

Early Modern Science in Theological Contexts: Cardano, Bacon, and Leibniz
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LEIBNIZ' METAPHYSICS AND ORGANISM

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Leibniz' ontology about monad and body

- Monad: simple components of this world
- Body: phenomenon expressed by aggregation of the monads
- "ce qui n'est pas véritablement un être, n'est pas non plus véritablement un être" (Letter to arnauld, 30 April 1687, A II, 2, 186)
- Therefore, only monads are veritable being, and bodies are being in appearance.
- "Bodies, which are commonly taken for substances, are nothing but real phenomena, and are no more substances than perihelia or rainbows, and this is not something that is overturned by touch any more than by sight. A monad alone is a substance; a body is substances, not a substance" (Letter to De Volder, 21 January 1704, Transl. by P. Lodge, Yale DV, p. 287)

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Two interpretations of later Leibniz: Idealism vs Realism

- **Idealism interpretations; C. D. Broad (1975), D. Garber (1985), D. Rutherford (1990) etc.**
Leibniz' metaphysics in middle years; *Discours de métaphysique*, Correspondence with Arnauld, etc.
> He had have upheld the reality of corporeal substances, that is, some bodies that have reality in itself.
Later his metaphysics; *Monadology*, Correspondence with De Volder and De Boss, etc.
> He changed the position from realism on corporeal substances to idealism.
- **Realism interpretations; J. E. H. Smith (2011), R. T. W. Arthur (2018) etc.**
 - a) Later Leibniz upheld the degree of reality in body as well as his middle years.
 - b) He had same idea consistently, Although he no longer used the name "corporeal substance".

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For Leibniz, what is corporeal substance, what is animal, and what is organic body?

- “not a flock but a animal, not a pond but a fish is one substance” (Leibniz to Johann Bernoulli, 1698/8/22, A III, 7, 885).
- “A substance is either simple like a soul, which has no parts; or it is composite like an animal, which consists of a soul and an organic body” [*Principium ratiocinandi fundamentale*, 1708, transl. by J. E. H. Smith and O. Nachtomy (2011), p. 197].

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For Leibniz, what is corporeal substance, what is animal, and what is organic body?

- “Thus each organic body of a living being is a kind of divine machine or natural automaton which infinitely surpasses all artificial automata. For a machine made by human artifice is not a machine in each of its parts. For example, the tooth of a brass wheel has parts or pieces which to us are no longer artificial things and no longer have something recognizably machine-like about them reflecting the use for which the wheel is intended. But the machines of nature namely living organism[body], are still machines even in their smallest parts ad infinitum” [Monadology §64, transl. by N. Rescher (1991)].

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Organic body as particular and Organism as methodology

- “Organism, that is to say order and artifice, is something essential to matter produced and arranged by the sovereign wisdom” [Leibniz to Masham, 1704, transl. by J. E. H. Smith (2011), p. 105].
- “Thus ‘organism’ does not refer to any particular organic body, but rather to the mechanism, the organization and the general natural law-governedness which applies to the matter. More than a particular being, organism is a universal *principle*” [J. Roland (2011), p. 145]

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A Difference between the Descartes’ mechanism and Leibniz’ mechanism or Organism

- “[...] Organism is nothing other, formally speaking, than mechanism, although it is more exquisite and more divine, since all things in nature should occur mechanically [...]” (Leibniz’s Exceptions and Stahl’s Replies, Transl. by J. E. H. Smith, Yale Stahl, p. 255).
- Descartes considered parts of a living body as things similar to a fountain, a water mill, a clock, an organ, strings, levers, and so on, namely artificial machines (Cf. AT XI, p. 120; pp. 130–131; pp. 165–166, AT I, pp. 435–448).

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A Difference between the Descartes' mechanism and Leibniz' mechanism or Organism

- Descartes' mechanism = The anthropomorphic mechanism
= Considering the organic body as artificial machines
≠ The Organism
- Leibniz' mechanism = The ideal mechanism
= Considering the organic body as a divine or natural machine.
= The Organism
[about the concept of Ideal mechanism, Cf. J. Miura (2018)]

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His thought of the dominant monad is based on the organic body

