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An Aggregate of Substances as an External Object. Leibniz on the Ontological Status of Body or Aggregate

*Un agregado de sustancias como un objeto externo.
Sobre el estatuto ontológico del cuerpo o agregado en Leibniz*

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ABSTRACT

According to Robert M. Adams' interpretation, Leibniz holds that an aggregate of substances exists in the mind that perceives them as one being. For Leibniz, an aggregate is dependent upon a mind since its being is realized by a mental action. Since Leibniz states that being and unity are convertible, and the unity of an aggregate is completely dependent upon mind, Adams takes Leibniz to hold that an aggregate exists in the mind. In this paper, I argue against Adams that an aggregate of substances is an external object. I show that there are passages that support this interpretation. I further make clear that substances in an aggregate have a remarkable feature in common, and it is possible that an aggregate exists in relation to a mind as an external object.

Keywords: Early Modern Philosophy 17th Century, Leibniz, Locke, Metaphysics, History of Physics

RESUMEN

Según la interpretación de Robert M. Adams, Leibniz sostiene que existe un agregado de sustancias en la mente que las percibe como un solo ser. Para Leibniz, un agregado depende de una mente ya que su ser se realiza mediante una acción mental. Dado que Leibniz afirma que el ser y la unidad son convertibles, y que la unidad de un agregado depende completamente de la mente, Adams toma a Leibniz para sostener que existe un agregado en la mente. En este documento sostengo, a diferencia de Adams, que un agregado de sustancias es un objeto externo. Muestro que hay pasajes que respaldan esta interpretación. Además, aclaro que las sustancias en un agregado tienen una característica notable en común, y es posible que exista un agregado en relación con una mente como un objeto externo.

Palabras clave: Filosofía moderna temprana Siglo XVII, Leibniz, Locke, Metafísica, Historia de la física

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Introduction

One of the best known of Leibniz's metaphysical doctrines is that bodies are not substances, but aggregates of substances.¹ Leibniz states the doctrine repeatedly in his mature writings. The doctrine is found in his letters to Antoine Arnauld in 1686-90, and it remained unchanged in his works from this period to the end of his life. What is usually emphasized is his claim that aggregates of substances are mind-dependent, in that their unities are accomplished by a perceiving mind. Though an aggregate of substances is not one substantial unity since it is composed of many substances, a mind perceives them at once and regards them as one thing.

A proper understanding of Leibniz's account of aggregate, however, is not easy to acquire, given that an aggregate is not completely mind-dependent. Namely, it is composed of many substances that exist outside of a perceiving mind, and each of them is certainly mind-independent. In his monumental work, Robert M. Adams discusses how an aggregate is constructed from external substances. He holds that though the being of such an external substance is mind-independent, the being of an aggregate itself is realized through a mental action.² For Adams, this implies not only that Leibniz is an idealist, but that aggregates are mind-dependent and an aggregate exists in a perceiving mind as a mind-dependent entity.

As sophisticated and attractive as Adams's perspective may be, I believe that it actually distorts Leibniz's thought and that a closer look at the relevant texts points in the direction of a rather different approach to the ontological status of an aggregate. I shall argue that when Leibniz ascribes intrinsic forces to aggregates or bodies, he is suggesting that an aggregate, properly speaking, is an external object for a perceiving mind, and thus it exists outside of the mind. Further, I shall contend that an aggregate is external to the mind, though its unity is realized by a mental action.

From my point of view Leibniz's theory of force does not, as Adams suggests, merely account for the intrinsic forces of substances or monads. It also accounts essential properties of aggregates as such. In other words, Leibniz is suggesting that aggregates need to have these forces at the realm in which they exist. In claiming that aggregates have intrinsic forces, then, Leibniz is suggesting that these essential properties of aggregates are in a perceiving

¹ I am thankful to an anonymous reviewer of *Metafísica y Persona* for insightful comments. And I alone am responsible for any errors or inadequacies of the paper.

² See ADAMS, R. M., *Leibniz: Determinist, Theist, Idealist*, New York: Oxford University Press, 1994, p. 246.

mind, if the whole aggregates are to exist in it. But it is strange to assume that entities in a mind are moving around through their intrinsic forces.

My aim will be to make a case for my reading that an aggregate is an external object for a mind. I devote the first section of the paper to the task of showing the problems of Adams's interpretation of Leibniz. In addition to that, I will discuss passages which support that aggregates are external objects for a perceiving mind. Finally, I will explore why an aggregate can exist outside of a perceiving mind though its unity is mind-dependent.

1. Aggregates and their Mind-Dependent Unity

According to Adams, Leibniz provided three characteristics of the ontological status of aggregates. First, aggregates need a perceiving mind to come into existence, and to that extent they are mind-dependent entities. Second, aggregates are aggregates of substances, so they require these substances. Without these substances, the existence of an aggregate would not be realized. Third, aggregates are intentional objects in a perceiving mind, which are distinguished from its perceptual states.

In relation to the first condition, it would be natural enough to begin with an examination of Leibniz's definitions of 'aggregate.' There are at least two, one from a text from 1689–90 and the other from a letter to De Volder:

[F]or an aggregate it is sufficient that many beings, distinct from it, are understood to agree in a similar way with respect to it; namely if *A*, *B*, *C* are considered in the same way, and by that [consideration] *L* is understood to be established, *A*, *B*, *C* will be the things aggregated and *L* the whole made by the aggregation³ (A VI, IV, 998).

[A]n aggregate is nothing other than all the things from which it results taken together, which clearly have their unity only from a mind, on account of those things that they have in common, like a flock of sheep (GP II, 256/Lodge 275).

Now we can understand that something is an aggregate if and only if it is a whole that is given when a mind conceives many things as sharing something in common. A concrete example of a common feature is not provided by Leibniz, but one may think about their shape, color, way of behavior, pla-

³ I used a translation in Paul Lodge's renowned paper. See LODGE, P., "Leibniz's Notion of an Aggregate," *British Journal of the History of Philosophy*, vol. 9, núm. 3, 2001, pp. 467-486, at 469-470.

ce and others. It should be noted that even if many individual sheep have common features, they cannot be aggregated without a mind which regards them as one group.

