

**QUASI-NOTHING, YET SOMETHING:
UNDERSTANDING NIETZSCHE’S BIOLOGICAL NOTION OF SUBJECT
THROUGH BARUCH SPINOZA AND THOMAS PRADEU**

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Abstract

The opinion of Friedrich Nietzsche on the theme of subjectivity is well-known: the subject does not exist; it is merely the theoretical hypostatization of a phantom. In Nietzsche's works the subject appears to be something transitory and destined to disappear, as nothing more than a ripple in the vast ocean of the will to power. However, can the question truly be considered closed? In this paper, I will demonstrate the opposite, showing how it is possible to still provide some Nietzschean positive notion of the subject. Initially, a brief excursus will be necessary to outline the main scientific sources employed by Nietzsche in developing his concept of the individual. Secondly, I will focus on certain aspects of the works of two authors who are very different from each other, although akin in spirit, with the aim of making it more evident how one can speak of the individual in Nietzsche's philosophy. These two authors are Baruch Spinoza and Thomas Pradeu. Through Deleuze's famous lectures on Spinoza, I will show how it is possible to postulate an understanding of individuality that is not entirely fixed and monolithic, adopting the concepts of Bauplan, ratio, and strategy. I deemed it important to also dedicate attention to Pradeu for at least two reasons. Firstly, because the theme of Immunology, to which he devoted his most important works, is strictly related to the issues of defining the borders of the individual: a good immune system can work only if there is an individual to protect, opposed to every other external body, understood as enemies. Secondly, because Pradeu too argues that an individual - while maintaining its unity - is never something rigid. Finally, I highlight why it is crucial to speak of the Nietzschean individual. The theme of the individual is pivotal in Nietzsche's Moral Philosophy: the only possible way to think of an Ethics "beyond Good and Evil" is the path of understanding Ethics as Ethology - to use a Deleuzian term. An Ethics of this kind – focusing on bodily joy to the point that it can even be defined as medical in its nature – can only find its keystone precisely in the question upon what is a body – which in turn is dependent on the question upon what is an individual.

Keywords: Nietzsche, Spinoza, individuality, philosophy of biology, moral philosophy

1. Overture: Nietzsche and the Natural Sciences

Friedrich Nietzsche's opinion about subjectivity is well-known: the subject does not exist; it is merely the theoretical hypostatization of a phantom. In Nietzsche's works, as well as in those of his epigone Foucault,¹ the subject appears to be something transitory and destined to disappear, as nothing more than a ripple in the vast ocean of the will to power. I should refer to one specific posthumous fragment included in *The Will to Power*, as for instance fragment 487:

Should not all philosophy ultimately disclose the first principles on which the reasoning processes depend? — that is to say, our belief in the “ego” as a substance, as the only reality according to which, alone, we are able to ascribe reality to things? The oldest realism at length comes to light, simultaneously with man's recognition of the fact that his whole religious history is no more than a history of soul-superstitions. Here there is a barrier: our very thinking, itself, involves that belief (with its distinctions — substance, accident, action, agent, etc.); to abandon it would mean to cease from being able to think. But that a belief, however useful it may be for the preservation of a species, has nothing to do with the truth, may be seen from the fact that we must believe in time, space, and motion, without feeling ourselves compelled to regard them as absolute realities.²

Nonetheless, I could have picked almost the entire third book of this collection of pseudo-aphorisms,³ and especially the section C of the third book, entitled significantly “The belief in the Ego subject”. In this section, Nietzsche argues that what we call the subject

¹ Just think of *Le Mots et les Choses*'s last pages. Cfr. Michel Foucault, *The Order of Things. An Archaeology of Human Sciences*, Knopf Doubleday Publishing Group, New York City, 1994.

² Friedrich Nietzsche, *The Will to Power*, English translation by A. M. Ludovici, Delphi Classics, Hastings, East Sussex, 2017.

³ As Montinari underlines, *The Will to Power* is a posthumous volume arranged by Elizabeth Förster Nietzsche and Peter Gast, who deliberately selected, cut, merged, and organised various Nietzsche's fragments – written from 1882 to 1889 – in 1067 paragraphs and four books. Cfr. Mazzino Montinari, Paolo D'Iorio, Patricia Farazzi, “*La volonté de puissance*” *n'existe pas*, *Éclat*, 1996. However, I still decided to refer to some fragments included into *The Will to Power* instead than referring to the integral collection of Nietzsche's posthumous fragments curated by Giorgio Colli and Mazzino Montinari simply for a practical reason: in fact, *The Will to Power* offers to us the possibility to access to a large number of Nietzsche's posthumous fragment still permitting the understanding of the most part, while at the same time organising them in a thematical order (as for example the abovementioned “Section C”, which collect a series of pseudo-aphorisms strictly on the theme of subjectivity). Moreover, even if it is not possible to say that *The Will to Power* is a genuine Nietzsche's writing, I believe the comparison between the original materials and the pseudo-aphorisms mentioned in this paper is close enough to permit their use even in a sufficiently satisfying philological framework.

is just the product of our imagination: it is a useful product, a useful tool, evolutionary speaking;⁴ although, it is just an illusion.

However, is it really just that? I believe not. In fact, in my opinion it is possible to find another way to approach the subject in Nietzsche's works, and that is the way of biology, which understands the subject as an organism. Of course, advancing this hypothesis, I am shifting from searching a notion of subject to searching a notion of individual; yet, this seems the only way to approach the theme of Nietzschean subjectivity in a non-disruptive way: abandoning the classic notion of subject as a mental subject, or as an *Ego*, one is left with the only possibility of considering the body, instead, as the main source and referent of the subject. In a way, it is Spinoza's ontology that opened the path of inquiring the *Ego* as something both physical and mental, opposed to considering the *Ego* only as an *Ego Cogito*, as Descartes did in his *Meditations on First Philosophy*.⁵

In the *Ethica, Ordine Geometrico Demonstrata*,⁶ Spinoza famously radicalises the concept of substance as already defined by Descartes ("that which is in itself and is conceived for itself: that is, that whose concept does not need the concept of another thing, from which it must be formed") however eliminating the threefold distinction between *Deus*, *Res Cogitans* and *Res extensa*. Spinoza's ontology, as Proposition V of the first part of the *Ethica* states, is founded on the idea of a single substance within which the modes – that are the specific concretisations, such as a body or an idea – are expressed through infinite attributes; the human being conceives only two of these attributes: thought and extension. In this way it is possible to bring together within the same substance the Cartesian *Res cogitans* and *Res extensa*, precisely depriving them of the status of substance for considering them instead as simple attributes. Spinoza proposes an extreme divarication of the two terms, presenting in a way an even more stringent dualism than the Cartesian one: in fact, within the substance the attributes – and the relative modes

⁴ Nietzsche's works have been massively influenced by Charles Darwin, especially during the 80's of the 19th century. Cfr. John Richardson, *Nietzsche's New Darwinism*, Oxford University Press, Oxford, 2004. However, on the other hand, it has been often noted how Nietzsche strongly disagreed with Darwin on various themes – such as the crucial theme of survival, as it is clearly displayed in pseudo-aphorisms 647 and 684 from *The Will to Power*, respectively entitled "Against Darwinism" and "Anti-Darwin".

