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THE LEIBNIZIAN DOCTRINE OF *VINCULUM SUBSTANTIALE* AND THE PROBLEM OF COMPOSITE SUBSTANCES

Leibniz is famous for his Monadism—a metaphysical doctrine based on the thesis that fundamental bricks of reality are non-extensive simple soul-like substances (monads). Leibnizian Monadism is very radical in respect to composed things: they are not substances because they are dependent beings lacking *per se* unity. It seems the possibility of composite substances is completely excluded from Leibniz's mature metaphysics. Yet in his correspondence with Bartholomew Des Bosses, Leibniz introduces the notion of *vinculum substantiale*—an entity which is supposed to unify monads into a genuine substance.

My goal is to present the conception of a *vinculum*¹ against a broader background of the problem of composite substances. I give a systematic interpretation² of a *vinculum*. According to it, a composed thing is two-sided: it has two inseparable ontological structures. The first is the whole–parts structure and the second is the subject–properties structure. In the case of substances the latter structure should be ontologically prior to the former. A *vinculum* is a subject-of-properties (accidents) determining such a way of composition, which makes a compound entity a true substance. Since Leibniz still thought a *vinculum* unifies independent (existentially and with regard to activity) substances, he was inclined to separate a *vinculum* from the integrated monads and finally conceived it as an additional relatively independent monad-like³ substance.

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¹ “*Vinculum*” is translated as “bond,” but I prefer to use the original word with English articles.

² The results of my systematic analysis are in essential aspects convergent with the historical analysis provided by Brandon Look.

³ But he never said modifications of a *vinculum* were perceptions. A *vinculum* is not a soul-like substance. Its similarity to regular monads consists (paradoxically as it will turn out) in simplicity.

I. THE PROBLEM OF THE POSSIBILITY OF COMPOSITE SUBSTANCES

One of the theses of classical substantialism (of the Aristotelian provenance) states that no substance can be a part of another substance (*Met.* 1039a 3–13). Let us call it “the Mereological Limitation Thesis” (MLT for short). By “parts” in this context I mean the so-called integral parts—physical, extensive “pieces” of a substance.

MLT has two consequences. First, that parts of a composite substances (organs like hearts, livers, lungs etc.) are not substances. Second, that things made up of genuine substances (artifacts like cars, bottles, books etc.) are devoid of substantial character. How can MLT be argued for? I would merely like to signal three provisional ways of argumentation:

1. Any set of substances constitutes an actual plurality of objects, so it cannot be one actual object. But actual unity is an essential feature of substance. Thus, such a set cannot be a substance. If one wants to start from the opposite point of view, one can say: a genuine substance is actually one thing. Actually one thing is actually undivided (is not made up of separate parts) although it can be divided. In other words: substantial unity allows only for potential divisibility. A substance is essentially a separate being. Thus, parts of real substances are not substances.

2. The principle of internal organization of substance (the principle of unity) is a substantial form. If a substance were composed of substances, they would be connected only by a net of relations. The net would be the principle of internal organization (the principle of unity). But relations are accidents, so the net would also be accidental. Such a net by no means is a substantial form. Thus, a thing composed of substances is not organized by a substantial form and is not a genuine substance.

3. An essential mark of substantial unity is that a substance has only one internal source of activity—its own principle of action and reaction to the impact of the environment. A substantial form is such a source. In a thing composed of many substances there are many sources of activity—the activity of a thing composed this way is a result of activities flowing from forms of parts. Therefore, such a thing is not a substance. On the other hand, in the case of a true substance composed of parts, the principle of activity of these parts is a form of a composed substance (because there is only one source of activity in a substance). Parts do not have their own sources of action. Hence they are not substances.

I am aware these arguments should be elaborated more carefully and in their present form can be challenged in many ways. But they refer to basic intuitions underlying MLT: that true unity consists in the unity of actual separate existence, unity of form and unity of action.

