

***LEIBNIZ'S HYPER-REDUCTIONISM
ABOUT EXTRINSIC DENOMINATIONS:
A FURTHER LAST WORD?****

***O HIPER-REDUCCIONISMO DE
LEIBNIZ SOBRE AS DENOMINAÇÕES
EXTRÍNSECAS: UMA ÚLTIMA
PALAVRA ADICIONAL?***

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ABSTRACT *One of Leibniz's most characteristic metaphysical theses is that there are no 'purely' extrinsic denominations (NPED). Traditional reductionist accounts of NPED interpret this thesis as the assertion that extrinsic denominations reduce to (sets of) qualitative facts about the individual substances – in the plural – to which the extrinsic denomination is attributed: only the conjunction of these facts is sufficient to extract the denomination, and hence both (sets of) facts are necessary. This article radicalizes this reductionist interpretation by arguing that, more strongly, an extrinsic denomination reduces to qualitative facts about the extrinsically denominated individual alone – in the singular. To argue for this 'hyper-reductionist' interpretation, the article develops a detailed analysis of two Leibnizian arguments for NPED – the argument*

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from ‘the connection of things’, and the argument from substances’ property of conceptual completeness and the containment theory of truth underpinning it. It is proposed that, when seen from the angle of this second argument, NPED turns out to be the strong thesis expressed by hyper-reductionism. After showing this, the article further explains how hyper-reductionism can be seen to accommodate Leibniz’s conception of perception as a sui generis type of absolute property.

Keywords: *Leibniz. Extrinsic denominations. Relations. Complete concept. Perception.*

RESUMO *Uma das teses metafísicas mais características de Leibniz é a de que existem denominações não puramente extrínsecas (NPED). As tradicionais abordagens reducionistas das NPED interpretam essa tese como a afirmação de que as denominações extrínsecas se reduzem a (conjuntos de) fatos qualitativos sobre as substâncias individuais – no plural – às quais se atribuem a denominação extrínseca: somente a conjunção desses fatos é suficiente para extrair a denominação e, assim, ambos os (conjuntos de) fatos são necessários. Este artigo radicaliza essa interpretação reducionista, argumentando que, de forma mais enfática, uma denominação extrínseca se reduz a fatos qualitativos sobre o indivíduo denominado extrinsecamente – no singular. Para defender essa interpretação “hiper-reducionista”, o artigo desenvolve uma análise detalhada de dois argumentos leibnizianos para as NPED: o argumento da “conexão das coisas” e o argumento da propriedade de completude conceitual das substâncias e da teoria da contenção da verdade que a fundamenta. É proposto que, sob a perspectiva desse segundo argumento, as NPED se revelem como a forte tese expressa pelo hiper-reducionismo. Após demonstrar isso, o artigo explica como o hiper-reducionismo pode acomodar a concepção de Leibniz da percepção como um tipo sui generis de propriedade absoluta.*

Palavras-chave: *Leibniz. Denominações extrínsecas. Relações. Conceito completo. Percepção.*

1. Introduction*

Leibniz often claims that there are no ‘purely’ extrinsic denominations (NPED).¹ Yet in this article I argue that NPED should be interpreted as the

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¹ References will be given in due course.

stronger assertion that there are no extrinsic denominations *at all*. The meaning of this assertion is that (prima facie) extrinsic denominations attributed to a substance reduce to the states of that substance *alone*. While this interpretation is in fundamental agreement with reductionist accounts of Leibniz's conception of relations, it goes beyond it. Suppose a substance *a* bears the extrinsic denomination *D* to *b*. According to 'traditional reductionism', as we can call it, all there is to *D* reduces to facts about *a* and *b*: the *conjunction* of those facts is sufficient to extract *D*, and hence both (sets of) facts are necessary. My main claim in this article is that, more strongly, all there is to *D* reduces to facts about *a*: *a* is by itself sufficient to extract *D* and hence *b* is unnecessary. This makes for what I call Leibniz's 'hyper-reductionism' about extrinsic denominations.

One traditional way of addressing NPED places Leibniz's logico-grammatical analyses of relational sentences into (sets of) non-relational ones at centre stage. For those who regard such analyses as successful, the import of Leibniz's view would be that the truth of a relational sentence is entailed by, or can be inferred from, the truth of the non-relational sentences into which it is analysed. Ontologically phrased, relations 'supervene' on the properties of the individuals – in the plural – standing for the *relata* of relational sentences.² I have already said that hyper-reductionism radicalizes this entailment/supervenience view in an important sense: the properties of *one* of the related individuals is all that is needed for the relation to obtain. But hyper-reductionism takes distance from traditional reductionism in a methodological sense, too. While I have nothing serious to say against the logico-grammatical approach, I believe it significant that Leibniz never adopts it in those contexts where NPED is at stake.³ Moreover, and more importantly, Leibniz does favour us with arguments which expressly deploy NPED as a conclusion. This suggests that a better, or in

2 Classical treatments of Leibnizian reducibility in terms of entailment (truth-inference)/supervenience include Mates (1986, pp. 215-8), Cover (1989), Sleigh (1990, pp. 75-8), and Cover/O'Leary-Hawthorne (1999, pp. 83-5), among others. A different view was favoured by Russell (1937, pp. 9-15). For him, Leibniz's alleged reductions should lead to sets of propositions that are logically *equivalent* to the (purportedly) reduced ones. Typically, scholars arguing along Russell's lines – e.g. Broad (1975, p. 79), Rescher (1967, p. 71), Rescher (1981, pp. 60-2) – think Leibniz's reductive analyses (or at least some of them) unsuccessful: the reductions fail in the case of asymmetrical relational sentences, for, at least in this case, a set of sentences cannot be attained where (i) there is no sentence containing a relational predicate and (ii) only truth-functional operators are involved. But both (i) and (ii), it is claimed, must be satisfied for the sentences in the set in question to be logically equivalent to the original ones. Thus, the asymmetrical sentence 'Paris loves Helen' is analysed into 'Paris loves, and for that very fact (*et eo ipso*), Helen is loved' (p. 14), where the predicates 'loves' and 'loved' are (implicitly) relational and the non-truth-functional operator '*eo ipso*' is indispensable. For more on this, see Mates (1986, pp. 215-8), Jauernig (2010, pp. 189 ff.) and Mugnai (1992, pp. 57-83). In my opinion, the most important and detailed interpretation of Leibniz's theory of the reducibility of relations continues to be Mugnai (1992).

