

On Oneness and Substance in Leibniz's Middle Years¹

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Abstract

We argue in this paper that Leibniz's characterization of a substance as "un être" in his correspondence with Arnauld stresses the per se unity of substance rather than oneness in number. We employ two central lines of reasoning. The first is a response to Mogens Lærke's claim that one can mark the difference between Spinoza and Leibniz by observing that, while Spinoza's notion of substance is essentially non-numerical, Leibniz's view of substance is numerical. We argue that Leibniz, like Spinoza, qualifies the substance as "one" primarily in a non-numerical sense, where non-numerical means per se unity or qualitative uniqueness. The second line of reasoning suggests that the term "one" should be understood as a-unity-presupposed-by-multiplicity in two senses: a) externally, in the sense of being presupposed by higher complex structures, such as aggregates, and, b) internally, in the sense of having itself a complex structure. We develop an analogy along these lines between the role the notion of a fundamental unity plays in Leibniz's view of numbers and his view of substance. In other words, we suggest that looking at the role units play in Leibniz's view of mathematics can shed some light on the role they play in his metaphysics.

...as all numbers are derived from one plus one, so must all multiplicity be derived from unity (LBr, 389).

And it would be the subject of a fine inquiry to discover whether, out of the entire totality of finite numbers, one number can be defined which is the most beautiful of all - unless perhaps this is the number one, which represents all power at the same time (A 6.3, 477).²

1. Infinity and Oneness: One is Said in Many Ways

Traditional theology typically captures God as unique and infinite substance. The conjunction of oneness and infinity, however, is intriguing. If both these features are understood at the same time in a numerical, quantitative sense, they are incompatible.³ More particularly, if the notion of God is considered as both one and infinite, then either oneness or infinity (or both) must be held in a non-

numerical sense. In previous work (Nachtomy 2005; 2011), we have discussed the distinction between quantitative and non-quantitative senses of the notion of infinity in Spinoza and Leibniz.⁴ Here, we focus on a similar distinction between different senses of oneness. We shall attempt to show that Leibniz's qualification of a substance as "one being" is intended to emphasize the essential unity and indivisibility of substance. Leibnizian substances may well be called one in the sense that they can be counted and numbered, but this, we suggest, is not one of their essential features.

To set up the terminology for our discussion, we shall distinguish between different senses of oneness that are said of a substance:

- (i) A substance is one in number. In this sense we may say of a substance that is one thing as opposed to 2, 3, or 4 such things. The numerical meaning of "one" is exemplified by sentences such as "there is one apple in the basket";
- (ii) A substance is one in the sense of being unique. In this sense, there is nothing exactly like it or, more generally, two things cannot be perfectly similar.⁵ This sense of "one" as unique is exemplified by the sentence "there is no other apple (or anything else) exactly like it";
- (iii) A substance is one in the sense of being a unity or a complete whole.⁶ Here it is useful to distinguish a weak sense of unity, viz., that of parts held together or united into one whole, and a strong sense of unity, which amounts to indivisibility or even stronger, the lacking of parts. Leibniz famously distinguishes between *unum per se* and *unum per accidens*⁷ or substantial unity vs. unity by aggregation. Whereas the second kind of unity implies divisibility, the first implies indivisibility.⁸

These three senses of oneness—oneness in number, uniqueness, and unity—are closely related, but are certainly not identical.⁹ As we have just seen, each of these senses admits of further distinctions. For our purposes here, the rough differences mentioned above should suffice. For we seek to show here that Leibniz's qualification of a substance as "one being" is primarily intended to emphasize the essential unity and indivisibility of a substance. In fact, much of our claim can be expressed by noting that unity *per se* (or an indivisible unity) implies numerical oneness but not vice versa.

Our undertaking is partly motivated by a recent analysis by Mogens Lærke. In his comprehensive study *Leibniz lecteur de Spinoza* (2008), Lærke argues that Spinoza's reservations about qualifying a substance as "one" should be taken very seriously. The interpretation of Spinoza's philosophy as a Substance Monism, he

claims, though widely taken for granted, is in fact misguided.¹⁰ Lærke suggests that Spinoza qualifies the substance (God or Nature) as “one” only in a non-numerical (and merely negative) sense (Lærke 2008, 671-678).¹¹ For Spinoza, a substance can be said to be “one” only in an inappropriate sense. In fact, if one could think of a substance as one in number, this would imply that there could be 2 or 3 or 4 substances. But this is exactly what Spinoza seeks to deny. The very possibility of a plurality of substances is ruled out in the Ethics. Thus, God cannot be said to be one in number because this would imply that there could be more than one God. Strongly related to this view is Spinoza’s denial of any ontological distinction between God and the existing world, as well as any real division within the substantial unity of the natural world. In a more recent work, Lærke (2012) has developed and refined this argument. He argues that, for Spinoza, in order for something to count as one, it must be conceivable that there is another one, since oneness for him only comes about from the conceivability of a multiplicity.

