain rational construct to make sense of the world and not another, which cannot be transferred or explained rationally, might alternatively be resolved by grounding such decision in what he calls *aesthetic seduction*. This entails that the frames of references according to which certain systems could gain priority over others in a certain society are related to people's desires and not their needs, and therefrom, they would accordingly proceed to find the best way or *functions* in order to satisfy these desires. If, however, the first step in the construct of a rational system is grounded in an aesthetic activity, nevertheless, along with such a construction comes ethical responsibility.[18] Through the present exposition, it has been shown, therefore, how it is that the ethical is grounded in the aesthetic by medium of reason.

17 Maturana and Varela 1972, 58.
18 Prigogine and Stengers 1984, 312.

The Difference Between Schelling's and Hegel's Conceptions of Matter

Benjamin Berger

In the 1803 edition of his *Ideas for a Philosophy of Nature*, Schelling writes:

> No inquiry has been surrounded, for the philosophers of every age, by so much darkness as that concerning the nature of matter. And yet insight into this question is necessary for true philosophy, just as all false systems are shipwrecked from the very outset on this reef.[1]

It is perhaps unsurprising that Schelling identifies the conceptual clarification of matter as essential to the success of any philosophical system. For it is well known that Schelling is the first post-Kantian philosopher to criticise the modern obsession with the *subject* and to demand that philosophy turn its attention to the natural ground upon which spiritual subjectivity rests. As Schelling writes in the *Freedom* essay: «The whole of modern European philosophy since its inception (through Descartes) has this common deficiency - that nature does not exist for it and that it lacks a living ground».[2]

In connection with these ideas, Schelling is often seen as the idealist philosopher of nature par excellence. There is some truth to this notion, especially if one emphasises the sheer abundance of Schellingian texts devoted to the philosophy of nature, and the fact that it was Schelling who, after Fichte's subjective idealism, initiated the very program of an idealist *Naturphilosophie*. But it would be a serious obfuscation of the history of idealism to single Schelling out as the *sole* post-Kantian idealist concerned with material nature. For Hegel is equally insistent upon the need for a speculative nature philosophy,

[1] Schelling 1988, 179.
[2] Schelling 1936, 30 (translation modified).

an insistence that goes far beyond the early *Differenzschrift* in which Hegel sides with Schelling regarding the latter's critique of Fichte's subjectivism. Indeed, nature remains important throughout Hegel's development, occupying the central location in his mature system, between logic and spirit. Moreover, nature occupies this central location in Hegel's system because nature constitutes the *essential* moment in the unfolding of being, according to Hegel.[3] Thus, in what follows, I take both Schelling *and* Hegel to be committed to the task of *speculative physics*, i.e. the task of disclosing the fundamental structures of *nature* through *thought*. For both Schelling and Hegel, such a philosophy of nature requires that we let go of our subjective, finite reflection and allow infinite nature to *think itself*.

This is not to say, however, that there exist no fundamental differences between Schelling's and Hegel's philosophies of nature. On the contrary, in what follows, I will attempt to distinguish Schelling's *Naturphilosophie* from that of Hegel by focusing on what is arguably the most fundamental concept within any philosophy of nature: the concept of *matter*. But in order to draw out the *difference* between the Schellingian and Hegelian conceptions of matter, it is necessary to begin with their similarities. In particular, it is vital to both Schelling and Hegel that matter be understood as immanently mobile, and that such immanent mobility is not limited to mechanical motion but rather extends to the self-driven *development* of matter beyond the realm of mechanics and into higher realms of organisation, such as chemical processes and, eventually, human being. As Hegel says in the introduction to his *Philosophy of Nature*, «the stones cry out and raise themselves to spirit».[4] In this way, the idealist conception of matter as immanently mobile plays a critical role in the construction

[3] «Essential» is here a technical term referring to Hegel's *Science of Logic*. The philosophy of nature is in many respects an expression of the doctrine of essence which is itself located between the doctrine of being and the doctrine of the concept in the *Logic*. By «essential moment», therefore, I do not mean that Hegel sees nature as «more true» than spirit; rather, nature constitutes the «essential moment» in the Hegelian system in the technical sense, i.e. nature expresses the alienation of reason from its prior (logical) immediacy, an alienation which is only fully overcome in the philosophy of spirit, where reason returns to its immediacy via the mediation of nature.