⁵ René Descartes, *Meditations on First Philosophy*, eng. Tr. By J. Cottingham, Cambridge University Press, Cambridge, 1996.

⁶ Baruch Spinoza, *Ethica*, translated by G. Elliot, edited by C. Carlisle, Princeton University Press, Princeton, 2020.

– do not communicate with each other in any way, as stated by the Proposition X of the first part of the *Ethica* and as demonstrated by Proposition VI of the second part.

Spinoza’s parallelism, exposed in the famous Proposition VII of the second part (which states that “the order and connection of ideas is the same as the order and connection of things”), hypothesises that each event is expressed separately but simultaneously according to the substance’s infinite attributes, and therefore in infinite ways: each actualisation of the substance is expressed at the same time as a physical event and as a mental event – as well as, implicitly, any other type of non-humanly-conceivable event. Mind-body monism is therefore to be found in the monism of substance and not in the fusion of the different attributes, according to a solution that postulates the manifestation and progress of the events along different parallel *plateaus*. It is relevant to point out how the Spinozian solution to the mind-body issue, which leads to the inseparability of bodily events from mental events, has been adopted as a crucial inspiration by influential neuropsychologists and neuroscientists – such as Antonio Damasio⁷ – who stresses the importance of considering mind and body as inseparable entities within the unity of an individual.

Returning to the Nietzschean individual, one could ask why considering the field of biology, as Nietzsche is often recalled as an anti-scientific and anti-rationalistic author. But that would be an error: in fact, especially in the 1880’s, Nietzsche dedicated himself to the study of advanced scientific works of all sorts, also including works in the fields of chemistry and biology. It is Nietzsche himself who reveals it in his *Ecce Homo*’s chapter entitled “Why I write such good books”, where he writes that at a certain point “an even burning thirst seized” him and that from that moment on, in fact, he “practiced nothing but physiology, medicine, natural sciences”.⁸

When affirming this I am referring in particular to two philosophers who dedicated some of their works to the analysis of the relation between Nietzsche and the natural sciences: Francesco Moiso⁹ and Barbara Stiegler.¹⁰ They both show how Nietzsche’s thought has been massively influenced by various biologists such as Wilhelm Roux, Ernst

⁷ Antonio Damasio, *Looking for Spinoza: Joy, Sorrow, and the Feeling Brain*, Harcourt, San Diego, 2003.

⁸ Friedrich Nietzsche, *Ecce Homo. How To Become What You Are*, eng. tr. by D. Large, Oxford University Press, Oxford, 2007.

⁹ Francesco Moiso, *Nietzsche e le Scienze*, Rosenberg & Sellier, Torino, 2021.

¹⁰ Barbara Stiegler, *Nietzsche et la Biologie*, Presses Universitaires de France, Paris, 2001.

Haeckel, Rudolf Virchow, and Karl Nägeli. To be more precise, Nietzsche takes inspiration from their positions on two main themes: the constitution of the cellular body¹¹ and the relation between cellular constitution and memory – understood as the ability to incorporate other bodies.

As Barbara Stiegler argues, in the 1880's Rudolf Virchow's cellular theory (displayed in his 1858 *Cellular Pathologie*)¹² was well known by most acculturated people, including Nietzsche, who learned about it from Lange's *History of Materialism*.¹³ However, Nietzsche was mostly impressed by Virchow's pupil Wilhelm Roux.¹⁴ The German philosopher dedicated two readings, during 1881 and 1883, to the 1881 *Kampf der Teile im Organismus*,¹⁵ a book in which Roux deepens Virchow's view on body, discussing – as Diderot also did in the 18th century¹⁶ – the idea of the body as a Republic of cells.¹⁷ Roux's starting point is Virchow's motto “The *I* of the philosophers is nothing but a consequence of the *Us* of the biologists”; however, to this general idea of plurality that lies under the apparent oneness of the body, Roux adds the intuition of a struggle between cells: the unity of a certain body is not given top-down, thanks to a fixed form, but it is built bottom-up, thanks to the constant struggle and fight of all its parts, that eventually leads to a position of equilibrium. This process of struggle exists because every living being, starting from cells, finds its primary and principal faculty in the assimilation activity. As Nietzsche writes in *Beyond Good and Evil's* aphorism 259,¹⁸ directly quoting Roux, “life is *essentially* appropriation (*Aneignung*)”. Nietzsche adopted the concept of appropriation since from his 1873 *On Truth and Lies in a Nonmoral Sense*,¹⁹ so it is no

¹¹ It is important to remind that animal cells have been discovered between 1838 and 1839 by Matthias Schleiden and Theodor Schwann.

¹² Rudolf Virchow, *Pathologie Cellulaire*, tr. fr. di P. Picard, Baillière, Paris, 1874.

¹³ Friedrich Albert Lange, *History of Materialism*, Taylor & Francis, Abingdon-on-Thames, 2016.

¹⁴ Wolfgang Müller-Lauter, *Nietzsche: His Philosophy of Contradictions and the Contradictions of His Philosophy*, University of Illinois Press, Champaign, Illinois, 1999.

¹⁵ Wilhelm Roux, *Kampf der Teile im Organismus*, Engelmann, Leipzig, 1881.

¹⁶ Denis Diderot, *Thoughts on the Interpretation of Nature, and Other Philosophical Works*, Editions Clinamen, Genève, 1999.

¹⁷ The tradition of understanding the body as a State, and viceversa, can of course be traced back to Plato. Cfr. Plato, *The Republic*, Penguin Books Limited, Westminster, 2007.

¹⁸ Friedrich Nietzsche, *Beyond Good and Evil. Prelude to a Philosophy of the Future*, eng. tr. by W. Kaufmann, University of Michigan Press, Ann Arbor, 1966.

¹⁹ Friedrich Nietzsche, *On Truth and Lies in a Nonmoral Sense*, Delphi Classics, Hastings, East Sussex, 2017.

surprise that starting from 1881 he returns to use it intensely, since the discovery of its mention in Roux's works.

Another crucial Virchow's concept that underlies the Nietzschean notion of subjectivity is the one of excitement, or agitation: in particular, Nietzsche once again does not take it from the direct reading of Virchow's texts, but rather from another scientist, who is the French biologist Claude Bernard.²⁰ The core of Virchow's teaching – which was inspired by the 18th century French physiologists – was that “in absence of agitation (*Reiz*) there is no organic work”.²¹ This means that a living body is first of all an excitable subject, which needs to defend itself and needs to sharpen its sensitivity in order to understand and strategically manage the huge multiplicity of different stimulations, without which he would be dead. Every living subject experiences this paradox of needing to open to external bodies in order to nourish and, at the same time, of needing to close to external bodies in order to protect itself.