Spinoza’s view is surely worth exploring in its own right but here we only consider it as part of the proper context for investigating Leibniz’s position. As noted, we mainly seek to show that Leibniz’s qualification of a substance as “one being” is intended to emphasize the essential unity and indivisibility of a substance and, in this sense, is presupposed by numerical oneness. Thus, while we agree with Lærke’s reading of Spinoza, we challenge his subsequent move (made explicitly in his book) to use Spinoza’s non-numerical characterization of substance as a way to mark a difference between Spinoza and Leibniz’s metaphysical systems. Lærke argues that, whereas Spinoza’s qualification of substance as one is non-numerical, Leibniz’s qualification of substance as one is numerical. In Leibniz’s view of substance, he argues, the number one is used in “an absolute and positive sense” (2008, 678) and that “the numerical determination one (and it alone) is [...] clearly considered by Leibniz as a necessary determination of a substance” (2008, 674).¹²

We do not claim that Leibniz uses “one” only in a non-numerical sense, nor that the unity of substance excludes numerical oneness. Numerical oneness is certainly a feature that follows directly from essential unity. Rather, what we argue for here is that the reading of “un” as a unity is more fundamental to Leibniz’s qualification of a substance than its numerical reading, so that a numerical ascription of one to a substance presupposes it. This reading, we argue, is strongly suggested by Leibniz in his correspondence with Arnauld as well as in some of his later writings. In the following section (2), we discuss Spinoza and Leibniz’s views on the relation between numbers and substances. We show that the term “one” figures not as

a number but rather as what we will refer to as a fundamental unity presupposed in two contexts, that is, as a unit presupposed by any plurality and also as a unit presupposed by any of its fractions. With this conception of one as unity in mind, we turn in sections 3 and 4 to discuss the metaphysical context, which, as we shall argue against a recent reading of Levey, is an essential part of Leibniz's qualification of a substance as one being. In particular, in section 3 we discuss Leibniz's principle of the identity of indiscernibles (hereafter PII) and argue that uniqueness, rather than numerical oneness, is the thrust of the PII. This shows that the gap between Leibniz and Spinoza cannot be accounted for on the basis of a numerical vs. non-numerical definition of substance. In section 4 we address Leibniz's famous statement in the letter to Arnould: "that which is not one being is not a being". We argue that Leibniz wishes to emphasize the sense of unity, so that unity, in the strong sense of indivisibility, becomes essential for articulating the nature of substance. This reading is further confirmed by the reciprocity of being and one that Leibniz articulates in the same letter to Arnould as well as in his early letters to De Bosses.

2. Spinoza and Leibniz: Numbers and Substance(s)

According to both Spinoza and Leibniz, a substance – and God as such – is one. For both thinkers, as for most thinkers at the time, God is one and infinite. In EIP14C Spinoza writes, "from this it follows most clearly, first, that God is unique, i.e., (by D6), that in Nature there is only one substance, and that it is absolutely infinite (as we indicated in P10S)" (Curley, 420). In Ep. 12 Spinoza states: "every substance can be understood only as infinite" (A 6.3, 277; LLC, 105; Curley, 202) and, "... [I]f we attend to it [substance] as it is in the intellect, and perceive the thing as it is in itself [...] then we find it to be infinite, indivisible, and unique" (ibid, Curley, 203). In the same letter, Spinoza writes:

What I should like you to consider about substance are: (1) that existence pertains to its essence, i.e. that from its essence and definition alone, it follows that it exists (if I am not mistaken, I have demonstrated this to you before in conversation, without the aid of other propositions); and (2) (which follows from (1)) that substance is not manifold; rather, there exists only one unique substance of the same nature; and Finally, (3) that every substance can be understood only as infinite (Ep. 12, LLC, 105).

When Leibniz reads Spinoza's letter in 1676, the first thing he notes is that "[Spinoza] demonstrates that every substance is infinite, indivisible, and unique" (A 6.3,

275; LLC, 101). Leibniz clearly agrees with Spinoza that infinity, indivisibility, and uniqueness are the defining features of every substance.

As it turns out, Spinoza and Leibniz's views on numbers are similar. The judgment that there are many things is based on regarding different particular things under the same aspect. In his Ep. 50 to Jarig Jelles, Spinoza's writes,

We do not conceive things as existing in a certain number, unless we have reduced them to a common genus. For example, one who holds in his hand a penny and a crown will not think of the number two, unless he can call both the penny and the crown piece by one and the same name, to wit, coins or pieces of money. In the latter case he can say that he holds two coins or pieces of money, inasmuch as he calls the crown as well as the penny, a coin, or a piece of money (Ep. 50, G, Vol. 4, 239-240).¹³

Moreover, Spinoza maintains (Ep. 12) that numbers are auxiliaries of the imagination: they arise when certain exemplars are seen under a common genus. In this picture, numerical claims do not pertain to the essence of the things being numbered. In other words, numerical claims add nothing to the nature of particular things, since they are mere abstractions that are based on the properties they share. Leibniz's view regarding the status of numbers is similar. As Leibniz writes,

When I perceive a horse and an ox, I note that the ox is not the same, but different. But since they combine in something there will be many things, to wit, animals or beings. But that which can be substituted for another without altering the truth is the same. But if A is D, and B is D, and C is D, and A, B, and C are the same, D will be one thing. If, on the other hand, A, B, and C are each different from the other, they will be many, whence numbers (A 6.4 561; Arthur 267, 1683).¹⁴

According to Leibniz, the judgment that there are many things stems from observing differences and similarities: the horse and the ox are the same insofar as they are regarded as animals, but differ in the kind of animal they are. Numerical ascriptions derive from observing a multiplicity of different things under a common aspect. On this view, numbers, like modes and relations, are not entities in their own right (A 6.3, 463; Pk, 7).¹⁵ Rather, numbers depend on, and result from, mental abstractions: they are products of the comparison between particular things.