The arguments also allow us to find some difficulties in MLT. These difficulties concern the ontological status of parts of substances and the ontological status of artifacts and natural formations like portions of water, rocks, clouds etc. I would like to emphasize some problems related to parts. What are they if not substances? Accidents? They do not play the function of accidents: characterization or modification. A heart does not characterize (modify) a dog in the same way as a dog's size and mass characterize it. But they are not substances because they do not have their own substantial forms. Since a substantial form determines what a thing is, and *what a thing is* is the essence of a thing, integral parts do not have their own essences. An integral part is what it is due to the form of a composed substance to which it belongs. With regard to their ontological status, parts of substances are in between substances and accidents. They are existentially and essentially (i.e. with regard to essence) dependent on substances (and this is why they cannot survive a detachment) but they are not accidents, they are not immanent to substances as accidents are, they do not modify a substance as accidents do. Integral parts do not really act on their own—a substance made up of them acts through them. Furthermore, what does it mean that they are potential (as many scholars used to say)? They are not potential substances in the sense they can become substances after a detachment. Since they cannot survive such a detachment, it is not the case that something is potentially a substance and the same something is actually a substance after the detachment. Does potentiality mean integral parts do not exist yet, but can exist in the future? The answer is no, as they must exist if a substance is really composed of them.

The above considerations show that we should accept a rather strange ontological characteristic of integral parts if we want to hold MLT and to believe in composite substances. Thus, the possibility of the latter is doubted. If the division of substances and accidents is disjunctive, integral parts as not belonging to any category seem to be self-contradictory. Now we have three choices: to deny the possibility of composed substances (Leibniz), to deny MLT (some analytical Neo-Aristotelians), to find some moderate version of MLT (some contemporary Thomists).

The first option is very radical but simple: no composite substances, no problems with integral parts. This path is more attractive for philosophers

who have strong criteria of substantiality. On the grounds of classical substantialism, substantiality consists (*inter alia*) in subsistence and identity independence. A substance does not inhere in anything and has its *own* essence—an essence of substance does not contain a reference to anything else like essence of accident. But a substance can be existentially dependent on other substances (e.g. organisms are dependent on oxygen particles). In modern philosophy, substances were conceived as existentially independent of anything except God. For some philosophers, the existential independence of substances entails its mereological simplicity.

II. MLT AND LEIBNIZ'S MONADISM

Leibniz's famous argument for the existence of simple substances (monads) is very short but has far reaching consequences. Leibniz just says that, "there must be simple substances, since there are compounds, for the compounded is but a collection or an aggregate of simples" (LEIBNIZ 1989b, 643). Complex things exist and are collections of some parts. Therefore, complex things are existentially dependent on their parts. If these parts are also composed, they are dependent on their parts (parts of a lower level of composition). If there were no simples, we would have a vicious regress of existential dependence. Thus, we should accept simple substances. Two important corollaries immediately impose themselves. First, that composed things are not substances because they are existentially dependent. Second, that simples are substances because they are existentially independent. Complex substances are impossible on the ground of Monadism. Thus, Leibniz maintains a stronger version of MLT: substances have no parts at all.

It is worth emphasizing that Leibniz seems to refute the concept of potential part. All parts, even of a perfectly homogeneous thing, are actual: "material atoms are contrary to reason, besides being still further composed of parts, since an invincible attachment of one part to another [...] would not at all destroy the diversity of these parts" (LEIBNIZ 1989a, 456). A composed thing always has actual parts and for that reason it lacks actual unity.

Given that extension consists in having parts external to each other, true substances cannot be extensive and are not bodies (since bodies are essentially extensive). "Extended simple" is a contradiction in terms. There is no real extension at all because aggregates of non-extensive monads are also non-extensive. Therefore, both extension and bodies are phenomena.