Having now established that the organism cannot be interpreted in the terms of a stable identity (*Gleichheit*) but rather as a multiplicity, and then having acknowledged that this multiplicity acts following the principle of appropriation (*Aneignung*), which, in turn, can never exist without the faculty of excitability (*Reiz*), there is at least one main question to be answered yet: how it is possible that a body structure is formed starting only from the constant struggle of all its parts? Nietzsche tries to approach this problem through other two biologists of his time: Ernst Haeckel (whose works Nietzsche probably never read directly,²² but knew thanks to Haeckel's fame and to the reading of Johann Gustav Vogt's Haeckel-inspired volume *Die Kraft*,²³ as well as the reading of the Journal *Kosmos*, official agency of the Haeckelian monism) and Karl Wilhelm von Nägeli.

One of Haeckel's theory's central notions of is the one of memory: the most characteristic life trait, in the German biologist's view, is the faculty of appropriation of external bodies through a process of absorption. This means that the incorporation (*Einverleibung*) is never equivalent to an annihilation, but rather to a process of constant

²⁰ Claude Bernard, *Leçons sur les Phénomènes de la Vie Communs aux Animaux et aux Végétaux*, Baillière, Paris, 1885.

²¹ Rudolf Virchow, *Über Erblichkeit*, in *Deutsche Jarbuch für Politik und Literatur*, Bd. 6, 1863.

²² Curt Paul Janz, *Nietzsche, Biographie*, Gallimard, Paris, 1984.

²³ Johann Gustav Vogt, *Die Kraft. Eine Real-Monistische Weltanschauung*, Haupt und Tischler, Leipzig, 1878.

growth allowed by memory. In the Haeckelian paradigm the biological foundation of memory is the process of intussusception (the process of growth which involves the absorption of the external bodies), and this operation can take place thanks to a simple chemical principle, the one of endosmosis, which affirms that a dense and concentrated liquid, separated from other liquids by a membrane, absorbs the less dense liquids that surround it. Nietzsche agrees with this vision, as it is shown in most parts of *The Will To Power*. However, he rejects another main Haeckel's biological system's piece, that is the theory that can be summarised by the famous motto "ontogeny recapitulates phylogeny".²⁴ In fact, Nietzsche believes instead that memory cannot be understood as something passive, as Haeckel does, but rather as a result of an active process: in a way, Nietzsche seems to merge together Roux's internal struggle (*Selbstregulation*) and Haeckel's organic memory in one motion.

It is Nägeli who offers Nietzsche a way to think this union between Haeckel and Roux. In Nägeli's hereditary theory – discovered by Nietzsche in 1886 – the mediation is found in the idea that organisms' autoregulation through memory is first and foremost an act of subjection of the new bodies to the old structure: the vital excitement is necessarily something external; however, the external bodies are ingested only under the condition of being recognised as identical to some other bodies previously seen or already known (in a word: something *old*). The new can only adhere to the "backbone" of the past, or, in Nägeli's biological terms,²⁵ the *idioplasm* (the material support of heredity, the plasma on which all the forms of a living being are deposited) governs the *trofoplasm* (the nutritive plasma through which a cell assimilates what the environment offers to it). The result is an idea of organism that in some way can solve the paradox that lies between openness and closeness, between activity and passivity.

Once ended this excursus about Nietzsche and the natural sciences, having acknowledged from where the German philosopher finds the inspiration for a great part of his 1880's writings, I may now directly approach the main question: what is a subject in Nietzsche, starting from a biological point of view? To answer this question, I will take some fragments from both *The Will to Power* and the 1868 *Notes on Teleology starting*

²⁴ Ernst Haeckel, *Generelle Morphologie der Organismen*, Reimer, Berlin, 1866.

²⁵ Karl Wilhelm von Nägeli, *Mechanisch-Physiologische Theorie der Abstammungslehre*, Oldenbourg, München – Leipzig, 1884.

from Kant, and I will just comment them with a short *Scolio*, in order to grasp the general sense. I will proceed this way because I will delegate further explanations to Baruch Spinoza and Thomas Pradeu, to whom I will refer shortly after.

Firstly, a subject is not a static monolith, but it is a multiplicity. As it is wrote in *The Will to Power's* fragment 488, there are

No subject-atoms. The sphere of a subject increasing or diminishing unremittingly, the centre of the system continually displacing itself; in the event of the system no longer being able to organise the appropriated mass, it divides into two. On the other hand, it is able, without destroying it, to transform a weaker subject into one of its own functionaries, and, to a certain extent, to compose a new entity with it. Not a “substance,” but rather something which in itself strives after greater strength; and which wishes to “preserve” itself only indirectly (it wishes to surpass itself).

Alternatively, I could refer to fragment 490:

The assumption of a single subject is perhaps not necessary; it may be equally permissible to-assume a plurality of subjects, whose interaction and struggle lie at the bottom of our thought and our consciousness in general. A sort of aristocracy of “cells” in which the ruling power is vested? Of course, an aristocracy of equals, who are accustomed to ruling co-operatively, and understand how to command? My hypothesis: The subject as a plurality.

I can also recall fragment 518, which states that “appealing to the body for our guidance, we are confronted by such appalling manifoldness”, but this idea can be even found in one of Nietzsche’s first philosophical works, the 1868 *Notes on Teleology*, where the author writes that “every living being, says Goethe, is not an individual but a multiplicity: even when it appears to us as an individual, it always remains a union of autonomous living beings”.²⁶

Secondly, one should not refer to the opposition between internal and external, or between subject and object, when discussing about the individual. An organism is defined, in fact, only by the speed ratio between its parts, as it can be read in *The Will to Power's* fragment 552:

²⁶ [Personal translation], Cfr. Friedrich Nietzsche, *Appunti Filosofici 1867-1869*, tr. it. a cura di G. Campioni e F. Gerratana, Adelphi, Milano, 1993.

If we abandon the idea of the acting subject, we also abandon the object acted upon. Duration, equality to self, Being, are inherent neither in what is called subject, nor in what is called object: they are complex phenomena, and in regard to other phenomena are apparently durable — they are distinguishable, for instance, by the different tempo with which they happen. Repose, movement, fixed, loose: all antitheses which do not exist in themselves and by means of which differences of degree only are expressed; from a certain limited point of view, though, they seem to be antitheses.

Thirdly, the organism is a struggle between its parts, and living is a process of putting one's organism to the test. Harmful elements can act as stimulants, as the organism is formed only in relation to external bodies that act on it. This idea can be found in *The Will To Power's* fragments 642 and 647:

Life might be defined as a lasting form of force-establishing processes, in which the various contending forces, on their part, grow unequally.

A deficiency, a state of degeneration, may be of the greatest possible use, in as much as it acts as a stimulus to other organs. [...] The individual himself is the struggle of parts (for nourishment, space, etc.): his development involves the triumph, the predominance, of isolated parts; the wasting away, or the “development into organs,” of other parts.

Lastly, I could also mention fragment 688, which perspicuously reveals that Nietzsche's “theory would be: that the will to power is the primitive motive force out of which all other motives have been derived”.