The similarity between Spinoza's and Leibniz's view on numbers emerges in these passages. Notice that the status of the term "one" in this view is peculiar. Clearly, it cannot be formed by grouping individual entities or by comparing such entities to any other particular thing. Any grouping operation presupposes a multiplicity of

things to be grouped. In this context, it is easier to grasp the reason why one should not be regarded as a number. Rather than a number, one is seen as the element or principle of numbers or as the unit presupposed by any number. In a letter to Louis Bourguet from 1715 Leibniz writes: “it is true that the concept of numbers is finally resolvable into the concept of unity, which is not further analyzable and can be considered the primitive number” (L, 664).

The idea of one as the foundation of all numbers is clearly at the background of Leibniz’s early definition of numbers: “Numerum definitio unum, et unum, et unum, etc., seu unitates” (To Thomasius, 1669, GP I, 24).¹⁶ “Number is defined as one, and one, and one, etc., or as unities.” Leibniz later realizes that this definition applies only to whole numbers (NE, II, 16 §4).¹⁷ But the most important point for our purposes here is that Leibniz uses the notion of one or unum in his definition of number. This clearly shows that unum, according to him, is not regarded in this context as a number (for otherwise the definition would be circular). Rather, he takes the notion of unum to indicate any unit whatsoever, whose combination and reiteration would yield a number. Leibniz’s approach is evident in many texts where the number 2 is defined as $1 + 1$; 3 is defined as $2 + 1$; 4 as $3 + 1$, etc. Thus, fundamental unities are presupposed by the notion of number, which is nothing but a number of any such units.

As Laerke observes, this traditional analysis of the foundational role of oneness is exactly what Spinoza denies. If there were a foundational number in Spinoza, it would rather be two, to the extent that one is conceivable only on the condition of the conceivability of another one. Spinoza for his part rejects that multiplicity has basis in any “primitive number” or “unity”. Rather, for Spinoza, unity is conditioned on (the conceivability) of multiplicity – which is the exact reverse of what Leibniz holds (endorsing as he does a traditional position on the origin of numbers).

If Leibniz’s view of one as the foundation of number is indeed traditional, let us observe that this is just one aspect of a more radical thesis. For he does not only regard one as the element composing number, and thus as the unit presupposed by any plurality but also regards “one” as a mathematical unit which is logically prior to any of its fractions, (which may be thought of as its “internal” constituents, e.g., as 1 could be thought to consist of $\frac{1}{2} + \frac{1}{2}$). According to Leibniz, however, fractions are not the constitutive parts of a unity; rather, they are an artificial product of its division. Thus, a mathematical unit remains for Leibniz most fundamental even if it can be (mentally and potentially) divided, that is, it is divisible.¹⁸ Thus, in a letter to Louis Bourguet from August 5, 1714 Leibniz writes,

When I say that unity is not further analyzable, I mean that it cannot have parts whose concept is simpler than it. Unity is divisible but not resolvable, for fractions, which are parts of unity, have less simple concepts than whole numbers, which are less simple than unity, since whole number always enter into the concepts of fractions (L, 664-665).

This is why Leibniz sees one as a basic unit that could be well divided into fractions, but could not be broken down into parts. A division of one into two ($\frac{1}{2}$) is a mathematical operation that concerns ideal (but not real) entities. Thus we can see that Leibniz considers one as a fundamental unity required for both producing arithmetical multiplicity (by the addition of ones) as well as for producing an internal complexity and multiplicity of fractions (by a division of one).

3. Uniqueness and the Identity of Indiscernibles

This conception of one as the fundamental unity presupposed by any numerical plurality brings out an analogy between mathematics and metaphysics. In particular, we would like to highlight here the analogy between the role oneness plays in mathematics (as a unit constituting the foundation not only of whole numbers but also of rational numbers) and the role basic unities play in Leibniz's metaphysics.¹⁹ We suggest that the status of the basic units of reality, presupposed by any plurality, is similar to that of the basic unit in the context of numbers. As mentioned above, for Leibniz, one is considered as the foundation of numbers rather than itself a number. By analogy, the essential feature of Leibniz's true units, we suggest, is not oneness in number, but unity, which is seen as a constitutive element of reality.

As Leibniz put it later: "actual things are composed as a number is composed from unities" (a letter to De Volder from January 19, 1706; LDV, 333).

As we have seen above, Lærke holds that "the number one always subsists as real determination" (2008, 674). Lærke adds,

According to Leibniz's principle of the identity of indiscernibles, the number one always subsists as a real determination (determination réelle). An individual substance is one being (un être) which serves to support multiple accidents, that is to say, the one of many (l'un du multiple). It is in this sense that Leibniz, in a celebrated passage in a letter to Arnauld, maintains that "ce qui n'est pas un être, n'est un être (Letter to Arnauld, 30 April 1687, GP II, 184; AG, 86). (2008, 674).

Indeed, it is quite natural to understand the PII in this manner. After all, the PII asserts that each individual must differ in some respect from all other individuals

or that there cannot be two distinct things that resemble each other exactly.²⁰ This principle is closely related to Leibniz's pluralistic view on substance.

In addition, notice that the idea that a substance must be unique applies to Spinoza's definition of substance as well, even if it figures in a very different metaphysical framework. For Spinoza, not only there are no other substances like God, but also there are no other substances but God. For Leibniz, on the contrary, nature consists of infinitely many created substances, each of which is a unique, individual being. This difference explains the logic of Lærke's analysis. Lærke argues that the relativity of numerical oneness does not allow Spinoza to attribute it, appropriately, to a substance, but that Leibniz's concept of substance does involve numerical oneness in an essential way. In other words, Lærke suggests that we understand Leibniz's PII in relation to his overall pluralistic metaphysics and as underlining the diversity among substances. Consequently, Lærke draws our attention to the difference among things and therefore to the plurality of substances. This reasoning makes it possible to view the PII as implicitly asserting that a substance is numerically "one." If the PII involves numerical oneness in this essential way, we can distinguish between Spinoza and Leibniz on this basis: Spinoza's God is not numerically one, while Leibniz's substance is.