- "Nor do I see what a dominant monad takes away from the existence of other monads, since there is, in fact, no communication between them but only an agreement. [...] [C]onsidered in terms of the monads themselves, Domination and subordination consist only in degrees of perception" [Letter to De Bosses, 16 June 1712, Transl. by B. C. Look and D. Rutherford, Yale DB, p. 257] .
- Russell: "[T]he dominant monad dominates in the sense that it represents more clearly what the other monads represent very confusedly" [B. Russell (1937), p. 148]

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His thought of the dominant monad is based on the organic body

- "Indeed, it [soul] would not be the soul of the whole thing but only the soul of a separately animated part if it were not at the same time a soul dominating in the whole thing on account of the structure of the whole" [Letter to De Volder, 1 September 1699, transl. by P. Lodge, Yale DV, p. 129].
- The whole structure = The structure of organic body ← researched from the viewpoint of organism

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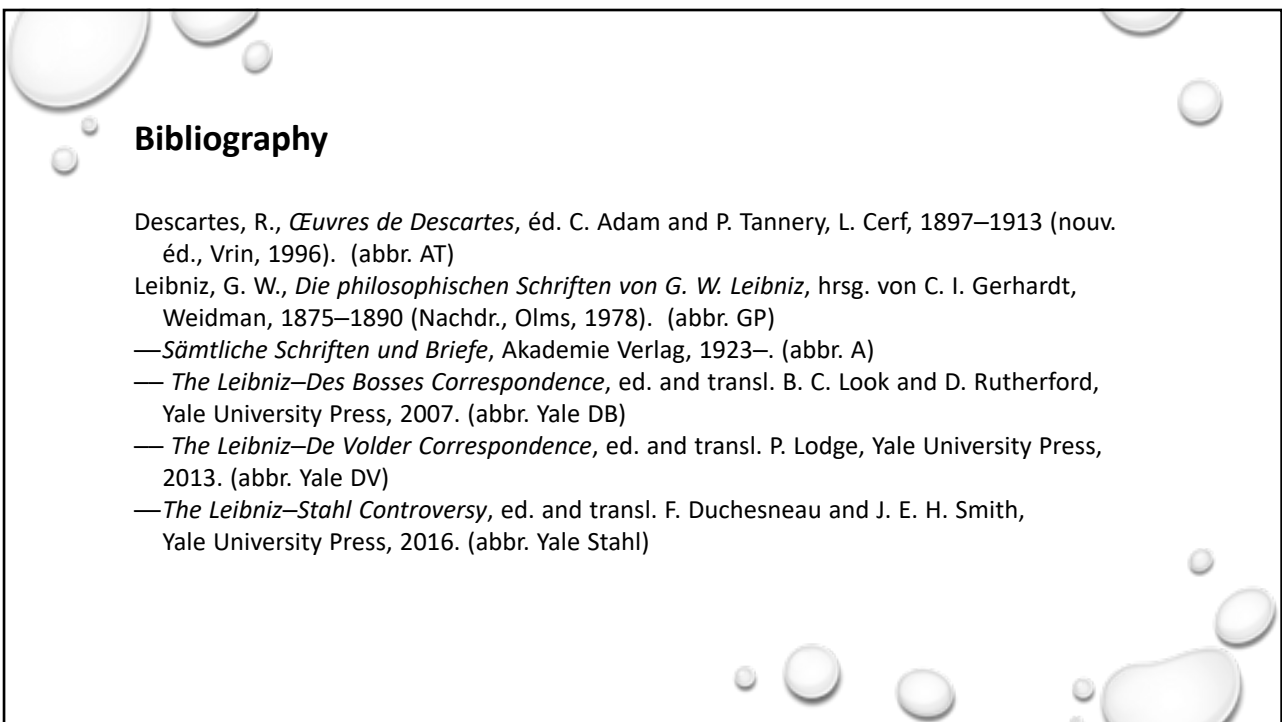
Can one read Leibniz' as realism?

- According to an Idealist interpretation, it is unnecessary for his monadology to deal with the bodies.
- According to a Realist interpretation, it is necessary for his monadology to deal with the bodies.
 - ← The explanation of dominant monad needs Organism.
 - ← The Organism is a kind of methodology for researching organic bodies.
 - ← A organic body is a substance, hence the Organism is a kind of methodology for researching substance.
- In later years Leibniz philosophy can accept Realist interpretation as well as in his middle years.