[4] Hegel 2004, 15.

of a philosophy of nature in which biological and spiritual life are understood to emerge from a lifeless material world.

1 Schelling

The idealist conception of matter as immanently mobile is, of course, conceived in direct response and opposition to the Newtonian conception of matter that was so repellent to Schelling, Hegel, and their romantic peers. Their accusation is that Newton's physics fails to capture the reality of matter for two interrelated reasons: First, insofar as matter is understood to be fundamentally *atomistic*, the continuity of nature is forsaken. And second, because matter is defined as *inert*, all change in velocity is attributed by the Newtonian model to an external force, whether this be a force leading to physical impact *between* inert bodies or a force acting from a distance, as in gravity. Either way, material bodies are seen as ontologically distinct from the forces which move them, and as a result, the Newtonian physics conceives of nature in terms of a dualism between material bodies and immaterial force.

Of course, Schelling and Hegel were not the first to see the dualism of Newtonian mechanics as problematic. One attempt to solve this problem seeks to eradicate the Newtonian conception of «force from a distance» by interpreting all motion in terms of mechanical contact. This was the strategy taken up in the mid-eighteenth century by Georges-Louis le Sage, who Schelling praises as a truly speculative philosopher, despite his failure to see the limits of mechanism.[5] Because le Sage represents the paradigmatic mechanistic solution to Newtonian dualism, considering Schelling's critique of le Sage puts us in a position to understand Schelling's alternative solution to Newtonian dualism: to conceive matter as intrinsically dynamic.

For the mechanical physicist, matter is inert. Consequently, any change in movement of a given body is necessarily caused by contact with *another* body. When it comes to the phenomenon of gravity, which at first glance does not seem to be explicable in terms of contact, le Sage proposes the following: an indefinite number of ethereal particles or gravitational atoms move rectilinearly throughout the universe in every direction. Given two material bodies A and B, body A acts as a

[5] Schelling 1988, 170; Schelling 2004, 199. See also: Beiser 2008, 512-513.

barrier blocking the stream of particles that would otherwise continue moving towards body B (and vice versa). Thus, the stream of ethereal particles moving between the two bodies is decreased, as each body upsets the balanced portion of particles making contact with the total surface area of the *other* body. The two bodies are thereby driven towards one another by the ethereal particles insofar as *more* particles or gravitational atoms make contact with the *un*shielded sides of each body.[6]

According to Schelling, le Sage's account of gravitational movement is the most comprehensive mechanistic account possible. *Everything*, on this account, is explained mechanically - everything, that is, but the «first cause» of motion which sets the material bodies and ethereal particles into contact from the start. Schelling asks: «But whence does this inexhaustible stream [of particles] come, from what era does it derive, and what supports it continually?» And since the mechanist has no response, according to Schelling, «this system ends with the inexplicable».[7] The ground of movement - and indeed, the ground of the ethereal particles themselves - must reside in some extra-mechanical sphere which mechanical physics is unable to explain. Moreover, because nature is understood to be entirely mechanistic on this view, the «extra-mechanical» sphere must be located outside nature itself, a ground of movement ontologically separate from the material world.[8]

Thus, according to Schelling, mechanism is ensnared by the same metaphysical dualism that it attempted to avoid. For even if one attempts to overcome the Newtonian dualism of material bodies and immaterial force by way of a thoroughgoing mechanism, dualism *reappears*: a mysterious principle of movement is implicitly posited as external to the material bodies and ethereal particles that are *put* into motion. This reappearance of dualism stems from the mechanist's claims to ignorance about the origin of movement and, indeed, matter

6 See Schelling's description of le Sage's account of gravity in Schelling 2004, 73, an account largely dependent upon Pierre Prévost's *Vom Ursprunge der Magnetische Kräfte* (1794). For a detailed explanation of le Sage's theory of gravity, its motivation, and its reception, see Lunteren 1993, 357-360.