Such a reading would incline us to regard "one" in a numerical sense here. However, such a reading of the PII plays down its metaphysical gist: Leibniz intends to stress the uniqueness of substance, which implies the impossibility of a qualitative identity or of a plurality of things of the same nature. The idea is that numerical difference stems from a qualitative difference. On our view, Leibniz's PII can be used as a negative claim as well – that is, in a similar way Spinoza attributes uniqueness to God or nature. For both Spinoza and Leibniz, the definition of substance suggests that a substance must be unique in the sense that there could be no other substance like it, that is, that it is the only instance of its own kind.²¹ This is why, for Leibniz a substance is individual and why it is to be individuated through a complete concept that involves every one of its predicates. For Leibniz, as for Spinoza, uniqueness is an essential part of a substance's definition, so that there cannot be, conceptually or metaphysically, more than one thing of the same nature (if two things are identical in all their qualities, they must be one and the same).

While in the context of Spinoza's metaphysics this idea is linked to the impossibility of a plurality of substances, in the context of Leibniz's metaphysical system it refers to the intrinsic nature of each substance. Indeed, Leibniz's metaphysical

system obviously involves a plurality of substances. But this commitment to pluralism does not mean that the PII itself implies substance pluralism by presupposing numerical oneness. Rather, this principle expresses Leibniz's view about the individuality and unity of substance. It certainly does not imply that there are many substances. It only says that there cannot be two perfectly similar substances. Or, if there were many substances, each of them would necessarily be different from all others.

Notice that our reading of the PII as relating primarily to the intrinsic nature of a substance is orthogonal to the debate between the reductionist and the non-reductionist views on relations and the role relations play in articulating the PII.²² In this debate we side with the (so called) nontrivial reading of the PII. By a "trivial" reading we refer to what Sleight calls the "bland formulation" of the principle, a formulation that says "no more than that if individual *x* is distinct from individual *y* then there is some property *F* that *x* has and *y* lacks, or vice versa" (2009, 325). This formulation is trivial because it allows numerical oneness or extrinsic relational properties to function as the source of uniqueness in the PII,²³ which renders uniqueness a mere difference in number (and thus trivial). Moreover, such a reading ignores Leibniz's repeated statements that things must always differ more than numerically (Discourse on Metaphysics, §9; AG, 41-42).²⁴ A nontrivial understanding of PII, which highlights the point that substances are unique due to their intrinsic features, shifts the focus from being numerically one (as opposed to a mere modal difference) to the intrinsic nature of a substance. Both reductionists (such as Sleight) and non-reductionists (such as Plaisted) adapt a nontrivial reading.²⁵ If both sides understand uniqueness in terms of some intrinsic differences between substances, they could in principle agree that intrinsic uniqueness, seen as the core of the PII, need not be articulated in the numerical sense of oneness.²⁶

4. Unities and Aggregates in Leibniz's Correspondence with Arnauld

We now return to what Leibniz "holds as an axiom" in his letter to Arnauld from April 30, namely, "ce qui n'est pas véritablement un être, n'est pas non plus véritablement un être".²⁷ Notice first that the second occurrence of "un" in this phrase serves as an indefinite article rather than as an indication of the number "one." In order to emphasize this point, we translate the second "un être" as "a being" rather than "one being", thus: "that which is not one being is not a being". Leibniz's usage of the first un, we suggest, is meant to stress the essential unity of substance

rather than its oneness in number.

This reading of oneness as implying the essential unity of substance relates of course to Leibniz's distinction between being per se (a substance) and being by aggregation, which plays a major role in the second part of Leibniz's correspondence with Arnauld. This distinction employs the third sense of oneness (noted in the introduction) of an indivisible unit. As Leibniz writes, substantial unity "requires a thoroughly indivisible and naturally indestructible being" (to Arnauld, 28, November 1686; AG, 79).²⁸ Clearly, it is indivisibility that marks here a substance in distinction from an aggregate. In his letter from April 3rd, Leibniz argues that beings by aggregation are distinct from substances (AG, 86) in that aggregates are lacking true and persisting unity. He makes the same claim a few lines earlier in his letter: "I believe that where there are only beings by aggregation, there aren't any real beings. For every being by aggregation presupposes beings endowed with real unity, because every being derives its reality only from the reality of those beings of which it is composed" (AG, 85).²⁹

An aggregate is a unity only insofar as a mind observes the relations among its constituent entities. The unity of an aggregate is merely "a phenomenal unity or a unity of thought, which is not enough to constitute what is real in phenomena" (a letter to Arnauld from October 9, 1687; WFP, 132). While both a substance and an aggregate such as flock or a heap of stones can be said one in number, only a substance is an unum per se – an indivisible and indestructible being. As in the case of one (understood as the principle of any number), it is the indivisibility of substance that is presupposed by the existence of aggregates. As we noted, Leibniz regards "one" as the foundation of all numbers. Analogously, he regards the basic unities of substance as the foundation of all plurality. As Leibniz writes in the Fardela memo: "there are no substances where there is no substance, no more than there would be numbers if there were no unities" (A 6.4 p 1672). And, "...just as all numbers are derived from one plus one, so must all multiplicity be derived from unity" (LBr 389; translation in Coudert, 83).³⁰