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- Arthur, R. T. W. (2018), *Monads, Composition, and Force: Ariadnean Threads through Leibniz's Labyrinth*, Oxford University Press.
- Broad, C. D. (1975), *Leibniz: An Introduction*, Cambridge University Press.
- Garber, D. (1985), "Leibniz and the foundations of physics: The middle years", K. Okruhlik and J. R. Brown (eds.), *The Natural Philosophy of Leibniz*, D. Reidel, pp. 27–130.
- Miura, J. (2018), "Organism in later philosophy of Leibniz: From the viewpoint of continuity and discontinuity with mechanism", *Studia Leibnitiana Japonica* 5, pp. 100–118 [in Japanese].
- Rutherford, D. (1990), "Leibniz's analysis of Multitude and Phenomena into Unities and Reality", *Journal of the History of Philosophy* 28[1], pp. 11–28.
- Roland, J. (2011), "'The organism, or the machine of nature': some remarks on the Status of organism in the substantial composition", J. E. H. Smith and O. Nachtomy (eds.), *Machines of Nature and Corporeal Substances in Leibniz*, pp. 145–156.
- Russell, B. (1900), *A Critical Exposition of the Philosophy of Leibniz*, George Allen and Unwin Ltd., 8th impression, 1975 (1st ed., 1900; 2nd ed. 1937).
- Smith, J. E. H. (2011), *Divine Machines*, Princeton University Press.
- Smith, J. E. H. and Nachtomy, O. (2011), *Machines of Nature and Corporeal Substances in Leibniz*, Springer.

Manuscript

Slide 1

Today, I'd like to talk about the relationship between Leibniz's metaphysics and his thought of Organism.

Generally speaking, in a period from the end of the 17th century to the middle of the 18th century, when Leibniz was working, biology was stagnating. Even though there were not a large number of discoveries in this period, Leibniz's philosophy was heavily influenced by biology especially microscopists.

Slide 2

I've divided the presentation into 3 parts. First, I'll talk about Leibniz's metaphysical thought. As you know, he thought a lot about the concept of monads, which the world was made up of. In the same way, did he accept the complex substance, which is made up of the simple monads? In this respect, current scholars have different positions. Those who support on Idealist interpretation insist that Leibniz in the middle years of his career accepted the complex substances but later didn't. Others who support on Realist interpretation insist that Leibniz accepted both simple and complex substances consistently, although these substances were hard to follow as they were called by some different names.

Secondly, I'll talk about Leibniz's biological thoughts. Leibniz believed that if complex substances existed, then this substance must be animal. For Leibniz, an animal was composed of a soul and an organic body. His biological thought was particularly about the organic body. He divided bodies into 2 types, artificial machines and natural or divine machines. He categorized the organic body into natural or divine machine. Furthermore, Leibniz invented his original methodology for researching the organic body. The methodology is Organism. One should understand the term "Organism" as a kind of mechanism without confusing it with the term "organic body". I'll go into detail about these later in my talk.

Finally, I'll talk about how Leibniz's thought of Organism affected his metaphysical research. His biological thought seems to limit his later metaphysics, that is, monadology. For example, his concept of the dominant monad, which in later years he proposed, does not consistently hold true without the concept of the organic body and

Organism. To escape this difficulty, he had two possible ways. One is to create a new concept independent from the organic body, another is to develop the concept of the organic body together with monadology. I think that later Leibniz philosophy follows the second option, and that this attitude means that his philosophy supports Realism. I'll explain this in detail in my talk.

Slide 3

Let's begin with Leibniz's metaphysical thoughts. First, I'll talk about his ontological system. According to general reading, there are two types of being in his metaphysical system, that is, monad and body. The monad, which does not have an extension, is the simplest components of this world. The term "simple" means that they don't have parts. On the other hand, the body is just a phenomenon expressed by the aggregation of monads. Therefore, since the body needs plural substances to exist, it has parts. That is, the body is not simple but complex.

According to a tradition, Leibniz insisted that unity and being were equal concepts in correspondence with Arnauld. Therefore, only the monad is a veritable being, and the body is just being in appearance, although we can recognize a body. That is, every body is like a rainbow, as Leibniz said. He said as follows: "Bodies, which are commonly taken for substances, are nothing but real phenomena, and are no more substances than perihelia [sun dog] or rainbows, and this is not something that is overturned by touch any more than by sight. A monad alone is a substance; a body is substances, not a substance".