7 Schelling 2004, 74.

8 See Lunteren 1993, 359: «In fact, Le Sage referred to Newton's suggestion in query thirty-one of the *Opticks*, that the world needed a correcting hand to compensate for the constant loss of motion».

itself. Therefore, according to Schelling, it is the assumption that matter is *inert* and dependent on some external *activity* which necessitates a dualism in which matter is ontologically distinct from that which sets matter into motion.

In order to liberate matter from its supposed inertia, Schelling draws upon Kant's *Metaphysical Foundations of Natural Science*. Although Kant's *Metaphysical Foundations* fully endorses Newtonian science and seeks to ground it metaphysically, Kant criticises the Newtonian position that makes gravitational attraction *contingent* in relation to the existence of matter.[9] Thus, in the second chapter of the *Metaphysical Foundations*, Kant develops a conception of nature in which force is entirely necessary for and immanent to the *construction* of material bodies. According to this dynamic model of matter, gravitational movement is no longer seen to be accidental to matter but is instead conceived as intrinsic to matter as such. For these reasons, Schelling sees Kant's dynamics as central to overturning the dualism of matter and force.

Schelling modifies his interpretation of Kant's dynamics in significant ways throughout the development of his philosophy of nature, but in general, the following principle is central to all of Schelling's nature philosophy texts: matter is constructed by the opposing forces of repulsion and attraction. Repulsion, the positive force, extends infinitely outwards in infinite directions, while attraction, the negative force, contracts toward a single, non-existent point. Matter is constituted in the strife between the two forces, since the repulsive force expands infinitely outwards, at once scattering and spatialising matter, and the attractive force acts as a counterforce, limiting the repulsive force and thereby determining the boundaries of matter through the activity of contraction.[10] It is therefore through their ceaseless strife

[9] Following Kant, Schelling writes: «When Newton himself said of the force of attraction that it was *materiae vis insita*, *innata*, etc., he was mentally attributing to matter an existence independent of attractive forces. Matter could thus also be *real*, without any attractive forces; that it has them (that, as some of Newton's disciples said, a higher hand has impressed this tendency upon it, so to speak) is a *contingent* thing, as regards the existence of matter itself» (Schelling 1988, 154).

[10] The positive force of repulsion and the negative force of attraction must necessarily remain in perpetual discord, since equilibrium between forces would result in the cancellation of each force, and by extension, matter itself.

that the fundamental forces of nature generate and sustain matter as spatially extended being.

Schelling distinguishes his conception of the construction of matter from that found in Kant's *Metaphysical Foundations* in various ways. Most importantly, however, after the first edition of *On the World Soul* (1798), Schelling follows Franz von Baader in differentiating between attractive force and gravity, whereas for Kant, attraction and gravitation are synonymous.[11] I will discuss the absolute idealist conception of gravity in further detail when I turn to Hegel's *Philosophy of Nature*, for in many respects Schelling and Hegel agree about the ontological determination of gravity. For the moment, suffice it to say that for Schelling post-1798, «gravity» names the *identity* of repulsion and attraction, a *third* term which accomplishes the unification of otherwise disparate material bodies.[12] For our purposes, the most important feature of this notion is that gravity is nothing *external* to material bodies for Schelling. On the contrary, because matter is constituted by the strife between repulsive and attractive force, and because attraction and repulsion are united in gravitational movement, gravity is *neither* a force acting *from a distance* nor is it explained through gravitational *particles* making contact with a material body. Rather, gravity constitutes the intrinsic mobility of material bodies, the activity of one material body driven of its own accord to unite with *other* material bodies. And because gravity is the *unity* of attraction and repulsion, these latter forces are similarly intrinsic to matter. For Schelling, matter simply *is* its self-construction via attraction and repulsion together with the inner unity of these forces, i.e. gravity, which immanently propels ontologically derivative material *bodies* towards other bodies.

While gravity plays a crucial role throughout Schelling's philosophy of nature - and even in his philosophy of freedom - gravitational movement is not the only way in which matter is immanently active. Because Schelling understands the construction of matter to

11 Schelling 2004, 77-78; 174.

12 Gravity is therefore not so much a force but the intrinsic unity of the two forces of matter's construction. Thus, in the *First Outline*, Schelling uses the term «force of gravity» only to then immediately deny that there is any one *force* of gravity, claiming that, instead, the most one can say is that there are *forces* of gravity insofar as each material body seeks a distinct centre outside itself (84 n.).

depend upon the play between repulsive and attractive *forces*, matter is, from the very beginning, *powerful* for Schelling. Indeed, even more than force, power or potency (*Potenz*) is the key concept at work in Schelling's philosophy of matter. For whereas the play between repulsive and attractive forces refers to the dynamic self-*construction* of matter, already-constructed matter must be understood in terms of a further activity of «*potentiation*» (*Potenzierung*).

