MARGINALIA IN RUSSELL'S COPY OF GERHARDT'S EDITION OF LEIBNIZ'S *PHILOSOPHISCHEN SCHRIFTEN* [1]

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Russell's most important source for his book on Leibniz was C. I. Gerhardt's seven-volume *Die philosophischen Schriften von Gottfried Wilhelm Leibniz*. Russell heavily annotated his copy of this important edition of Leibniz's works. The present paper records all Russell's marginalia, with the exception of passages marked merely by vertical lines in the margin, and provides explanatory commentary.

Russell's *A Critical Exposition of the Philosophy of Leibniz* (1900) resulted from a lecture course on Leibniz which he gave at Cambridge from January to March 1899. Given the almost accidental way in which he came to give the lectures, the book which resulted from them had a remarkable impact on philosophical scholarship on Leibniz, where it tended to set the agenda for much of the ensuing century, focusing attention especially on Leibniz's logic and

[1] The authors would like to thank Ken Blackwell for his advice and encouragement, the two referees for *Russell* for the care they took with what must have been a very difficult article to referee, and David Hitchcock for his detailed help with Greek translation.

its relation to his metaphysics.[2] Given the impact of Russell's book, it is worth considering the sources that he used for it and the use he made of them. By far the most important sources for Russell were two seven-volume collections of Leibniz's writings, *Leibnizens mathematische Schriften* (1849–63), and *Die philosophischen Schriften von Gottfried Wilhelm Leibniz* (1875–90), both edited by the German historian of mathematics, Carl Immanuel Gerhardt (1816–1899). Both of these are very frequently cited in *The Philosophy of Leibniz* and in the collection of "leading passages" with which it ends; the *Philosophischen Schriften* are cited on almost every page. Russell recorded reading the *Philosophischen Schriften* in February 1899,[3] which was presumably when he finished a task begun some time before. By contrast, he did not record reading the *Mathematische Schriften*, probably indicating that he read it only selectively.[4] Russell did not own a copy of the *Mathematische Schriften*: he told G. E. Moore, who was helping him with translations, that he was using the copy from Trinity College Library so Moore would have to use the copy in the Cambridge University Library.[5] But Russell did have his own copy of the

[2] For more information on how the book came to be written, see O'BRIANT, "Russell on Leibniz" (1979), and GRIFFIN, "Russell and Leibniz on the Classification of Propositions" (2012), §1.

[3] "What Shall I Read?", *Papers* 1: 361.

[4] Other Leibniz texts that Russell read in connection with his lectures were LATTA, ed., *The Monadology and Other Philosophical Writings* (1898); DUNCAN, ed., *The Philosophical Works of Leibnitz* (1890), and Langley's translation of the *Nouveaux Essais* (LEIBNIZ, *New Essays* [1896]). It is very probable that Russell had his own copies of these widely available and relatively inexpensive works, but Russell was not a great keeper of books, and no copies have remained in his library. The only other Leibniz text he cites frequently enough to warrant an abbreviation is FOUCHER DE CAREIL's *Réfutation inédite de Spinoza par Leibniz* (1854), which does not appear in Russell's reading list. Russell cites the very rare Institut de France edition of 100 copies, one of which was in the Cambridge University Library. Russell's library contains a finely bound copy of Leibniz's *Opera Philosophica*, edited by J. E. ERDMANN (1840), which belonged to Russell's former brother-in-law, Frank Costelloe. Russell refers to it occasionally, as in the marginale to **G.VII.81**, for a different version of the same text, and at *PL*, p. 109, to correct a deficiency in Gerhardt's text. Also in Russell's library is an early eighteenth-century edition of Leibniz's correspondence in four volumes edited by CHRISTIAN KORTHOLT (1709–1751), the son of the Kiel professor Sebastian Kortholt (1675–1760), with whom Leibniz had some correspondence in 1711. The edition shows no sign of having been read by Russell and probably came into his possession long after *PL* was written.

[5] BR to G. E. Moore, 9 June 1900 (RA). In 1900 there were few English translations of Leibniz's works (and most of those, not good). Serious work on Leibniz therefore

Philosophischen Schriften, and it has survived in his library.

Leibniz published little of his philosophy in his lifetime, and it wasn't until the second half of the eighteenth century that collections of his philosophical writings began to appear, notably with the six-volume *Opera Omnia*[6] edited by Louis Dutens in 1768. Through the nineteenth century and beyond, more and more philosophical material (together with much else) continued to emerge higgledy-piggledy from the archives in Hanover—a process which still continues, since the massive but glacially slow Akademie edition is still incomplete. In many ways the most impressive result of this process in the nineteenth century was Gerhardt's seven volumes of *Philosophischen Schriften*. They were at the time by far the most extensive collection of Leibniz's philosophical writings that had been made available—a distinction they retained through much of the twentieth century (being overhauled by the Akademie edition only by the end of the century). They are still generally regarded as the most useful collection of Leibniz's philosophical texts available, and were reprinted in paperback as recently as 2008.

Nonetheless, they have their faults—many of them common to nineteenth-century editions. In the first place, Gerhardt's is not a critical edition: different versions of a text are not compared and collated. Gerhardt makes no attempt to record Leibniz's extensive corrections and revisions to the text, or even to offer much by way of a history of the text or a description of the physical documents. Even more seriously, Gerhardt (perhaps understandably at a time when travel was slow and travel grants non-existent) relied exclusively on the Hanover archives for holograph material. In the case of correspondence this had the unfortunate consequence that Gerhardt typically took drafts and copies of Leibniz's letters as his texts, rather than the physical documents that were actually sent to the recipients. The ill effects of

required reading knowledge of Latin and French (the two main languages in which he wrote) and German (the language of his main editors). Russell's German and French were excellent (witness his occasional corrections of Gerhardt's transcriptions of Leibniz's French, e.g. at **G.III.458** and **G.IV.534**). His Latin was good enough for him to read Leibniz's Latin relatively easily and to prepare his own translations. But, as he told Moore, he did not feel sufficiently confident about his translations to pass them without Moore's approval. (Moore, of course, had started his Cambridge career by taking the Classics Tripos.)

6 Misleadingly advertised, since it didn't even include all the works that were known at the time.

this, however, spread beyond the letters themselves, for many of Leibniz's texts were prepared for particular correspondents, so that the Hanover archives contain drafts or copies while the definitive version ended up elsewhere. In addition, Gerhardt had a very nineteenth-century tendency to meddle, especially with Latin punctuation.[7] Finally, Gerhardt was not always very successful in deciphering Leibniz's handwriting: witness the place where Russell was able to guess the word "Supralapsaires", of which Gerhardt could provide only the opening "Supra" (**G.III.481**). Nonetheless, Gerhardt's edition was a considerable achievement and retains its value to this day. It contains numerous texts which still have not appeared in the Akademie edition, which to date has only published Leibniz's philosophical texts up to June 1690 (with the exception of the *Nouveaux Essais* of 1704) and his philosophical correspondence up to 1695, with the result that translations are still often cross-referenced to Gerhardt's edition. As late as 1967, L. J. Russell could describe it as "indispensable",[8] and in 1989 Ariew and Garber lamented that the Gerhardt volumes were still "unfortunately, the best and most comprehensive collections of Leibniz's writings currently available".[9]

Of all the defects of the Gerhardt edition, however, the one that mattered most for Russell's purposes was incompleteness, though this is a defect it has shared with all others and will continue to do so until the Akademie edition is finished. There is little evidence that Russell, as he wrote his book, gave much thought to what had been left unpublished in the archives and what impact it might have on his interpretation of Leibniz's philosophy. He came to do so, however, soon after publication when Louis Couturat produced his own account of Leibniz's logic (*La Logique de Leibniz* [1901]), based on archival research, and subsequently published some of the previously unpublished documents on which it was based (*Opuscules et fragments inédits de Leibniz* [1903]).[10] Couturat's work tended broadly to confirm Russell's interpretation and to supply a great deal more textual support

[7] On all this, *cf.*, e.g., LOOK AND RUTHERFORD (2007), pp. xv–xvi.

[8] L.J. RUSSELL, "Leibniz, Gottfried Wilhelm" (1967), p. 432.

[9] ARIEW AND GARBER, eds., Leibniz, *Philosophical Essays* (1989), pp. xi–xii.

[10] In reviewing COUTURAT, *La Logique de Leibniz* (1901), Russell made a strong plea for a complete edition of Leibniz's writings, including even the fragments, the importance of which Couturat had demonstrated ("Recent Work on the Philosophy of Leibniz" [1904]; *Papers* 4: 562).

for it.[11] It showed, Russell said in the Preface to the second edition of *The Philosophy of Leibniz*, that "the 'Discours de Métaphysique' and the letters to Arnauld, upon which I had to rely almost exclusively for my interpretation, were mere samples of innumerable writings expressing the same point of view, which had remained buried among the mass of documents at Hanover for over two centuries."[12] He went on to mention several logical innovations for which Leibniz had been responsible, but which had remained unpublished owing to "the bad taste of his editors" (*PL*, p. vi). There is no doubt that Russell's book on Leibniz would have been significantly different if Russell had had more texts to go on, but it is doubtful if the main thesis of the book would have changed. Russell would surely still have maintained that Leibniz's philosophy could be derived almost entirely from his logic; but the account Russell gave of Leibniz's logic would probably have been richer and more appreciative. But given the partial extent to which Leibniz's *Nachlass* had been published at the time Russell wrote his book, his choice of Gerhardt's editions as his main texts cannot be criticized.

Russell acquired his copy of Gerhardt's *Philosophischen Schriften* in December 1898. On the top right-hand corner of the title page of the first volume he wrote "B. Russell | December 1898" in black ink; on the half-title page of the second volume he wrote "B. Russell" in pencil in the same location. He did not write his name on the remaining volumes, though all volumes have the Bertrand and Alys Russell bookplate inside the front cover.