3 See Plaisted (2002, p. 5).

any case more direct, understanding of NPED may be gained if we concentrate on these arguments. And that is what we will do.

The article is divided into the following sections. In section 2, I begin by formulating a definition of extrinsic denomination, which will serve us as a basis for the analysis of Leibniz's arguments for NPED. Sections 3 and 4 concentrate on those arguments. I discuss two Leibnizian arguments for NPED – the argument from 'the connection of things' (section 3) and the argument from substances' conceptual completeness and the theory of truth underpinning it (section 4) – and propose that only the latter expresses all the force of Leibniz's reductionist position. Particularly, I show that, when viewed from the perspective of conceptual completeness, NPED turns out to be the strong thesis captured by hyper-reductionism. A final section aims at giving more content to hyper-reductionism by briefly addressing the issue of the nature of the states to which extrinsic denominations reduce. Consideration of this will also allow me to show how hyper-reductionism accommodates other distinctly Leibnizian doctrines, particularly his conception of perception as a *sui generis* type of absolute property.

Two further preliminary remarks are in order before moving on. The first is terminological. I have so far been talking of 'extrinsic denominations'. Yet Leibniz employs this term to refer to two different kinds of relations, namely 'relations *simpliciter*' and 'relational accidents'. The former are relations understood as polyadic properties which connect two or more entities as a kind of 'bridge', that is, in Leibniz's words, relations conceived of as 'out of the subjects' (GP VII, 401: *hors des sujets*) or as what is 'common' to two or more *relata* (GP II, 486: *relationem communem*).⁴ Relational accidents, by contrast, are monadic properties belonging to *one* entity only. While inhering in one entity, these accidents are nonetheless relational because their existence requires other entities.⁵ The hyper-reductionist interpretation I will put forward is intended to apply to both kinds of relations. Thus, my claim is not simply that the reduction of relations *simpliciter* obtains 'unilaterally', as it were, with respect to the states of the extrinsically denominated substance and nothing else: those states are also non-relational in nature.⁶

4 I take the 'bridge' metaphor from Mugnai (2012, p. 181).

5 As is well known, one of Leibniz's recurrent examples of this kind of accident is 'the paternity *in* David' and 'the sonship *in* Solomon', where David is a father – there is paternity in David – 'by virtue of' (*quatenus, eo ipso*) Solomon's being a son, and Solomon is a son – there is sonship in Solomon – 'by virtue of' David's being a father (GP II: 486).

6 We will revert to this in section 5.

The second remark concerns originality. Leibniz's theory of relations is an old topic, one which has exercised scholars for decades. Such has been the sheer volume of work on relations in the Leibniz literature that it would seem that no stone has been unturned and no corner unexplored. Symptomatic of this is the title Massimo Mugnai – arguably the most important scholar working on Leibniz's theory of relations – gives to his last contribution to this topic, “Leibniz's Ontology of Relations: A Last Word?”. And yet, I think there is more to be said about this. Particularly, the hyper-reductionist stone has not been unturned. Or so I aim to show.

2. Extrinsic denominations

Leibniz's writings do not furnish us with a definition of ‘extrinsic denomination’.⁷ They do, however, offer us many examples, and they indicate that an extrinsic denomination is a predicate concept which is imposed on something from another thing (*ex alio*) or, for that matter, makes a reference to another thing (*ad alium*).⁸ Thus, the denomination ‘widower’ predicated of someone who loses his wife is an extrinsic denomination because it makes a reference to the wife, and the wife and the widower are not of course the same thing (A VI, 4: 1503).⁹ Before being in a position to address Leibniz's arguments for NPED, there are two more specific points about the notion of extrinsic denomination that need to be clarified.¹⁰

The first concerns the ‘other things’ to which extrinsic denominations refer. Particularly, it should be made explicit that these ‘other things’ must be *wholly* distinct from the extrinsically denominated individuals. That is, the things to which extrinsic denominations refer must be distinct from the denominated individuals, all their properties and all their parts.¹¹ Think of the sentence ‘Socrates is wise’. The predicate concept ‘wise’ denominates Socrates. Now, Socrates and his wisdom are in some manner distinct from one another: the former is a Greek philosopher, the latter is not; Socrates talks, wisdom does not;

7 See Jauernig (2012, p. 176), Plaisted (2002, p. 3).

8 ‘*Ex alio*’ is Leibniz's terminology (A VI, 4: 1646). ‘*Ad alium*’ derives from Aristotle's characterisation of relations as beings ‘*pros ti*’ (Cat VIII, a15–19). It is a recurrent formula in scholastic and early modern descriptions of relations and relational predicates. See e.g. Suárez, *Disp. Met.* LIV, ii, 9; Jungius, *Logica*, L. I, C. VIII, 4. The phrase ‘make a reference’ is also employed by Mates (1986, p. 218) and Plaisted (2002, p. 3).

9 For more examples, see A VI, 4: 308; A VI, 4: 944; A VI, 6: 400-1; LH IV, i, 9, Bl. 1-7 (in Jolley, 1975, p. 186); LH IV, iii, 5a-e, Bl. 15 (in Mugnai, 2009, pp. 64-6).

10 The ensuing remarks are not intended as a full account of extrinsic denomination. For more detailed attempts at defining this notion, see Jauernig (2010, pp. 176-7) and Mates (1686, pp. 218-21).

11 See Jauernig (2010, pp. 176-7).

and so on. But if this is the case, it would seem that the denomination ‘wise’ attributed to Socrates makes a reference to another thing, namely wisdom. And this seems to indicate that wise is an extrinsic denomination of Socrates. But it is not. Put differently: without the qualification ‘wholly’, *all* denominations would trivially be rendered extrinsic on account of the difference between the subjects they describe and the properties they express.¹²

The second point that needs to be clarified is more difficult to grasp, but I shall focus attention on what is relevant to the discussion of NPED, leaving some additional difficulties aside. What I have in mind is apparent in one of the few accounts of the notion of extrinsic denomination that Leibniz offers by way of explicit characterisation. It occurs in a piece dated by the Academy editors to ca. 1679:

It seems, therefore, that extrinsic denominations, namely those which are born and die without *any change in the subject itself but only because of a change in something else* (*nulla subjecti ipsius mutatione, sed tantum, quia fit mutation in alio*), pertain properly to Relation. Thus, a father becomes a father when the son is born, even if he happens to be in India and so is not affected. In the same way, my similitude to someone else is born and originates with *no change occurring in me* (*sine mutatione mei*), but *solely* because of a change in the other (*sola mutatione alterius*). (A VI, 4: 308; my emphasis)