Given this view of substance as an indivisible unit, we can better understand the subsequent assertions that Leibniz makes in the letter concerning the reciprocity of one (unum) and being, and the dictum that "the plural presupposes the singular". Leibniz writes,

It has always been thought that one and being are reciprocal things [l'un et l'être sont des chose réciproque].³¹ Being is one thing and beings are another; but the plural presupposes the singular, and where there is no being still less

will there be several beings. What could be clearer? (AG, 86)

In his “On Unity, Borrowed Reality and Multitude in Leibniz” (2012), Samuel Levey challenges a reading of this passage that emphasizes the substance’s substantial unity. According to Levey, Leibniz employs three arguments and each conveys a distinct conception of unity (2012, 97).³² The “multitude argument”, Levey holds, states that “if there are many things (what Leibniz sometimes call ‘multitude’) then there must also be beings which are single things, or, to introduce yet another use of the term, unities” (2012, 113; our emphasis). On Levey’s reading, the multitude argument rests on two premises: (a) The reciprocity of being and unity; and (b) The assertion that the plural presupposes the singular. Levey reformulates (a) as follows: “what is truly one being is truly one being, neither more nor less” (2003, 263; our emphasis). Levey’s analysis thus endorses the numerical sense of “one” with the consequent claim that even the reciprocity of being and “one” “makes no special demand on the nature of being in question—unity is not understood to imply simplicity or indivisibility, for example” (2003, 262). Thus, for Levey, the question of “what it takes for something to be a single thing—some one thing” remains “a question for further metaphysical debate” (2012, 115). He writes that, “the notion of unity here just is that of a single thing, as opposed to many things, something that can be a value of a singular variable of quantification, so to speak” (2012, 114).

As we have noted, however, Leibniz’s distinction between substances and aggregates presupposes the indivisibility of substances (AG, 86). At the very least, it seems that, even if (b) may involve numerical implications it still requires unity in the sense of indivisibility to do the metaphysical work Leibniz assigns to it (such as ground reality and distinguish between true beings and beings by aggregation). The metaphysical sense Leibniz assigns to unity comes up in passages such as this one,

...since every multitude presupposes true unities, it is obvious that these unities cannot be material, otherwise they would, again, be multitudes, and not true and pure unities, as are needed to makeup a multitude. And thus the unities are substance apart, which are not divisible, nor, as a consequence, perishable, since everything which is divisible has parts that one can distinguish there before separating them. (Letter to Sophie, 12 June 1700, A.1. 18 113-114; translation in Garber 2009, 342)

Thus, we don’t see Levey’s reconstruction of the argument as a compelling reason for stripping “the plural presupposes the singular” from its metaphysical gist, so

that the singular would involve no essential unity in the sense of indivisibility.

One might object here that the contrast between “the plural” and “the singular” expressed by the assertion “the plural presupposes the singular” does not imply that the plural presupposes something indivisible. As we noted already, we do not deny that the plural presupposes numerical oneness, but only that it can be divorced from the metaphysical sense of the indivisibility of the basic units. This, we suggest, is exactly the role of the reciprocity of being and one for which Leibniz also argues when he writes to Arnauld in another letter (from October 9, 1687): “I argue that there cannot be a plurality of beings where there is not one being, and that all multiplicity presupposes a unity” (WFP, 131).³³

The reciprocity of being and unity returns to the foreground in Leibniz’s correspondence with Des Bosses. In the first letters written early in 1706, Leibniz refers to the scholastic formula: “Ens et unum convertuntur”. The latter formulation suggests that “unum” is not used in a numerical sense, but is rather intended to indicate unity. Leibniz stresses that these terms may be used interchangeably, so that “unum” could be replaced with “Ens” and vice versa. Given Leibniz’s principle that two terms may be substituted only if the truth of the statement is preserved, he surely does not mean that “being” and oneness in number can be substituted and used interchangeably. In this respect, Leibniz holds that “being” and “number” are not only distinct, but also opposed. As we have seen above, Leibniz maintains that a number is not a true being, but rather a being of reason. Surely “unum” in its numerical sense could not be substituted with “being” in statements such as “a being truly exists” unless unum is used to stress an indivisible unity.

As in his letters to Arnauld, Leibniz employs this formulation as part of his effort to distinguish true beings from aggregates. His commitment can be spelled out as follows: whatever is composed of (and can be decomposed into) many things cannot be regarded as a true being because it lacks inherent unity or unity per se. If so, Leibniz’s emphasis on the oneness of substance is aimed at stressing the natural and enduring unity required for a true being. A number, as we have seen, derives from considering a multiplicity of individual things or units. Consequently, the notion of number does not apply to a single unit considered on its own. Something similar can be said of a real unit or a true being. While any plurality presupposes single units, the units themselves need not be regarded as one in number. Instead, they should be regarded in the foundational sense, as essential units presupposed by any plurality. In this context, too, we suggest, Leibniz uses “unum” mainly to stress the essential unity and the indivisibility of substance.