Since a monad is not a body, it is a soul-like substance. A monad does not have a mereological structure but is not entirely simple. Monads are subjects-of-accidents. Accidents (properties) are called perceptions. Besides perceptions, each monad is endowed with the inner principle of succession of perceptions called the law of the series. The law of the series determines the order of perceptions and is identified by Leibniz with the essence of monad or even with the monad itself (substance). The sense of the latter identification depends on what we take for “substance.” The term “substance” is ambiguous. Firstly, it can mean a substantial subject—considered as a correlative of accidents. Secondly, “substance” can be the name for “the whole being,” i.e. for a subject characterized by properties. The law of the series can be identified with a substance only in the first meaning of the word. Leibniz did not believe in prime matter understood as a qualityless, empty correlative of form, thus, for him a subject in which the perceptions of a monad inhere is not composed of form (essence) and such prime matter but is identical to essence. The theory of prime matter was supposed to explain substantial changes. Since monads cannot undergo such changes (they can be merely created *ex nihilo* or completely annihilated) there is no place for traditionally conceived prime matter in Monadism. But other concepts of matter play important roles in Leibnizian metaphysics.

The law of the series is identified with the primitive active force—a sort of *nisus* due to which a monad passes from one set of perceptions to another. The presence of such a striving makes a monad a real center of activity. Substances are essentially active. Leibniz interpreted a scholastic form (or *entelechy*) as a primitive active force. On the other hand prime matter is identified with a primitive passive force. In the case of monads, Leibniz identifies prime matter with the capacity of having confused perceptions but I think that prime matter should be interpreted more broadly: as a primitive passive force, prime matter is a principle of receptivity. Form determines what perceptions a monad will have and prime matter is responsible for the fact that a monad can accept some perceptions at all.

I accept Jan Arthur Cover’s and John O’Leary-Hawthorne’s interpretation of the law of the series (COVER, O’LEARY-HAWTHORNE 1999)⁴. According to it, the law is a functional dependence between possible states (perceptions) of a monad. It “transforms” one set of states into another just as a mathematical function transforms arguments into values. This is why the law of

⁴ For the similar interpretation see ROSIAK 2006.

the series determines what perceptions a monad will have in the future if it has such and such perceptions at the present moment. On the grounds of this theory, properties are like values and arguments of functional dependence. The function determines possible sets of coexistent properties but actual properties “infuse” or “saturate” the function. This “saturation” does not change the nature of functional dependence. Because the law itself is a subject of properties (it is an essence), we have a new understanding of the subject–properties structure. The subject is the functional law governing the coexistence of properties. Properties “saturate” the law. In this manner, properties supplement the subject (PIWOWARCZYK 2016).

Given this interpretation of a subject, a form and prime matter can be conceived only as aspects of the law of the series. Form is a function determining the order of succession of accidents, and matter is the capacity of being “saturated” by accidents.

Monads are independent also with regard to their activity. Every change of a monad has only an inner reason (is internally generated). Monads are windowless and they fit to each other not because of interaction but due to pre-established harmony. Hence, we cannot say that an aggregate’s activity is the result of the interaction between monads. Aggregates lack not only substantial unity but even a lower grade of unity relevant for artifacts as they were understood in classical substantialism. Aggregates are just pluralities of substances. They do not have substantial forms and are not centers of activity. So they lack all aforementioned marks of true unity: unity of actual separate existence, unity of form and unity of activity.

III. *VINCULUM SUBSTANTIALE* IN THE MAKING

It seems Leibniz has only one message for the friends of composite substances who search for inspiration in his metaphysics: “Abandon all hope, ye who enter here.” Yet in his correspondence with Bartholomew Des Bosses he experimented with the conception of *vinculum substantiale*. A *vinculum* can be defined functionally as a unifier of many substances into one true substance. Additionally a *vinculum* “reifies phenomena,” but this function is not an object of my interest in this paper.