The explanation of the origin of extrinsic denominations articulated in this passage does not represent any ‘attitude of belief’ on Leibniz’s part, as the subsequent lines indeed clarify.¹³ But the passage is nevertheless interesting, because it brings out one characteristic of the notion of extrinsic denomination that I think orientates Leibniz’s reflections on this matter and that will prove important to the hyper-reductionist interpretation: extrinsic denominations *fully* supervene, or are fully dependent for their existence, on facts about the *other*, wholly distinct individuals to which they refer. Leibniz is particularly

12 See Jauernig (2010, p. 177). Interestingly, some philosophers appear to have endorsed precisely this conclusion. Thus, in his philosophical dictionary, published twice during Leibniz’s lifetime (1692, 1713), Chauvin reports the view, put forward by the ‘most accurate philosophers’, that there are *no intrinsic denominations*, i.e., that all denominations are extrinsic. See *Lex.*, ‘Denominatio’, p. 171 (quoted in Mates, 1986, pp. 219, n. 34). Chauvin does not specify who these ‘most accurate philosophers’ are and, so far as I could see, none of the most important philosophical dictionaries in circulation in seventeenth-century Europe register the view that he reports. See e.g. Chasteigner, *Synopsis* (1612, p. 14); Hackspan, *Termini* (1664, p. 114); Le Roy, *Floretum* (1649, p. 61); Micraelius, *Lexicon* (1662, pp. 360-1); Scherzer, *Vade Mecum* (167), Pars I, pp. 48-9). Cf., though, Volckmar, *Dict. Phil.* (1675, pp. 101-2), where ‘omnia verba’ are said to be extrinsic denominations.

13 The passage continues: ‘It must be admitted, however, that, rigorously, there is no extrinsic denomination in reality, for nothing happens anywhere in the universe which does not affect every existent thing in the universe’. Note that here Leibniz says that there is *no* extrinsic denomination (*nullam esse denominationem extrinsecam*) – rather than no *purely* extrinsic denomination. We return to this below.

clear on this, insistently stressing the point through the employment of four key, unmissable words: ‘*nulla*’, ‘*tantum*’, ‘*sine*’ and ‘*sola*’. As he first puts it, extrinsic denominations ‘are born and die without *any (nulla)* change in the subject itself [i.e. the denominated subject] but *only (tantum)* because of a change in something else [i.e. the externally denominating individual]’. And, again, towards the end of the passage: extrinsic denominations ‘are born and originate with *no (sine)* change occurring in me [i.e. the denominated subject], but *solely (sola)* because of a change in the other [i.e. the externally denominating individual]’.

On the basis of these two points, we can formulate Leibniz’s conception of extrinsic denomination as follows:

- (1) For every denomination D, D is extrinsic if, and only if, there is an individual *a* such that, if D denominates *a*, then there is an individual *b* which is wholly distinct from *a* and D fully supervenes on facts about *b* alone.

A more stringent formulation of (1) should perhaps be phrased in terms of truth-entailment rather than in terms of supervenience, for the latter is an ontological relation, whereas ‘denomination’ is primarily a logical notion. Alternatively, I could keep ‘supervenience’ and replace ‘denomination’ with ‘property’. For the sake of simplicity, however, I shall leave (1) as it stands, which I think provides us with a sufficiently precise account to permit us to discuss NPED on a reasonably stable basis. Moreover, assuming we are talking of extrinsic denominations which *truly* denominate the denominated individuals, whatever holds for a denomination will also hold for its correlative property. So, there is nothing serious to worry about in the disanalogy I am pointing out.

Let us now move on to the more serious issue: why does Leibniz think that there are no denominations ‘purely’ of the sort defined in (1)? As I anticipated, he gives two main arguments. We shall consider them in turn.

3. Leibniz’s first argument: from the connection of things to NPED

Consider these texts:

A1: A consideration which is of the greatest importance in all philosophy, and in theology itself, is this: that there are no purely extrinsic denominations, because of the interconnection of things. (C 8/MP 133)

Philalethes. However, a change of relation can occur without there having been any change in the subject: Titius, ‘whom I consider today as a father, ceases to be so tomorrow, only by the death of his son, without any alteration made in himself’.

Theophilus. That can very well be said if we are guided by the things of which we are aware; but in metaphysical strictness there is no wholly extrinsic denomination (*denominatio pure extrinseca*), because of the real connections amongst all things. (NE 227)

As elsewhere, in these passages Leibniz presents NPED as a consequence of the ‘connection of things’ – that is, the doctrine that everything in a universe is connected with everything else in that universe.¹⁴ A proposal as to how to understand this way of inferring NPED has been made by Rutherford (2005, p. 145), and I take his proposal to be a correct way of presenting Leibniz’s position. It involves a two-stage reasoning.

Stage 1: First, since everything in the universe is interconnected, whenever an object in the universe undergoes change, everything in the universe undergoes change. As Leibniz puts it in one text, ‘nothing happens in one creature of which some exactly corresponding effect does not reach all others’ (A VI, 4: 1618/MP 78; cf. A VI, 4: 308). For example, in a universe comprising two substances, *a* and *b*, if *a* takes on the property red, *b* will take on the extrinsic property of, say, ‘being such-and-such when *a* takes on the property red’.

Stage 2: The second stage of Leibniz’s reasoning would be the decisive one, however. For, according to Leibniz, whenever an object undergoes extrinsic change, some change in the *intrinsic* states of that object must occur: ‘no one becomes a widower in India by the death of his wife in Europe unless (*quin*) a real change occurs *in him*’ (A VI, 4: 1503/L 365, my emphasis; cf. A VI, 4: 1646). Thus, when substance *b* takes on the extrinsic property of ‘being such-and-such when *a* takes on the property red’ there must be some variation in the internal states of *b*. And from this, it would seem, NPED follows. For, as we can see in (1), an extrinsic denomination fully supervenes on facts about the externally denominating thing. That is, in Leibniz’s words, they are ‘born and die without *any* change in the subject itself but *only* because of a change’ in the external thing. But this is not the case in the situation just described, where we are told that an extrinsic change – such as becoming a widower – always

14 See also A VI, 4: 308 and A VI, 4: 944.

entails *some* change in the intrinsic properties of the individual who undergoes that change. Hence, NPED: there are no purely extrinsic denominations.