The definition of an aggregate of substances sheds significant light on its ontological status. At the same time, it leaves important questions unanswered. It seems likely that if we consider some of Leibniz's more detailed comments about how aggregates are formed, we shall be in a better position to understand their ontological status. The more detailed comments arise in the *New Essays*, in which Leibniz forcefully expressed the mind-dependency of an aggregate:

This unity of the idea of aggregates is very genuine one; but fundamentally we have to admit that this unity that collections have is merely a respect ore relation, whose foundation lies in what is the case within each of the individual substances taken alone. So the only perfect unity that these 'entities by aggregation' have is a mental one [...] (GP V, 133/NE 2.12.7/RB 146).

Adams claims that the view that bodies are entities by aggregation entails that the being of a body or an aggregate is mind-dependent. Specifically, it seems that without a perceiving mind, an aggregate of substances cannot be given. Adams takes this mind-dependence of an aggregate seriously and argues that an aggregate of substances exists in a perceiving mind.

Leibniz's claim is that aggregates have their unity, and therefore their being, only in the mind, and that this is true even of aggregates of real things. [...] The ontological status of entities logically or metaphysically constructed from substances, "being nothing but phenomena, abstractions, or relations" [LA 101], is therefore at least partly mental. They exist in the mind and are dependent on being thought of.⁴

It seems to me that Adams argues that the mind-dependency of aggregates entails that they exist in a perceiving mind. Compare what Adams has said about aggregates with what Leibniz says in a letter to Arnauld:

To put it briefly, I hold this identical proposition, differentiated only by the emphasis, to be an axiom, namely, *that what is not truly one being is not truly one being either*. It has always been thought that one and being are mutually supporting. (GP II, 97/AG 86)

In light of this passage and in light of Leibniz's view that the unity of an aggregate is mind-dependent, Adams concludes that for Leibniz an aggregate of substances exists in a perceiving mind. This kind of convertibility of one and

⁴ See ADAMS, R. M., *Leibniz...*, p. 246.

being was already suggested by Aristotle.⁵ There is no doubt that Leibniz consciously follows this traditional thesis. Consequently, it seems advisable to say, with Adams, that Leibniz's acceptance of the claim that an aggregate exists within a mind amounts to his acceptance of the convertibility of unity and being.

2. Aggregates as Intentional Objects

As Adams sees it,⁶ these considerations show a tension in Leibniz's metaphysics. On the one hand, an aggregate is actually composed of many substances. It is not a mere phenomenon or illusion. On the other hand, it still needs a perceiving mind to actualize its unity. The first aspect seems to suggest that an aggregate is a mind-independent entity. Even if there is no perceiver, many substances which constitute the reality of an aggregate still exist. But the second aspect suggests the ontological dependence of an aggregate. It seems that without a perceiving mind, an aggregate of substances cannot be given. Indeed, Adams takes the second seriously, and argues that an aggregate of substances exists in a perceiving mind. But Adams also takes note of how an aggregate is different from a perceptual state by drawing attention to the following passage from a letter to Sophie Charlotte:

But the nature cannot, and the divine wisdom does not want to trace these figures of limited nature, which presuppose something that is limited and therefore imperfect, in the artifices of God. Nevertheless they take place in the phenomena or in the objects of limited minds [...] (GP VII, 563).

From passages like these, Adams draws the following conclusion:

The first thing to be said about phenomena, as Leibniz conceives of them, is that they are *intentional objects*. In this respect (though of course not in all respects) I believe that Leibniz's phenomenalism is a forerunner of the phenomenalism of Kant. Leibniz certainly did not devote as much attention to the relevant concept of "object" as Kant did, though he did at least once characterize "phenomena" as "*objects of limited minds*" (GP VII, 563, italics added). [...] A simple identification of phenomena (and hence of bodies) with perceptions, or with collections of them, would position Leibniz's phenomenalism closer to the idealism of Berkeley. The interpretation of

⁵ See *Metaphysics* 1001a4-b26, 1003b23-1005a18 (translation by Hugh Tredennick [Harvard University Press, 1933], at 133-7 and 149-59).

⁶ See ADAMS, R. M., *Leibniz...*, p. 241 and 244-247.

phenomena as intentional objects, which I favor, requires a more nuanced account of their relation to perceptions.⁷

In short, according to Adams, Leibniz doesn't identify phenomena with perceptions, considering the former not as mental states or actions, but as objects presented to minds. Leibniz's statement that phenomena are objects of minds forms the basis on which Adams will say that Leibniz does not regard phenomena as mental states. Adams bolsters this claim by reference to a note on Malebranche:⁸

Nevertheless I think that there is always something in us which correspond to ideas that are in God, as well as phenomena that place in bodies [...] (RML 321-2).

So, a body or aggregate is clearly distinguished from mere perceptual states. It exists as a phenomenon or an intentional object, which is perceived by a mind. It is given to the mind as a correlate of perceiving action, which is present. But still it exists within a mind. It exists insofar as it is perceived as an object. For this reason, it cannot be considered as mind-independent.

One may wonder how an intentional object in a mind can be an aggregate of substances at the same time. Adams's discussion of organic body seems to be a key to understand his view that a body or aggregate is in a mind. According to Adams, any substance perceives its organic body as its own.⁹ There is "a relation of one-to-one mapping"¹⁰ between the substance and its organic body in such a way that the inner properties which the substance has correspond to the physical properties of the organic body. Not only that, any substance perceives an inorganic body, in which there are organic bodies that correspond to other substances that exist outside of the perceiving substance. Since this inorganic body corresponds to many external substances, it is regarded not only as an aggregate of organic bodies, but an aggregate of these substances.¹¹ Since it corresponds to external substances, it is supposed to have more reality than an aggregate of things that do not exist (say, a

⁷ ADAMS, R. M., *Leibniz...*, p. 219.

⁸ ADAMS, R. M., *Leibniz...*, p. 220.

⁹ ADAMS, R. M., *Leibniz...*, pp. 286-287.

¹⁰ See ADAMS, R. M., *Leibniz...*, p. 286.

¹¹ In Rutherford's article, we can find a sophisticated explanation of Adams' theory. See Rutherford, D., "Leibniz as Idealist", in *Oxford Studies in Early Modern Philosophy*, núm. 4, 2008, p. 160 "Roughly, my perception as though of a body will be veridical, or of certain monads, just in case there exist monads that collectively represent themselves (via representations of their bodies) as an exhaustive decomposition of the perceived body into an infinity of smaller organic bodies. Under this condition, the external monads constitute an aggregate that is perceived by me as an extended material thing."

group of unicorns).¹² But still it is an intentional object in a mind, and in this point it is differentiated from things that exist outside of a mind. After all, an aggregate of substances, for Adams, is a phenomenon in a mind, which has some reality that is grounded upon the corresponding substances that exist outside of the mind.