2. Interlude: Spinoza's Physics and Pradeu's Biology

I may now direct myself to the second author to be faced in this paper – who is Spinoza – to see if he can help in understanding better what Nietzsche is trying to express. Before that, the first question I should ask myself is why it is important to refer to Spinoza. It is Nietzsche himself to give us a first answer. In his letter written to Franz Overbeck, dated July 30, 1881, he writes:

I am truly stunned and enchanted! I have a precursor and what a precursor! I hardly knew Spinoza. [...] My solitude [Einsamkeit] – which, as happens in the high mountains, often

took my breath away and made blood ooze from my pores – is now, at least, a solitude of two [Zweisamkeit]. Wonderful!²⁷

A second possible answer must concern one of the philosophers who, probably more than anyone else, influenced Nietzsche: I am not referring to Kant, nor to Schopenhauer, but to Goethe. As it is well known, Goethe was an ardent Spinozian, to the point that his vision of nature and of the relationship between nature (that is *Zoé*) and forms (that are *Gestalt*, or *Bildung*) are massively inspired to Spinoza's view of nature. Goethe's very same ideas about nature and bodies have been then inherited by Nietzsche, who can thus be considered a Spinozian of secondary source.

It should be recalled what Goethe writes in his *General Theory of Nature* just to better understand the theoretical connection between him and Nietzsche:

I will say right away that the high-sounding maxim: Know yourself! It has always been suspicious to me, like a cunning of priests secretly in cahoots to confuse man with unrealizable demands and divert him from the activity of the outside world towards a false internal contemplation. Man knows himself only to the extent that he knows the world, of which he is aware in himself, as he is aware of himself only in it. Every new object, properly observed, opens up a new organ in us.²⁸

Now that this Spinozian incursion is justified I can proceed, and I will do so approaching a small section included in the second part of the *Ethica*, the so-called “Physical Excursus”, or “Physical Digression”. This small treatise interrupts the propositions in their normal flow, advancing a series of postulates and lemmas on the issue of physical bodies. To be specific, I will refer to two concepts adopted by Spinoza, that are the concept of *Corpora simplicissima* and the concept of *ratio* (derived by Matheron's lectures on Spinoza)²⁹ or *Bauplan* (derived from Deleuze's lessons on Spinoza).³⁰

It can be immediately understood how Goethe and then Nietzsche refer to Spinoza when they discuss the idea of the body as a multiplicity. In the first place, as previously mentioned, in Spinoza's ontology any individual cannot be a substance, as there is only one substance, which is nature: the individuals are only modification, or modes, of the

²⁷ Friedrich Nietzsche, *Epistolario 1880-1884*, a cura di G. Campioni, Adelphi Edizioni, Milano, 2004.

²⁸ Johann Wolfgang Von Goethe, *Teoria della Natura*, a cura di M. Montinari, SE Editore, Milano, 2020.

²⁹ Alexandre Matheron, *Individu Et Communauté Chez Spinoza*, Éditions Minit, Paris, 1969.

³⁰ Gilles Deleuze, *Cosa Può Un Corpo?*, tr. it. di A. Pardi, Ombre Corte, Verona, 2007.

substance. Secondly, Spinoza believes that any individual is basically the aggregation of other individuals linked to each other: in fact, Spinoza admits that eventually the entire nature can be thought as a huge individual itself. Spinoza's ontology is immanent, as Deleuze argues, and that also means that there cannot be any ontological differences between the pieces of nature that we are used to consider separate entities: every single body is composed by the *Corpora simplicissima*, the simplest bodies, that are the minimal unit of the Spinozian Physics.

It is important to note that the *Corpora simplicissima* are not atoms: they are the simplest parts because they constantly regress; in fact, they coincide with the notion of infinitesimal approximation, as Deleuze affirms. This aspect is important because it helps us reminding to relativise even the strive of the cells mentioned by Roux and Nietzsche: even the cells can be thought as the product of a strive; the symbiosis is everywhere, as Lynn Margulis argues.³¹ The *Corpora simplicissima*, in fact, act very similarly to the cells conceived by Roux's biological system: they move at different speed, they collide and press each other (they strive, I could say), and they aggregate in bigger and bigger bodies the moment a certain ratio of speed (of forces) between them is imposed and stabilised. The individual state of stability understood as ratio is called by Spinoza "*certa quaedam ratio*", and this last point leads us to the second theme, which is probably the most relevant.

"Bodies are distinguished from each other by motion and rest, velocity and retardation, and not by substance." writes Spinoza in the first lemma of his Physical Digression.³² The individual, therefore, cannot be defined by assuming some substantial fixity, but must be understood as a particular type of form, such as a relationship of forces. As Roberto Finelli observes:

The individual is not a substance because, to use Cassirer's expression from *Substanzbegriff und Funktionsbegriff*, it is a function, that is to say a proportion: [...] the individual must

³¹ Lynn Margulis, *The Symbiotic Planet: A New Look at Evolution*, Orion, London, 2013.

³² Part II, Axiom II", Definition.

therefore be conceived as a *societas* in which the fundamental constitutional norm is given by the continuous variation of the many ones.³³

This peculiar understanding of form is further specified by Spinoza a few lines after the first lemma:

When a number of bodies of the same or different sizes are restrained by other bodies so that they press upon each other, or if they move with the same or different degrees of speed so that they communicate their movements to each other in some fixed ratio, we will say that those bodies are united with each other, and all of them together compose just one body or one individual thing which is distinguished from others by this union of bodies.³⁴

The Spinozian notion of individuality rejects any substantialist foothold in favour of a concept of permanence based on a relationship of speed, or a relationship of forces: as Matheron argues, Spinoza proposes a proper equation, or a function. In Matheron's opinion, talking about equations or ratios when discussing the idea of individuality in Spinoza is far more than using an appropriate metaphor; as a matter of fact, following the French Philosopher's reading, the Spinozian individuality of each body – which is always composed by a multiplicity of individuals – can be indicated according to the following mathematical formula:

$$\frac{m_1v_1 + m_2v_2 \dots + m_nv_n}{m_1 + m_2 \dots + m_n} = K$$

where m stands for mass – admitting that the quantity of mass is a function of rest –, v stands for movement, and K identifies and defines the constant of their possible variations, corresponding precisely to the Spinozian *certa quaedam ratio*.

Italian Philosopher Cristina Zaltieri brilliantly enucleates this unique concept of form:

The form of the individual remains, being in any case guaranteed by the union of multiplicities of corpuscles in which it consists. [...] This use of the term *form* is very distant from the Platonic use of the term *eidos* – which is the only intelligible and non-corporeal

³³ Roberto Finelli, *Per un Nuovo Materialismo: Presupposti Antropologici ed Etico-Politici*, Rosenberg & Sellier, Torino, 2018.