As appealing as it may seem, I believe this reasoning leaves open at least two important questions.¹⁵

The first question concerns the relationship between the connection of things and NPED. The texts quoted in **A1** make it very clear that the connection of things is supposed to be an *explanation* of NPED: there are no purely extrinsic denominations *because* of the interconnection of things (C 8: '*ob rerum connexionem inter se*'; NE 227: '*à cause de la connexion...*'). But the reasoning just presented appears to give no hint as to how the explanation works. Granted, the connection of things does seem to explain the fact that whenever an object undergoes change, everything in the universe in which it exists undergoes change (i.e., Stage 1). But how about Stage 2, which is the decisive step of the reasoning? Suppose *a* and *b* are green at t_1 . Further, suppose that *a* takes on the intrinsic property red at t_2 . The result is that *b* takes on a new extrinsic property at t_2 : it passes from, say, 'being green when *a* is green' at t_1 to 'being green when *a* is red' at t_2 . This is explained by the fact that *a* and *b* are connected. However, there seems to be nothing in this situation which implies that some variation in *b*'s *intrinsic* states has occurred: *b* continues to be green at t_2 . Of course, the extrinsic change of *b* does not preclude the possibility of a correlative variation in its intrinsic states. But it does not entail it either. So more than the connection of things appears to be needed in order to reach the decisive claim of Leibniz's reasoning. There is something missing.

The second question I have in mind concerns the decisive claim itself, regardless of whether it can or cannot be derived from the connection of things. The claim at stake, recall, is that for every substance, if it undergoes change in its extrinsic properties, there must be some variation in its intrinsic properties. Now, the way in which Leibniz phrases the example of the widower in India leaves no doubt that he thinks that the extrinsic change of something depends, *to some extent*, on its intrinsic change: the man in India would not become a widower 'unless' (*quin*) a real change occurs in him. Yet this can *prima facie* be understood in two ways. One way is to think that intrinsic change is a *necessary* condition for extrinsic change. However, another way of reading it is to think that variation at the intrinsic level is not only a necessary condition for variation at the extrinsic level but also, and much more strongly, a *sufficient* condition for it. Importantly, note that the notion of extrinsic denomination in

15 As I said, Rutherford's explanation of Leibniz's position is, in my opinion, correct. The following misgivings are not about Rutherford's explanation of Leibniz's view but about Leibniz's view itself.

(1) can accommodate both readings. That is, assuming that, as I have proposed, the proposition in (1) captures the notion of extrinsic denomination driving Leibniz's reflections, his thesis about the status of extrinsic denominations can be interpreted as the assertion that

- (2) extrinsic denominations supervene *partly* on facts about the denominated substance and *partly* on facts about the externally denominating substance

or, alternatively, as the stronger assertion that

- (3) extrinsic denominations supervene *completely* on facts about the denominated substance and hence not *at all* on facts about the externally denominating substance.

Proposition (2) is what I called above 'traditional reductionism'. Proposition (3) is a way of formulating hyper-reductionism. Note that, whatever interpretation we endorse, extrinsic denominations would be impossible, for, according to (1), extrinsic denominations fully supervene on facts about the externally denominating substance. And both (2) and (3) contradict this.

One predictable response to this could be that (2), the weaker option, must be Leibniz's because, in formulating his thesis about extrinsic denominations, he often employs, as he actually does in NPED, the modifier 'purely' (*pure*) or some other similar adverb.¹⁶ The suggestion here would be that extrinsic denominations *can* be upheld, though not on the version in (1). That is, extrinsic denominations do depend on the other, wholly distinct things to which they refer, but not fully or exclusively: they *also* depend on intrinsic features of the denominated substances.

The fact, however, is that Leibniz does not always formulate his thesis in this qualified, soft version. For example, in the 1679 piece which I used as a basis for my formulation in (1), he simply writes that, 'rigorously, there are *no* extrinsic denominations in things (*nullam esse denominationem extrinsecam in rebus*)' (A VI, 4: 308; my emphasis). And this is not the only case in point. The same formulation occurs in *De modo distinguendi phenomena realia et imaginaries* (A VI, 4: 1503) and, even more emphatically stated, in a writing probably composed in the early months of 1702: 'There is no extrinsic denomination *at all* in complete things (*denominatio prorsus extrinseca in*

¹⁶ A VI, 4: 1618: *absolute*; NE 227: *entièrement*.

rebus completis nulla est)'.¹⁷ Of course, this formulation does not logically imply that the intrinsic variation in an extrinsically denominated substance is a sufficient condition for its extrinsic change, not at any rate if Leibniz's point is to deny the existence of extrinsic denominations as conceptualized in (1). And yet the fact remains that Leibniz does formulate his position in the non-qualified version, and he does so more than once. If we are going to ascribe any meaning to this, it seems reasonable to believe that, in dropping out the qualifier 'purely', Leibniz's point is this: would-be extrinsic denominations and changes supervene on facts about the denominated substances *only*, i.e. (3). Which of these versions of the no-(purely?)-extrinsic-denomination thesis is to be preferred is an important question. If (3) turns out to be correct, then there will be no more to the extrinsic, grounded properties than facts about the intrinsic, grounding properties of the denominated thing. And the (purportedly) decisive claim that there must be some variation in a thing's intrinsic states whenever it undergoes extrinsic change leaves us with no criterion on which to base our decision.

4. Leibniz's second argument: NPED, predicate/foundation containment, and conceptual completeness

Fortunately, however, the connection of things is not the only argument that Leibniz offers for NPED. By way of preliminary, consider this text, taken from Leibniz's letter to Arnauld of 4/14 July 1686:

I hold that the concept of the individual substance contains all its events and all its denominations, even those that one commonly calls (*appelle vulgairement*) 'extrinsic' (that is to say, those that belong to it only by virtue (*en vertu*) of the general connection of things and of the fact that it expresses the entire universe after its own manner), since there must always be a foundation (*fondement*) for the connection of the terms of [true] propositions, and it must lie in their concepts. (A II, 2: 80/LA: 63-4)¹⁸

Two things in this passage call for attention. First, the explanatory role that it ascribes to the connection of things is considerably weaker than the one attributed to it by the argument in **A1** as recast in the two-stage reasoning that we have been evaluating. As Leibniz parenthetically observes, the connection of things would explain substances' *possession* of commonly called extrinsic

¹⁷ The text is edited, tentatively dated, and translated in Mugnai (2009), from which I quote.