3. Problems in Adams's Interpretation

Adams's reconstruction is not without attractions. It promises to distinguish perceptions as mental states, and phenomena as intentional objects, by holding that phenomena are also in perceiving minds. Moreover, in doing this, it explains how aggregates are ontologically mind-dependent. In addition to that, Adams seems to have introduced the claim that aggregates are "in" a perceiving mind in a careful way. He seems to assume that this in-relationship is not transitive. In other words, according to Adams's interpretation, even if every aggregate is in a perceiver, it does not follow that any substance which constitutes an aggregate, each is internal to a perceiver since it is supposed to be in an aggregate.¹³ If Adams implied to claim that a substance is internal to a perceiver, in effect, such a statement seems to violate the doctrine of mutual independence of all created monads. It seems highly unlikely that Leibniz meant anything so nearly contradictory in saying that aggregates are mind-dependent. For example, it seems unlikely that he took the assertion that the unity of an aggregate is mental to imply that an infinite number of other simple substances are actually in our spirits! But in fact, Adams carefully introduces his discussion of a set of pencils to explain the ontological status of an aggregate.¹⁴ For him, an aggregate is more analogous to the set of pencils rather than pencils themselves. In the case of pencils, each pencil exists dependently from a mind, but a set of pencils is mentally constructed out of these pencils. By the same token, Adams might suggest that an aggregate of substances exists in a perceiving mind, while each of substances of that aggregate exists outside of that mind.

However, even if we grant that point, we are still able to find further problems in the Adamsian view. Chief among them is that Leibniz gives an explicit indication that bodies have intrinsic forces, which alone is sufficient for

¹² ADAMS, R. M., *Leibniz...*, p. 245.

¹³ Glenn Hartz argues that in many passages Leibniz suggests that bodies literally contain substances, and this "containment doctrine" cannot be explained if we suppose that bodies are phenomena or appearances in minds. See HARTZ, G., *Leibniz's Final System*, New York: Routledge, 2007, at 99-102.

¹⁴ ADAMS, R. M., *Leibniz...*, pp. 244-245.

their motions.¹⁵ Given that Leibniz identifies bodies with aggregates of substances, aggregates must also have such forces. Leibniz suggests that bodies have intrinsic forces in the letter to De Volder of June 20 1703:

Meanwhile I discover that it is further true in phenomena and derivative forces that masses do not so much give new force to other masses as they give determinate direction to the force already existing in them, so that one body is repelled away from another by its own force rather than being propelled by the other. (GP II, 251/L 530)

According to the passage, bodies have their own forces to act. And it is natural to suppose that these forces exist outside of a perceiving mind, causing movements to arise. Thus Glenn Hartz takes the passage to support Leibniz's realistic view that bodies are not mere phenomena for a perceiving mind.¹⁶ Here some may think that we should not interpret Leibniz's late metaphysics of monad in light of the quoted passage. According to Daniel Garber, it is anachronistic to ascribe the monadological view that every created substance is simple and immaterial to some of Leibniz's texts, given that his metaphysics has a remarkable developmental history.¹⁷ So one may suppose that Leibniz did not hold that all the substances are immaterial in 1703, a year before his declaration that "there is nothing in the world except simple substances and, in them, perception and appetite" (GP II, 270/L 537). But even later, Leibniz still argues that bodies have intrinsic forces to move, as we see from a passage from his last letter to Clarke of 1716, where he implies that a body continues to have its own force, or that it always has an intrinsic force. More precisely, he states that bodies do not lose their force since "their parts receives it, being shaken internally by the force of the concurrence" (GP VII, 414/L 713). His point is that even when a body seems to lose some of its force, the total amount of the force stays the same since its inner motions accelerate. Thus in the latest period, Leibniz still holds that the kinetic energy of a baseball, for example, does not exist in my mind. That energy is supposed to cause the motion of the baseball. Does my mind have a causal power to realize this motion? In a sense it is true, since for Leibniz, my mind produces all the perceptions spontaneously. But it is not plausible to suppose that many physical forces exist in my mind, and each of them causes a specific motion.

¹⁵ Hartz also emphasizes that phenomena or appearances in minds cannot have intrinsic forces, and that if we take bodies to be phenomena, it is impossible for bodies to have forces. See HARTZ, G., *Leibniz's Final System*, pp. 146-147.

¹⁶ See HARTZ, G., *Leibniz's Final System*, p. 207. Although I understand that some of Hartz's discussions of Leibniz's texts are persuasive, I do not fully accept Hartz's interpretation that Leibniz is a theory pluralist who presented both idealism and realism as metaphysical hypotheses. And, due to space limitations, I do not attempt to examine his interpretation critically in this paper, either.

¹⁷ See Garber, D., *Leibniz: Body, Substance, Monad*, New York: Oxford University Press, 2009, p. xix.

The force of the baseball causes the straight projectile. The force of the bat causes the change of the projectile of the baseball, and these two forces somehow coexist within my mind and change the projectile of the baseball at the appropriate time, which seems odd.

To be sure, Adams seems to address the problem we have seen above, when he discusses primitive and derivative forces in the last part of his book. He seems to imply that all of Leibniz's discussions of forces can be explained in terms of intrinsic powers of monads or simple substances. For Leibniz, monads have powers to produce their future states. Since any aggregate is composed of monads, it may be possible to interpret that whenever Leibniz claims that a body has a force, it merely implies that each of the substances, composing the body, has some intrinsic power to produce its future states. Thus Leibniz's theory of force is completely consistent with his metaphysics, according to which, strictly speaking, only monads and their inner properties exist. Moreover, Adams seems to suggest that although a primitive force only pertains to a substance, a physical derivative force pertains to a body or an aggregate. His suggestion is that even though substances only have perceptual states and tendencies to have new states, they "correspond" or "express" a physical derivative force of the body that contains the substances.¹⁸ Thus there is a regular relationship between all the inner states of monads in a body, and the quantity of its physical derivative force.

s4. Aggregate as an External Object

Considering the oddness of the statement that bodies have immanent forces to act, but still exist in a perceiving mind, we are inclined to admit the externality of bodies or aggregates. Given the suggestion above about the difficulties of Adams's view, it is easy to think that an aggregate of substances is in fact external to a perceiver. If an aggregate of substances is external to a perceiver, this perceiver must perceive it as an external object.