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In his letter from March 2, 1706, Des Bosses complains that if being and “one” are convertible one into another, “then nothing will exist in reality simply and actually except what is actually and simply one [...] fractions of unity and of any simple thing will be only mathematical beings that result from a mental abstraction” (LDB, 25-27). In his letter from March 11, 1706 Leibniz responds that, in saying that “being and one are convertible” he was thinking of substances that have a metaphysical kind of unity. The metaphysical kind of unity is distinguished from the arithmetical one, which applies to aggregates (LDB, 31). In the case of “one by aggregation,” Leibniz writes, the unity in question is a “semi-mental” one (LDB, 35).³⁴

If substances are seen as indivisible unities, there is no difficulty in counting a finite subset of them. This, however, does not make Leibniz’s characterization of substance as *unum* numerical. The countability of substances only implies that the definition of substance is consistent with the existence of a plurality of substances (as we argued in the context of Leibniz’s PII) and that their countability presupposes some more fundamental unity. This refers us back to our initial question. We opened this paper with the distinction between different senses of oneness, asking whether it could serve to mark the difference between Leibniz and Spinoza’s metaphysical systems. We argued that while Spinoza’s hesitation to refer to the substance as one relates to the relativity of numerical oneness, Leibniz’s approval of oneness should not be understood on similar grounds. Instead of relating to his metaphysical pluralism, oneness relates to Leibniz’s distinction between a substance and an aggregate. In addition, this understanding of oneness (in terms of unity) is important for Leibniz’s reconciliation of the tension between oneness and infinity, a tension which arises at different levels of his metaphysics. Oneness relates not only to the infinite God but also to Leibniz’s idea of one substance as involving infinitely many other substances as well as to the infinite series of states that a simple substance involves.

If Leibniz considers “one” as the foundation of all numbers rather than a number, perhaps something similar would hold regarding the basic units presupposed by any multiplicity in the metaphysical context of the later period. In closing we would like to suggest such an analogy between the mathematical and metaphysical contexts. As a unit in mathematics may be both combined (to produce numbers by addition or reiteration) and divided (to produce fractions by division), something analogous might hold in a metaphysical context: a basic unit can be seen as standing at the foundation of higher complex structures and as itself admitting of

a complex structure. This suggests that the internal complexity of substances also presupposes unity. This kind of unity, however, is not that of a plurality of units at the basis of composition (as one is the foundation of number) but a unity of a whole – a whole that has rich internal states and perceptions but nonetheless lacks parts. A more complete discussion of this fascinating analogy, however, must wait for another occasion.

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Abbreviations

Curley Spinoza, B. de. *Collected Works*. vol. 1, ed. and trans. by E. Curley (Princeton: Princeton University Press, 1988).

EN Galileo, Galilei. *Opera*. Edizione Nazionale, ed. by A. Favaro. (Florence, 1898).

G Spinoza B. *Opera*. 4 vols, ed. by C. Gebhardt (Heidelberg: Carl Winter, 1925).

LBr Niedersächsische Landesbibliothek Hanover, MSS Helmout.

LDB *The Leibniz-Des Bosses Correspondence*, ed. and trans. by B. C. Look and D. Rutherford (New Haven, CT: Yale University Press, 2007).

LDV *The Leibniz-De Volder Correspondence: With Selections from the Correspondence between Leibniz and Johann Bernoulli*, ed. and trans. by P. Lodge (New Haven: Yale University Press, 2013).

LLC Leibniz, G. W. *The Labyrinth of the Continuum. Writings on the Continuum Problem, 1672-1686*, ed. and trans. by R. Arthur (New Haven and London: Yale University Press, 2001).

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Pk Leibniz, G.W. *De Summa Rerum: Metaphysical Papers 1675-1676*, ed. And trans. by G. H. R. Parkinson (New Haven and London: Yale University Press, 1992).

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Notes

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²*Et disquisitionis foret egregiae, an ex tota numerorum finitorum universitate aliquis definiri possit, omnium pulcherrimus, nisi is forte unitas, quae simul omnes potential refert.*" (*De arcanis sublimium vel de summa rerum*, 11 February 1676, A 6.3, 477; Pk, 30-31)

³From a traditional point of view, there is nothing remarkable in saying that God is both one and infinite. Rather, these are two of the attributes ascribed to God at least since Augustine. It goes without saying that, Spinoza does not consider unity and infinity to be attributes in the strict sense of the term. Compare also Galileo's point about the relation between infinity and unity: "Infinity and indivisibility are in their very nature incomprehensible to us; imagine then what they are when combined. Yet if we wish to build up a line out of indivisible points, we must take an infinite number of them, and are, therefore, bound to understand both the infinite and the indivisible at the same time." (EN, 77-78; *Dialogues Concerning Two New Sciences* 1914, 30)

⁴Quite early in his career, Leibniz carefully distinguishes the infinite in number from the infinite in perfection. Unlike the infinite in perfection, the infinite in number cannot form a whole and cannot be considered as *one* being. God is infinite, but not in number or magnitude, nor in any other quantitative sense. God is said to be infinite in the sense of absolute perfection and unlimited unity. As Leibniz puts this in his comments on Spinoza's letter, the highest degree of infinity is the One/All, the *Unus/Omnia*. And this "...is the highest degree, [it] is everything, and this kind of infinite is God, since he is all one; for in him are contained the requisites for existing of all the other" (A 6.3, 385; LLC, 43). God is omniscient, omnipotent, perfectly wise, and so on, but none of these attributes may be quantified. We may recall here that, for Leibniz, the very mark of perfection is that it differs from the nature of number, figure, or motion in the sense that perfection cannot have a largest

(a maximum). In discussing God's nature, Leibniz notes: "an infinite whole is one" (A 6.3, 474; LLC, 49), a claim which should be seen against Leibniz's claim that the infinite in number or quantity cannot be regarded as a whole. Thus, it seems clear that, for Leibniz, the highest degree of perfection, which is the defining features of God (the *ens perfectissimum*), is not meant in a numerical sense.