Slide 4

As I have shown in the last slide, later Leibniz's texts uphold that only monads exist, and bodies are just constructed by the monads. According to such texts, some scholars, for example, C. D. Broad, D. Garber, and D. Rutherford, insist that Leibniz changed the opinion about the reality of the body from middle years to later years. In fact, although middle Leibniz often used the concept of corporeal substance, later he came to hardly use the concept. One could consider this change in the reality of body as a shift from Realism in the middle years to Idealism in later years. Namely, according to the Idealist interpretation, later Leibniz claimed any body is just a phenomenon.

On the other hand, other scholars support the Realist interpretation that later Leibniz

also upheld a kind of reality of the body consistently. However, going into detail, there are two types of Realist interpretation. One is that later Leibniz upheld the degree of reality in the body as well as in his middle years. That is to say, according to this type of Realist interpretation, when later Leibniz said that the body is a "well-founded phenomenon", then he did not only claim that the monads found a body, but also that the body has a large reality. Another interpretation is that, although later Leibniz no longer used the name "corporeal substance", instead he came to more often use "living being" and "animal", which mean corporeal substance. Namely, according to this type of realism, later Leibniz changed just the name of the real body and kept the same idea consistently.

My study supports the latter type of Realist interpretation. As shown in the next and last parts, later Leibniz developed his thoughts on living beings and had to realize them. Thereby, he created his monadology together with biology. So, let's move on to Leibniz's biological thoughts.

Slide 5

Then, for Leibniz, what is a corporeal substance, what is an animal, and what is an organic body? First, I will show that animals or living beings are corporeal substances. As shown above, Leibniz insisted the only monad is a substance in some texts. However, he said an animal or living being is also a substance in other text. For example, in a letter to Johann Bernulli, he said "not a flock but animal, not a pond but a fish is one substance". Namely, aggregations such as flock and pond are not a substance, but just substances, and animals such as fish are one substance. For later Leibniz, a corporeal substance, which is often used in his middle years, comes to be an animal or a living being.

Secondly, what is an animal? Leibniz in his middle years often said an animal is composed of an organic body and a substantial form. This substantial form is almost like a soul, which unifies corporeal parts to make an organic body. After he created the concept of the monad, he stopped using the term "substantial form". Instead of it, he used the terms of the soul or dominant monad in later years. And he said "A substance is either simple like a soul, which has no parts; or it is composite like an animal, which consists of a soul and an organic body".

Slide 6

Finally, what is an organic body? Leibniz believed that the organic body surpassed other bodies in complexity because all organic bodies were created by God. Therefore, he called the organic body a divine machine or a natural machine. For example, Leibniz said “Thus each organic body of a living being is a kind of divine machine or natural automaton which infinitely surpasses all artificial automata. For a machine made by human artifice is not a machine in each of its parts. For example, the tooth of a brass wheel has parts or pieces which to us are no longer artificial things and no longer have something recognizably machine-like about them reflecting the use for which the wheel is intended. But the machines of nature namely living organism [les corps vivants], are still machines even in their smallest parts, ad infinitum”. The complexity of the organic body is such that there is a machine in each of its parts everywhere. And this complexity, which is defined as infinity, played an important role in his philosophy, especially, his methodology.

Slide 7

As shown above, Leibniz used the term "organic body" in many texts. Certainly, this term itself is important for our study, but in addition to this term, Leibniz introduced a different term "Organism" in a letter to Lady Masham in 1704, who was a daughter of Cudworth and a friend of Locke. Then, what is the difference of meaning between the terms "organic body" and "Organism"? On the one hand, the term "organic body" always refers to each particular being. On the other hand, although nowadays the term "Organism" also refers to a particular living being, from the end of the 17th century to the start of the 18th century Organism refers to a more general system or structure common to living beings. In the letter to Lady Masham, Leibniz said “Organism, that is to say order and artifice, is something essential to matter produced and arranged by the sovereign wisdom”. In this text, Leibniz identified Organism with a kind of order and artifice, and a kind of essence of the matter. Namely, the term "Organism" refer to a more general being than the term "organic body". Roland, who is a current researcher, already said “Thus ‘organism’ does not refer to any particular organic body, but rather to the mechanism, the organization and the general natural law-governedness which applies to the matter. More than a particular being, Organism is a universal *principle*”.