Now we need some textual evidence for this interpretation. It is true that without attempting to specify what the expressions might mean, Leibniz uses the expressions 'external object [*objet externe, object externe*],'¹⁹ 'external thing

¹⁸ ADAMS, R. M., *Leibniz...*, p. 384.

¹⁹ See GP III, 380, 392, 561, GP IV, 453, 545, GP V, 99/NE 2.1.1, GP V, 147 = NE 2.19.1, GP VI, 577, 593. Leibniz often uses the expression 'immediate external object' to refer to God, since all the other external objects are perceived with the mediation of God and the preestablished harmony. Now God clearly exists outside of our minds independently (GP I, 383, GP IV, 453,

[*chose externe*],²⁰ ‘exterior object [*objet extérieur*],’²¹ ‘exterior thing [*chose extérieure, res exteriora*]’²² and ‘thing outside of us [*chose hors de nous*].’²³ Given this, one might propose that these expressions refer to aggregates of substances. For example, in the *New Essays*, Leibniz states explicitly that when a mind has a sensation, it also perceives an external object.²⁴ This seems to be a good evidence that Leibniz takes an aggregate of substances to be external. This is the passage in question:

I shall say then that it is *sensation* when one is aware of an outer object [*on s’apperçoit un objet externe*], and that *remembrance* is the recurrence of it without the return of the object [...] (GP V, 147/NE 2.19.1/RB 161)

There is a problem in this passage: it refers to “an outer object,” or in my translation and terminology, “an external object” rather than the plurality of external objects. So what the mind perceives or senses is supposed to be one thing rather than many things. Thus the expression ‘*un objet externe*’ doesn’t refer to a plurality of substances. Another option is to understand an external object as a single substance. According to this reading, Leibniz in the passage suggests that with respect to a certain group of substances, each of which exists independently of the others, a mind perceives each substance as an external object. However, there is a problem in this reading. In the passage of the *New Essays*, Leibniz states that “*on s’apperçoit un objet externe*,” which is fairly translated by Peter Remnant and Jonathan Bennett as “one is aware of an outer [or external] object.”²⁵ And this statement implies that there should

GP VI, 593). So it is reasonable to suppose that the other external objects also exist outside of perceiving minds.

²⁰ See GP IV, 484 and 544.

²¹ See GP V, 101/NE 2.1.2, GP V, 147/NE 2.19.1, GP V, 237/NE 2.29.2, GP V, 247/NE 2.31.1, GP V, 354/NE 4.2.14, GP VI, 494, 503. So far I did not see any substantial difference between ‘external object’ and ‘exterior object’.

²² See GP II, 12, 90; III, 386; IV, 202, 452, 458, 574; V, 245/NE 2.30.2, GP VI, 289.

²³ See GP I, 370 and 372; III, 623; V, 159 and 354-5. Also see DM 12 and 14.

²⁴ It is appropriate to see how Leibniz has used the term ‘external object.’ In the earliest stage of his career, he had a broader concept of external object. In 1663-4, even inner sensations and volitions are counted as external objects (A VI, I, 53-5).

Around 1676, he considered the reality of external world, and whether there are things outside of us or not (A III, I, 313). During this period, Leibniz said that exterior objects produce sensations in us. Later, however, he explicitly stated that external objects do not stimulate our souls to produce perceptions. See A VI, IV, 1573 (1686). In brief, after 1676, Leibniz usually used the term ‘external object’ or ‘exterior object’ to refer to something that exists outside of minds. In 1670s and 80s, it seems that Leibniz borrowed these terms from Malebranche, while he clearly used the same terminology in the *New Essays* inspired by Locke himself.

²⁵ In the Gerhardt Edition, the earliest use of term ‘apperception’ is found in the *New Essays* (1703-5), followed by several others (GP V, 46/NE Intro; GP V, 69/NE 1.1.20; GP V, 109/NE 2.2.1; GP V, 148/NE 2.19.4; GP V, 222/NE 2.27.14; GP V, 227/NE 2.27.23; GP IV, 532 (1705); GP III, 307 (May 28 1706); GP II, 311n (July 11 1706). Leibniz is talking about the status in which a soul has perceptions but lacks apperceptions or reflections. As for how apperceptions arise,

be some kind of awareness for the object, and there is a remarkable problem when we take the passage to discuss a case of being aware of one simple substance or monad. Suppose that I am perceiving a desk. According to Leibniz, this desk is an aggregate of simple substances or monads, rather than one monad. I can be aware of the brown color, oblong shape, and so on. But it sounds odd to say that I can pick out one monad from this aggregate and specifically be aware of it. Here some may suppose that Leibniz is talking about a special kind of "awareness," given that he accepts the framework of small perception. In this interpretation, Leibniz thinks that we are always aware of tiny objects even if they are considered as invisible and we do not notice them at all. But the interpretation does not fit with the quoted passage, where Leibniz is talking about ordinary sensation following discussions in Locke's *Essays*.

And we need to confront another problem if we follow Adams's line of interpretation. He suggests that my mind can perceive one monad by perceiving its organic body. For example, Adams argues that when I see the body of a kitten, I perceive the soul or dominant monad of that kitten by perceiving the body.²⁶ When I see the kitten jump upon the ball, I perceive the mental properties of its soul. In other words, I understand what the kitten wants or desires to do by perceiving its body. However, in the case of perceiving an inorganic body like my desk, the organic bodies that make up the whole inorganic body are too tiny to be aware of.²⁷ Now, in the passage of the *New Essays*, Leibniz discusses sensations in general, and he does not consider the perceptions of organic bodies particularly. Therefore, Leibniz is probably not talking about the perception of one monad in this passage. In this context, we should not take an outer or external object as one monad.

Even if we suppose that we perceive one corporeal substance as an external object, the same kind of problem arises. In the framework of Leibniz's metaphysics, if a corporeal substance exists, then it exists as an organism, and inorganic bodies are aggregates of corporeal substances. An organic body in

Mark Kulstad argues that they are given when souls reflect upon the previous perceptions (Kulstad M., "Leibniz on Consciousness and Reflection", *The Southern Journal of Philosophy*, núm. 21(S1) 1983, pp. 39-66, at 54).

²⁶ ADAMS, R. M., *Leibniz...*, pp. 286-7.