³⁴ Cristina Zaltieri, *Il Divenire Della Bildung In Nietzsche E Spinoza*, Mimesis Edizioni, Milano, 2013.

form – since in the Physical Digression *form* is what configures a mode of extension as unique, as different from all the others; it is the proper conformation of this extended mode, or, to put it better, it is a particular relationship of rest and movement between the corpuscles that make up the body. [...] The possibility of grasping a “form of the man” which has a universal value, remains beyond Spinoza's intentions. The idea of an universal form which aspires to enclose an essence is not contemplated by Spinoza, as the need to respect the singularity of each mode makes this concept unusable as it is: it would be the result of an impoverishment and a loss of the many characteristics of each of the existing modes. The shape, as it is understood in the Physical Digression, is a relationship of stillness and movement between the components of the body, and will always and only be an individual conformation, different for each singular body.³⁴

Spinoza highlights on one hand the non-essential and non-autonomous status of the individual – and therefore its condition of mode – while on the other hand it paves the way for a new idea of the individual, which instead sees it as a compositional relationship between a potentially infinite number of components.

The result of the strive of *Corpora simplicissima* is a kind of hierarchical body. Kind of, because this hierarchy is spontaneous and has no hierarch. Or rather, the hierarch is the ratio itself. We should not understand the individual as something unitary and stable: unity is just a state of equilibrium, and the subject is just an equilibrist always risking falling down. Deleuze refers to the concept of *Bauplan*, from Von Uexküll,³⁵ but it is possible to more simply refer to the notion of *Bildung*, opposed to *Gestalt*, as Goethe does in *Die Metamorphose der Pflanzen*.³⁶ *Bildung* is at the same time both the form as a result and as a formation process, while *Gestalt* only refers to the form as a result:³⁷ the form in Spinoza is more of a *Bildung*, as it is always primarily the process that leads to it. That is the reason why Antonio Damasio, in his reading of Spinoza, considers the Dutch philosopher to have anticipated the notions of metabolism and homeostasis: through the process of metabolism, it can be clearly understood how the survival and the defence of the body – or the maintenance of the individual as an individual – is something that

³⁵ Jakob Johann von Uexküll, *A Foray Into the Worlds of Animals and Humans. With A Theory of Meaning*, University of Minnesota Press, Minneapolis, 2013.

³⁶ Johann Wolfgang Von Goethe, *The Metamorphosis of Plants*, MIT Press, Cambridge, Massachusetts, 2009.

³⁷ As elucidated by Moiso, Cfr. Francesco Moiso, *Goethe tra Arte e Scienza*, CUEM, Milano, 2001.

involves an active process of appropriation and transformation. As I have previously mentioned, a unitary body is a still body, and a still body is a dead body.³⁸

Being an individual is not a state, but a process, and the process of maintaining its own unity does not coincide with the defence of a stronghold, but rather with an active process of commerce with – and assimilation of – different components: as Deleuze would say, it really is an art of encounters. If I had to find a practical example of this kind of proactive defence, I would without doubt choose the example of vaccines: vaccines' medical model is in fact based on the theoretical principle of openness to external bodies and exploitation of them as stimulants, rather than on a defensive closure or external *a posteriori* intervention.

Since I have mentioned vaccines, homeostasis, and metabolism, it is now the moment to take into consideration the third and last author of this route: Thomas Pradeu.³⁹ I decided to refer also to his work for three reasons. Firstly, because the theme of Immunology, to which he devoted his most important works,⁴⁰ is strictly related to the issue of defining the borders of the individual: a good immune system can work only *if there is* an individual to protect, opposed to every other external body, understood as enemies. Furthermore, because Pradeu too argues that an individual – while maintaining its unity – is never something rigid. Lastly, I believed a reference to the most contemporary research in theoretical biology was important. After all, if Nietzsche developed his theory of the individual through continuous engagement with biologists and scientists of his time, then perhaps it will be fruitful to do the same regarding our contemporaneity.

I should first spend a couple of words on what is an immune system, according to Pradeu. Contrary to what is usually believed, an immune system is a set of biological components (in the case of mammals some types of specialised cells and two specific categories of molecules) which work in concert and which function... is not to defend the

³⁸ The link between the notion of death and the one of stillness appears particularly clear to an Italian author who writes in English, as I am. In particular, I am thinking about the Italian translation of the “still life” pictorial genre: in fact, a still life painting in Italy would be called *natura morta*, which literally means “dead nature”.

³⁹ Thomas Pradeu is a philosopher of biology or, as he would say, a philosopher in biology: he is doing his research at Philinbiomed center based in Bordeaux and has recently published an important volume on the Philosophy of Immunology.

⁴⁰ Thomas Pradeu, *Philosophy Of Immunology*, Cambridge University Press, 2020.

organism from pathogenic elements. Or at least, not only. The Extended Immunity Theory understands the immune system as something involved also in maintenance of the homeostasis, in blood clearance, in tissues development and in general body repair. Considering that the immune system is ancient as life itself, I can safely say that also Pradeu, and in general contemporary biology, presents to us a model of individuality not univocally linked with the issues of defence, but rather to the active quest of a balance or equilibrium to be constantly built.

However, it is important to recall how, using the eye of biology, it seems almost like the individuals have no boundaries at all: we all are symbiosis, or holobionts. This means that we are systems of organisms which not only coexist with colonies of numerous other organisms, but which even count on their coexistence for the maintenance of their own survival. Out of ten cells present in the human body, nine do not belong to us but to microbial species, and 99% of the DNA we carry around belongs to those microbes. Furthermore, at least a dozen viruses roam undisturbed in our body.⁴¹ The immune system recognises this whole world – called microbiota – as different from itself, and yet tolerates it. But why so? Has it not been previously established that a good immune system is one able to distinguish between ourselves and the other bodies?

It is still possible to answer this question affirmatively, but only under the condition of rethinking the notions of internal and external. Internal and external – as well as subject and object – are notions that can be used, but only if we free them from an idea of original foundation, to consider them instead as mobile and continuously re-outlined notions. Considering that, how should the internal and external parameters be interpreted, when talking about the immune system? The immune system acts according to three functional principles, between which the most relevant is the so-called principle of *Filtering Over Presence*: this means that the immune system is not intolerant towards generically and essentially external subject, but rather adopts a principle of evaluation based on the speed of changes. The immune system defines the boundaries of identity on the basis of tolerance and articulates tolerance as a function of speed: too sudden a change will cause

⁴¹ Michael Pollan, *Cooked: A Natural History of Transformation*, Penguin Book Limited, Westminster, 2013.

the immune system to intervene, while a more gradual one will be more likely to be tolerated.⁴²

I believe this idea of identity based on movement can remind of something I mentioned earlier, quoting *The Will to Power's* fragment 552:

Duration, equality to self, Being, are inherent neither in what is called subject, nor in what is called object: they are complex phenomena, and in regard to other phenomena are apparently durable — they are distinguishable, for instance, by the different tempo with which they happen. Repose, movement, fixed, loose: all antitheses which do not exist in themselves and by means of which differences of degree only are expressed; from a certain limited point of view, though, they seem to be antitheses.

At the same time, I could also recall some of the lemmas from the Spinozian Physical Digression, such as:

Lemma 1: Bodies are distinguished from each other by motion and rest, velocity and retardation, and not by substance.