All but two of the seven volumes are quite extensively marked up. The exceptions are Volumes 5 and 6. Volume 5 is taken up entirely with Leibniz's *Nouveaux Essais sur l'entendement humain*, a work which Russell had already read in A. C. Langley's recently published English

[11] There was one matter on which Couturat's research caused Russell to change his mind, namely that it was Leibniz's view that all true propositions, including those which are contingent, are analytic. Russell came to accept this only as a result of new texts published by Couturat (*cf.* "Recent Work", *Papers* 4: 543). But here he could hardly blame Gerhardt alone, for, as he told Couturat on 23 March 1902, he had already "quoted several texts ... that are hardly capable of any other interpretation", but had not been able to understand them properly because he could not suppose than anyone would think that an analytic proposition might be contingent (SCHMID, ed., Russell, *Correspondance ... avec Louis Couturat* (2001), 1: 272).

[12] *PL*, p. [v]; see also "Recent Work", *Papers* 4: 537–8.

translation.[13] There are only two marginalia in Volume 5, and both take up errors originating with Gerhardt and reproduced by Langley.[14] It would be surprising, perhaps, that he read the original French at all, but for the fact that (as Remnant and Bennett point out) the Langley translation is "almost unreadable … and also remarkably inaccurate: in literally hundreds of places Langley gives renderings from which no one could discover what thought is expressed in the French text."[15] Langley's translation follows Gerhardt's edition and derives some of its failings from that (as we see from Russell's marginalia).[16] Russell even read Gerhardt's original account of the production of the book, an English translation of which appears at the beginning of Langley.[17] Much of Volume 6, also, is taken up with a work Russell read before he acquired his own copy of Gerhardt, namely Leibniz's *Théodicée*. Russell's list of books he read includes the *Théodicée* for November 1898 (*Papers* 1: 361), and his Leibniz notebook[18] contains three pages of notes on the work which make it clear he was using Gerhardt's edition, presumably a library copy.

There is a mystery concerning Russell's marginalia in Volumes 4 and 7. In Volume 4 Russell wrote a very small "R." (or sometimes "R") against the headings of sections II (**G.IV.281**) and IV (**G.IV.297**) of the material Gerhardt put together under the heading "Leibniz gegen Descartes und den Cartesianismus". The mysterious letter "R." reappears in Volume 7, written to the left of the heading of fourteen of the seventeen documents Gerhardt collected under the heading "Philosophische Abhandlungen" (**G.VII.249–344**), the exceptions being X, XIV and XVI. The content of the papers gives no clue as to why some are so marked and not others; and both marked and

[13] Russell's Leibniz notebook includes thirty pages of quite detailed notes on the Langley translation. See "Notebook" (2016).

[14] The only other mark in Volume 5 is a vertical line against the first half of the first speech by Theophilus in Bk. II, Ch. xxiii, §2 (**G.V.202**). Russell includes the passage in the Appendix of leading passages in a significantly different translation to that given by Langley (*PL*, pp. 220–1).

[15] *New Essays*/Remnant and Bennett, p. xiii.

[16] Curiously, Remnant and Bennett make nothing of passages in the work which Langley, following Gerhardt, leaves out. Remnant and Bennett use the Akademie edition, of course.

[17] *New Essays*/Langley, pp. 3–12.

[18] RA 230.0300001–F1. These notes, along with his other reading notes for *PL*, are printed in "Notebook".

unmarked papers carry marginalia. It is possible that the ones that Russell marked "R." were papers he had read in some other source. But, if so, the source cannot be any of the other collections of Leibniz texts which we know Russell read, namely Latta, Duncan and Erdmann, for some of the marked papers are not included in any of these collections. It remains a mystery what the marks signify.

It is worth noting that all the pages in all seven volumes of Russell's copy of Gerhardt have been cut. But this is not a very reliable indication that Russell read every page; he is more likely to have cut the pages of a volume before he started to read than to cut them as he read. Moreover, it cannot be absolutely ruled out that he obtained a second-hand copy, although the books show no sign of previous ownership, and Volume 5, which contains the *Nouveaux Essais*, is noticeably less well used than the other six volumes. No doubt Langley's translation was his main source for that work, though as noted he consulted Gerhardt's original to correct Langley's errors and sometimes Erdmann's edition to correct Gerhardt's (as at *PL*, p. 109 n.3). Inside the front cover of each volume is a small bookbinder's sticker ("J. P. Gray & Son, | Bookbinders, &c. | 10, Green St., Cambridge"). The volumes were almost certainly shipped from Germany in signatures bound in printed paper wrappers to be rebound in hard covers by the bookseller.[19]

Russell marked many passages, some of them quite long, simply with single (here "|") or double vertical lines in the outer margins, obviously to draw them to his attention as he prepared his lectures or his book. Passages marked in this way are so extensive as to preclude reproducing them in this record of Russell's marginalia: to do so would require reprinting scores of pages of Gerhardt's text. It is worth noting, however, that, of the 515 "leading passages" from Leibniz that Russell included as an appendix to his book, almost all of those which come from the Gerhardt edition are marked by such marginal lines in Russell's copy. Almost the only exceptions are when the passage in question had already been translated by Latta or Duncan, which tends to confirm Russell's report that, where they were available, he preferred to correct the translations of others than to make his own (*PL*, p. xv).

[19] See WITTMANN, *Geschichte des deutschen Buchhandels* (2011), p. 262. Thanks to Tom Archibald for this explanation.

On occasion, however, Russell accompanied these vertical lines with some written comment which served merely to indicate the topic of the passage so marked (e.g. "I⟨dentity⟩. of I⟨ndiscernibles⟩." at **G.II.54** or "S⟨ufficient⟩. R⟨eason⟩." at **G.II.62**). Occasionally such labelling would occur without the marginal lines. These are not so much comments on the text as what we shall call "indexing labels": they are exactly the sort of labels with which an indexer might mark up a text. In this case, they are intended to identify the relevance of a passage for Russell's purposes, or perhaps where to include it in the classified selection of texts in his appendix. It is notable that these indexing labels are much more common in the first two volumes and cease almost entirely after the third. This suggests that Russell probably read Gerhardt's seven volumes in sequence and, by the time he reached the fourth volume, felt confident enough to find his way around Leibniz's corpus without the help of indexing labels. Although we have ignored vertical lines when they are not accompanied by any verbal comment, we have included these verbal indexing labels, whether or not they were accompanied by vertical lines. They have some importance as indicating which passages Russell took to be canonical statements of a certain doctrine, how he planned to classify the extracts in the appendix, and perhaps how he understood the relevance of passages the purport of which may not have been immediately clear. Although we include the marginal comment, identify the exact passage it labels using page and line numbers,[20] and where (if anywhere) in the appendix it is translated, we do not reproduce either the original language text from Gerhardt or the translation (if any) from the appendix. Doing so would usually amount to no more than quoting a statement of some important principle such as the Identity of Indiscernibles in the original language, quoting a translation of the passage, and then adding merely that Russell had labelled it the Identity of Indiscernibles in the margin. Doing this across all seven volumes would have greatly extended our record of Russell's marginalia, and would tend to obscure more interesting marginalia among a mass of labelling. Since what we have termed indexing labels are treated differently from Russell's other marginal comments, we have listed them separately in this record of Russell's marginalia.

[20] These are given thus: "**G.I.52**:25–**53**:21" indicates that the passage labelled begins on page 52, line 25 and ends on page 53, line 21 of Gerhardt's first volume.

A different type of marginal comment which Russell quite often made was to add the date of a document around its title. Indeed, the frequency with which Russell did this is rather surprising, for his book is not an account of the development of Leibniz's philosophy.[21] It is clear, however, that he did pay considerable attention to the dates of the documents he was dealing with. Russell seems to have derived all his dating of documents from Gerhardt's editorial apparatus, so the date was noted only to emphasize a document's place in the chronology. We have recorded all such dating by Russell and identified the text so dated in a list separate from the main table of marginalia.

The marginalia with which we are primarily concerned, however, are those in which Russell offers some criticism, comparison, or comment on the text. In such cases, we record Russell's comment together with the text he is commenting on in the language in which it appears in Gerhardt, and a translation. We use Russell's translations from the appendix of leading passages in the *Philosophy of Leibniz* wherever they are available (giving paragraph and page reference to where they occur in the Appendix,[22] and retaining the square brackets in his translations); where they are not we have made our own, consulting available English translations. Where Russell translated only part of a marked passage in his appendix, we have enclosed the parts which we have translated in angle brackets, "⟨…⟩". We have also included, in the second column, after the translation, a list of the places in the *Philosophy of Leibniz* where Russell discusses the passage in question. In presenting the original text we have not only indicated the volume and page number of Gerhardt from which it is quoted but identified as briefly as possible the document from which it comes.[23] Wherever possible, we identify the location of the passage in the definitive Akademie

[21] Though he does point out that in the Appendix he gives the date of an extract "whenever it is not later than 1686, or seems important for some other reason" (*PL*, p. xiv).

[22] The page references are those of *PL*'s first edition, published by Cambridge in 1900 and reissued, with a "Preface to the Second Edition", by Allen and Unwin in 1937. Routledge reissued it in 1992 with an Introduction by John G. Slater. Spokesman Books reprinted it in 2008. In 2013 Cambridge reprinted the first edition without the 1937 preface. The arabic page references work for any print edition where the Appendix ends on p. 299; the roman, for any print edition with the 1937 preface. They do not, however, coincide for Routledge's reset e-book of 2005.

[23] In order to be as concise as possible we have used abbreviations extensively: thus "ltr." for "letter", "corresp." for "correspondence", "intro." for "introduction", "L" for "Leibniz" and "G" for "Gerhardt".

edition of Leibniz's works (cited as "A", followed by series, volume and page number) or, where necessary, some other authoritative edition, if one is available. (The comparatively large number of passages for which we have been unable to supply a more definitive edition indicates the degree to which Gerhardt's edition has still not been fully superseded.) We have also used modern scholarship to correct errors in Gerhardt's descriptions of the documents, particularly, for example, in the dating of letters. With two exceptions (**G.III.657** and **G.VI.605**), which may not be in Russell's hand, all the marginalia were written in pencil. All are printed here in bold italic type. Not surprisingly, Russell made very frequent use of abbreviations in his marginalia, often using a specialized system of abbreviations he had developed as a student.[24] Throughout we have silently expanded Russell's abbreviations.