²⁷ Leibniz supposes that all inorganic bodies are aggregates of organic bodies. C.D. Broad uses the term 'panorganism' for this idea (BROAD, C.D., *Leibniz: An Introduction*, ed. by C. Lewy Cambridge: Cambridge University Press, 1975; cf. RUTHERFORD D., *Leibniz and the Rational Order of Nature*, New York: Cambridge University Press, 1995, p. 201). Basically, Leibniz does not specify the size of organic bodies in an inorganic body. In some passages, Leibniz seems to suggest that inorganic bodies are aggregates of kinds of microbes (GP II, 193; VII, 502). However, it is ridiculous suppose that, for example, a one millimeter wood tip has an organic unity for Leibniz. These "microbes" must be much smaller.

my desk, for example, is so minute that I can hardly be aware of it. Therefore, it is also difficult to conclude that the expression 'an external object' refers to a corporeal substance in that context.

What is another candidate for "an external object"? According to Leibniz, when we are aware of inorganic bodies, these bodies are supposed to be composed of many substances. This point suggests that if a mind perceives its external object, it is not one substance, but a plurality of substances. In particular, it suggests that a mind is aware of an external object, which is a plurality of substances, each of which exists independently of others. Here I used the term 'a plurality of substances' to mean something different from an aggregate.²⁸ It is better to consider the notion of matter or a plurality of substances suggested by Rutherford:

The claim that the unity of an aggregate is ideal, or mind-dependent, follows directly from Leibniz's theory of relations. A plurality of things is merely a plurality, and not a unity, unless it is represented as one, through relations supplied by a mind.²⁹

A plurality of substances that does not have a unity, whereas a body is an aggregate of substances that is perceived as one thing. Unlike an aggregate of substances, matter or a plurality of substances is a mind-independent entity.

I do not say that "A unity exists in a mass of extension," or rather of extended things, or, as I would prefer, in a multitude of things, but rather innumerable unities (GP II, 276/Lodge 321).

So before a mind perceives many substances as one thing, there are merely many substances as themselves and nothing else. There is no unity among them, and each of them exists independently. So, this reading does not entail that a human mind can be aware of one substance whenever it has a sensation, since it implies that when I have a sensation of my desk, I am perceiving a plurality of simple substances. Given that for Leibniz, a desk is not a sub-

²⁸ In fact, Rutherford admits that Leibniz does not always use the terms 'aggregate' and 'mass' (or a plurality of substances) in different contexts. See Rutherford (2007), 178-9n. I agree with Rutherford in that Leibniz's terminology for these is not always consistent. In some passages, Leibniz seems to conflate an aggregate with a plurality of substances:

We can therefore conclude that a mass of matter is not truly a substance, that its unity is only ideal and that (leaving the understanding aside) it is only an aggregate, a collection, a multitude of an infinity of true substances, a well-founded phenomenon. (GP VII, 564)

In this passage, for example, the expression 'a mass of matter' seems to refer to an aggregate of substances, which has a mind-dependent unity.

²⁹ Rutherford (2007), 176.

stance, but consists of many simple substances, we know that this reading explains my perception better than the previous reading does.

However, I think it is not possible to take a plurality of substances as one external object, since by definition, it is supposed to lack any unity. According to Rutherford, a plurality of substances exist before a mind regards them as one thing, and this group of substances does not even have a mental unity. Since there is no unity among these substances, it is not reasonable to consider them as one external object. In other words, when Leibniz talks about one external object, he must regard it as something endowed with a certain kind of unity, if we suppose that Leibniz discusses an external object here by using a rigorous and exact terminology. Considering the difficulty in taking 'an external object' as one substance, and considering the difficulty in taking it as a plurality of substances, it makes sense to take a second look at the possibility of taking an aggregate to be an external object for a perceiving mind.

One of the worries is that in the *New Essays*, Leibniz tends to use his terms following Locke's terminology. Given this, Leibniz may not use the term 'external object' in a strict sense, in his own metaphysical framework. Second, we have just picked out one short passage for interpretation. So one might suggest that we have to show more textual evidence to support the view that an aggregate of substances is an external object for Leibniz. Thus it seems that we need to introduce another passage concerned with the ontological states of an aggregate. I will take note of the following passage from *On What is Independent of Sense and of Matter*:

Instead, our lack of attention causes us to take sensible things for the only true ones. It is also well to observe that if I should discover some demonstrative truth, mathematical or other, in a dream (and this can in fact be done), it would be just as certain as if I were awake. This shows us that intelligible truth is independent of the truth or existence of sensible and material things outside of us [*l'existence hors de nous des choses sensibles et materielles*] (GP VI, 503/L 549).

In this passage, Leibniz discusses 'sensible and material things' outside of our minds. It seems that these sensible and material things are external objects for our minds. Now we have to consider what is a sensible and material thing in this context. One possibility is that this expression refers to a simple substance or monad. One serious problem with this reading, however, is that a simple substance or monad is not sensible, and not material, either. Leibniz explicitly states that simple substances are immaterial and not extended.³⁰ Also, as we have seen in section 3, we are usually not aware of one simple substance or monad. So it is unnatural to state that it is "sensible." For these

³⁰ See GP III, 367.

reasons, we should not take a sensible and material thing to be a simple substance or monad.

The second possible reading is that the expression ‘sensible and material thing’ refers to a corporeal substance. Indeed, unlike a simple substance, a corporeal substance is material by definition. Though it has a substantial unity, it is also extended. But, as we have seen in section 3, some corporeal substances are too tiny, and we cannot be aware of them. My desk is supposed to be an aggregate of miniscular corporeal substances, for instance.

Another possible reading is that the expression ‘sensible and material things’ refers to a plurality of simple substances or monads. To be sure, if we take a single sensible and material thing to be a plurality of simple substances, as we have seen in section 3, there will be a problem: a plurality of simple substances do not even have a mind-dependent unity, so they can neither be a single entity per se, nor be a mind-dependent single entity like an aggregate. But in this reading, a plurality of simple substances are “sensible and material things,” which are not a single entity. Thus the problem we addressed in section 3 does not matter here. However, there is another problem with this reading. The expression ‘sensible and material things’ suggests that there are many sensible and material things, and any one of them is still sensible and material. So, not only a plurality of sensible and material things, but one of them should be sensible and material. Now, if we take sensible and material things to be a plurality of simple substances, then one “sensible and material thing” is either a simple substance or another plurality of simple substances, which is a proper subset of the original group of simple substances. But if we take it as a simple substance, we confront a serious worry, since generally speaking a simple substance is neither sensible nor material. Also, it is unnatural to take it as a plurality of simple substances, since a plurality of simple substances do not even have a mind-dependent unity, so it is difficult to regard them as one sensible and material thing.