Schelling adopts the concept of potency from Eschenmayer, the post-Kantian philosopher of nature with whom Schelling argued for years over the possibility of going beyond the transcendental standpoint and grasping nature *as it is* as opposed to merely as it is *for consciousness*. Wresting the algebraic concept of «power» or «potency» from its transcendental significance in Eschenmayer, Schelling interprets matter as that which actually *potentiates* itself or *raises* itself to higher powers of materiality. Matter, conceived along the lines of potentiation, does not therefore simply remain self-*moving* matter. Instead, matter's intrinsic dynamism allows it to become *more* than mere matter. Thus, when matter raises itself to the first power, it becomes *magnetic*; in the second, *electrical*; and in the third, *chemical*. At each logically successive potency, it is the same *material* which is raised to a novel configuration.[13] And as Michael Vater puts it, precisely because the material which raises itself to higher powers is already dynamic, «the duality of attractive and repulsive forces found in gravity is manifested again as polarity in magnetism, positive and negative charges in electricity, etc.».[14]

In this way, Schelling achieves one of the ultimate aims of absolute idealism: to construct a philosophy of nature in which identity and difference are *united*. On the one hand, *all is one*; everything that *is* is material in its foundation, since we are always dealing with the same exponential base: the dynamic material world. On the other hand, matter raises itself to higher powers, such that matter does not remain immanently active, gravitational movement, but actually *becomes* more complex forms of material organisation and activity. In this way, the dynamic conception of matter avoids both Newtonian dualism *and*

[13] See the *Allgemeine Deduktion des dynamischen Prozesses* of 1800, in Schelling 1907, 740.

[14] Vater 2012, 169.

reductive naturalism. Gravitation, magnetic polarity, electricity, and the chemical process are not understood as *external* to matter but *intrinsic* to matter, since matter is constructed dynamically, and as a result matter is nothing other than an activity of potentiation. In Schelling's words, «Matter is the general seed-corn of the universe, in which is hidden everything that unfolds in the later developments».[15] And:

> Das Dunkelste aller Dinge, ja das Dunkel selbst nach einigen, ist die Materie. Dennoch ist es eben diese unbekannte Wurzel aus deren Erhebung alle Bildungen und lebendigen Erscheinungen der Natur hervorgehen.[16]

Thus, the variety of forms we find in the inorganic, organic, and spiritual world has its source in a primordial matter which potentiates itself as material diversity.[17]

2 Hegel

In his Jena *Realphilosophie*, Hegel also utilises the concept of «potency» in order to describe the ontological continuity between nature and more complex forms of activity, such as spiritual freedom.[18] However, in his «mature» system, Hegel replaces the Schellingian, graduated sequence of potencies with a self-developing *process* constituted by nothing other than its *moments*. To be sure, Hegel's system is, like

15 Schelling 1988, 179.

16 Schelling 1907, 455.

17 A hermeneutic difficulty arises, however, when we note that the relationship between matter and the potencies changes significantly throughout Schelling's philosophical development. In the *Ages of the World*, for example, matter is identified as the *first* potency, followed by light or the «substrate of the spirit-world» as the second potency (Schelling 2000, 60-65). In the *Identitätssystem*, however, matter is the «substrate of all the potencies» and, in this way, «matter» names the *totality* of the three potencies, as opposed to being the *first* of the triad (Schelling 1988, 180). And in the *First Outline*, which was never revised in light of the system of identity, Schelling accounts for the emergence of qualitatively distinct matter by positing dynamic atoms called «actants» (Schelling 2004, 21) or, what we could also label «atomistic dynamisms». However, the crucial point in *each* system is the same: dynamic matter is the *base level of being from which all ontological determination emerges*.