¹⁸ Translation in LA altered: where Mason translates 'basis' I use 'foundation'. This is only to keep consistency with remarks I will be making soon.

denominations or the *occurrence* of commonly called extrinsic events, *not* their dependence, partial or complete, on the intrinsic states of the denominated thing.¹⁹ That is, it would explain Stage 1 of our reasoning but not Stage 2. (Note that Leibniz's parenthetical observation also identifies substances' *expression* as the reason for their possessing commonly called extrinsic denominations and for the occurrence of commonly called extrinsic events: I will say something about this in the conclusion). At the same time, secondly, although the passage does not explicitly mention NPED, it does say something that would explain it: given the nature of truth, that is, given that 'there must always be a foundation for the connection of the terms of [true] propositions, and it must lie in their concepts',

- (4) all of a substance's denominations, *including commonly called extrinsic ones*, must be contained in its concept.

There is much to be said about (4), and we shall revert to it shortly. For the time being, let us just leave it at that and see how it would perform its function in an argument for NPED. In *PL-M*, Leibniz presents his second argument with explicit mention of the relevant conclusion:

A2: It also follows that there are no purely extrinsic denominations which have absolutely no foundation (*fundamentum*) in the very thing denominated. For (*enim*) it is necessary that the notion of the subject denominated contain the notion of the predicate. (A VI, 4: 1645-6)²⁰

The argument is ostensibly simple. Its only explicit premise is that

- (5) the notion of the predicate (of a true proposition) must be contained in the notion of the denominated subject,

from which NPED follows. If we take into consideration the relevant propositions presented so far, we can tentatively put the argument thus. According to (1), extrinsic denominations depend solely on facts about the externally denominating substances to which they refer. But, according to (5), true predicates or denominations are contained in the denominated subject. And this, as we know from (4), applies to any true predicate whatsoever, including

¹⁹ See also A II, 2: 57.

²⁰ See also A VI, 4: 1503, where a parallel argument is given.

commonly called extrinsic denominations. Hence, there are no denominations purely of the sort defined in (1). That is, NPED.

Yet, in truth, the argument is not quite so simple. To understand it, it is crucial that we get (4) right and, more generally, the specific sense in which Leibniz allows – as he does in (4) – for predicate concepts of the extrinsic type to fall under the scope of the application of the containment theory of truth. Above all, note that (4) does *not* simply say that ‘extrinsic denominations’ must be contained or included in the concepts of the substances to which they apply. What it says, rather, is that ‘*commonly called (apelle vulgairement)*’ or, as we may say, *prima facie* extrinsic denominations must be contained or included in their concepts. The reason for this qualification must ultimately be traced, I think, to differences between the structure of relational sentences and that of sentences of the subject-predicate form (or, more precisely, of the subject + copula + non-relational predicate form), as well as to difficulties, which stem from these differences, with making the former correspond with ontic facts in the manner that the latter do. However, a satisfactory development of this reason would require us to enter into Leibniz’s logico-grammatical reductions of relational sentences, which, as mentioned earlier, we shall not do. Instead, here I shall simply observe that the inclusion of *literally* extrinsic denominations in the concept of substances cannot be what Leibniz has in mind in (4) if it is true that the conception of extrinsic denomination that drives his investigation is the one captured by (1): for, given (1), if there is a denomination D such that it is included in a subject *a*, then D cannot be an extrinsic denomination. In any case, more important than Leibniz’s reasons for excluding extrinsic denominations as such from the domain of application of the containment theory of truth is the question that this exclusion prompts: if not extrinsic denominations *qua talis*, quite what is included in substances’ concepts when ‘commonly called’ extrinsic denominations are said to be included in them? My suggestion is that Leibniz’s answer is this:

- (4*) For a commonly called or *prima facie* extrinsic denomination to be included or contained in the concept of its subject means that the *foundation* of that extrinsic denomination is included in that concept.²¹

In the conclusion of the article, I will gesture at the way in which the nature of the ‘foundation’ invoked in this claim is to be fleshed out. In the remainder

21 In suggesting this, I am lining up with Mugnai (2012) and Cover/O’Leary-Hawthorne (1999, pp. 67-61).

of this section, I first (i) present and comment on two texts which, jointly considered, lend fairly strong support to the interpretation of (4) in terms of (4*). Then, (ii) I formulate Leibniz's argument for NPED in **A2** with the appropriate adjustments in place, i.e. with (4) read as (4*); Next, (iii) I assess this argument in light of the problems I have claimed to be involved in Leibniz's argument from the connection of things in **A1**. I show that the new argument solves the problems and allow us to establish proposition (3), i.e. hyper-reductionism. Finally, (iv) I address one objection that might be levelled against (3).

(i) (4) is (4*): two texts

In § 8 of *DM*, we read:

God, on the other hand, seeing the individual notion of Alexander, sees in it at the same time *the foundation of* and the reason for (*le fondement et la raison*) all the predicates (*tous les predicats*) which can truly be stated of him – as, for example, that he vanquished Darius and Porus. (A VI, 4: 1540, 20-1541, 1; my emphasis)

This text occurs nine lines after Leibniz has formulated his containment theory of truth in its canonical, most recurrent terms: 'the subject term must always include the predicate term (*le term... du predicat*)' (A VI, 4: 1540, 11). Yet, for some reason, he now refrains from phrasing his point in exactly those terms: he says instead, or unambiguously implies, that Alexander's individual notion includes the '*foundation of* his predicates, not the predicates themselves.²² What is the reason? The only thing in this second formulation that is not found in the preceding, canonical one is the type of predicate concept that Leibniz singles out in order to exemplify his view: Alexander 'vanquished Darius and Porus' – that is, a predicate concept of the *extrinsic* type. So the suggestion here, I take it, is that, when applied to an extrinsic denomination, the containment theory of truth delivers not the containment of the extrinsic denomination as such in the concept of the subject, but rather of its foundation. That is, (4*).