Thus we are in a position to read this passage in accordance with the claim that an aggregate of substances exists outside of a perceiving mind as a material thing. Some aggregates of substances are sensible, and we can understand “sensible and material things” in the passage as aggregates of substances. This reading solves problems with other readings. Given an aggregate of substances is material (since it is identical to a body), and often sensible, it is natural for Leibniz to discuss material and sensible aggregates of substances.

The last passage to suggest that bodies are external objects for perceiving minds is found in a letter to Isac Jaquelot of February 9, 1704: “The reason why infants do not form the thoughts of adults is that their thoughts are parallel to external phenomena in relation to their bodies” (GP III, 465).

The expression 'external phenomena' seems to be contrasted with 'internal phenomena,' which Leibniz used in other passages. These internal phenomena, as we have seen, are produced only by a perceiving mind. But it should be noted that Leibniz has another notion of phenomenon, and this kind of phenomenon cannot be produced only by a perceiving mind. We can read off this notion of phenomenon from a passage in a letter to Bayle, for example.

Further, there must be simple beings; otherwise there would not be composite beings or beings through aggregation, which are phenomena rather than substances, and exist by convention rather than by nature (that is, morally or rationally rather than physically) as Democrite put it (GP III, 69).

Here, phenomena or beings through aggregation presuppose the existence of many simple beings or simple substances. Since they cannot be produced solely by one perceiver, they are clearly different from internal phenomena which a perceiver can produce by itself.³¹ Now in this passage, Leibniz explicitly discusses aggregates of simple substances, and takes them as phenomena. In light of the fact that these "phenomena" are clearly different from internal phenomena in perceiving minds, and in light of the fact that external phenomena are contrasted with internal ones, it is reasonable to suppose that Leibniz takes external phenomena to be aggregates of simple substances.

So, if Leibniz uses the expression 'external phenomena' to refer to aggregates of simple substances, this also suggests that aggregates are external for a perceiving mind. Though the expression 'external phenomena' itself may seem to be odd (given that our intuitions might tell us that all phenomena are internal), it is reasonable to suppose that Leibniz regards aggregates as phenomena in that they are not mind-independent substances, and yet takes them to be external for a perceiving mind.

In brief, so far, we have seen three passages to support our interpretation concerning the ontological status of aggregates.

³¹ Rutherford also refers to this passage in the letter to Bayle, though he does not translate it (RUTHERFORD, D., "Phenomenalism and the Reality of Body in Leibniz's Later Philosophy", in *Studia Leibnitiana*, vol. 22, núm. 1, 1990, pp. 11-28, at 19. He mentions it as evidence that Leibniz considers an aggregate of substances which cannot be reduced into perceptions.

5. How can an Aggregate be External?

However, one may argue that the three passages we have seen in section 4 do not necessarily justify the claim that an aggregate is an external object, since Leibniz's texts are extremely voluminous and it seems that Leibniz's terminology is not always rigid. This suggests that these three passages are not sufficient to conclusively validate one way of reading. Though I still think that provided I could not find a passage that explicitly undermines this reading, and these three are good evidence, it is true that we can point out another problem concerning how an aggregate of substances can be external to a perceiver while it is mind-dependent. In this section, I will show that the reading that an aggregate is an external object is not only supported by some passages, but it can be theoretically supported in the framework of Leibniz's metaphysics.

The complexity alluded to a moment ago is that a Leibnizian aggregate is mind-dependent. This is easily shown; many substances form an aggregate if and only if a perceiving mind regards them as one thing. The main problem is how to reconcile the externality of an aggregate and its mind-dependence. So we have to reexamine the mind-dependence of aggregates. Recall the definition of aggregate in which Leibniz refers to the mind-dependence:

This unity of the idea of aggregates is very genuine one; but fundamentally we have to admit that this unity that collections have is merely a respect ore relation, whose foundation lies in what is the case within each of the individual substances taken alone. So the only perfect unity that these 'entities by aggregation' have is a mental one [...] (GP V, 133/NE 2.12.7/RB 146).

In discussing this explanation of aggregates we emphasized that, despite its vagueness, the term 'relation' is more appropriate to characterize the essential property of aggregates. Before discussing the formation of aggregates in detail, we need to see the theory of relation in Leibniz briefly.

Aristotle already stated that the ontological status of relation is not as robust as that of attributes or accidents of substances, since relations do not exist independently without a mind which conceives them.³² Leibniz follows this idea, and states that relations are mental or ideal entities. However, Leibniz does not state that relations are arbitrarily constructed by minds, and

³² See *Metaphysics* 1020b26-1021b12 (translation by Hugh Tredennick, Cambridge: Harvard University Press, 1933), 261-7.

they do not have any real foundation at all. Now we have to see his famous statement that there is no purely extrinsic denomination.³³

To be in a place is not a bare extrinsic denomination; indeed, there is no denomination so extrinsic that it does not have an intrinsic denomination as its basis. This is itself one of my important doctrines (GP II, 239-40/L 527).

Concerning this abstract claim, Leibniz introduces an example, which is supposed to be helpful to understand the claim. One man went to India, leaving his wife in Europe, and deceased. According to Leibniz, the wife's intrinsic denominations must change with his death.³⁴ When he was alive, she was his spouse, which is one of relations or extrinsic denominations between them. But when he passed away, she became a widow. The terms 'spouse' and 'widow' express a relation of two persons. His death not only changes her extrinsic denomination or relational property. She must have some correspondent change of inner state.

Given Leibniz's thesis concerning extrinsic denomination or relation, we have to conclude that internal properties of substances always underlie their relations. We are now in a position to move to a full analysis of Leibniz's conception of relation. The idea we have been developing is roughly that x is related to y when there is a certain property p in x , and q in y , which are foundations of their relation. If this understanding of relation is correct, then we are in position to state that internal properties always accompany relations, and for any relation, there is an internal property of a subject which corresponds to that relation.

Concerning the thesis that there is no purely extrinsic denomination, I will take note of another thesis that any substance expresses other substances in the universe. Indeed, the thesis concerning extrinsic denomination may be regarded as a result of this thesis of universal expression.³⁵ In a letter to De Volder, Leibniz states that "the essential ordering of individuals" is necessarily expressed by any individual in such a way that the universe could be read in it (GP II, 277-8). Thus for Leibniz, any substance "expresses" other substances in the universe. 'Expression' is a general term, which can be applied even to a relationship between abstract entities (e.g., circle and ellipse).³⁶ However, the

³³ Also, see GP II, 250; VII, 311; V, 211/NE 2.25.5. Dennis Plaisted gives a focusing research for this topic. See PLAISTED, D., *Leibniz on Purely Extrinsic Denominations*, Rochester, NY: University of Rochester Press, 2003.