MARGINAL COMMENTS

Passage in Gerhardt	Translation	Marginale
G.I.58 *Ltr. to Duke Johann Friedrich of Brunswick-Luneberg, 2nd half Oct. 1671; A II 1: 262.* In philosophia naturali bin ich der erste vielleicht, so vollkommen demonstrirt, terram moveri; item dari vacuum, nicht durch experimenta, denn die thuns nicht, sondern demonstrationes geometricas, dieweil ich de natura motus etliche propositiones bewiesen, so noch niemands in gedanken kommen.	*PL, §37 (p. 227):* In natural philosophy I am perhaps the first to have proved thoroughly ⟨that the Earth moves; and likewise⟩ that there is a vacuum, ⟨though not through experiments, for they fail to do so, but through geometrical demonstrations, because I prove some propositions about the nature of motion that no one has hitherto thought of.⟩ *Cf. PL, p. 77n.*	| in margin. ***Leibniz the first to have proved a vacuum.***

[24] See BLACKWELL, "Russell's Personal Shorthand" (2015).

G.I.325 *Ltr. to Malebranche, 1st half of 1676; A II 1: 404.* Chez moy, tout ce qui peut estre produit, a des *requisits* hors de luy, sçavoir ceux qui ont concourru à sa production. Or les parties de l'espace sont produites par le mouvement du corps qui le coupe; donc elles ont des requisits.	According to me, everything that can be produced has *requisites* outside of it, namely, those which have conspired to produce it. Now, the parts of space are produced by the motion of the body which cuts it; thus they have requisites.	In margin: | against whole paragraph; || against passage quoted; ||| and ***?*** against last sentence.
G.I.330 *Ltr. to Malebranche, 2 July 1679; G gives 2 versions of the ltr., G.I.330–3 and G.I.334–9; the Akademie edition prints 1 corrected version; A II 1: 717.* J'approuve merveilleusement ces deux propositions que vous avancés, sçavoir que nous voyons toutes choses en Dieu, et que les corps n'agissent pas proprement sur nos.	I concur wholly with these two propositions that you put forward, namely that we see all things in God, and that bodies don't properly act upon us.	| in margin. ***Agreement with Malebranche***
G.I.332 *Ibid.; A II 1: 726.* Comme j'ay commencé à mediter lorsque je n'estois pas encor imbu des opinions Cartesiennes, cela m'a fait entrer dans l'interieur des choses par une autre porte et decouvrir des nouveaux pays, ….	As I began my meditations when I was not yet steeped in Cartesian opinions, this made me enter inside of things through another door and discover new lands, ….	| in margin. ***Not originally Cartesian***[25]
G.I.334 *Ibid.; A II 1: 717–18.* C'est pourquoy je vous aurois beaucoup d'obligation si vous pouviés un jour dissiper les doubtes que j'ay sur les	This is why I would be very much obliged if you ⟨Malebranch⟩ could someday dispel the doubts I have about the following	| in margin. ***6 points against Descartes (1679)***[26]

[25] Russell's notes on this letter of Leibniz to Malebranche show him to be particularly interested in the extent of Leibniz's agreement and disagreement with Descartes and with Malebranche as the most distinguished living Cartesian.

[26] In this passage Leibniz is delicately stating some of his chief objections to Descartes' philosophy as questions on which he wishes Malebranche to "dispel his doubts". He is adamant elsewhere that matter is not the same thing as extension; that no created substance can exist without a body; that Descartes' argument for the existence of God is defective, in that it does not establish that a most perfect being is possible;

propositions suivantes: *premierement* que la matiere et l'entendue ne sont qu'une même chose; *secondement* que l'esprit peut subsister sans estre uni à quelque corps; *troisiemement* que les raisons de l'existence de Dieu de M. des Cartes sont bonnes; *quatriemement* que toute la verité depend de la volonté de Dieu; *cinquiemement* que la raison que M. des Cartes apporte à l'egard de la proportion des refractions est valable; *sixiemement* qu'il se conserve tousjours la même quantité de mouvement dans les corps.

propositions: *firstly* that matter and extension are simply the same thing; *secondly* that the mind can subsist without being united with a body; *thirdly* that M. des Cartes's reasons for the existence of God are right; *fourthly* that all truth depends on God's will; *fifthly* that the reason that Mr. des Cartes provides concerning the ratio in refractions ⟨of light⟩ is valid; *sixthly* that bodies always conserve the same quantity of motion.

G.I.338 *Ibid.; A II 1: 723.*
Mons. des Cartes dans sa réponse aux deuxiemes objections *articulo secundo* demeure d'accord de cette analogie inter *Ens perfectissimum et Numerum maximum,* niant que ce nombre implique. Cependant il est aisé de le demonstrer. Nam numerus maximus idem est cum numero omnium unitatum. Numerus autem omnium unitatum idem est cum numero omnium numerorum (nam quaelibet unitas addita prioribus novum semper numerum facit). Numerus autem omnium numerorum

PL, §58 (p. 244):
Mons. Des Cartes in his reply to the second objections, article two, agrees to the analogy between the most perfect Being and the greatest number, denying that this number implies a contradiction. It is, however, easy to prove it. For the greatest number is the same as the number of all units. But the number of all units is the same as the number of all numbers (for any unit added to the previous ones always makes a new number). But the

| in margin against whole passage after 1st sentence. Russell inserted a caret mark in the text after the 1st sentence and wrote

? ∧ contradiction

in margin. Below this he wrote

infinite number

that truth does not depend on God's will; that Descartes' stated argument in favour of the sine law of refraction is flawed (he hints elsewhere that Descartes may have plagiarized it from Snell); and that the quantity of motion (scalar mv) is not conserved in collisions. Wallis, Huygens, Wren and Marriotte had established that what is conserved is rather the quantity of directed motion (vector mv—which Newton calls momentum and Leibniz calls "quantity of progress"), and Leibniz himself had discovered in 1678 that the quantity of force (of dimension mv^2—what we call energy) is also conserved in all collisions.

implicat, quod sic ostendo: Cuilbet numero datur respondens numerus par qui est ipsius duplus. Ergo numerus numerorum omnium non est major numero numerorum parium, id est totum non est majus parte.

number of all numbers implies a contradiction, which I show thus: To any number there is a corresponding number equal to its double. Therefore the number of all numbers is not greater than the number of even numbers, *i.e.* the whole is not greater than its part.
Cf. PL, p. 109n.

self-contradictory[27]

G.I.370 *Ltr. to Simon Foucher, Paris, 1676; A II 1: 388.*
Ainsi de toutes les choses qui sont actuellement, la possibilité meme ou impossibilité d'estre est la premiere. … Ainsi la nature du cercle avec ses proprietez est quelque chose d'existant et d'eternel; c'est à dire il y a quelque cause constant hors de nous qui fait que tous ceux qui y penseront avec soin trouveront la même chose, et que non seulement leur pensées s'accorderont entre elles; ce qu'on pourroit attribuer à la nature seule de l'esprit humain, mais qu'encor les phenomenes ou experiences les confirmeront lorsque quelque

Thus, of all the things that actually exist, the very possibility or impossibility of being is the first. … Thus the nature of the circle with its properties is something existent and eternal; that is to say there is some constant cause outside of us which makes all those who think carefully [about the circle] find the same thing, and not only makes their thoughts agree with one another—this might be attributed solely to the nature of the human mind—but also makes the phenomena or experiences confirm them when some

In margin:
| against whole paragraph;
|| against 1st and last sentences.
Square brackets inserted around "d'existant et".

Anti- & Ante-Kant[28]

[27] As Russell would soon discover, Cantor objected to this proof on the grounds that it depended on the axiom that "the whole is greater than the part", which is false for infinite collections. Russell would follow Cantor in this criticism. But in fact Leibniz understood this well enough; if one insists on the part-whole axiom, this rules out infinite collections; if one insists on regarding infinite collections as true wholes, then this means the part-whole axiom cannot apply to them if the whole is understood as an infinite collection or set, and its part as any proper subset.

[28] Russell perhaps sees an anticipation of Kant's critical philosophy in Leibniz's claim that the agreement of thoughts of a circle with one another "might be attributed solely to the nature of the human mind", and a rejection of Kant in his attributing this agreement to the action of a constant cause outside of us (God).

apparence d'un cercle frappera nos sens.

appearance of a circle strikes our senses.

G.I.372–3 *Ibid.; A II 1: 390.* Donc qu'il y a quelque cause hors de nous de la varieté de nos pensées. Et comme nous convenons qu'il y a quelques causes sous-ordonnées de cette varieté, qui neantmoins ont encor besoin de cause elles mêmes, nous avons etabli des Estres ou substances particulieres dont nous reconnoissons quelque action, c'est à dire dont nous concevons que de leur changement s'ensuit quelque changement en nous. Et nous allons à grands pas à forger ce que nous appellons matiére et corps. Mais c'est icy que vous avez raison de nous arrester un peu et de renouveller les plaintes de l'ancienne Academie. Car dans le fonds, toutes nos experiences ne nous assurent que de deux, sçavoir qu'il y a une liaison dans nos apparences que nous donne le moyen de predire avec succès des apparences futures, l'autre que cette liaison doit avoir

PL, §33 (pp. 224–5): Therefore there is outside of us some cause of the variety of our thoughts. And since we agree that there are certain subordinate causes of this variety, which nevertheless themselves need causes, we have established particular beings or substances in which we recognize some action, *i.e.* of which we conceive that from their change follows some change in ourselves. And we are marching with great strides towards the construction of what we call matter and body. But it is at this point that you [Foucher] are right in delaying us a little, and renewing the complaints of the ancient Academy. For all our experiences, at bottom, assure us of only two things, namely, that there is a connection between our appearances which gives us the means

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Important [Berkeley][29]