One might object that in the quoted passage from *DM* § 8, and *pace* the example, foundation-inclusion is said to apply to *all* of Alexander's predicates (*tous les predicats*) and not only to an especial class thereof, which would seem

²² To be precise, what Leibniz says, or unambiguously implies, is that Alexander's individual notion includes the 'foundation of *and* the reason for' all his predicates. A very early text suggests a distinction between 'foundation' and 'reason'. See *Specimen Quaestionum Philosophicarum ex Iure Collectarum* (A VI, 1: 95; 1664). As Mugnai (2012, p. 180) says, whether Leibniz continues to accept this distinction in his later writings is a moot point. For the sake of brevity, I shall assume that he does not and confine my attention to the notion of 'foundation' only.

to indicate that foundation-inclusion is just a different way of formulating the account of truth as predicate-inclusion, bearing no philosophically relevant distinction. But now consider this second text, coming from Leibniz's remarks on Arnauld's letter of 13 May 1686:

For all the predicates of Adam depend (*dependent*) or do not depend upon other predicates of the same Adam. Setting aside, therefore, those which do depend upon others, one has only to consider together all the basic predicates (*predicats primitifs*) in order to form the complete concept of Adam sufficient to deduce (*deduire*) from it everything that is ever to happen to him. (A II, 2: 50/LA 47-8)

In quite plain language, here Leibniz says that *not all* the predicates of a substance – Adam – are required in order to produce its complete concept: only the basic, primitive ones are. As for the rest, they ‘depend’ on the primitive predicates and hence, I believe it is safe to say, are *founded* on them. True, nothing in this passage suggests that there are true predicates which are not included in the complete concept of the substance to which they are attributed: all of them, *in some way*, are. But the passage does suggest that not all these predicates are included *in the same way*: dependent predicates must be extracted from primitive ones through suitable operations of ‘deduction’. Now, the passage does not inform us any further about the kinds of predicates falling within the dependent and primitive classes. However, if we assume that extrinsic denominations belong to the class of predicates which depend on primitive ones, then they will not be included (literally, as such) in the subject concepts to which they apply: their foundation will. And the assumption is reasonable enough: had Leibniz been pressed to provide examples of predicates belonging to the primitive class, he would surely not have listed extrinsic denominations. Given Leibniz's conception, advanced elsewhere, of complex concepts as formed from primitive concepts, he would perhaps have listed some intrinsic denominations – namely complex intrinsic denominations – among the dependent class of predicates. But this would broaden the list of predicates eligible as members of the dependent class, rather than the primitive class so as to incorporate extrinsic denominations among its members. Indeed, as already observed, when Leibniz does provide an example of a predicate the ‘foundation’ of which is included in the subject concept, he mentions an extrinsic denomination, namely ‘vanquished Darius and Porus’. The same happens in *DM* § 13, where the extrinsic denominations ‘master of the republic’, ‘perpetual dictator (of the Romans)’, and ‘resolved to

cross the Rubicon' are all said to have a foundation/reason in the concept of Julius Caesar (A VI 4: 1548).²³

(ii) *Formulation of A2 with (4) interpreted as (4*)*

The interpretation of (4) in terms of (4*) being premised, we are now in a position to provide a more complete reconstruction of Leibniz's argument for NPED in **A2**. We can put it as follows. According to (5), true predicates or denominations are contained in the denominated subject. This, as we know from (4), holds for commonly called extrinsic denominations, the meaning of which is that, as (4*) asserts, extrinsic denominations have a foundation in the subjects to which they are attributed. Therefore, extrinsic denominations depend (at least partly) on these subjects. Now, according to (1), extrinsic denominations fully supervene on facts about the externally denominating individuals to which they refer. But this contradicts (4*). Hence, NPED.

We shall note at this point that this reconstruction of Leibniz's argument for NPED displays a perfect inferential fit with Leibniz's actual language in **A2**. For, conspicuously, there Leibniz qualifies NPED with the relative clause 'which have absolutely no *foundation (fundamentum)* in the very thing denominated', which is exactly what one would expect if (4*) is operating as a premise in **A2**. Also, the fact that Leibniz combines NPED with this clause reinforces my claim that (4*) is the correct way of interpreting (4): when the containment theory of truth is applied to extrinsic denominations, the result is the inclusion not of extrinsic denominations as such in the denominated subjects but rather of their foundations.

(iii) *Conceptual completeness and NPED: NPED is the thesis that there are no extrinsic denominations at all, i.e. (3).*

Hitherto I have argued that, when viewed from the angle of his containment theory of truth, Leibniz's thesis that there are no purely extrinsic denominations means that extrinsic denominations have a foundation in the intrinsic states of the denominated substances. We have now to consider how, or whether, the identification of foundation-containment as the reason for NPED sheds some

²³ More accurately, in *DM* § 13 the extrinsic denomination 'destroyer of the liberty of the Romans' is said to be included (*comprise*) in Julius Caesar's notion (A VI, 4: 1547). But soon afterwards Leibniz says instead that it 'has *its foundation* in [Julius Caesar's] concept or nature' (*a son fondement dans sa notion ou nature*) (A VI 4: 1548). In any case, it must be conceded that not all of Leibniz's texts can be used to support the reading of (2) as (2*). For two problematic texts, see A VI, 4: 912 and A VI, 4: 1644.

light on the two issues I have claimed Leibniz's first argument for NPED – the argument from the connection of things in **A1** – leaves open. More specifically, recollect, I claimed that argument to be defective in two senses. First, it falls short of providing us with an explanation of why extrinsic change requires a correlative change on the intrinsic level. Second, even if one were to concede that the argument does provide us with such an explanation, it fails to give us a clue as to which version of the no-(purely?)-extrinsic-denomination thesis – the weaker option in (2) or the stronger, hyper-reductionist option in (3) – is to be seen as Leibniz's. Does **A2** fare any better?

I want to suggest that it does, and with respect to the two issues. However, consideration of the second issue will automatically give us a solution to the first one, so I shall confine my attention to the second issue only.

We may begin by observing that the conclusion in **A2** is formulated by Leibniz in the same terms as the one in **A1**: 'there are no *purely* extrinsic denominations'. Because Leibniz employs the qualifier 'purely', we may be tempted to conclude that his rejection of extrinsic denominations must amount to the assertion in (2): extrinsic denominations supervene *partly* on facts about the denominated substances and *partly* on facts about the extrinsically denominating substances. I believe, however, that Leibniz thought the qualifier to play no particularly relevant role here. Consider this version of the argument in **A2**, coming from *De modo distinguendi phenomena realia et imaginaries*:

[T]here are no (*nullae*) extrinsic denominations...for every predicate is contained in the nature of the subject. (A VI, 4: 1503)

Unlike the one in **A2**, the conclusion in this passage is unqualified. And the passage was probably written in 1683–1686, that is, roughly the same time period as the text from *PL-M* in **A2**.