The immediate impulse for the discussion about *vinculum* was the problem of transubstantiation, but in fact Leibniz deals with a much broader topic: the possibility of composite substances and this topic is more important

for both correspondents (Des Bosses wanted to write a treatise on corporeal substances). What is a methodological status of the theory of *vinculum substantiale*? I think it should be classified as a purely ontological theory. By ontology I mean a philosophical discipline which investigates pure possibilities. An ontologist asks whether some entities are possible and what makes them possible (what are conditions of their possibility). An entity is possible if it is not self-contradictory. Moreover a possibility is understood here in contrast to factuality. An ontologist is not interested in whether entities examined by him really exist—this is the concern of metaphysics which investigates the nature and properties of really existing entities. Leibniz's Monadism is a metaphysical doctrine but his attempts to elaborate the theory of *vinculum substantiale* seem to bear marks of ontology. In many places Leibniz takes in brackets the real existence of vincula and uses hypotheticalal clauses like:

If corporeal substance is something real over and above monads [...], we shall have to say that corporeal substance consists in a certain union, or rather in a real unifier superadded to monads by God. (LEIBNIZ 2007, 225)

Now I come to the question whether this bond, if it exists, is something substantial. (LEIBNIZ 2007, 349)

Leibniz asks: what the conditions for the possibility of composite substances are; what a vinculum as a factor of substantial unity should be etc. He never says that composite substances really exist although he hypothetically assumes composite substances are possible and asks about grounds of this possibility.

The correspondence with Des Bosses is (*inter alia*) a record of succeeding working hypotheses about *vinculum substantiale*. Leibniz many times changed his mind about the nature of a vinculum and it is evident he did not work systematically ("I cannot find now what I wrote to you some time ago about substantial bonds." [LEIBNIZ 2007, 319]; "Forgive me that I write intermittently, and for that reason perhaps do not always satisfy, for I cannot return to earlier writings. As a result, some appearance of contradiction perhaps may arise from time to time." [LEIBNIZ 2007, 373]).

There are three main stages of the development of the *vinculum substantiale* doctrine:⁵

⁵ For a more detailed reconstruction see LOOK, RUTHERFORD 2007, lx-xxxii.

1. In the letter of the 15th of February, 1712 (LEIBNIZ 2007, 278–294) Leibniz states that if a composite substance is some new entity over and above of monads, it must be unified by an entity created directly by God and superadded to monads. This entity is called *vinculum substantiale*. A vinculum cannot arise as an effect of the accumulation of monads because the latter can give existence only to an aggregate.

The supernatural origin of vinculum makes it relatively independent of the monads unified by it. This relative independence sounds strange for contemporary ears but Leibniz means the following: as existing in the world, a vinculum must coexist with some monads and no natural force can take it apart from them. But in the supernatural order, God can sustain a vinculum in existence even without monads or can attach it to another group of monads. The vinculum's dependence on monads is limited only to the natural world.

Monads are not ingredients of a vinculum. This thesis flows from the relative independence of vinculum. A whole (a sum of parts) is absolutely dependent on its parts (it is not a *whole* without parts and is not *this* whole without *these* parts). If a vinculum is miraculously able to survive apart from monads, they cannot be its parts. Monads are only the "requisites" of a vinculum.

A corporeal substance united by a vinculum is composed of form and matter but its form arises from the union of monad's entelechies and its matter arises from the matter of monads. The form and matter of a corporeal substance are in perpetual flux because monads constantly change their states. Thus, a composite substance does not persist in the same way as simple substances do.

A vinculum is called "a substantial thing" or "unifying substance" but it seems Leibniz does not identify it with a corporeal (composite) substance because the latter is composed of monads (monads are its parts).

This conception is rather strange: a vinculum is a substantial thing, in principle independent, yet as existing in the world, it is dependent. Moreover, if a vinculum is a substantial thing, why does it not need to be integrated with monads? How can a substantial thing unify other substantial things? Should not a vinculum be rather a sort of relation?