Lemma 4: Bodies (by Lemma 1) are not distinguished from each other in relation to substance. But that which constitutes the form of the individual, consists in the union of bodies (by preceding def.). And this (by hypothesis) will be retained, although there be a continual change of bodies.⁴³

Lemma 5: If the parts composing an individual [become] greater or smaller, but in such a proportion that they all preserve the same relative rate of motion and rest as before, the individual will retain its nature as before without any change of form.

⁴² In the words of the author: “The immune system does much more than control entries into the organism at interfaces. In a process that can be called *filtering over presence*, the immune system constantly monitors the motifs expressed by the cells present in all tissues and body compartments as well as their intracellular content and determines which elements are tolerated, and therefore can remain part of that living thing, and which elements are rejected, and therefore cannot remain part of that living thing. But what exactly does the immune system detect in this process of internal filtering? Although it has long been said that the immune system controls the identity of the elements with which it interacts (that is, their conformity with the self), my own view is that the immune system eliminates elements that change too abruptly, while tolerating elements that change slowly.” Cfr. Thomas Pradeu, Stephen Jaeger, Eric Vivier, *The Speed Of Change: Towards A Discontinuity Theory Of Immunity*, Nat Rev Immunol 13, 2013.

⁴³ It is no coincidence, I believe, that Hans Jonas interpreted this lemma as an early Spinozian attempt to explain body's metabolism. Cfr. Hans Jonas, *Dalla Fede Antica All'uomo Tecnologico*, tr. it. di G. Bettini, Il Mulino, Bologna, 2001. Moreover, the same attempt to biologise the physical notions of the Physical Digression has been also carried out by Lorenzo Vinciguerra. Cfr. Lorenzo Vinciguerra, *Spinoza et le Signe: La Genèse de l'Imagination*, Vrin, Paris, 2005.

The idea of identity that emerges from the model of the immune system appears to be similar to that of the Spinozian individual or of the Nietzschean organism: identity is something relative and changeable, and, in any case, it never concerns a substance. The material components that make up an organism do not really matter, as what remains unchanged is only a relationship: Pradeu highlights how the principle of identity is to be recognised simply in a criterion that establishes what is part and what is not. Identity is not about essences, but about *Bauplan*, or strategy.

3. A Brief Finale: Moral Philosophy as a Medical Science

I would like to highlight one last final point, asking myself why it was important to try and find a notion of subject in Nietzsche, and why it is important that this notion has been found in the biological world – defining the subject as an organism, or a biological individual.

My answer is that it was important especially from the perspective of Nietzsche's moral philosophy. As it is well known, Nietzsche is not a moral thinker. Nevertheless, he is an ethical thinker in a Deleuzian sense: Deleuze defines Spinoza as an ethical or ethological thinker, meaning that Spinoza does not care about the metaphysical and moral notions of Good and Evil, but rather cares about what is advantageous or disadvantageous for the body.⁴⁴ His ethics is the art of good encounters, and Nietzsche's ethics can be understood in the same way. Nietzsche is, in fact, a pedagogical or paidethical thinker, as Italian Philosophers Rossella Fabbrichesi⁴⁵ and Cristina Zaltieri would say: he does not renounce to set values but wants to bring the question of Good and Evil back to the level of nature, or life, through a pedagogical approach that insists on the necessity of bodily constant incorporation of one's personal truth, to be intended as an habit (*Ethos*) or a style.

This idea is clearly stated in aphorism *The Gay Science's* aphorism 290, entitled significantly "One thing is needful":

⁴⁴ Gilles Deleuze, Spinoza, *Practical Philosophy*, City Lights Books, San Francisco, 1988.

⁴⁵ Rossella Fabbrichesi, *La Freccia Di Apollo: Semiotica Ed Erotica Nel Pensiero Antico*, Edizioni ETS, Pisa, 2006; Rossella Fabbrichesi, *Vita e Potenza. Marco Aurelio, Nietzsche, Spinoza*, Cortina Editore, Milano, 2022.

One thing is needful. - To give style to one's character - a great and rare art! It is practised by those who survey all the strengths and weaknesses that their nature has to offer and then fit them into an artistic plan until each appears as art and reason and even weaknesses delight the eye. [...] For one thing is needful: that a human being should attain satisfaction with himself - be it through this or that poetry or art; only then is a human being at all tolerable to behold! Whoever is dissatisfied with himself is continually prepared to avenge himself for this, and we others will be his victims if only by having to endure his sight. For the sight of something ugly makes one bad and gloomy.⁴⁶

Moreover, Nietzsche seems to express something similar also at the end of aphorism 110 – once again from *The Gay Science* –, where he writes:

[...] The thinker – that is now the being in whom the drive to truth and those life-preserving errors are fighting their first battle, after the drive to truth has proven itself ‘to be a life-preserving power, too. In relation to the significance of this battle, everything else is a matter of indifference: the ultimate question about the condition of life is posed here, and the first attempt is made here to answer the question through experiment. To what extent can truth stand to be incorporated? – that is the question; that is the experiment.

Considering these last words, it is possible to affirm that Nietzsche’s anthropo-poietic⁴⁷ project is, to some extent, also a medical project. In fact, the project of an individual life strategy is precisely the project of Hippocratic medicine,⁴⁸ opposed to the Empedoclean one.⁴⁹

Empedocles, as the Historian of Classic Philosophy Maria Michela Sassi argues,⁵⁰ was not only a Philosopher, but also a Doctor whose medical doctrines were linked to a reductionist view of the human being as just a combination of the four Cosmo’s elements

⁴⁶ Friedrich Nietzsche, *The Gay Science*, edited by B. Williams, translated by J. Nauckhoff, Cambridge University Press, Cambridge, 2001.

⁴⁷ I borrowed this term from Francesco Remotti. Cfr. Francesco Remotti, *Fare Umanità. I Drammi dell’Antropo-poiesi*, Editori Laterza, Bari, 2013.

⁴⁸ Werner Jaeger, *Paideia: The Ideals of Greek Culture: II. In Search of the Divine Centre*, eng. tr. by G. Highet, Oxford University Press USA, New York City, 1986; Werner Jaeger, *Paideia: The Ideals of Greek Culture: III. The Conflict of Cultural Ideals in the Age of Plato*, eng. Tr. By G. Highet, Oxford University Press USA, New York City, 1986; Geoffrey Ernest Richard Lloyd, *Magic, Reason, and Experience. Studies in the Origins and Development of Greek Science*, Hackett Publishing Company, Indianapolis, 1999.

⁴⁹ Maria Michela Sassi, *Gli Inizi della Filosofia: in Grecia*, Bollati Boringhieri, Torino, 2020; Giorgio Cosmacini, *L’arte Lunga*, Laterza Editore, Bari, 2021.

⁵⁰ In affirming this, she particularly refers to Francis Macdonald Cornford's *Principium Sapientiae*. Cfr. Francis Macdonald Cornford, *Principium Sapientiae. The Origins of Greek Philosophical Thought*, University of Michigan Press, Ann Arbor, 1971.