⁵ This is in fact the phrasing often favored by Leibniz. For more details, see Rodriguez-Pereyra (2014).

⁶ In the following we discuss more specific meanings of unity as for example the lacking of parts or, in the case that a unity involves parts, its mind-independent reality as an entity.

⁷ Letter to Arnauld of April 30 1687.

⁸ These distinctions are also noted by Lærke. He writes: "I will focus on the three terms which, in Spinoza's texts, are immediately presented as having a bearing on whether the cardinal number "one" can be assigned to God in any proper manner. These terms are *unity*, *uniqueness*, and *oneness*" (2012, 246).

⁹ See Aquinas' distinction between one as the negation of division viz., as implying metaphysical unity and one as the principle of number (belonging to the genus of quantity). (Summa Theologiae I, q.11 a. 1, 105-106)

¹⁰ Following Macherey (1994), Lærke argues that the notion of 'Substance Monism' (used, for example, by Bennett 1996, 66; Della Rocca 2008, 35) misconstrues Spinoza's metaphysics as it misses the point that a substance, according to Spinoza, cannot properly be said to be "one." See also: *L'unicité reconnue ainsi a la substance est bien celle de l'Un métaphysique, qui n'a rien a voir avec l'unité numérique; ce qui s'accord avec la lettre L.* (Gueroult 1968, *Ethique*, vol. I, 158). For a more recent (and more nuanced) statement see Lærke's "Spinoza's Monism? What Monism?" (2012).

¹¹ Thus stressing that Spinoza's term "substance" *can* only apply to one kind of thing and directed against Descartes's (and the traditional) distinction between created and non-created substances.

¹² "La détermination numérique *un* (et elle seule) est donc clairement considérée par Leibniz comme une détermination nécessaire de la substance»(2008, 674). In fairness, it should be noted that Lærke's formulations in his 2012 article are more refined.

¹³ In a letter to Sophie from 1700 Leibniz restates this point by quoting the Duke of Bourgogne in a passage echoing Spinoza's example from the scholium to EIP15: [...] when one attentively considers the existence of beings [...] one understands

very clearly that existence belongs to unities, and not to numbers (or multitudes). Twenty men only exist because each man exists. Number is nothing but the repetition of the unities to which existence only belongs [...] Leibniz comments on this: “I have read all this with admiration, and I find that my ideas concerning unities are being expressed wonderfully” (GP VII, 560). (Cf. A 6.3, 399; Pk 115).

¹⁴ For additional references to Leibniz’s later view on the ideal nature of number, on a par with relations and possibilities, see, GP II 268-69; 276-79; 282; GP IV 568.

¹⁵ As McRae put this, numbers are extrinsic denominations “indifferent to the things that can be enumerated, and as such are beings of the imagination” (McRae 1995, 184). This is in line with Leibniz’s well-known quasi nominalist approach to abstract concepts, possibilia and relations.

¹⁶ This idea has a long history, which goes back to Aristotle and later involves influential thinkers such as Maimonides and Aquinas. See Aristotle 1052b23-24, where unity is regarded as the principle of number. Aquinas writes: “We do not predicate of God the unity of with which number begins. We predicate this only of material things. For the unity with which number begins belongs to the genus of mathematical entities, which exist in matter but are defined without reference to matter.” (Summa Theologiae I, q.11 a. 3, 110). In this connection, see also the following citation from the Jewish writer A. Harera: “As one is prior to all numbers and it is pure and simple, unique in itself and contains with no other but himself all numbers, in such a way that none of them would exist and could exist without it, while it is and exists without any of them and causes them all to be by giving them their reality, their existence, and the perfection they are capable of having, and it is also found in all of them - not only in the whole but also in each of their parts - just so, and even more so, infinity (EINSOF), the first and uncaused cause, is before all things and prior to them not only in duration, which cannot be bounded but also in degree and beyond comparison.” (Harera 2002, Book I, 279-280; Book III, Chapter 3, 339-338 and Chapter 4, 342-341)

¹⁷ Compare with Hobbes’ definition of number: “NUMBER is one and one or one one and one, and so forwards: namely, one and one make the number two, and one one and one the number three; so are all other numbers made; which is all one as if one would say, number is unities.” in *On Body* p. 96 (chapter II 7, OL I, 85, 86).

¹⁸ See Russell’s discussion on this point (1992, 111).

¹⁹ Scholars have indeed widely discussed the ideal nature of numbers and the distinction Leibniz sketches between numbers and real things, as well as between the potential divisibility of ideal things and the actual division of real ones. But

the full range of this analogy of the role of one, has not received due attention.

²⁰ In *Primary Truth* Leibniz writes: “*in nature, there cannot be two individual things that differ in number alone*. For it certainly must be possible to explain why they are different, and that explanation must derive from some difference they contain [...] for never do we find two eggs or two leaves or two blades of grass in a garden that are perfectly similar” (AG, 32).

²¹ But see (EIP10S) which seems to imply that the inference from qualitative difference to a quantitative difference is not warranted.

²² One might take (as we do in fn. 25) Sleigh (1990) as a representative of a reductionist perspective and Plaisted (2002) as the representative of a non-reductionist perspective. For a comprehensive discussion of this debate also see Jauernig (2010).