If attention to the qualifier 'purely' is indecisive, we must look for an answer to our issue elsewhere. My suggestion is that the answer lies not too far afield, namely, I submit, in the premises from which NPED is reached, that is (4*) and (5). Let us first consider (5) in its own terms. More specifically, consider what Leibniz *does* with (5):

Since [the subject term must always contain the predicate term], we can say that the nature of an individual substance or of a complete being is to have a notion so complete that it is sufficient (*suffisante*) to contain and to allow us to deduce from it all the predicates of the subject to which this notion is attributed. (*DM*, § 8; A VI, 4: 1540/AG 41)

According to this text, the mark of conceptual completeness is that a substance's concept is *sufficient* for deducing all its true predicates. If this is an implication of (5), then the meaning of NPED, insofar as it relies on (5), must be this: so-called extrinsic denominations fully supervene on facts about the denominated substances *only*. That is, the hyper-reductionist claim in (3). Thus, where substance *a* bears the (prima facie) extrinsic denominations D to substance *b*, a *complete* description of *aDb* can sufficiently be obtained by providing complete information about *a*'s intrinsic states. And about nothing else.²⁴

Enriched and reinforced, the same conclusion follows when we translate (5) into the appropriate foundation-language of (4*). For 'foundation' can have a very strong meaning for Leibniz. Writing about the relationship between monads and bodies, he says to De Volder:

[A]ccurately speaking, matter is not composed of constitutive unities, i.e., from real unities; rather it results (*resultat*) from them, since matter, i.e., extended mass, is nothing but a phenomenon *founded* (*fundatum*) in things. (GP II: 265/LV 303; emphasis mine)

Soon afterwards Leibniz famously contends:

[C]onsidering the matter carefully, it should be said that there is nothing in things except simple substances and in them perception and appetite. (GP II: 270/LV 307; emphasis mine)

The first text claims matter to be nothing but a 'result' having real unities as its 'foundation'. The second text claims these real unities and their properties to be *all* there is. Taken together, they imply that the reality of the result is *exhausted* by the reality of the foundation. So, for any substance *a* bearing a (prima facie) extrinsic denomination D to substance *b*, all there is to *b* supervenes on, or reduces to, the foundational, intrinsic states of *a* alone: there are no extrinsic denominations *at all*. And so, once again, we arrive at hyper-reductionism.

(iv) *Extrinsic denomination and mind: an objection and a reply*

But here is an objection. *Premise*: Leibniz insistently repeats that extrinsic denominations and relations require the activity of a perceiving mind; they are ideal or mental results. For instance, he writes to Des Bosses that the 'common relation' between David and Solomon 'is something merely mental (*mere*

24 Or, to be exact, about no other *finite* being. See below, (iv).

mentalem)' (GP II: 486).²⁵ *Conclusion*: it is false that extrinsic denominations fully supervene on the states of the subjects that they denominate: a perceiving mind is also needed.

I concede the premise but not the conclusion. To see why, we must begin by agreeing on two points.

First, whatever one's take on Leibniz's reductionist stance on relations and extrinsic denominations may be, this much is certain: it applies at the level of *finite* substances only. Several important passages bear witness to this. For example, at the beginning of *DM* § 14, before presenting his view that finite substances are not externally related, the first thing that Leibniz deemed pertinent to clarify is this: '[F]irst of all, it is very evident that substances depend upon God, who preserves them and who even continuously produces them by a kind of continuous emanation' (A VI, 4: 1550/AG 46). The same proviso is made in the great majority of passages where Leibniz characterises substances as 'worlds apart': 'Every substance is like a world-apart, independent of all other things, *except for God*' (A VI, 4: 1550/AG 47; my emphasis). And again, in *DM* § 33: '[E]verything that happens to [a substance] is a consequence of its idea or of its being, and nothing determines it, *except God alone*. It is God alone who determines creatures from the outside' (A VI, 4: 1581/AG 64; my emphasis).²⁶

The second point: God has a mind. In fact, God *is* a mind: 'God is a pure mind' (A VI, 4: 1399: *intelligentia pura*). Hence, he himself is a perceiver. Indeed, according to Leibniz, in God there is more perception than in anything else. For God is the only pure mind (A VI, 4: 1399: *solus...intelligentia pura*) and has 'infinite perception' (A VI, 4: 1542/AG 42: *perception...infinie*). As he puts it in a letter to Wolff, 'God, that is, the supreme mind, is endowed with perception, indeed to the greatest degree (*Deum esse perceptione et quidem maxima*)' (GLW 172/AG 234).

Now, if we take these two points together, we can readily see that the objection posed above is dispelled, even conceding its premise. For since NPED – whatever its meaning may be – holds true for finite substances only, it is perfectly consistent to say that NPED is really the claim that extrinsic denominations completely supervene on intrinsic states of the denominated substances and that extrinsic denominations and relations require the activity of a perceiving mind: that mind could be the mind of God, whose relation to finite substances lies outside the domain of application of Leibniz's reductionism

25 See also Gr. 266, GP II: 438, 517; GP V: 132, 210, 220, 246; GP VII: 241, 401; A VI, 6: 145, 227, 245.

26 See also A VI, 4: 1620; GP I: 382, GP II: 57; GP IV: 484, 492, 496.

about relations and extrinsic denominations. And, in effect, this is precisely what Leibniz thinks:

The reality of relations is dependent on mind, as is that of truth; but they do not depend on the human mind, as there is a supreme intelligence which determines them from all time. (NE 265).

5. Concluding remarks

So far, I have argued that Leibniz's NPED should be interpreted as the strong, hyper-reductionist claim that (prima facie) extrinsic denominations completely reduce to the intrinsic, founding states of the substances they denominate: such states are sufficient to extract all there is to the extrinsic denomination; nothing else is needed.

But quite what are these states? This question opens up an area of inquiry which transcends the limits of what is feasible in the present article. However, since the version of NPED I am attributing to Leibniz deploys the thorough dependence of extrinsic denominations on such states, it is clear that a satisfactory understanding of NPED will largely hinge on what we make of them. Moreover, getting clearer on this will pave the way for an enriched and less abstract account of the hyper-reductionist interpretation I have been defending, to be pursued in future work. So, for these reasons, I should like to conclude by briefly addressing this question.