18 See Harris 1983.

Schelling's, a system of graduated *stages* dynamically related to one another. But in Hegel's mature philosophy of nature, these stages are logical moments of a natural process that is utterly *powerless*. As Hegel writes in the *Science of Logic*, nature's impotence (*Ohnmacht*) determines nature as something that runs wild or goes off course (*sich verlaufen*) into «blind irrational (*begrifflos*) multiplicity».[19]

Hegel's conception of the powerlessness of nature does not, however, mean that material nature depends upon something *other* than it in order to set matter into motion or to allow matter to become chemical and living; Hegel's abandonment of the language of potency does not return him to a metaphysical dualism. On the contrary, the particular sense in which nature is «powerless» for Hegel is central to his unique conception of the immanent mobility of matter and its development into qualitatively distinct material.

But without granting nature intrinsic powers for self-movement and self-transformation, how does Hegel overcome the notion that matter is inert? We understand the answer to this question by unpacking what the «powerlessness of nature» means in Hegel's system. «Powerless», in this context, describes a deficiency in the power of *logos*. Indeed, the very powerlessness which makes nature «go off course» into «blind irrational multiplicity» is nature's inability *to be* purely rational. In order to understand this, let us turn to the beginning of Hegel's *Philosophy of Nature*.

Hegel's nature philosophy begins where the *Science of Logic* leaves off. At the end of the *Logic*, being has proven to be self-determining reason or, what is the same thing, «the absolute Idea». The absolute Idea, however, on account of its dynamic self-movement, proves to be more than self-determining *conceptual* movement and resolves to determine itself as *real being*. This is the infamous transition from logic to nature which the late Schelling relentlessly criticised. However, here is not the place to consider the strangeness of the «release» of the Idea into nature. For our current purposes, Hegel's central point is the following: none of the ontological determinations of the *Science of Logic* have *real* being until the same determinations are understood as expressing themselves in *the natural world* and, subsequently, in the world of spirit. Furthermore, reason *must* manifest itself as nature-and

[19] Hegel 1969, 607.

first as nature-because without doing so reason *would not be*. As Hegel says in the *Encyclopaedia* logic, nature is «the *Idea* as *being*,» «the Idea that *is*».[20]

Thus, whereas the *Science of Logic* presents the determinations of being in abstraction, the philosophy of nature will have to consider the *concrete* determinations of being, and therefore, such determinations will no longer be *purely* rational. Therefore, insofar as the Idea *is* as *nature*, the Idea becomes *other* than itself, becomes *other* than pure reason, or, what is the same thing, reason becomes *external* to its own rationality. And it is this *externality* that will be the starting point of Hegel's philosophy of nature. § 247 of the *Philosophy of Nature* reads:

> Nature has presented itself as the Idea in the form of *otherness*. Since therefore the Idea is the negative of itself, or is *external to itself*, Nature is not merely external in relation to this Idea [...] the truth is rather that *externality* constitutes the specific character in which Nature, as Nature, exists.[21]

The fundamental determination of nature, therefore, is precisely this externality, which Hegel logically unpacks to be the three dimensions of space, each dimension being external to the other and thereby constitutive of the *self*-externality of nature.

Yet insofar as length, width, and depth remain *spatial*, these dimensions are not entirely self-negating or external to themselves. The fully *external* character of space is only realised insofar as space actually *passes away*. *This* «space», here, despite its self-externality, still *is*. *Now*, however (i.e. now that time has passed), the space that *was*, is no longer. Space, therefore, proves to be temporal. As Richard Dien Winfield says, time is «nothing but the process whereby space is differentiated from itself».[22]

Hegel's logic of nature progresses rapidly: this space «*here*», that space «*there*» and this time «*now*» are all, in some important sense,

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20 My emphasis. The full quotation reads: «We have now returned to the Concept of the Idea with which we began [at the beginning of the Logic]. At the same time this return to the beginning is an advance. What we began with was being, abstract being, while now we have the Idea as being; and this Idea that is, is Nature» (Hegel 1896, 307).