(earth, fire, water, and aither); starting from that, an important medical thought tradition begun in southern Italy, influencing thinkers such as Philistion of Locri. On the contrary, the Hippocratic approach reacted against this reductionist view of medicine and of human nature, proposing instead a search for a regime that should be based on the specific study of each and every single body that a Doctor accepts to take into cure: a strategic regime based on the experimental science of relationships, and that finds its greatest tools in training (*Askesis*) and dietetics⁵¹ (the art of selection, as well as the art of nourishing life).⁵²

I should quote a brief paragraph from the Hippocratic *corpus*, to clearly underline the Greek's Doctor minute attention to details when coming to know and manage strategically every external body that a person could encounter in its life:

We therefore have to consider the patient, what food is given to him and by whom... the conditions of the climate and the place, both in general and in particular, the habits, the way of life, the activities and the age of the patient... We must then consider his words, his ways, his silences, his thoughts, habits regarding sleep and wakefulness, the nature of his dreams and the moment in which they manifest. Next, we must observe if he tears his hair, scratches or cries. We must take note of his paroxysms, faeces, urine, saliva, vomiting, spy on any change in the state of the disease, its frequency and nature, and the special changes that cause a crisis or death, observe sweating, chills, colds, coughing, sneezing, hiccups, type of breathing, burps, flatulence, both silent and noisy, bleeding and haemorrhoids. It is necessary to determine the meaning of all these signs.⁵³

The totalising aspect of Hippocratic medicine, moreover, is also reflected in the relationship between it and the other sciences: precisely because medicine is characterised as a science of relationships, any perspective limited to starting from mere physiological studies would be unsatisfactory; quite the opposite, dialoguing with many other sciences is necessary. For instance, in *On Air, Waters, and Places*' first chapter,⁵⁴ one can see how Hippocrates recognises the great influence of climate on health, and the importance of

⁵¹ I am referring to Michel Foucault's reading of Hippocrates. Cfr. Michel Foucault, *The History of Sexuality Volume 2: The Use of Pleasure*, Penguin Book Limited, Westminster, 2019.

⁵² The idea of Ethics as the art of nourishing life can also be found in Zhuang-Zi Daoist Philosophy. Cfr. Chuang-Tzu (Zhuang-Zi), *The Book of Chuang Tzu*, eng. tr. by M. Palmer, Penguin Book Limited, Westminster, 2006.

⁵³ Ippocrate, *Opere*, a cura di M. Vegetti, UTET, Torino, 1965.

⁵⁴ Hippocrates, *On Air, Waters and Places*, Kessinger Publishing, Whitefish, Montana, 2004.

studying meteorology – as a science of natural non-living bodies yet operating on us – for the purpose of a broader understanding of our body placed in specific situations. Classical Greek and Ancient Philosophy scholar Mario Vegetti, in fact, states that

Thus set, it [medicine] is essentially biology, extending to a unitary consideration of the human organism in health as in disease, of its internal physiological and pathological relationships, of its relations with the environment. The therapeutic method proper to such a medicine obviously goes beyond the stage of sporadic intervention to integrate in turn into the unitary idea of regime.⁵⁵

As mentioned above, also Nietzsche's ethical project is an experimentation and research for the most useful elements to our joy, especially bodily joy – which can be described as “the great joy”, as Nietzsche defines the body as “the great reason” in *The Gay Science*. Besides, it is no coincidence that, as I argued in other works,⁵⁶ also Spinoza's *Ethics* can be understood from the point of view of Medical Science.⁵⁷

We can safely compare the Hippocratic approach to the ethical aspects that emerge from Nietzsche's quest to understand the subject from a biological perspective. Understanding Ethics as a knowledge of advantageous and disadvantageous elements means placing it as a both practical and theoretical area (in a word: the area of strategy) of which the foundations, procedures and objectives can – and perhaps must – coincide with the foundations, procedures, and objectives of a good medicine. In sum, to conclude with the words of Nietzsche, it really is important to “know the capacity of your stomach”.⁵⁸

⁵⁵ Mario Vegetti, *La medicina in Platone*, in *Rivista Critica di Storia della Filosofia*, 1966, Vol. 21, No. 1.

⁵⁶ Antonio Lorenzo Sartori, *Ethica, sive Ars Medica: Spinoza e la Medicina*, Foglio Spinoziano, anno XXII, Novembre, Roma, 2022.

⁵⁷ I argued in favour of this thesis from a mostly theoretical point of view, following the path of Gilles Deleuze, Hans Jonas and Antonio Damasio; however, there are other authors who discussed some crucial historical aspects regarding the relation between Spinoza and the Medical Science, such as Pina Totaro (cfr. Pina Totaro, *Ho certi amici in Ollandia: Stensen and Spinoza: Science Verso Faith*, in *Analecta Romana Instituti Danici, Supplementa* (L'Erma) 31, 2002.), Edwin Curley (cfr. Edwin M. Curley, *Divine Machines: Leibniz and the Sciences of Life*, Princeton University Press, Princeton, 1988), Herman de Dijn (cfr. Herman De Dijn, *Spinoza: The Way to Wisdom*, Purdue University Press, West Lafayette, 1996), and Justin E. H. Smith (cfr. Justin E. H. Smith, *Divine Machines: Leibniz and the Sciences of Life*, Princeton University Press, Princeton, 2011).

⁵⁸ These words can be found in *Ecce Homo*.

References:

- Michel Foucault, *The Order of Things. An Archaeology of Human Sciences*, Knopf Doubleday Publishing Group, New York City, 1994.
- Friedrich Nietzsche, *The Will to Power*, English translation by A. M. Ludovici, Delphi Classics, Hastings, East Sussex, 2017.
- Mazzino Montinari, Paolo D'Iorio, Patricia Farazzi, “*La volonté de puissance*” *n'existe pas*, Éclat, 1996.
- John Richardson, *Nietzsche's New Darwinism*, Oxford University Press, Oxford, 2004.
- René Descartes, *Meditations on First Philosophy*, eng. tr. By J. Cottingham, Cambridge University Press, Cambridge, 1996.
- Baruch Spinoza, *Ethica*, translated by G. Elliot, edited by C. Carlisle, Princeton University Press, Princeton, 2020.
- Antonio Damasio, *Looking for Spinoza: Joy, Sorrow, and the Feeling Brain*, Harcourt, San Diego, 2003.
- Friedrich Nietzsche, *Ecce Homo. How To Become What You Are*, eng. tr. by D. Large, Oxford University Press, Oxford, 2007.
- Francesco Moiso, *Nietzsche e le Scienze*, Rosenberg & Sellier, Torino, 2021.
- Barbara Stiegler, *Nietzsche et la Biologie*, Presses Universitaires de France, Paris, 2001.
- Rudolf Virchow, *Pathologie Cellulaire*, tr. fr. di P. Picard, Baillière, Paris, 1874.
- Friedrich Albert Lange, *History of Materialism*, Taylor & Francis, Abingdon-on-Thames, 2016.
- Wolfgang Müller-Lauter, *Nietzsche: His Philosophy of Contradictions and the Contradictions of His Philosophy*, University of Illinois Press, Champaign, Illinois, 1999.
- Wilhelm Roux, *Kampf der Teile im Organismus*, Engelmann, Leipzig, 1881.
- Denis Diderot, *Thoughts on the Interpretation of Nature, and Other Philosophical Works*, Editions Clinamen, Genève, 1999.
- Plato, *The Republic*, Penguin Books Limited, Westminster, 2007.
- Friedrich Nietzsche, *Beyond Good and Evil. Prelude to a Philosophy of the Future*, eng. tr. by W. Kaufmann, University of Michigan Press, Ann Arbor, 1966.
- Friedrich Nietzsche, *On Truth and Lies in a Nonmoral Sense*, Delphi Classics, Hastings, East Sussex, 2017.