2. Some of these problems were recognized by Des Bosses. According to him, a vinculum cannot be a substantial thing but it is an accident (relation) because it presupposes the existence of substances. For it is a unifier of substances: if there are no substances, there is nothing to unify. Yet Des

Bosses (as an Aristotelian scholar) was aware that if a *vinculum* unifies monads and gives rise to a true composite substance, it cannot be a regular accident. Thus, he tried to work out a conception of “a substantial mode”: such an entity would be a modification of a substance (or substances) but would not make up an accidental but rather a substantial being. Leibniz rightly refuted this idea as incoherent and firmly emphasized the substantial nature of *vinculum*. No accident can be a principle of substantial unity. In the letter of the 20th of September, 1712, Leibniz says a *vinculum* “formally constitutes composite substance” but “is not a mere modification of monads or something existing in them as subjects” (LEIBNIZ 2007, 269). Nevertheless, it is something in between a simple substance and an accident. A *vinculum* is “a substantiated unity” which can become and perish. The doctrine of relative dependence is still held. In the letter of the 23rd of August, 1713 it finds a new justification: “corporeal substance or the substantial bond of monads, although it requires monads naturally or physically, does not require them metaphysically, since it is nonetheless not in them as in a subject” (LEIBNIZ 2007, 319–321). Notice a corporeal substance is now identified with a *vinculum*. It sounds strange, especially if united monads are not ingredients of a *vinculum*. In the same letter, Leibniz says a composite substance is not “a concurrence of its parts” (LEIBNIZ 2007, 321) and is incorruptible and ingenerable (LEIBNIZ 2007, 319). The ontological status of *vinculum* was significantly strengthened.

3. This strong status is maintained in several last letters. In the letter of the 21st of April, 1714 Leibniz for the first time explicitly states that a *vinculum* consists in primitive active and passive forces (LEIBNIZ 2007, 325), so it is a regular substance with its own accidents as it is emphasized later (dated the 29th of April, 1715): “if there is something substantial in body besides monads, it must be capable of its own modifications” (LEIBNIZ 2007, 337). A *vinculum* endowed with primitive forces is a principle of action of a composite substance. During this time Leibniz thinks the modifications of a *vinculum* depend (relatively) on monads, and stresses the close connection between integrated monads and a *vinculum*: “If that real bond is possible, it should be possible for there to be an influence of the unities on it; otherwise there will be no reason why it can be called the bond of them” (LEIBNIZ 2007, 337).

In the very last letter (from the 29th of May, 1716) Leibniz claims emphatically that a composite substance (as identical with a *vinculum*) is identity independent from monads: “the substance and the composite itself

(for example, that of a man or an animal) remain numerically the same, not only in appearance but in fact, although the ingredients are forever changing and are in constant flux” (LEIBNIZ 2007, 375). Monads do not formally constitute a composite substance. Only aggregates are formally constituted by monads. Formal constitution seems to be a relation of identity dependence: an aggregate is what it is because it is a plurality of monads but a composite substance is what it is due to its own form and matter (LEIBNIZ 2007, 369, 373). In other words: monads do not belong to the essence of a composite substance (LEIBNIZ 2007, 369).

Taking into account these considerations, one can reasonably ask: in what sense is a composite substance composed? *Is* it composed (of parts) at all? A vinculum (a composite substance) constituted only by primitive forces is *per se* unity. Thus, it seems Leibniz does not even need to postulate that monads are really united by a vinculum (LOOK, RUTHERFORD 2007, lxxi). The unity of a vinculum as a regular substance resolves the problem of the possibility of composite substances. But is it correct to think a vinculum is a regular substance in an analogical way as a monad is a regular substance?