21 Hegel 2004, 13-14.

22 Winfield 1998, 58.

characterised by externality. But since one «here» is interchangeable with another «here» - and the same goes for the temporal «now» - these spatio-temporal determinations remain abstract. Insofar as space and time are *concrete*, however, a given «here» is tied to a given «now», and it is this spatio-temporal *location* which Hegel identifies as *place*. Space and time are thus necessarily *place*. But place, on account of nature's constitutive negativity, negates *itself* in terms of its spatio-temporal location.[23] In doing so, place *negates* the place that it is, but somehow remains *a* place, place *in general*. Hegel calls this simultaneous *negation* of place and *endurance* of «having a place» *movement*, for this logic describes a *change of place*. Beginning with pure externality, therefore, the dialectic of nature very quickly proves to show nature as necessarily in motion.

But that is not all. In the very same paragraph in which place proves to be motion, Hegel asks the following: what is this «place» which *retains* its identity even though it changes its spatial location over time? This, Hegel tells us, is *matter*. Consequently, all motion is material and all matter is in motion.[24] According to Hegel, therefore, it is the self-*externality* of the Idea with which the philosophy of nature begins that determines nature to *necessarily* be matter-in-motion.[25]

Following Kant and Schelling, Hegel first considers this immanent mobility of matter in terms of repulsion and attraction.[26] However, Hegel departs from both Kant and Schelling insofar as he sees neither repulsion nor attraction as *forces* of nature. Rather, repulsion is simply matter's activity of repelling *other* matter from occupying its place in space-time, and attraction is the same matter's constitutive *unity* with all other matter. In Hegel's idiom, repulsion and attraction are simply *moments* which pass over into one another.[27] That said, despite rejecting the Schellingian language of force, Hegel does follow Schelling's

23 As Stephen Houlgate puts it, «logically, space and time must constitute *place that negates itself spatially as well as temporally* – place that, while retaining its identity, ceases to be *this* place and becomes *another* place (Houlgate 2005, 131).

24 Hegel 2004, 44.

25 Place, motion, and matter all appear within two paragraphs, §§ 260-261. See 40-44.

26 Repulsion develops from the moment of nature's negativity, «its abstract *separation into parts*», and attraction develops from the moment of the sameness or indifference of these separate parts (44).

27 Hegel 1969, 182.

criticism of Kant and identifies gravity as a distinct determination of matter responsible for unifying the «moments» of repulsion and attraction.[28]

Gravity is the last determination of Hegel's philosophy of nature I want to consider here, for gravity is a crucial moment in the dialectic of nature. In gravity, a material body is immanently drawn *outside* itself in order to unite with all *other* matter. This is not the merely attractive activity which describes the fundamental *continuity* of matter. Rather, gravity signifies a further material activity. In particular, the phenomenon of gravity depends upon an implicit *self-identity* that has been achieved in the construction of matter. To be sure, this self-identity remains relatively implicit throughout Hegel's speculative mechanics. But with gravity, the *externality* of nature begins to organise itself as an *internal unity*, first in the form of material bodies with *mass*. Hegel notes that a body's centre of gravity is *outside* it, and in this way, matter merely *strives* for self-identity; matter only *longs* to become united with its centre. But at the same time, a body is drawn outside itself, towards an alien centre, *of its own accord*. For it is the *intrinsic* mass of a material body which draws that body towards *other* bodies. In *this* way, gravity signals the burgeoning activity in which external nature begins to turn inwards and become self-determining. In Stephen Houlgate's words, we can see the seeds of spiritual freedom in the way «finite natural objects fall freely towards their respective planets and those planets themselves orbit freely around their sun».[29]

In this latter case especially, that is, in Hegel's account of celestial mechanics, the gravitational movement of matter achieves such an intense degree of self-determining motion that Hegel sees this as an indication that we must leave the realm of mechanics and enter the next phase of the philosophy of nature, i.e. physics. For in the orbits of the planets, not only does matter *move* itself, but it also organises itself into material bodies Hegel terms «totalities». And it is here, in a form of movement that is no longer mere change of place (motion) but is the immanent organisation of matter into self-identical «totalities», that Hegel sees the logical emergence of qualitatively distinct matter.