[29] In *PL* (p. 72) Russell remarks that this passage "actually suggests Berkeley's philosophy", but that "though [Leibniz] never seems to have found arguments against this admission, he so far forgot his early unresolved doubts, that, when Berkeley's philosophy appeared, [he] had no good word for it", quoting Leibniz's remarks about the "man from Ireland who rejects the reality of bodies" to Des Bosses at **G.II.492**. Foucher, to whom the present letter is addressed, was an Academic Sceptic, and in this passage Leibniz is ceding to the sceptical position that we can never establish beyond doubt the existence of bodies as external, subordinate "causes of the variety of our thoughts". But that is a far cry from rejecting the reality of such external subordinate causes and opting, like Berkeley, for God as the sole external cause of things' existence.

une cause constante. Mais de tout cela il ne s'ensuit pas à la rigueur qu'il y a de la matiere ou des corps, mais seulement qu'il y a quelque chose qui nous presente des apparences bien suivies. Car si une puissance invisible prenoit plaisir de nous faire paroistre des songes bien liés avec la vie precedente et conformes entre eux, les pourrions-nous distinguer des realitez qu'apres avoir esté eveillés? Or, qui est ce qui empeche que le cours de nostre vie ne soit un grand songe bien ordonné?

of successfully predicting future appearances, and that this connection must have a constant cause. But from all this it does not follow, strictly speaking, that matter or bodies exist, but only that there is something which presents well-ordered appearances to us. For if an invisible power took pleasure in making dreams, well connected with our previous life and agreeing with each other, appear to us, should we be able to distinguish them from realities until we had been awakened? Or what prevents the whole course of our life from being a great orderly dream, of which we might be disillusioned in a moment?
Cf. PL, pp. 47, 72 & n., 73.

G.II.8 *Passage from L's 2nd ltr. to Arnauld, 24 June 1686, quoted in G's intro. to corresp. with Landgrave von Hessen-Rheinfels and Arnauld; A II 2: 65.*
Et quant à la metaphysique, je pretends d'y donner des demonstrations geometriques, ne supposant presque que deux verités primitives, sçavoir en premier lieu le principe de contradiction … et en deuxieme lieu, que rien n'est

And regarding metaphysics, I claim to give geometrical demonstrations, supposing almost nothing other than two primitive truths, namely in the first place the principle of contradiction ... and in the second place, that nothing is without reason, or that all truth has its a priori proof, drawn from the notion of its terms, though it

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This statement of Sufficient Reason & the one on p. 7[30] seem different from later statements

[30] The passage Russell refers to is the following: "il faut tousjours qu'il y ait quelque foundement de la connexion des termes d'une proposition, qui se doit trouver dans leurs notions" ["there must always be some foundation for the connection of the terms of a proposition, which must be found in their notions"] (**G.I.7**), which is also marked with a line in the margin.

sans raison, ou que toute verité a sa preuve a priori, tirée de la notion des termes, quoyqu'il ne soit pas tousjours en nostre pouvoir de parvenir à cette analyse.	is not always in our power to reach this analysis.	
G.II.15–16 *Arnauld's ltr. to von Hessen-Rheinfels, 13 March 1686; A II 2: 9.* Mais je ne puis m'empescher de témoigner à V.A. ma douleur, de ce qu'il semble que c'est l'attache qu'il a à ces opinions là, qu'il a bien crû qu'on auroit peine à souffrir dans l'Eglise Catholique, qui l'empêche d'y entrer, quoyque si je m'en souviens bien, V.A. l'eust obligé de reconnoistre, qu'on ne peut douter raisonnablement que ce ne soit la veritable Eglise. Ne vaudroit il pas mieux qu'il laissast là ces speculations metaphisiques qui ne peuvent estre d'aucune utilité ny à luy ny aux autres, pour s'appliquer serieusement à la plus grande affair qu'il puisse jamais avoir, qui est d'asseurer sou salut en rentrant dans l'Eglise, dont les nouvelles sectes n'ont pu sortir qu'en se rendant schismatiques?	I cannot refrain from expressing to Your Highness my grief that it is apparently the attachment he has to these opinions, which he rightly believed would hardly be tolerated in the Catholic Church, that prevents him from entering it, though if I recall correctly, Your Highness compelled him to acknowledge that we cannot reasonably doubt that it is the true Church. Would it not be better for him to lay aside these metaphysical speculations, which cannot be of any use, either to him or to others, in order to apply himself seriously to the most important business he could ever have, which is to ensure his salvation by returning to the Church, from which new sects could only leave by becoming schismatic?	| in margin. *Cf. pp 23–4*[31]

[31] Arnauld was responding to the headings he had been sent by the Landgrave of the sections of Leibniz's *Discourse on Metaphysics*. The context is Arnauld's and the Landgrave's hope that they could persuade Leibniz to convert from his Lutheran faith to Catholicism (Ernst himself had converted from Calvinism in 1652); Leibniz's interest was to enlist their help in achieving the unification of Catholicism and Lutheranism. On the pp. 23–4 that Russell refers us to, Leibniz denies having acknowledged that "we cannot reasonably doubt that [the Catholic Church] is the true Church", as Arnauld reports him to have done here.

G.II.38 *Ltr. to Arnauld, June 1686; A II 2: 44.*
… ou qui dependent de ce principe de morale, que tout esprit se portera à ce qui luy paroist le meilleur.

… or which depends on this moral principle, that every mind will bring about that which appears best to it.
Cf. PL, pp. 47, 196.

|| in margin.

Important

G.II.39 *Ibid.; A II 2: 45.*
C'est que la notion d'une *espece* n'enferme que des verités éternelles ou necessaires, mais la notion d'un individu enferme *sub ratione possibilitatis* ce qui est de fait ou ce qui se rapporte à l'existence des choses et au temps, et par consequent elle depend de quelques decrets libres de Dieu considerés comme possibles: car les verités de fait ou d'existence dependent des decrets de Dieu. Aussi la notion de la sphere en general est incomplete ou abstraite, c'est à dire on n'y considere que l'essence de la sphere en general ou en theorie sans avoir égard aux circonstances singulieres, et par consequent elle n'enferme nullement ce qui est requis à l'existence d'une certaine sphere; mais la notion de la sphere qu'Archimede a fait mettre sur son tombeau est accomplie et doit enfermer tout ce qui appartient au sujet de cette forme. C'est pourquoy dans les considerations individuelles ou de practique, *quae versantur circa singularia*, outre la forme de la sphere, il y entre la matiere dont elle est faite, le lieu, le temps, et les autres circonstances, qui par un enchaine-

PL, §13 (p. 209). (In part.)
The notion of a species involves only eternal or necessary truths, but the notion of an individual involves, *sub ratione possibilitatis*, what is of fact, or related to the existence of things and to time, and consequently depends upon certain free decrees of God considered as possible; for truths of fact or of existence depend upon the decrees of God. ⟨So too the notion of the sphere in general is incomplete or abstract, that is to say one considers only the essence of the sphere in general or in theory without regard to the particular circumstances, and as a result it does not at all include what is required for the existence of some particular sphere; but the notion of the sphere that Archimedes had placed on his tomb is complete and must include all that belongs to the subject of this form. This is why, in individual or practical considerations, *quae versantur circa singularia* [which are concerned with individual things] there

| in margin against whole passage.

Written against last sentence:

This seems inconsistent with the Identity of Indiscernibles.

ment continuel enveloppe-roient enfin toute la suite de l'univers, si on pouvoit poursuivre tout ce que ces notions enferment.	enters, besides the shape of the sphere, the matter from which it is made, the place, the time, and the other circumstances, which by a continuous chaining would ultimately encompass all the rest of the universe, if could pursue everything that these notions involve.) *Cf. PL, p. 26.*	
G.II.40 *Ibid.; A II 2: 47.* comme l'idée d'un bastiment resulte des fins ou desseins de celuy qui l'entreprend,	... as the idea of a building results from the aims or designs of the one who undertakes it,	| in margin. ***Same illustration as Spinoza***[32]
G.II.51 *Ltr. to Arnauld, 14 July 1686; A II 2: 73.* Cela pourroit suffire, mais à fin de me faire mieux entendre, j'adjouteray, que je conçois qu'il y avoit une infinité de manieres possibles de créer le Monde selon les differens desseins que Dieu pouvoit former, et que chaque monde possible depend de quelques desseins principaux ou fins de Dieu, qui luy sont propres, c'est à dire de quelques decrets libres primitifs (conçus *sub ratione possibilitatis*) ou Loix de l'ordre general de cet Univers possible, auquel elles conviennent, et dont elles determinent la notion, aussi bien que les notions de toutes les substances individuelles qui doivent entrer dans ce même univers.	This might suffice, but with the aim of making myself better understood, I would add that I imagine that there would be an infinity of possible ways of creating the world according to the different plans that God could form, and that each possible world depends on certain principal designs or aims of God which are specific to it, that is, on certain primitive free decrees (conceived under the notion of possibility) or Laws of the general order of this possible universe with which they agree and whose concept they determine, as well as the concepts of all the individual substances which must enter into this same universe. *Cf. PL, pp. 36, 38, 66, 67.*	| in margin. ***Important***

[32] See the Preface to Part IV of SPINOZA's *Ethics* for Spinoza's use of this illustration.

G.II.56–7 *Ibid.; A II 2: 80.*

… qu'il *faut tousjours qu'il y ait quelque fondement de la connexion des termes d'une proposition qui se doit trouver dans leur notions*. C'est là mon grand principe, dont je croy que tous les philosophes doivent demeurer d'accord, et dont un des corollaires est cet axiome vulgaire que rien n'arrive sans raison, qu'on peut tousjours rendre pourquoy la chose est plustost allée ainsi qu'autrement, bien que cette raison incline souvent sans necessiter, une parfaite indifference estant une supposition chimerique ou incomplete.

… there *must always be some foundation for the connection of the terms of a proposition, which must be found in their notions.* This is my great principle, with which I believe all philosophers must agree, and of which one of the corollaries is this vulgar axiom, that nothing happens without a reason, that one can always give the reason why the thing has gone thus rather than otherwise, though often this reason inclines without necessitating, a perfect indifference being a chimerical or incomplete supposition.