IV. WHAT REALLY IS A VINCULUM?

Although Leibniz always calls a vinculum “a substantial thing” and in the later letters he attributes to it essential marks of substantiality, it is not indubitable that a vinculum is a substance. As Brandon C. Look noticed, there are four possible interpretations of a vinculum which can be somehow supported by Leibniz’s words (LOOK 2000):

1. A vinculum as a relation—it would be “substantial” only as something which makes up a substance. A vinculum is not a substance but a principle (a reason of substantiality) of a composed substance.
2. A vinculum as a form—again, it is not a substance but a principle of substantiality.
3. A vinculum as a composed substance in the sense of an object containing parts—united monads.
4. A vinculum as a separate distinct substance attached to a group of monads.

Look refutes the first three interpretations. We could see above that in fact there are very strong reasons for the fourth—preferred by Look. Generally I agree with this interpretation but I do not think it is incompatible with 2.

My approach to the *vinculum substantiale* doctrine is more systematic (in the sense that it is non-historical) therefore I am inclined to reconstruct it as follows.⁶

The problem of composite substances can be considered as the problem of coexistence of two structures in one being. I mean the whole–parts structure and the subject–properties (accidents) structure. Consider an organism. It can be analyzed in terms of its integral parts such as a heart, lungs, a liver, a stomach, and so on. These parts are related to each other in a peculiar way. The set of relations in which parts stand and processes in which they participate determine that an organism is a special type of whole: just an organic one. Yet, an organism is not only a whole of a special sort but also an object of a higher order. As such it can be analyzed in terms of subject and properties. An organism is a subject of such properties as temperature, mass, particular extension, ability to survive, ability for sexual reproduction, ability to absorb food, and so on. The subject itself (an object in abstraction from all properties) is directly determined by essence (for example, horse-ness, felinity or humanity) which determines what properties an organism must have and what properties are accidental.

Notice that the first structure seems to presuppose the second: parts are also subjects-of-properties and this is the source of the problem: If the composed object is one being, in the sense of one subject-of-properties, how can it contain many subjects-of-properties? MLT is an attempt at a quite radical solution: a whole can be a subject–of–properties only if parts are not true subjects-of-properties and vice versa: if parts are true subjects, then the whole is not so.⁷

Anyway, we should start with the assumption that in a composite being one can find two sides constituted by these two different structures and then check whether this assumption is true. We can consider a composite thing as a whole, made up of parts, and as a subject of properties. These two sides are inseparable. The coincidence of structures is an occasion for asking various important questions: how are essences and properties of parts and the relations between them determined by the essence and properties of a higher order object built upon the parts? And vice versa: how are the essence and

⁶ This reconstruction is based on some ideas of phenomenological ontology of composed objects. See INGARDEN 1965, section 43, and ROSIAK 2001.

⁷ Another solution can be based on the reduction of the subject–properties structure to the whole–parts structure. There is no problem of reconciliation then. The whole just has properties of parts because these properties are also parts of parts.

properties of such an object determined by essences, properties and the relations of parts? Does my humanity determine the peculiar properties of my organs and the special relations they stand in or do these organs and relations ground my humanity? It seems that at least in the case of artifacts, the latter possibility obtains: the essence of my bike (“bikehood”) is determined by the fact that it is a machine which has two wheels, a frame, a seat, gears, a chain etc. fastened by screws. Particular properties of my bike (size, possible speed and so on) depend on particular properties of its parts and relations between them. But we saw in section I that some substantialists think that essences and properties of parts of a composed substance are wholly determined by the essence of this substance.

It seems that two general relationships between the two structures in question are possible: either a subject of properties is a ratio of “wholeness” of an object or the whole is the ratio of subjectivity. In other words: the unity of parts (that they make up a whole) can be caused by a subject-of-properties or a subject can be the result of unity of parts. In the first case, relations between parts are determined by the nature of a subject and by properties modifying it. A whole (and parts) is subordinated to a subject, and has its ontological foundation in a subject. In the second case the nature and properties of a subject are determined by the relations between parts. A subject is subordinated to the configuration of parts, or has its ontological foundation in parts.