²³ The prime example of this reading is found in Russell, who holds that since relations are internal then the PII becomes trivial. As Russell puts it: “every extrinsic denomination—*i.e.* every relation—has an intrinsic foundation, *i.e.* a corresponding predicate [...] The substance is, therefore, wholly defined when all its predicates are enumerated, so that no way remains in which the substance could fail to be unique. For suppose A and B were two indiscernible substances. Then A would differ from B exactly as B would differ from A. They would, as Leibniz once remarks regarding atoms, be different though without a difference [...] Or we may put the argument thus: A differs from B, in the sense that they are different substances; but to be thus different is to have a relation to B. This relation must have a corresponding predicate of A. But since B does not differ from itself, B cannot have the same predicate. Hence A and B will differ as to predicates, contrary to the hypothesis. Indeed, if we admit that nothing can be said about a substance except to assign its predicates, it seems evident that to be a different substance is to have different predicates. For if not, there would be something other than predicates involved in determining substance, since, when these were all assigned, the substance would still be undetermined” (1992, 68).

²⁴ In *New Essay on Human Understanding* (1705) Leibniz writes, “I have also pointed out that in consequence of imperceptible variations no two individual things could be perfectly alike, and that they must always differ more than numerically” (1981, 57) and also “although diversity in things is accompanied by diversity of time or place, time and place do not constitute the core of identity and diversity by impressing different states upon the thing” (1981, 230).

²⁵ For Sleigh, a nontrivial (metaphysical) reading of the PII suggests that “if individual x is distinct from individual y then there is some *intrinsic, non-relational*

property F that x has and y lacks, or vice versa” (2009, 325; our emphasis). And Plaisted, who wants to show that the relation of situation in fact intrinsic denomination, claims: “a thing’s position is not an accident of that thing, and so if two distinct things were alike in every respect but occupied different spatial locations, they would not differ with respect to any genuine property” (2002, 77). Thus, both camps can understand uniqueness in terms of some intrinsic differences between substances and they could in principle agree that the fact of uniqueness is not articulated *via* numerical oneness.

²⁶ Sleigh’s distinction between the bland formulation of PII and the metaphysical formulation (see fn. 20) is correlative to Frankel’s distinction between the logical and the metaphysical readings of the PII. According to Frankel’s account in “Leibniz’s Principle of the Identity of Indiscernibles” (1994) there is a *primacy* of the non-numerical meaning of “one” over the numerical meaning. When substances are seen at the most basic level, Frankel argues, what we find is a set of monadic perceptions and “upon these perceptions are founded the discernibility-producing differences, and, finally, numerical difference” (1994, 144). The quality which makes one substance different from another is not its being different from another substance; in other words, “while each of two distinct substances will have the quality of being different from one another, it is *not by virtue* of having that quality that the one is distinguished from the other” (1994, 144). This line of thought which emphasizes the primacy of the non-numerical reading of “one” in PII is also defended by Johanna Seibt in her article “Non-Countable individuals: why ‘one’ and ‘the same’ is not one and the same.” Seibt claims that “the debate about individuality is shaped by the presupposition that all concrete individuals are countable particular entities [...] if we abandon the traditional equation of individuality and countability [...] the dispute about Leibniz’s principle [...] can be dissolved” (1996, 225). Her conclusion is that the principle fails as a principle of oneness and that it is just a principle of sameness.

²⁷ Ariew’s and Garber’s translation is: “*what is not truly one being is not truly one being either*” (AG, 86).

²⁸ The emphasis on unity is rather common. Garber (2009, 325) and Sleigh (1990, 104) emphasize that in his correspondence with Arnauld Leibniz understands indivisibility as the most significant feature of substantial unity. See also Lodge (2004, 179), Look and Rutherford (2007, xl), McDonough (2013, 9), among others. Elsewhere, Look notes: “if anything deserves to be called the fundamental tenet of Leibniz’s metaphysics, it is certainly the principle of the reciprocity of unity

and being. As Leibniz puts it in a letter to Arnauld in 1687, 'I hold this identical proposition, differentiated only by the emphasis to be an axiom, *that what is not truly one being is not truly one being either*' [...] That is, for something to be a real being, it must possess genuine unity. This axiom or tenet leads to the strong distinction within Leibniz's system between, on the one hand, true unities, or unities *per se*, and, on the other hand, aggregates, or unities by aggregation, which can have only 'phenomenal unity'" (2004, 239).

²⁹ C.f. Paul Lodge's Introduction to the Leibniz- De Volder correspondence: "Ultimately the reality of any given aggregate must be derived from some aggregate with *aggregata* that are unities, that is, things whose unity is intrinsic, which are not themselves the product of aggregation and, hence, as he puts it in Letter 55, things that 'cannot be divided into parts'" (LDV, lxxxi).

³⁰ See also Letter to Sophie (GP VII, 557).

³¹ Ariew and Garber translate "mutually supporting".

³² In his "On Unity: Leibniz-Arnauld Revisited" (2003) Levey refers to this argument under the heading "the unity-and-plurality argument" (262).

³³ In the *New System* (1695) Leibniz writes: "without true unities there would be no multitude" (AG, 142); and to Bernoulli: "By monad I understand a substance truly one, namely, one which is not an aggregate of substances [...] if there were no souls or something analogous to them, then there would be no I [ego], no moands, no real unities, and therefore there would be no substantial multitudes" (AG, 167).

³⁴ "A fraction of an animal, or a half-animal, therefore, is not one being *per se*, since this can be understood only of the body of the animal, which is not one being *per se* but an aggregate, and has an arithmetical unity and not a metaphysical unity" (LDB, 31).