Cf. PL, pp. 32–3.

|| in left margin alongside 1st sentence; | alongside remainder.

Very important [Sufficient Reason]

G.II.57 *Ibid.; A II 2: 80–1.*

Au reste la proposition qui a esté l'occasion de toute cette discussion est tres importante et merite d'estre bien etablie, car il s'ensuit que toute substance individuelle exprime l'univers tout entier à sa maniere et sous un certain rapport, ou pour ainsi dire suivant le point de veue dont elle le regarde; et que son estat suivant est une suite (quoyque libre ou bien contingente) de son estat precedant, comme s'il n'y avoit que Dieu et elle au monde: ainsi chaque substance individuelle ou estre

Besides, the proposition that has given rise to this whole discussion is very important and deserves to be well established, since it follows that every individual substance expresses the entire universe in its own way and under a certain aspect, or, as it were, according to the point of view from which it looks at it; and that its succeeding state is a consequence (albeit free or quite contingent) of its preceding state, as if there were nothing but God and itself in the

| in margin against whole passage.

Cf. pp. 46, 47 written at top.[33]

[33] Russell refers us to pp. 46–7 in the correspondence between Arnauld, von Hessen-Rheinfels and Leibniz, where Leibniz responds to Arnauld's objections and "having tried to satisfy them in good faith, it seems to me that I find myself not too far from his opinions."

complet est comme un monde à part, independant de tout autre chose que de Dieu. Il n'y a rien de si fort pour demonstrer non seulement l'indestructibilité de nostre ame, mais même qu'elle garde tousjours en sa nature les traces de tous ses estats precedans avec un souvenir virtuel qui peut tousjours estre excité puisqu'elle a de la conscience ou connoist en elle même ce que chacun appelle moy. Ce qui la rend susceptible des qualités morales et de chastiment et recompense, même apres cette vie. Car l'immortalité sans le souvenir n'y serviroit de rien. Mais cette independance n'empeche pas le commerce des substances entre elles; car comme toutes les substances créées sont une production continuelle du même souverain estre selon les mêmes desseins, et expriment le même univers ou les mêmes phenomenes, elles s'entraccordent exactement, et cela nous fait dire que l'une agit sur l'autre, parceque l'une exprime plus distinctement que l'autre la cause ou raison des changemens, à peu pres comme nous attribuons le mouvement plustost au vaisseau qu'à toute la mer, et cela avec raison, bien que parlant abstraitement on pourroit soutenir une autre hypothese du mouvement, le mouvement en luy même, et faisant abstraction de la cause estant

world: thus each individual substance or complete being is like a world apart, independent of everything other than God. There is nothing else which can so strongly demonstrate not only the indestructibility of our soul, but also that it retains in its nature the traces of all of its preceding states with a virtual memory that can always be stirred since it has consciousness, or is aware in itself of what each one calls I. This makes it susceptible to moral virtues, and to reward and punishment, even after this life. For immortality without memory would be useless to it. But this independence does not prevent the interaction between substances; since, as all created substances are a continual production of the same sovereign being according to the same designs, and express the same universe or the same phenomena, they agree with one another perfectly, and this makes us say that one acts on another, because one expresses more distinctly than the other the cause or reason for the change, in roughly the same way that we attribute motion rather to the ship than to the whole sea, and rightly so, although abstractly speaking we could

tousjours quelque chose de relatif.	support another hypothesis of motion, motion in itself, which, abstracted from the cause, is always something relative.	
G.II.73 *Ltr. to Arnauld, 8 Dec. 1686; A II 2: 117.* Je me doutois bien que l'argument pris de la nature generale des propositions, feroit quelqu' impression sur vostre esprit;	I suspected that the argument taken from the general nature of propositions would make some impression on you; *Cf. PL, pp. 8–9.*	| in margin. ***? Was this argument mainly ad hominem?***
G.II.92 *Ltr. to Arnauld, 30 April 1687; A II 2: 178.* … les mouvemens estant des phenomenes reels plustost que des estres, un mouvement comme phenomene est dans mon esprit la suite immediate ou effect d'un autre phenomene et de même dans l'esprit des autres, mais l'estat d'une substance n'est pas la suite immediate de l'estat d'une autre substance particuliere.	*PL, §49 (p. 238):* … motions being real phenomena rather than beings, one motion as phenomenon is in my mind the immediate consequence or effect of another phenomenon, and similarly in the minds of others, but the state of one substance is not the immediate consequence of the state of another particular substance.	| in margin. ***Important***
G.II.95 *Ibid.; A II 2: 182–3.* Enfin pour me servir d'une comparaison, je diray qu'à l'égard de cette concomitance que je soutiens, c'est comme à l'égard de plusieurs differentes bandes de musiciens ou choeurs, jouans separément leurs parties, et placés en sorte qu'ils ne se voyent et même ne s'entendent point, qui peuvent neantmoins s'accorder parfaitement en suivant seulement leur notes, chacun les siennes, de sorte qui celuy qui les écoute tous, y trouve une harmonie merveilleuse et bien plus surprenante que s'il y	Finally, to use a comparison, I would say that with respect to this concomitance which I uphold, this is like the case of several different bands of musicians or choirs, separately playing their parts, and placed in such a way that they neither see nor even hear one another at all, but who nevertheless can agree perfectly in following only their notes, each his own, in such a way that those whomever listens to them all, will find in it a wonderful harmony and more	| in margin. ***Simile of choirs***

auroit de la connexion entre eux.

surprising than if there were a connection between them.

G.II.97 *Ibid.; A II 2: 185.*
l'essence ne soit pas une matiere d'estre d'une substance.

essence is not a matter ⟨*sic*⟩ of being of a substance.

| in margin. "t" in "matiere" deleted and ***n*** written in margin.

G.II.112–13 *Ltr. to Arnauld, Sept. 1687; different, corrected text in A II 2: 230, 231.*
Une chose *exprime* une autre (dans mon langage) lorsqu'il y a un rapport constant et reglé entre ce qui se peut dire de l'une et de l'autre. C'est ainsi qu'une projection de perspective exprime son geometral. L'expression est commune à toutes les formes, et c'est un genre don't la perception naturelle, le sentiment animal, et la connoissance intellectuelle sont des especes. Dans la perception naturelle et dans le sentiment il suffit que ce qui est divisible et materiel, et se trouve dispersé en plusieurs estres, soit exprimé ou representé dans un seul estre indivisible, ou dans la substance qui est douée d'une veritable unité. On ne peut point douter de la possibilité d'une belle representation de plusieurs choses dans une seule, puisque notre ame nous en fournit un exemple. Mais cette representation est accompagnée de conscience dans làme raisonnable, et c'est alors qu'on l'appelle pensée. Or cette expression arrive par tout, parceque toutes les

PL, §68 (pp. 252–3). (In part).
⟨One thing expresses another (in my terminology) when there is a constant and fixed relationship between what can be said of one and of the other. It is in this way that a perspectival projection expresses its ground plan. The expression is common to all forms, and it is a genus of which natural perception, animal sentiment, and intellectual knowledge are species. In natural perception and sentiment it suffices that what is divisible and material, and is dispersed in various beings, is expressed or represented in a single indivisible being, or in the substance that is endowed with a true unity. We cannot doubt the possibility of a pleasing representation of many things in one, since our soul provides us with an example. But this representation is accompanied by consciousness in the rational soul, and it is then that we call it thought. Now this expression occurs everywhere,

| in margin against whole passage.

What is meant by one thing expressing another.
written against 1st 3 sentences.

substances sympathisent avec toutes les autres et reçoivent quelque changement proportionnel, répondant au moindre changement qui arrive dans tout l'univers, quoyque ce changement soit plus ou moins notable, à measure que les autres corps ou leur actions ont plus ou moins de rapport au nostre. C'est de quoy je crois que M. des Cartes seroit demeuré d'accord luy même, car il accorderoit sans doute, qu'à cause de la continuité et divisibilité de toute la matiere, le moindre mouvement étend son effect sur les corps voisins, et par consequeut de voisin à voisin à l'infini, mais diminué à proportion; ainsi nostre corps doit estre affecté en quelque sorte par les changemens de tous les autres. Or à tous les mouvemens de nostre corps repondent certaines perceptions ou pensées, plus ou moins confuses de mostre ame, donc l'ame aussi aura quelque pensée de tous les mouvemens de l'univers, et selon moy toute autre ame ou substance eu aura quelque perception ou expression.

because all substances sympathize with all others and receive some proportional change as a result of the slightest change which occurs in the whole universe, though such changes are more or less noticeable, in proportion as other bodies or their actions have more or less connection with ours. I think Mr. Descartes would have admitted this, as he would doubtless agree that, because of the continuity and divisibility of all matter, the slightest motion exerts an effect upon neighboring bodies, and as a result, on neighboring body to neighboring body to infinity, but diminished in proportion; thus⟩ our body must be affected in some way by the changes in all others. Now to all motions of our body correspond certain more or less confused perceptions or thoughts of our soul; hence the soul also will have some thought of all the motions of the universe, ⟨and according to me, every other substance or soul will have some perception or expression.⟩
Cf. PL, pp. 97, 132.

"sympathisent" underlined.

This is fallacious: it seems to forget that 2 simultaneous motions make one only
written against last sentence.