28 For Hegel's most detailed account of repulsion and attraction, see Hegel 1969, 170-184.

29 Houlgate 2005, 161.

This shift from mechanics to physics has resonances with Hegel's logic of measure, in which an increase or decrease in *quantity* can give rise to *qualitative* change. For example, if chilled to zero degrees centigrade, the quality of water changes from a liquid to a solid.[30] In Hegel's absolute or celestial mechanics, what appear to be purely quantitative changes in motion - such as a planet's acceleration as it nears the sun and deceleration as it gains distance from the sun-actually involve qualitative determinacy. For in the gravitational movement of a planet, the material body in question no longer seeks its self-identity *elsewhere*, that is, the sun, but rather freely *remains what it is*, orbiting the sun as an embodiment of pre-spiritual rationality.[31] In this «remaining what it is», matter begins to sublate its self-externality, turning inwards as a qualitatively distinct «self» - a «self» which becomes organic, spiritual, and free in its subsequent logical development.

Before moving on to explicate the ontological structures of fully free and rational beings, however, Hegel believes we must continue to unfold the logic of *nature*. And with the qualitative distinction Hegel perceives in the mechanical motion of the planets, the next phase of *Naturphilosophie* must necessarily engage with *qualitative* material. In the physics, therefore, Hegel considers how matter is not only in motion, but also involves the phenomena of light, the elements, cohesion, sound, heat, magnetism, electricity, and finally, the chemical process, which logically leads to the emergence of organic life. To cut a long and very complicated story short, matter, according to Hegel, as sheer external being which actively turns inward, necessitates the emergence of increasingly complex forms of material organisation, forms that are irreducible to their base materiality.

3 Two Conceptions of Material Activity

Schelling's notion of matter's self-potentiating activity and Hegel's notion of matter's self-«inwardising» activity have something essential in common. Insofar as matter immanently moves itself, two central aims of the absolute idealist philosophy of nature are accomplished: first, nature is determined as *one*, for all dualism between matter and

30 Hegel 1969, 369-370.
31 Hegel 2004, 83.

the impetus for motion is done away with. Second, matter can be seen to raise itself *beyond* the merely quantitative sphere of mechanics and into the *qualitative* sphere of electromagnetic, chemical, and biological phenomena that express the diversity of matter.

And yet the differences between the Schellingian and Hegelian conceptions of matter are significant. To conclude, allow me to venture some very general and tentative thoughts about these differences. In order to do so, I want to first consider Schelling's conception of matter from the perspective of the Hegelian system.

Because Schelling conceives of matter's self-transformation in terms of *exponential potencies*, he remains, from a Hegelian perspective, chained to the Kantian formalism from which both philosophers sought to distance themselves. Schelling is himself particularly critical of the attempts by Kantians such as Eschenmayer to derive the variety of natural phenomena solely from the strife between attraction and repulsion, since this can only lead to differences in material density.[32] Hence, for Schelling, only *quantitative* differences directly result from the dynamic construction of matter. Qualitative difference requires some further determination of matter - such as the dynamic atoms or «actants» posited in the *First Outline* or the conception of the potencies developed in the *Identitätssystem* philosophy of nature.[33] Whether conceived as «actants» or potencies, Schelling insists that matter be seen to have intrinsic *powers* if quantitative, gravitational motion is to raise itself to higher levels of organisation involving qualitative determinacy.[34]

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32 Schelling 2004, 22.

33 See note 17 above.

34 Schelling's critique of Kantian formalism on the topic of chemical qualities is particularly important. Schelling understands chemistry to be fully rational despite its experimental and non-mathematical character. Indeed, the whole of the *Ideas* can be read as a philosophical experiment to see whether or not Kant's description of chemistry as a «mere art» is justified (Schelling 1988, 252). It is worth nothing, however, that Kant himself was embracing chemistry as a proper science (and not mere «art») at this time. As Michael Friedman has shown, Kant's negative description of chemistry in the *Metaphysical Foundations* of 1786 corresponds to the chemistry of Stahl as opposed to that of Lavoisier. In subsequent years, Lavoisier's chemistry became a paradigm for proper science much like Newton's physics. Indeed, if one looks to the Kantian texts produced during the years Schelling commenced his *Natur-*