Supporters of MLT hold that the subordination (grounding) in question excludes the substantiality of subordinated (grounded) entities. On the ground of classical substantialism, such a subordination consists in the determination of the natures of parts by the nature of a subject. If we want to deny MLT and save the substantiality of parts (as Leibniz wanted to do) we should admit that only relations between parts are determined by a subject.

Anyway, a composite thing is a true substance if its subject-properties structure is somehow ontologically prior to the whole-parts structure. Leibniz’s story about *vinculum* is an attempt to work out the theory of such a priority. At the same time this theory was supposed to save the independence of parts. On the other hand a composite thing is not a substance if the whole-parts structure is ontologically prior to the subject-properties structure. Leibniz’s remarks on “semi-substances” concern this case (LEIBNIZ 2007, 351, 356). Notice also that Leibnizian monads and aggregates are one-sided beings: monads are only subjects-of-properties and aggregates are only wholes-of-parts.

I think some troubles with *vinculum* are caused by the fact that Leibniz did not clearly distinguish these two sides of a composed thing. It even seems that he did not recognize that such a thing should have two coexisting structures. His *vinculum* can be identified with the subject-of-properties ontologically prior to the whole composed of monads. Such a subject must be endowed with its own primitive forces and properties and should determine relations between parts—relations which unify monads. Thus, a subject cannot be identity dependent on its parts and it can coexist with many different sets of parts. I think that from the systematic (not historical) point of view, this relative independence should be understood in this way. The thesis that such a subject can exist without any correlated parts is a concession to the doctrine of transubstantiation.

A *vinculum* as a subject-of-properties is not composed of parts, just because it is of a radically different structure. We have two different orders of analysis: analysis in terms of metaphysical constituents like primitive active and passive forces and modifications (accidents) and analysis in terms of integral parts. Thus, we can say a composed substance cannot contain monads as parts if we consider a substance *sub specie* the subject-properties structure. This is why monads are only conditions of a composite substance.

A *vinculum* is “a substantial thing” in the sense it is a subject-of-properties. It is absolute only in the sense it is not an accident. Yet it is generically dependent on parts—it must coexist with some parts (not necessarily with *these* or *those*). In the subject-properties structure, a subject plays the most important role. A subject is constituted by primitive forces. If my view on Leibnizian form and prime matter is correct, then a subject is just form (the law of the series). Yes, Leibniz said a form is the result of the unification of monads’ entelechies,⁸ but he said so before he identified a *vinculum* with a composite substance. A *vinculum*, as endowed with its own forces, is constituted by its own law of the series. Thus, the second interpretation of a *vinculum* is also correct: it is a substantial form of a composed substance because it is a subject determining relations between parts. A *vinculum* cannot be a form only if we take into account the early stage of his doctrine. In fact, a form is a substance, but a substance in the sense of a substantial subject considered in the abstraction of accidents.

My thesis that a *vinculum* can be interpreted as a form is based on the following assumptions. First, the subject-properties distinction is the same as

⁸ This is why Look maintains a *vinculum* cannot be a form.

the essence-properties distinction. Second, the proper correlative of a form is only prime, qualityless, matter, and not parts of the composed substance. The subject of properties was traditionally considered as a composition of form and prime matter. If one, as Leibniz, does not accept prime matter as conceived of in this way, one must admit that the subject is a pure form. Now, if a vinculum is interpreted as being one of two sides of a composed substance, i.e. as a subject of properties, then that vinculum as a subject considered by means of the abstraction of properties is a form.

The above considerations show that the first and the third interpretations are incorrect.