G.II.115 *Ltr. to Arnauld, 9 Oct. 1687; A II 2: 245.*
une substance corporelle se donne son mouvement elle même ou plustost ce qu'il y a

PL, §41 (p. 232):
A corporeal substance gives itself its own motion, or rather what is real in the motion at each instant, *i.e.*,

| in margin.

de reel dans le mouvement à chaque moment, c'est à dire la force derivative, dont il est une suite; puisque tout estat precedent d'une substance est une suite de son estat precedent.	the derivative force, of which it is a consequence; for every present state of a substance is a consequence of its preceding state.	1st occurrence of "precedent" underlined and ***? actuel*** written against it in margin.[34]
G.II.120 *Ibid.; A II 2: 251.* Mais si on entendoit par le terme de *matiere* quelque chose qui soit tousjours essentiel à la même substance, ou pourroit au sens de quelques Scholastiques entendre parlà la puissance passive primitive d'une substance, et en ce sens la matiere ne seroit point étendue ny divisible, bien qu'elle seroit le principe de la divisibilité ou de ce qui en revient à la substance.	But if one understands by the term *matter* something which is always essential to the same substance, one could understand it in the sense of certain scholastics as the primitive passive power of substance, and in this sense matter would be neither extended nor divisible, it is the principle of divisibility or that which amounts to it in the substance. *Cf. PL, pp. 144–5.*	| in margin. ***Important***
G.II.137 *Ltr. to Arnauld, 23 March 1690; A II 2: 313.* Il y a déja quelque temps que j'ay publié dans les Actes de Leipsig un essay physique, pour trouver les causes physiques des mouvemens des astres.	It is already some time ago that I published an essay on physics in the Acts of Leipzig, to find the physical causes of the motions of the heavenly bodies.	| in margin. ***Published when?***[35]

[34] The mistake appears to have been Leibniz's own: the Akademie edition has "*puisque tout estat [present] d'une substance est une suite de son estat precedent*".

[35] Leibniz is referring to his essay "Tentamen de motuum caelestium causis" [An Essay on the Causes of the Celestial Motions], published in the *Acta Eruditorum* of Leipzig in February 1689. Russell's marginalia reveal that he did not know of this essay, even though it was quite notorious for the fact that in it Leibniz derived the inverse square law for elliptical (and other conic) orbits while owning only to having read a review of Newton's *Principia*. MELI, *Equivalence and Priority* (1993), has since established that Leibniz did have access to a copy of the *Principia* itself for a while, and that his own derivation of the inverse square law using a differential equation exploited Newton's geometrical construction.

G.II.137 *Ibid.; A II 2: 314.*
J'ay démontré une proposition importante générale, que tout corps qui se meut d'une circulation harmonique (c'est à dire en sorte que les distances du centre estant en progression arithmétique, les vélocités soient en progression harmonique, ou réciproques aux distances), et qui a de plus un mouvement paracentrique, c'est à dire de gravité ou de lévité à l'égard du même centre (quelque loy que garde cette attraction ou répulsion), a les aires nécessairement comme les temps, de la maniere que Kepler l'a observée dans les planetes. Puis considerant *ex observationibus*, que ce mouvement est elliptique, je trouve que la loy du mouvement paracentrique, lequel joint à la circulation harmonique décrit des ellipses, doit estre telle que les gravitations soient réciproquement comme les quarrés des distances, c'est à

I demonstrated an important general proposition, that any body that moves in a harmonic revolution (that is, so that as the distances from the center are in an arithmetic progression, the velocities are in an harmonic progression, or inverse to the distances), and which also has a paracentric motion, that is, gravity or levity with respect to the same centre (whatever the law of this attraction or repulsion may be), have areas which vary proportional to the times, in the way that Kepler observed among the planets. Then, considering from observation that this motion is elliptical, I find that the law of paracentric motion, together with the harmonic revolution described for ellipses, must be such that gravitation is reciprocal to the squares of

Assertion that Leibniz has proved Kepler's 2nd law [v. G.I.396][36]

Law of gravitation! Observe that the Principia had been published 3 years before. [See next page for his premiss] Cf. G.III.580

[36] In this letter to Arnauld, Leibniz relates his demonstration in the "Tentamen" of Kepler's Second Law that the areas traced by the radius of a planet to the centre of its orbit are proportional to the times of its motions. Russell refers us to **G.I.396**, a letter to Foucher of 1688, in which Leibniz informs Foucher that he has submitted "some considerations of consequence regarding the System of the Universe" for publication in the Leipzig journal, where, by supposing both a circulation of the ether in concentric circles of constant force (energy) and equality in the forces of circulation among the planets, "we will have precisely the system of the planets, such as it is", with the planets describing elliptical orbits with the Sun at one focus.

In his second marginale, on Leibniz's claim to have proved the inverse square law, Russell remarks that Newton's *Principia* (in which the inverse square law was proved for the first time) was published in 1687, three years before, and refers us to **G.III.580**. This is a letter from Leibniz to Bourguet (5 August 1715), in which Leibniz sympathizes with Bourget's "shock" at what Roger Cotes had written in his preface to the second edition of Newton's *Principia* in reply to Leibniz's criticisms of gravitational attraction as an occult quality.

dire comme les illuminations *ex sole*.	the distances, that is, as in the rays of the sun.	
G.II.146 *Passage from L's ltr. to De Volder, 20 June 1703 (G.II.252), quoted in G's intro. to De Volder corresp.; LDV, 264–5.* Distinguo (1) Entelechiam primitivam seu Animam, (2) Materiam nempe primam seu potentiam passivam primitivam, (3) Monada his duabus completam, (4) Massam seu materiam secundam, sive Machinam organicam, ad quam innumerae concurrunt Monades subordinatae, (5) Animal seu substantiam corpoream, quam Unam facit Monas dominans in Machinam.	I distinguish (1) the Primitive entelechy or soul, (2) Matter, that is, prime matter or primitive passive power, (3) the Monad completed by these two, (4) Mass or secondary matter, or the organic machine, to which innumerable subordinate monads concur, (5) the Animal or corporeal substance, which the Monad dominant in the Machine makes One.	| in margin. ***Important***[37]
G.II.153–4 *Ltr. to De Volder, 27 Dec. 1698; LDV, 28–9.* Nam inde sequitur motus perpetuus non physicus, qui in tota est natura, qua res redeunt ad statum eundem vel aequipollentem, sed mechanicus, quo corpus vi casus sui ex	For from this there follows a perpetual motion; not the physical perpetual motion that exists in the whole of nature, whereby things return to the same state or one equal in power, but a mechanical one, whereby a	| in margin. ***It is taken as axiomatic that quantity of force constant.***[38]

[37] Modern commentators have agreed with Russell's valuation of this statement by Leibniz in his letter to De Volder of 1703 as "important". It is one of Leibniz's most explicit statements of the relationship between the monad, its body and "the animal or corporeal substance, which the Monad dominant in the Machine makes One", and it has featured centrally in discussion of the status of corporeal substance in Leibniz's philosophy ever since Russell drew attention to it.

[38] This remark of Russell's is correct, but misleading if he means by it that Leibniz is presupposing the conservation of quantity of *vis viva*. Rather, it is by means of his axiom (mentioned above) that "the entire cause always equals the full effect" that Leibniz establishes that "force" cannot be Cartesian quantity of motion (mv). In that case perpetual mechanical motion would ensue, and if force is taken as the ability to do work (what we call energy), it must instead be proportional to mv^2. See ARTHUR, *Leibniz* (2014), Ch. 6, for a brief account of Leibniz's dynamics in relation to Russell's criticisms.

altitudine quadam attolli potest non tantum ad altitudinem eandem, sed etiam ad locum altiorem, quod utique absurdum apparet, certe experimentis omnibus repugnat.

body falling from a certain height under its own force can not only be carried to the same height, but to an even greater height, which appears quite absurd, and certainly contrary to all experiments.

G.II.154 *Ibid.*
Et quidem putem tuto assumi posse axioma, quod Effectus non sit potior causa, seu quod eodem redit, quod nullus sit motus perpetuus mechanicus.

And indeed I think it can safely be assumed as an axiom that the effect is not more powerful than the cause, or, what comes to the same thing, that there is no perpetual mechanical motion.

| in margin.

Axiom. effect not greater than cause

G.II.191 *Ltr. to De Volder, 1 Sept. 1699; LDV, 120–1.*
Quod autem Catelano dixi, semper aequari causam integram et effectum plenum, verissimum nunc quoque censeo.

But what I said to Catelan, namely that the entire cause always equals the full effect, I still consider now to be perfectly true.

| in margin.

Cause = effect

G.II.193 *Ibid.; LDV, 126–7.*
Unum ergo verum (non ad sensum tantvon) seu *Monadem* esse intelligo, ubi illud est, in quo plures substantiae non sunt.

PL, §27 (p. 223):
I therefore understand there to be a true unity (not merely a unity with respect to the senses), i.e. a Monad, where there is something in which there are not several substances.

| in margin.

(1699)

G.II.221 *Ltr. to De Volder, 31 Dec. 1700; LDV, 198–9.*
Et cum prioris sensum non satis percipiam, insistam interim posteriori, quem pulchre declaras, ut si sint *A*, *B*, *C*,

And, since I do not understand the former sense well enough, I will follow the latter for the moment, which you explain beautifully as follows: If we had

| in margin.

cf. passage on ratio in Fifth Letter to Clarke[39]

[39] Leibniz is commenting on what De Volder had written to him about the notion of substance in a letter of 18 October 1700. Russell is assimilating Leibniz's remark in the last sentence to what Leibniz says about relations in his correspondence with Samuel Clarke: the thing that De Volder's definition would allow to be "in two subjects at once" would be a relation. Russell quotes the passage in question from the

possitque praecedens concipi sine sequente, non contra, futurum sit *A* substantia, *B* ejus modus, et *C* modus modi, dummodo scilicet *A* non rursus alio indigeat ut concipiatur. Haec sane peringeniose. Duo tamen monenda occurrunt, unum in hac ipsa notione, alterum in ejus applicatione. Nempe quoad ipsam notionem haec est difficultas, quod ea non prohibet dari duo *A* et *B*, quae singula seorsim concipi possint, et praeterea tertium *C* quod indigeat utroque, unde sequetur posse dari aliquid quod sit duarum simul substantiarum modus seu simul in duobus subjectis.

A, *B*, and *C*, such that each could be conceived without the following one, but not the other way round, *A* would be a substance and *B* its mode, and *C* a mode of a mode, provided, of course, that *A* did not require yet another thing in order to be conceived. These things are certainly very clever. However, there are two things to be cautious of, one in the notion itself, the other in its application. Concerning the notion itself, the difficulty is that it does not prohibit there being two things *A* and *B*, which each can be conceived separately, and also a third thing *C* that requires both of them. It follows from this that there could be something that was a mode of two substances at once, or that was in two subjects at once. *Cf. PL, p. 42.*

G.II.262 *Ltr. to De Volder, 21 Jan. 1704; LDV, 286–7.* Monada solam esse substantiam, corpus substantias, non

The monad alone is a substance, bodies are substances, not a substance: nor can there be any other

| in margin. "Monada" underlined.