Let me pick up the thread by establishing a negative claim: if hyper-reductionism holds true, then the intrinsic, founding states to which extrinsic denominations reduce cannot be 'relational accidents'.²⁷ There is no text known to me in which Leibniz explicitly sanctions this claim. However, he does explicitly assert that, whatever such states may ultimately be, they must be *absolute*. For instance, in the course of his comments on Temmik's *Philosophia vera theologiae et medicinae ministra*, he says that 'the foundation of a relation belonging to the predicaments is an absolute accident' (*Temmik*, 161).²⁸ Essentially the same point is made in a memorandum for a letter to Des Bosses

²⁷ Against this is Plaisted (2002, p. 69), to whom the intrinsic states upon which extrinsic denominations are founded are 'actually relational accidents'. For reasons of space, I cannot dwell on Plaisted's position here, on which see Mugnai (2012, p. 181). Varying as to detail, that Leibniz accepts irreducibly fundamental relational accidents has been defended by many other scholars. See e.g. Ishiguro (1972, pp. 147-50), Ishiguro (1977), Hintikka (1972), Kulstad (1980), Wong (1980), Woolhouse (1985), McCullough (1996), Maunu (2004), Puryear (2010).

²⁸ Translation in Mugnai (2012, p. 181).

of 12 December 1712, where we read that ‘relations...result from something absolute (*ex absolutis*)’ (GP II: 471). Leibniz’s designation, encountered above, of basic, foundational predicates as ‘*primitive predicates*’ leads to the same point: for, in Leibniz’s terminology, something ‘primitive’ is something ‘absolute’.²⁹ Now, while the notion of absolute tracks two distinguishable ideas in Leibniz, I think this much is unarguable: when employed in the context of discussions about relations, the meaning of absolute is non-relational.³⁰ It follows from this that the foundations of extrinsic denominations cannot be relational accidents. For, as mentioned earlier, such accidents require the existence of other things. Yet, understood as non-relational, something absolute is ‘thought with *no other thing* being thought’ (A VI, 2: 489; my emphasis).³¹

If the foundations of extrinsic denominations are absolute and absolute means non-relational, then these foundations must be qualities.³² But what *type* of quality does Leibniz have in mind? The answer is given in a passage that I have already quoted. The denominations ‘that one commonly calls extrinsic’, we found Leibniz saying in a memorandum for a letter to Arnauld,

belong to the individual substance by virtue of (*en vertu*)...the fact that it expresses (*exprime*) the entire universe after its own manner. (A II, 2: 80/LA: 63-4)

Extrinsic denominations, according to this passage, belong to substances by virtue of their *expressing* the whole universe. Now, when predicated of substances, expressions are, strictly speaking, *perceptions*, because the expressions occur in a unity, and ‘expression in a unity’ is the way Leibniz defines ‘perception’.³³ And so, we have arrived at an answer to our original question: the foundations of extrinsic denomination must be substances’ perceptions.

To be sure, the foregoing reasoning is quite schematic. For present purposes, however, it will suffice that we face one obvious problem that it prompts. If the foundations of extrinsic denominations are absolute, non-relational qualities,

29 See e.g. A VI, 4: 508.

30 In support of this, see e.g. A VI, 4: 993; A VI, 4: 1085; NE 228. ‘Absolute’ and its cognates are also employed by Leibniz in the sense of ‘positive’ or ‘affirmative’ (GP VI: 112, 383; A VI, 3: 519). When this is the case, they oppose the triad limitation/negation/privation (A VI 4: 36; 538, 2037; A I, 15: 560). For discussion, see Robert (2020, pp. 69-76)

31 Strictly speaking, this conception of absolute only applies to God’s simple unanalysable attributes (A VI, 4: 508). However, it seems clear that, when predicated of the accidents of finite substances, Leibniz’s point is that an accident is absolute if the existence of no other *finite* external entity is required for its explanation.

32 See C 9/MP 134: ‘[R]elations...demand a foundation taken from the category of quality (*ex praedicamento qualitatis*), that is, from an intrinsic accidental denomination’.

33 See GP II: 331; III: 329, 575; VI: 598; A II, 2: 240, 231.

can perceptions really be the foundations we are looking for? To wit, can perception be an absolute, purely qualitative non-relational property?

In a set of annotated transcriptions of Jungius' *Logica*, Leibniz makes a comment which establishes the framework for an affirmative answer to this question.³⁴ In a chapter entitled 'De Notionum Differentiis', Jungius says that absolute notions are the opposite of relational notions.³⁵ More specifically, absolute notions so conceived are 'unqualifiedly absolute' notions (*omnino absoluta*), for they 'include no relation at all (*nullum prorsus respectum includit*)' (A VI, 4: 1086). Shortly afterwards, however, Jungius points out that there are some notions which, while including 'a certain relation', can nonetheless be considered 'absolute in a qualified sense' (*absoluta secundum quid*).³⁶ Among others, this is the case of reflexive notions – for example, 'being similar to itself' (*sibi simile*). Leibniz makes the following comment: such a notion is 'absolute...because it involves a respect, that is, it contains that which belongs to the terminus (*quod ad terminationem requiritur*)' (A VI, 4: 1087; my emphasis). In other words, as Mugnai teaches, absolute *secundum quid* notions can at the same time be absolute *and* involve a certain relation precisely because they are reflexive: the term of reference or *terminus* of the relation is included *within* them (1992, p. 124).

This understanding of perception fits remarkably well with my hyper-reductionist proposal. Let us revert to substance *a* bearing the extrinsic denomination D to *b* referred to at the beginning of the article. I contended there that all there is to D reduces to facts about *a* – there is no need for *b*. How is this possible? Well, it is possible if *b* is contained in *a* as the intentional object of its perceptions, that is, if, as in the case of absolute *secundum quid* properties, the *terminus* of D remains within *a*. And note that, metaphysically speaking, the existence of *b* is not necessary for this to happen. For, as Leibniz sees things, while perceiving the whole universe, '[e]very substance is like a world-apart (*mondes à part*), independent of all other things, except for God', so much so that the elimination of the universe surrounding a substance would not be noticed by that substance. (*DM*, § 14; A VI, 4: 1550-1). Seen in this light, it turns out that hyper-reductionism is not only a specific conclusion we reach when we look at NPED from the angle of conceptual completeness. It is also the general view one would expect to be embraced by someone who believes,

34 Attention to this passage has been drawn by Mugnai (1992, p. 124), whom I follow in this paragraph.

35 See *Logica*, Logical Generalis, L. I, C. XV.

36 The adjective 'certain' in the characterisation of absolute *secundum quid* notions is neither Jungius' nor Leibniz's, but I think its employment is justified by Jungius' and Leibniz's use of 'prorsus' for describing *omnino absoluta* notions.

as Leibniz does, that the universe is composed of world-apart, metaphysically isolated yet all-perceiving substances. But the elaboration of this connection must be left for another occasion.

Data availability:

All datasets supporting the results of this study have been published within the article itself.

Conflict of interest:

The author declares that there are no conflicts of interest.

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