³⁴ See GP VII, 321-2.

³⁵ I borrowed this term from the work of Rutherford. See RUTHERFORD, D., *Leibniz and the Rational Order...*, pp. 187-8.

³⁶ See GP I, 383 and KULSTAD, M., "Leibniz's Conception of Expression", in *Studia Leibnitiana* vol. 9, núm.1, 1977, pp. 55-76, at 57.

expression in this passage is taken to be a perception of substance, given Leibniz uses the phrase ‘perception or expression’ when he discusses the expression of substance about others or the universe.³⁷ It seems that in this context Leibniz uses ‘perception’ and ‘expression’ interchangeably. One may doubt if non-spiritual substances can have mental activities for expressing the others. Indeed, some substances are not souls, and they do not have sensations, for instance. But according to Leibniz, even these substances at least have so-called “small perceptions” which human minds also have when they sleep deeply.³⁸

What kind of perceptions do substances have when they form an aggregate? To be sure, an aggregate consists of a relation, and any relation depends upon a mind which conceives it. But more precisely, an aggregate of substances is formed by the relation among a perceiving mind and other substances which constitute that aggregate. The mind perceives these substances as one being. Any of these substances perceives the perceiving mind as perceiving it as a member of the aggregate. Also, any of them perceives other members as perceiving the mind as perceiving them as members of the aggregate. In other words, a substance in the aggregate perceives another substance in the aggregate as perceiving the same mind as regarding themselves as members of the aggregate.

Thus, substances in an aggregate must perceive the mental action which conceives them as one being. It is true that the mental action of a perceiving substance which regards many substances as one being does not, strictly speaking, cause any change in these substances. But there must be some correspondent properties of substances which express the mental action of forming an aggregate. Even though any substance is causally independent of other created substances, nevertheless any change of a substance corresponds to a change of any other substance in the universe. What we can learn from this statement is that when a mind regards many substances as one being, any of these substances has internal change corresponding to this mental action, and this internal change can be the basis of the formation of the aggregate which these substances are supposed to make up.

In general, “one thing expresses another (in [Leibniz’s] terminology) when there exists a constant and fixed relationship between what can be said of one and of the other” (GP II, 112).

³⁷ See GP II, 113; IV, 439, 484. Leibniz also uses the phrase ‘representation or expression’ (GP II, 114). Robert McRae discusses the expressive characteristics of perceptions in detail. See McRAE, R., *Leibniz: Perception, Apperception, and Thought*, Toronto: University of Toronto Press, 1976, pp. 20-26.

³⁸ For the discussion of small perception [*petite perception*] or unsensible perception, see GP VI, 534-5 (1702); V, 24; GP V, 47-8/NE Intro; GP V, 105/NE 2.1.15; GP V, 121/NE 2.9.1-4; GP V, 148/NE 2.19.4; GP V, 174/NE 2.21.36 (1703-5); GP III, 345 (May 8 1704); IV, 532 (1705); III, 311 (July 6 1706); VI, 357 = T 403; GP VI, 402 (1710); VI, 610 = M 21 (1714); GP III, 658 (November 4 1715).

However, one may say that even though there are internal changes of substances in an aggregate, any of these is internal to an individual substance. If it is the case, we may wonder how these substances can be bridged so that they can make up one aggregate. To answer this question, it should be noted that any substance in an aggregate expresses the mental action of a perceiving mind, which regards all the substances in the aggregate as one being. Given the features of Leibniz's universal expression, the expression of this mental action must contain sufficient information about which substance is considered as a member of the aggregate. That is to say, if an omniscient mind looks at a substance in the aggregate, that mind will read off which substance makes up this aggregate and which does not.³⁹ As a result, any substance in the aggregate perceives the mind as regarding it as a member of the aggregate, and any substance outside of the aggregate does not. Thus all the substances in the aggregate have a decisive common character.

Now we have considered several issues which suggest that many substances outside of a perceiving mind can form an aggregate outside of that mind. First, we can try to see the possibility that an aggregate of substances is constructed outside of a perceiving mind. Many substances, or a plurality of substances exist outside of a perceiving mind before that mind regards them as one thing. Also, these substances clearly change their status when a perceiving mind regards them as one being, and there is an objective common property for all these substances. That is, any of them perceives the mental action of that mind. Thus we are inclined to think that an aggregate is formed when these substances begin to have this common property. It is possible that an aggregate does not exist in a perceiving mind as a mental entity, but rather a special kind of a plurality of substances in which any substance perceives a mind as perceiving them as one thing. Second, it is necessary to conclude that an aggregate of substances is external to a perceiver, since other explanations of the ontological status of aggregates have serious problems as we have seen. Leibniz clearly admits that a human mind senses an external object. And it is difficult to suppose that this external object is one substance or a plurality of substances which are not regarded as one being by a mind. Besides, if we suppose that an aggregate of substances exists in a perceiving mind, then as we have seen we will confront several serious problems: we will have a difficulty in explaining an immanent force of a body or aggregate, and we will confront the unacceptable conclusion that a substance exists within a mind. It seems that the best way to avoid confronting these difficulties is to suppose that an external object for a perceiving mind is an aggregate of substances.

³⁹ It is well-known that Leibniz states that God, who is omniscient, conceives all the properties of an individual substance by having the complete intellectual notion of that substance. See DM 8 and 13.

An objection might be raised, however, concerning the case in which a perceiving mind does not exist. A substance, which is supposed to be a member of an aggregate, perceives a mind as perceiving itself as a member of that aggregate. But it should be noted that Leibniz supposes that God can destroy one substance without changing any inner properties of any other substances (GP IV, 530). Suppose that God suddenly destroyed one human mind (cruel, but this is required for this consideration), and this mind would perceive many substances as one being if she would not have destroyed. These substances still have some internal properties which would express this destroyed mind if it were to exist. These internal properties of these substances would be the foundation of the relation between them and that mind. When the mind would perceive them as one being if she existed, these substances change their internal properties in accordance with the possible change of the perceiving mind. Given that, even if a mind does not exist, a substance has perceptions of something which is supposed to perceive itself as a member of that aggregate. These perceptions are merely internal to a substance, and do not guarantee an objective relationship between substances. Since any inner property of any substance does not change in the case of destruction, we are tempted to state that many substances form an aggregate outside of a perceiving mind if and only if they are similar in perceptions, and they express that mind as if perceiving them as one being.