In other words, one could say that Organism is a methodology used for research of the organic body. Certainly, in the 17th century, the terms of the mechanism and organism did not mean a system of methodology like today but rather a particular structure of being, as shown in the paper "Mechanism of Leibniz" by Current researcher Sasaki. However, one could say Organism is a principle of the methodology and most important element composing it. In this sense, Organism is a kind of methodology used for research of the organic body.

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Then, another important question is whether there is a difference between Mechanism and Organism or not. One could consider that Organism is a mechanism not in the sense of Descartes, but in sense of Leibniz. Let's look at this below.

Generally speaking, the mechanism is a methodology understanding an object as a kind of machine. Furthermore, what kind or type of machine we consider an object to be, determines the character of the mechanism. As shown in the above quote of monadology, Leibniz considered an organic body as a divine or natural machine. Therefore, when Leibniz said "organism is nothing other, formally speaking, than mechanism", Organism was the mechanism considering the object not as an artificial machine but as divine or natural machine.

On this point, Leibniz's mechanism or organism is separated from Descartes' mechanism. This is because Descartes considered the organic body as something like an aggregation of artificial machines, for example, a fountain, a water mill, a clock, an organ, and so on, in *Traité de l'homme*.

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In other words, as Canguilhem said in *La connaissance de la vie*, Descartes understood the organic body as an anthropomorphic machine, which is a human-made for humans. On the contrary, Leibniz understood the organic body as the divine or natural machine, which is God-made and defined by a kind of infinity. Namely, Leibniz's mechanism, that is Organism, is the methodology researching the organic body in itself, in the infinite, and in the natural world. Therefore, one could call this methodology Ideal mechanism.

Slide 10

Up to here, I have shown Leibniz's metaphysical thoughts and biological thoughts. As shown above, Leibniz believed a substance is a monad or living being, the living being was composed of a soul and an organic body, and the organic body was researched using the methodology of Organism. However, in this talk, I still haven't dealt with the soul, which is another element of the living being. Considering the soul, one will come to understand the methodology of Organism is necessary to his monadology.

In later years Leibniz used the term "dominant monad" to deal with the soul in his system of the monadology. In monadology, one can identify the dominant monad with the soul. When Leibniz used the term, he thought the monad dominated other monads to unify the living being.

Then, how does the monad dominate other monads? In his letter to De Bosses, he said "[C]onsidered in terms of the monads themselves, domination and subordination consist only in degrees of perception". From this text, Russell explained that "the dominant monad dominates in the sense that it represents more clearly what the other monads represent very confusedly" in his book *Philosophy of Leibniz*. Certainly, this is a clear answer to the above question.

However, Russell's explanation poses the problem of how one can determine the limit of domination. If the domination could depend on only the degrees of perception, then one cannot determine the limit of domination. This is because, according to his monadology, every monad has a unique degree of perception continuously. Furthermore, if one could perceive the movements of Saturn more clearly than the movements of their own body, then their own body wouldn't include the movements of the body but the movements of Saturn.

Russell missed Leibniz's words "Considered in terms of the monads themselves". These words are important for understanding the domination, because Leibniz didn't say only the perceptions of monads are sufficient to completely explain the domination. Therefore, one needs to consider things other than monads to explain the domination system completely.

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Then, the text in the letter to De Volder would help in understanding the domination.

In the letter, Leibniz said the soul “would not be the soul of the whole thing but only the soul of a separately animated part if it were not at the same time a soul dominating in the whole thing on account of the structure of the whole”. In other words, the whole structure is necessary for domination and limits the function of the dominant monad. The whole structure is something researched using Organism as I showed above.

Therefore, the methodology of Organism is important for determining the limit of a dominant monad. The explanation of domination is insufficient without Organism. Thus, one could say that for Leibniz his biological thoughts were needed for his reasoning on metaphysics.

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Finally, with the above reasons, I'd like to show the possibility of a Realist interpretation of Leibniz's philosophy. According to an Idealist interpretation that only monads are veritable beings and bodies are just being in appearance, it is unnecessary for monadology to deal with the bodies. This is because just his monadology is sufficient for all explanations of his metaphysical thoughts.

However, as shown above, part of monadology is based on his organism, which is the theory of bodies. This fact suggests that Leibniz accepted the reality of a kind of body in itself and that in later years his large interest in living beings is to be understood in relationship with monadology. This is the realism interpretation of monadology. Although this reading would decrease the economic efficiency of Leibniz philosophy, it would be able to explain the possibility of dynamic improvement.