Fifth Letter to Clarke (**G.VII.401**) in his *PL*, p. 13. If the relation "L is greater than M" is considered in abstraction from both the relata, L and M, Leibniz writes, "it cannot be said that both of them, L and M together, are the subject of such an accident; for if so, we should have an accident in two subjects, with one leg in one, and one leg in the other; which is contrary to the notion of accidents." Writes Russell, "This passage is of capital importance for a comprehension of Leibniz's philosophy" (*ibid.*). He thinks that Leibniz fleetingly recognizes that relations must have a reality independent of their relata, only to have to "thrust aside the awkward discovery" and declare a relation "to be an accident of the mind which contemplates the ratio" (*ibid.*).

substantiam: neque aliter difficultatibus de compositione continui et quae sunt hujusmodi exiri posse.

way out of the difficulties of the composition of the continuum and things of that sort.
Cf. PL, p. 108.

v. Stein, p 209n.[40]

G.II.263 *Ibid.; LDV, 288–9.*
Nec mihi aliud in eis est permanens quam lex ipsa quae involvit continuatam successionem, in singulis consentiens ei quae est in toto universo.

Nor, according to me, is there anything else that is permanent in ⟨things⟩ but the very law that involves the continued succession, corresponding in every individual thing to the law that is the whole universe.
Cf. PL, p. 47.

|| in margin.

cf. Lotze[41]

G.II.267–8 *Ltr. to De Volder, 30 June 1704.*
Verba Tua ad me haec sunt: *ita mihi videris argumentari: quod semper ulterius et ulterius dividi potest, id nullam habet realitatem nisi ex rebus ex quibus aggregatur, adeoque nullam nisi rerum quae dividi non queunt. Quod argumentum recte quidem concludit: in mole corporum non posse assignari unitates indivisibiles, sed tamen non persuadet nullam realitatem habere corpus mathematicum* etc.…

PL, §55 (p. 242). (In part.)
⟨These are your words to me: "it seems to me that you argue as follows: that which can always be further and further divided has no reality except from the things it is aggregated from, and so none at all except from things that cannot be divided. This argument rightly concludes that no indivisible unities can be assigned within the bulk of bodies. Nonetheless, however, it does not

| in margin against both passages.

De Volder's objection written against 1st passage.

[40] Russell is referring to Ludwig Stein's pioneering study, *Leibniz und Spinoza: ein Beitrag zur Entwicklungsgeschichte der Leibnizschen Philosophie* (1890). In it, Stein showed, on the basis of Gerhardt's recently published compilation as well as nineteen new pieces he published in an Appendix, that Leibniz was for a time closely engaged with the philosophy of Spinoza. He also discussed when Leibniz first used the term "monad", and Russell is referring us to Stein's citing of this passage.

[41] The nineteenth-century German philosopher Hermann Lotze, who was enormously influential in his day though he is now paid little attention, held that what constituted the reality of a thing through all its changing states was the law which connected them all together. *Cf.* Lotze, *Metaphysic* (1887), Bk. I, Ch. ii, §32. In the Lent Term of 1898, just before he began studying Leibniz, Russell attended McTaggart's lectures on Lotze where this was discussed in Lectures V and VI. (See Russell's notes, RA Rec. Acq. 385, file 4, fols. 102ff.)

establish that mathematical body has no reality."⟩

Quae res in plura (actu jam existentia) dividi potest, ex pluribus est agregata, et res quae ex pluribus aggregata est, non est unum nisi mente nec habet realitatem nisi a contentis mutuatam. Hinc jam inferebam, ergo dantur in rebus unitates indivisibiles, quia alioqui nulla erit in rebus unitas vera, nec realitas non mutuata. Quod est absurdum. Nam ubi nulla vera unitas, ibi nulla vera multitudo. Et ubi nulla est realitas nisi mutuata, nulla erit unquam realitas, cum ea debeat esse alicui tandem subjecto propria. Hic optassem a Te fuisse monitum, an et in quibus verbis meis haereres. Tu vero (*secundo*) conclusionem potius subjicis aliam a mea, quam quomodo ex meis inferri velis non capio, vis enim *hinc recte concludi, in mole corporum non posse assignari unitates indivisibiles*. At ego puto concludi contrarium, nempe in mole corporea seu in rebus corporeis constituendis esse ad Unitates indivisibiles tanquam *prima constitutiva* recurrendum. Nisi forte vis *recte concludi, ipsas moles corporeas non esse unitates indivisibiles*, quod fateor, sed de eo non agitur. Corpora enim utique semper sunt divisibilia, imo et actu subdivisa, sed non earum constitutiva.

Leibniz's reply written against 2nd passage.

A thing which can be divided into several (already actually existing) is an aggregate of several, and ⟨a thing which is an aggregate of several⟩ is not one except mentally, and has no reality but what is borrowed from its constituents. Hence I inferred that there must be in things indivisible unities, because otherwise there will be in things no true unity, and no reality not borrowed. Which is absurd. For where there is no true unity, there is no true multiplicity. And where there is no reality not borrowed, there will never be any reality, since this must in the end belong to some subject.… But you [De Volder] … hold that the right conclusion from this is that in the mass of bodies no indivisible unities can be assigned. I, however, think that the contrary is to be concluded, namely that we must recur, in bodily mass, or in constituting corporeal things, to indivisible unities as prime constituents. Unless indeed you hold the right conclusion to be, that bodily masses are not themselves indivisible unities, which I say, but this is not the question. For bodies are always divisible, and

	even actually subdivided, but not so their constituents. *Cf. PL, p. 106.*	Last 4 words underlined.
G.II.289 *G's intro. to Des Bosses corresp.* welche Leibniz während seines Aufenthalts zu Wien (1713 und 1714) für den Prinzen Eugen von Savoyen aufgesetzt und welcher man die Aufschrift: La Monadologie gegeben hat.	… which Leibniz composed during his trip to Vienna (1713 and 1714) for Prince Eugene of Savoy and which has been given the title *La Monadologie*	| in margin. ***Gerhardt must have come to the conclusion later that the Monadology was not for prince Eugene***[42]
G.II.304 *Ltr. to Des Bosses, 11 March 1706; LDB, 30–3.* Argumenta contra infinitum actu supponunt, hoc admisso dari Numerum infinitum, item infinita omnia esse aequalia. Sed sciendum, revera aggregatum infinitum neque esse unum totum, aut magnitudine praeditum, neque numero constare. Accurateque loquendo, loco numeri infiniti dicendum est plura adesse, quam numero ullo exprimi possint;	Arguments against an actual infinite suppose that if it is admitted there will be an infinite number, and likewise that all infinities will be equal. But it must be recognized that in fact an infinite aggregate is not one whole, or endowed with magnitude, nor does it correspond to a number; *Cf. PL, pp. 109–10, 115.*	|| in margin. ***Important***[43]
G.II.305 *Ibid.; LDB, 32–3.* cum pro infinite parvo substituere sufficiat tam parvum quam quis volet, ut error sit	… since it suffices to substitute for the infinitely small as small a magnitude as one wishes, so that the	| in margin. ***This shows a complete***

[42] Gerhardt notes that the "Monadology" was written in Vienna in 1714 in response to a request from Prince Eugene of Savoy for a condensation of his philosophy. Russell's remark alludes to Gerhardt's admission elsewhere that Leibniz apparently did not send the Prince the "Monadology" but instead the "Principles of Nature and Grace", an essay in a more popular style that he also composed in Vienna at that time.

[43] In *PL* Russell writes in this connection that "The general principle that all aggregates are phenomenal must not be confounded with the principle, which Leibniz also held, that infinite aggregates have no number. This latter principle is perhaps one of the best ways of escaping from the antinomy of infinite number" (p. 117 n.1).

minor dato, unde consequitur errorem dari non posse.

error would be smaller than any given, from which it follows that there can be no error.

misunderstanding of the Calculus.[44]

G.II.305 *Ibid.; LDB, 32–3.*
Caeterum ut ab ideis Geometriae ad realia Physicae transeam, statuo materiam actu fractam esse in partes quavis data minores, seu nullam esse partem, quae non actu in alias sit subdivisa diversos motus exercentes.

PL, §58 (p. 244):
To pass from the ideas of Geometry to the realities of Physics, I hold that matter is actually broken into parts less than any given part, or that there is no part which is not actually subdivided into others exercising diverse motions.

| in margin.

How can this avoid implying infinite number?[45]

G.II.325 *Ltr. to Des Bosses, 16 Oct. 1706; LDB, 78–9.*
An vero necesse sit Angelum esse formam informantem seu Animam corporis organici eique personaliter unitam, alia quaestio est, et certo sensu in praecedente Epistola exposito negari potest. Vides etiam hinc tolli substantias

Whether it is truly necessary that an angel be an informing soul, that is, the soul of an organic body, as if united to it in person, is another matter, and in a certain sense (explained in the preceding letter) it can be denied. From this you see that incomplete

| in margin.

"in praecedente Epistola" is underlined.

p. 320.

[44] Russell's remark is itself very contentious; Leibniz is appealing to the Archimedean property in order to give a foundation of the calculus that is in some respects equivalent to the epsilon–delta account later given by Weierstrass. See ARTHUR, "Leibniz's Syncategorimatic Infinitesimals …" (2013), for a defence of the consistency and profundity of Leibniz's views on the foundation of the calculus. Russell's own understanding of the calculus at this time was sharply limited by his Cambridge education. In "My Mental Development" (1944) he complains that he had never heard of Weierstrass until he visited America in 1896 (*Papers* 11: 11). He may well have heard of Weierstrass then from two Cambridge expatriates, JAMES HARKNESS AND FRANK MORLEY, whose *Introduction to the Theory of Analytic Functions* (1848) adopted a thoroughly Weierstrassian approach. If so, this marginale makes it clear he had not yet appreciated Weierstrass's work. That was to come shortly afterwards when he read HARKNESS AND MORLEY in March 1899.