Claude Bernard, *Leçons sur les Phénomènes de la Vie Communs aux Animaux et aux Végétaux*, Baillière, Paris, 1885.

Rudolf Virchow, *Über Erblichkeit*, in *Deutsche Jarbuch für Politik und Literatur*, Bd. 6, 1863.

Curt Paul Janz, *Nietzsche, Biographie*, Gallimard, Paris, 1984.

Johann Gustav Vogt, *Die Kraft. Eine Real-Monistische Weltanschauung*, Haupt und Tischler, Leipzig, 1878.

Karl Wilhelm von Nägeli, *Mechanisch-Physiologische Theorie der Abstammungslehre*, Oldenbourg, München – Leipzig, 1884.

Ernst Haeckel, *Generelle Morphologie der Organismen*, Reimer, Berlin, 1866.

Friedrich Nietzsche, *Daybreak. Thoughts on the Prejudices of Morality*, edited by B. Leiter, M. Clark, Cambridge University Press, Cambridge, 1997.

Friedrich Nietzsche, *Appunti Filosofici 1867-1869*, tr. it. a cura di G. Campioni e F. Gerratana, Adelphi, Milano, 1993.

Friedrich Nietzsche, *Epistolario 1880-1884*, a cura di G. Campioni, Adelphi Edizioni, Milano, 2004.

Johann Wolfgang Von Goethe, *Teoria della Natura*, a cura di M. Montinari, SE Editore, Milano, 2020.

Alexandre Matheron, *Individu Et Communauté Chez Spinoza*, Éditions Minit, Paris, 1969.

Gilles Deleuze, *Cosa Può Un Corpo?*, tr. it. di A. Pardi, Ombre Corte, Verona, 2007.

Lynn Margulis, *The Symbiotic Planet: A New Lookt at Evolution*, Orion, London, 2013.

Roberto Finelli, *Per un Nuovo Materialismo: Presupposti Antropologici ed Etico-Politici*, Rosenberg & Sellier, Torino, 2018.

Cristina Zaltieri, *Il Divenire Della Bildung In Nietzsche E Spinoza*, Mimesis Edizioni, Milano, 2013.

Jakob Johann von Uexküll, *A Foray Into the Worlds of Animals and Humans. With A Theory of Meaning*, University of Minnesota Press, Minneapolis, 2013.

Johann Wolfgang Von Goethe, *The Metamorphosis of Plants*, MIT Press, Cambridge, Massachusetts, 2009.

Francesco Moiso, *Goethe tra Arte e Scienza*, CUEM, Milano, 2001.

Thomas Pradeu, *Philosophy Of Immunology*, Cambridge University Press, 2020.

Michael Pollan, *Cooked: A Natural History of Transformation*, Penguin Book Limited, Westminster, 2013.

Thomas Pradeu, Stephen Jaeger, Eric Vivier, *The Speed Of Change: Towards A Discontinuity Theory Of Immunity*, Nat Rev Immunol 13, 2013.

Hans Jonas, *Dalla Fede Antica All'uomo Tecnologico*, tr. it. di G. Bettini, Il Mulino, Bologna, 2001.

Lorenzo Vinciguerra, *Spinoza et le Signe: La Genèse de l'Imagination*, Vrin, Paris, 2005.

Gilles Deleuze, *Spinoza, Practical Philosophy*, City Lights Books, San Francisco, 1988.

Rossella Fabbrichesi, *La Freccia Di Apollo: Semiotica Ed Erotica Nel Pensiero Antico*, Edizioni ETS, Pisa, 2006.

Rossella Fabbrichesi, *Vita e Potenza. Marco Aurelio, Nietzsche, Spinoza*, Cortina Editore, Milano, 2022.

Friedrich Nietzsche, *The Gay Science*, edited by B. Williams, translated by J. Nauckhoff, Cambridge University Press, Cambridge, 2001.

Francesco Remotti, *Fare Umanità. I Drammi dell'Antropo-poiesi*, Editori Laterza, Bari, 2013.

Werner Jaeger, *Paideia: The Ideals of Greek Culture: II. In Search of the Divine Centre*, eng. tr. by G. Highet, Oxford University Press USA, New York City, 1986.

Werner Jaeger, *Paideia: The Ideals of Greek Culture: III. The Conflict of Cultural Ideals in the Age of Plato*, eng. tr. by G. Highet, Oxford University Press USA, New York City, 1986.

Geoffrey Ernest Richard Lloyd, *Magic, Reason, and Experience. Studies in the Origins and Development of Greek Science*, Hackett Publishing Company, Indianapolis, 1999.

Maria Michela Sassi, *Gli Inizi della Filosofia: in Grecia*, Bollati Boringhieri, Torino, 2020.

Giorgio Cosmacini, *L'arte Lunga*, Laterza Editore, Bari, 2021.

Francis Macdonald Cornford, *Principium Sapientiae. The Origins of Greek Philosophical Thought*, University of Michigan Press, Ann Arbor, 1971.

Michel Foucault, *The History of Sexuality Volume 2: The Use of Pleasure*, Penguin Book Limited, Westminster, 2019.

Chuang-Tzu (Zhuang-Zi), *The Book of Chuang Tzu*, eng. tr. by M. Palmer, Penguin Book Limited, Westminster, 2006.

Ippocrate, *Opere*, a cura di M. Vegetti, UTET, Torino, 1965.

Hippocrates, *On Air, Waters and Places*, Kessinger Publishing, Whitefish, Montana, 2004.

Mario Vegetti, La medicina in Platone, in *Rivista Critica di Storia della Filosofia*, 1966, Vol. 21, No. 1.

Antonio Lorenzo Sartori, *Ethica, sive Ars Medica: Spinoza e la Medicina*, Foglio Spinoziano, anno XXII, Novembre, Roma, 2022.

Pina Totaro, *Ho certi amici in Ollandia: Stensen and Spinoza: Science Verso Faith*, in *Analecta Romana Instituti Danici, Supplementa (L'Erma)* 31, 2002.

Edwin M. Curley, *Divine Machines: Leibniz and the Sciences of Life*, Princeton University Press, Princeton, 1988

Herman De Dijn, *Spinoza: The Way to Wisdom*, Purdue University Press, West Lafayette, 1996.

Justin E. H. Smith, *Divine Machines: Leibniz and the Sciences of Life*, Princeton University Press, Princeton, 2011.