A vinculum as a subject-of-properties should not (in principle) be conceived as an additional substance beside monads. It is rather an object of a higher order—it does not “stand” next to monads, as a next ingredient in the same row. Yet Leibniz was apt to strengthen a vinculum and make it a distinct independent substance because he still believed that parts that are to be unified are monads. A vinculum can be a unifier only if it binds monads in another way than the pre-established harmony does. A vinculum must add something more to monads than harmony. Moreover, it seems that real unification is not possible unless the activity of monads is subordinated to the activity of a vinculum. But then monads would not be independent with respect to their actions. Since *operari sequitur esse* a dependence with regard to activity implies existential dependence and then monads would not be true substances. The law of the series of a vinculum should also operate (as a functional dependence) on the accidents of monads and then the changes that monads undergo would not be internally generated. Monads would lose their substantiality.

Because monads cannot be joined by anything stronger than by harmony, Leibniz put the unity of a composed substance into a vinculum itself. Monads must be completely (in all aspects) independent, therefore the two sides of a composite substance should be separated and the subject-properties structure becomes the structure of an independent substance. In other words Leibniz hypostasized one side (one structure) of a composed substance and made it a regular, monad-like substance. Paradoxically this substance is simple and is not a unifier of anything else. The mature metaphysics of Leibniz is still the inferno for the supporters of composite substances.

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LEIBNIZJAŃSKA KONCEPCJA *VINCULUM SUBSTANTIALE*
A PROBLEM SUBSTANCJI ZŁOŻONYCH

Streszczenie

Artykuł poświęcony jest późnej Leibnizjańskiej koncepcji *vinculum substantiale*. W paragrafie 1 zarysowuję stary problem możliwości substancji złożonych. Jest ona odrzucona na gruncie Monadyzmu, któremu poświęcam paragraf 2. Niemniej w korespondencji Leibniza z Des Bossesem pojawiają się nowe myśli dotyczące substancji złożonych. Na scenę wchodzi *vinculum substantiale*, czyli realna zasada jedności, przetwarzająca agregaty monad w prawdziwe substancje (paragraf 3). W ostatniej części dostarczam systematycznej interpretacji *vinculum*.

Zaczynam od tezy, że każda rzeczy złożona, która nie jest czystą mnogością przedmiotów, musi mieć dwie struktury: strukturę całość–części i strukturę podmiot–własności. W przypadku substancji ta druga jest ontycznie nadrzędna nad pierwszą. *Vinculum* jest podmiotem–własności (przypadłości), wyznaczającym taki sposób kompozycji, który czyni złożoną rzecz substancją. Ponieważ Leibniz ciągle uważał, że *vinculum* jednoczy niezależne (egzystencjalnie i co do działania) substancje, był skłonny oddzielać *vinculum* od zjednoczonych monad i ostatecznie pojął *vinculum* jako dodatkową, względnie niezależną substancję.

THE LEIBNIZIAN DOCTRINE OF *VINCULUM SUBSTANTIALE*
AND THE PROBLEM OF COMPOSITE SUBSTANCES

S u m m a r y

This paper is devoted to the late Leibnizian doctrine of *vinculum substantiale*. In the first section I sketch the old problem of possibility of composite substances. This possibility is refuted on the ground of Monadism (presented in section two). However Leibniz's correspondence with Des Bosses contains new thoughts concerning composite substances. A *vinculum* enters the stage as a real unifier, transforming aggregates of monads into genuine substances (section three). In the last section I give a systematic interpretation of a *vinculum*.

I start with the thesis that every composed thing, which is not a pure plurality of objects, must have two structures: the whole-parts structure and the subject-properties structure. In the case of substances the latter is ontologically prior over the former. A *vinculum* is a subject-of-properties (accidents) determining such a way of composition which makes a compound entity a true substance. Since Leibniz still thought a *vinculum* unifies independent (existentially and with regard to activity) substances he was inclined to separate a *vinculum* from the integrated monads and finally conceived it as an additional relatively independent monad-like substance.

Key words: composite substance; the subject-properties structure; the whole-parts structure; *vinculum substantiale*; Monadism.

Słowa kluczowe: substancja złożona; struktura podmiot-własności; struktura całość-części; *vinculum substantiale*; Monadyzm.

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