Hegel entirely agrees with Schelling's critique of Kantian formalism. But from a Hegelian perspective, Schelling's solution to the problem-utilising the concept of *potency* to understand how matter achieves qualitative distinction - leads Schelling *back to* a formalistic conception of matter. For example, in the *Darstellung* of 1801, Schelling writes the following: «*None other than quantitative difference is possible* [...] in terms of being itself [...] there remains only a quantitative difference»[35] For the Schelling of the *Darstellung*, all differences in matter pertain to differences in quantitative intensity. In this way, different chemical compounds *appear* to be qualitatively unique, but *in essence* all material difference is attributable to fluctuating quantitative intensities of the *same* material. From a Hegelian perspective, Schelling's tendency to dismiss qualitative difference as merely apparent can be traced to the fact that Schelling adopts the conception of «potency» from mathematics.[36] Hegel's solution, therefore, is to dispense with the concept of material power and instead understand matter to be self-transformative through the movement by which externality turns inward. Here, we might say a geometrical model replaces the Schellingian, algebraic model.

But from a Schellingian perspective, the abandonment of material potencies has dire consequences. In the transition from mechanics to physics, Hegel shows how matter becomes qualitatively distinct, and at the most developed stages of this process, matter proves to be not only chemical but also organic life and, finally, emergent spirit. But the motor behind this logic of emergence is the externality of nature *to the Idea*, an externality that is not entirely *other* than reason but nonetheless is defined as a certain *negation* of reason. For Schelling, matter constitutes the dark root of all logically subsequent productiv-

philosophie, it becomes evident that Kant had «experienced the chemical revolution for himself between the critical period and 1797-98» (Friedman 1992, 266-267).

35 Schelling 1936, 151. In this particular passage Schelling is describing the difference between subject and object in the statement of identity (A = A). However, throughout the remainder of the *Darstellung*, Schelling argues that difference continues to be only quantitative with respect to the various stages within the «objective» or «material» pole of A = A.

36 Hegel 1896, 529-531. It is worth noting, however, that more often than not Schelling defends a robust conception of qualitative difference.

ity, but however dark matter is, *negativity* plays no role in this dynamic process.

Two years after Hegel's death, Schelling gave a series of lectures in Munich where he began to describe what is known as his late, «positive» philosophy. The late Schelling described the difference between Hegel's system and his own, earlier system:

> In the earlier philosophy [Schelling's own identity philosophy] the beginning point at which the subject intensifies or raises itself up to a higher subjectivity is a real opposition, a real dissonance, and in this way one understands an intensification. In the Hegelian philosophy the beginning point behaves in relation to what follows it as a mere minus, as a lack, an emptiness, which is filled and is admittedly, as such, negated as emptiness, but in this there is as little to overcome as there is in filling an empty vessel; it all happens quite peacefully - there is no opposition between being and nothing, they do not do anything to each other. The translation of the concept of *process* onto the dialectical movement, where no struggle is possible, but only a monotonous, almost soporific progression, therefore belongs to that misuse of words which in Hegel is really a very great means of hiding the lack of *true life*.[37]

Schelling is here criticising the beginning of the Hegelian system with its onto-logical transitions from being, to nothing, to becoming. But we can see from this description that from a Schellingian perspective, any dialectic of nature which depends upon nature's *otherness* or *negativity* lacks any *real*, *positive* struggle within nature which might lead to the *actual* production of higher forms of material existence. Schelling's description of Hegelian dialectic as soporific is somewhat ridiculous. But we might bracket the disparaging tone of Schelling's analysis and note that Schelling discerns a genuine discrepancy between the projects of the two philosophers, a discrepancy which sheds light on the essential difference between the Schellingian and Hegelian conceptions of matter: in the one system, matter intensifies itself and thereby transforms itself into higher and higher forms of material existence; in the other, matter gradually achieves the inwardness of spirit by overcoming its exteriority from reason. The two systems of nature leave us, then, with a choice between a system of actual

[37] Schelling 1994, 142-143.

powers (a system tending towards formalism) and a system of material «inwardisation» (a system dependent upon a conception of nature as negativity). And yet the dialogue between Schelling and Hegel reveals that it is not at all foreign to the project of absolute idealism to conceive of matter as potentiating itself *as* qualitatively distinct or, what might be the same thing, as a natural process of «inwardisation» *without* lack.

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