But this statement is subject to a serious criticism. That is, if substances form an aggregate even though a perceiving mind which regards them as one being does not exist, then it seems that the formation of an aggregate is not mind-dependent. The statement that the formation of an aggregate is not mind-dependent clearly contradicts the mind-dependence thesis concerning aggregates. Leibniz explicitly states that the unity of an aggregate comes from a mind, so without the existence of a mind, we cannot explain where this unity comes from (GP II, 256). Indeed, we have to confront another severe difficulty in this supposition: how can many substances be endowed with a unity which comes from a perceiving mind, given all of them exist outside of that mind? To suppose that an aggregate exists in relation to a particular mind may help us to understand the issue. For example, when I am aware of my desk, an aggregate of substances which constitute the desk exists in relation to me, as an external object. This aggregate does not exist in relation to other people. This conclusion might not fit with common sense, but we can still suppose that each perceiving mind constructs its own aggregate. So if my wife perceives my desk, her aggregate also exists in relation to her. Since a mind regards these substances as one being, the unity of an aggregate is set up as if a fiction only in relation to that mind. Thus we should conclude that the formation of an aggregate requires a real mental action, which presupposes the existence of a perceiving mind. Even if they have similar changes,

they cannot form an aggregate without a perceiving mind. So it seems that many substances form an aggregate outside of perceiving minds if and only if they are similar in perceptions, and a mind perceives them as one being. In this case the aggregate exists in relation to the perceiving mind.

I need to explain what I mean by the expression 'in relation to' further. Even if one item exists in relation to some mind, it does not entail that it is a mind-dependent entity. For instance, according to Leibniz, a mind perceives all the other substances in the world. In this case, one of these substances exists in relation to a mind insofar as it is perceived. So, not only an aggregate of substances, but one of these substances that constitute the aggregate, exists in relation to a perceiving mind. One may here suggest that the expression 'in relation to' does not grasp the mind-dependency of an aggregate. Since it is applied to a mind-independent entity, this does not tell anything about the difference between an aggregate as mind-dependent entity and a mind-independent entity. But we can utilize this expression to differentiate an aggregate from a mind-independent entity. For instance, a substance in an aggregate exists in relation to any mind since any mind perceives the substance. Furthermore, it had existed in relation to any mind even before a mind took it as a member of the aggregate. Unlike a substance, an aggregate does not exist in relation to all the minds, though it at least exists in relation to the mind that perceived it as an aggregate. Also, it had not existed in relation to any finite mind before the mind took it as a member of the aggregate. Thus my usage of 'in relation to' captures the difference between aggregates and substances.

In addition, my usage of 'in relation to' is consistent with my view that for Leibniz an aggregate is not in a mind. An aggregate exists in relation to a perceiving mind, and the mind's relation to the aggregate is extrinsic. So, if one ascribes a predicate 'perceiving the aggregate' to the mind, the predicate is considered as an extrinsic denomination. Of course, since there is no purely extrinsic denomination, this predicate has some foundation in the mind. In other words, the mind has some intrinsic properties which provide a basis for the predicate 'perceiving the aggregate.' Still, the relation between the mind and the aggregate takes place outside of the mind. On the other hand, if we suppose that something is in the mind, then its relationship with the mind is not extrinsic for the mind. For instance, a mental state is in the mind, and the relation between the state and the mind is no extrinsic for the mind. It is true that the existence of an aggregate presupposes the existence of a mind which perceives it as one being, but the relationship between the mind and the aggregate can be considered in several ways. First, the relation may be established inside the mind. The aggregate exists in the mind, which has a perceiving action, on the one hand, and an intentional object (i.e., the aggregate) in itself, on the other. Second, the relation may be established outside of the

mind. The aggregate is related to the perceiving mind, as its external object. The aggregate exists in relation to the mind, but this relation is also found between the mind and a plurality of other substances, and it is established outside of the mind. In brief, the fact that an aggregate of substances exists in relation to a perceiving mind does not entail that it must exist in that mind.

Conclusion

While Adams's attempt to explain the ontological status of an aggregate is consistent with the convertibility of being and unity, the alternative we have advanced coheres nicely with the texts, which seem to suggest that aggregates are external objects for perceivers. Also, by holding that aggregates are external, we can rightly suppose that a substance that is in an aggregate is not in a perceiving mind, and that an aggregate has an immanent force that does not exist in a mind, either. I suggested that substances in an aggregate have a remarkable feature in common, that is, they all perceive a mind as perceiving them as the members of the aggregate. Since an aggregate not only has the mind-independent reality that consists in external substances, but its members have a remarkable common feature, it can be regarded as an external object for a mind.

Abbreviations of Primary Texts and Translations

- A *Sämtliche Schriften und Briefe*. Darmstadt and Berlin: Berlin Academy, 1923-. Cited by series, volume, and page.
- AG *G. W. Leibniz Philosophical Essays*. Edited and translated by Roger Ariew and Daniel Garber, Indianapolis: Hackett, 1989.
- C *Opuscules et fragments inédits de Leibniz*. Ed. by Louis Couturat. Paris : Félix Alcan, 1903. Reprint, Hildesheim: Georg Olms, 1966.
- DM *Discours de Métaphysique* (1686). Cited by section number from G IV, 427–63.
- GP *Die philosophischen Schriften von Gottfried Wilhelm Leibniz*. Edited by C. I. Gerhardt. Berlin: Weidman, 1874–90. Reprint, Hildesheim: Georg Olms, 1978. Cited by volume and page.
- L *Philosophical Papers and Letters*. Edited and translated by Leroy Loemker. Second edition, Dordrecht: Reidel, 1969.
- LA *The Leibniz-Arnauld Correspondence*. Edited and translated by H.T.Mason. Manchester: Manchester University Press, 1967.

- Lodge *The Leibniz-De Volder Correspondence*. Edited and translated by Paul Lodge. New Haven: Yale University Press, 2013.
- NE *Nouveaux Essais sur l'entendement humain*, Cited by book, chapter and section.
- RB *New Essays on Human Understanding*. Edited and translated by Peter Remnant and Jonathan Bennett. New York: Cambridge University Press, 1996.
- RML *Malebranche et Leibniz: Relations personnelles*. Edited by André Robinet. Paris: Vrin, 1955.

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- Rutherford, DONALD, "Leibniz as Idealist", in *Oxford Studies in Early Modern Philosophy*, núm. 4, 2008.