[45] This was Russell's first puzzled response to Leibniz's philosophy of the infinite. A good part of Chapter 9 of *PL*, on "The Labyrinth of the Continuum", is taken up with explaining how Leibniz defends the actual infinite, "on the express ground that it does *not* lead to infinite number". "Leibniz's views as to infinity", he says, "are by no means so simple or so naïve as is often supposed" (*PL*, p. 110)—or, indeed, as Russell supposes them to be in this marginale.

incompletas, monstrum in Vera Philosophia.

substances—a monstrosity in the true philosophy—are also abolished.

G.II.339 *Ltr. to Des Bosses, 21 July 1707; LDB, 98–9.*
Cum dico Extensionem esse resistentis continuationem, quaeris, an ea continuatio sit modus tantum? Ita putem: habet enim se ad res continuatas seu repetitas, ut numerus ad res numeratas: substantia nempe simplex, etsi non habeat in se extensionem, habet tamen positionem, quae est fundamentum extensionis, cum extensio sit positionis repetitio simultanea continua, ut lineam fluxu puncti fieri dicimus, quoniam in hoc puncti vestigio diversae positiones conjunguntur. At activum repetitione seu continuatione rei non activae nasci non potest.

PL, §71 (p. 255). (In part.)
⟨When I say that extension is the continuation of resistance, you ask whether this continuation is only a mode. I believe so, for it is related to the things continued or repeated as number is to the things numbered. That is,⟩ a simple substance, though it has no extension in itself, yet has position, which is the foundation of extension, since extension is the simultaneous continuous repetition of position, ⟨just as we say that a line comes to be from the flux of a point, since in this trace of a point its different positions are conjoined. But what is active cannot arise from the

| in margin.

very important (knocks Dillmann on the head)

But cf. p. 368[46]

[46] This and the following marginal comment can be clarified by reference to Russell's discussion in *PL*, pp. 147ff., of two inconsistent theories that commentators of his day ascribed to Leibniz concerning the connection of soul and body. According to the first, supported by Erdmann, "[b]ody and soul do not together form one substance (**G.VI.595**), and do not even interact … but only agree" (*PL*, p. 149). According to the interpretation of Kuno Fischer, however—also more recently supported by Dillmann "with constant appeal to the sources"—"mind and body together make one substance, having a true unity", "the soul and the body make one substance" (p. 150). Russell claims this second interpretation must be rejected "because it is wholly inconsistent with Leibniz's general philosophy" (pp. 149–50). Echoes of this dispute can still be found in the controversy among recent commentators over whether or not corporeal substances can properly be regarded as substances or *per se* unities. It is odd that Russell regards the passage from **G.II.339** as "knocking Dillmann on the head". One possible explanation is that he regards the Fischer–Dillmann view as involving bodies as *extended substances* distinct from souls or simple substances, and in the quoted passage Leibniz reduces extension to continuous resistance, classifying it as only a mode. Leibniz is quite clear, however, that a body is not a substance, but only an aggregate of substances. For Russell's "But cf. p. 368", see the next footnote.

repetition or continuation of a thing that is not active.⟩
Cf. PL, p. 125.

G.II.368 *Ltr. to Des Bosses, 16 March 1709; LDB, 118–19.*
Porro Entelechia nova creari potest, etsi nulla nova pars massae creetur, quia etsi massa jam habeat ubique unitates, tamen novas semper capit, pluribus aliis dominantes: ut si fingas Deum ex massa quod totum non organica v. g. ex saxo rudi, facere corpus organicum, eique suam Animam praeficere: tot nempe Entelechiae sunt quot corpora organica. Caeterum materia prima propria, id est potentia passiva primitiva, ab activa inseparabilis, ipsi Entelechiae (quam complet, ut Monada seu substantiam completam constituat) concreatur. Ea vero massam, seu Phaenomenon ex Monadibus resultans, non auget, non magis quam punctum lineam.

PL, §91 (p. 272). (In part.)
⟨Furthermore,⟩ a new entelechy can be created, even if no new part of mass is created; for although mass already has unities everywhere, yet it is always capable of new ones, dominating many others; as if you were to imagine that God should make an organic body out of a mass which, as a whole, is inorganic, *e.g.* a lump of stone, and should set its soul over it; for there are as many entelechies as there are organic bodies. ⟨Moreover, the primary matter proper to an entelechy, that is the primitive passive power that is inseparable from the active power, is co-created with the entelechy itself (which it completes, so that it constitutes a monad

| in margin against whole passage.
|| against "tot nempe Entelechiae sunt quot corpora organica."
Important. This again supports Dillmann.[47]
Below this, also in margin, Russell wrote with a slightly different pencil:
I see no way of reconciling this with p. 339.
Below this he wrote a 3rd note, again with a different pencil and at a slightly different angle:

[47] Here Leibniz is responding to Des Bosses's objection that if entelechies are inseparable from matter, then God could not have created matter first and then human souls and other entelechies "on only the fourth or fifth day of creation", as Leibniz had suggested to Sturm (**G.II.367**/LDB, 117). Leibniz responds that God could (miraculously) create a new entelechy without having to create new matter, since all that would be necessary would be for the new entelechy to be placed in command of (or "set over" in Russell's translation) the subordinate monads constituting the already existing mass—secondary matter—without any need to enlarge it. He adds: "Moreover, the primary matter proper to an entelechy, that is, the primitive passive power that is inseparable from the active power, is co-created with the entelechy itself (which it completes, so that it constitutes a monad or complete substance" (**G.II.338**/LDB, 118–19). This is taken to support Dillmann and Fischer, in that Leibniz is claiming that the primary matter proper to an entelechy it is needed to complete the monad or substance.

	or complete substance). But this does not increase the mass, or the phenomenon resulting from the monads, any more than a point increases a line.⟩ *Cf. PL, pp. 150, 154.*	***It seems necessary to regard a complete substance as occupying a physical point. It might then be an organized body. This is supported by the fact that the continuum is not composed of mathematical points.***[48]
G.II.370 *Ltr. to Des Bosses, 30 April 1709; LDB, 124–5.* Interim non puto convenire, ut animas tanquam in punctis consideremus.	*PL, §71 (p. 256):* ⟨Meanwhile⟩ I do not think it fitting to consider souls as in points.	|| in margin. ***very important***
G.II.372 *Ibid.; LDB, 128–9.* P.S. Ante multos annos, cum nondum satis matura esset philosophia mea, locabam Animas in punctis,	P.S. Many years ago, when my philosophy was not yet sufficiently developed, I located souls in points, *Cf. PL, p. 122.*	|| in margin. ***Important***
G.II.378 *Ltr. to Des Bosses, 30 July 1709; LDB, 134–5.* Etsi ergo absoluta non sit necessitas, ut omne corpus organicum sit animatum,	*PL, §90 (p. 271):* Although there is no absolute necessity for every organic body to be animated, yet we must judge that	|| in margin. ***Important***[49]

[48] At the time of writing *PL* Russell had not recognized that Leibniz could hold that every monad has an organic body aggregated from subordinate substances without contradicting himself, attributing to him the view that "the smallest organic bodies [occupy] only a physical point" (*PL*, p. 148). He corrects this mistake in the second edition: given Leibniz's interpretation of infinite division "it is possible for *every* monad to have a body composed of subordinate monads, just as every fraction is greater than an infinite number of other fractions" (p. viii).

[49] In *PL* Russell quotes this admission by Leibniz that he had once located souls in points, revealing why he found it "important": "From this early view he seems to have derived many of the premisses of his doctrine, and these premisses he thereafter accepted as an established basis for further argument. Forgetting that these premisses were themselves derived from the reality of space, he was not afraid of using them to disprove that reality" (pp. 122–3).

judicandum tamen est animae occasionem a Deo non neglectam, cum sapientia ejus producat quantum plurimum perfectionis potest.

God would not have neglected the opportunity for a soul, since his wisdom produces as much perfection as it can.

G.II.390 *Ltr. to Des Bosses, 8 Sept. 1709; LDB, 152–3.*
Quod de Eucharistia quaeris meum explicandi modum, respondeo, apud nos nullum esse locum neque transsubstantiationi neque consubstantiationi panis, tantumque pane accepto simul percipi corpus Christi, ut adeo sola explicanda sit corporis Christi praesentia.

Concerning your question about how I explain the eucharist, I respond that with us there is no place for either the transubstantiation or consubstantiation of the bread, but only that when the bread is received the body of Christ is perceived at the same time, so that all that needs to be explained is the presence of the body of Christ.

| in margin.

Beginning of discussion on Real Presence

G.II.399 *Ltr. to Des Bosses, 5 Feb. 1710 (G reproduces an unsent draft of this ltr., which he mistakenly took for a response L had sent to an earlier ltr. See LDB, 429.)*
Cum panis revera non sit substantia, sed ens per aggregationem seu substantiatum resultans ex innumeris monadibus per superadditam quandam Unionem, ejus substantialitas in hac unione consistit;

PL, §92 (p. 273):
Since the bread is really not a substance, but a being by aggregation or a *substantiatum*, resulting from innumerable monads by a certain superadded union, its substantiality consists in this union; thus it is not necessary according to you [the Catholics] that God should abolish or change those monads, but only

| in margin.

Approach to vinculum substantiale[50]

[50] This passage concerns the interpretation of the Eucharist, a major concern of the correspondence between Leibniz and the Jesuit Des Bosses. It is only in this correspondence that Leibniz toys with the idea of a *vinculum substantiale* (substantial bond) in an effort to make his metaphysics serviceable for the Jesuits. The idea is that in addition to the monads whose aggregate is the body (the bread or wine in the sacrament), there could be a substantial bond forging them into a corporeal substance. The Catholic interpretation of the Eucharist as involving *transubstantiation* could then be interpreted as the replacement of the substantial bond constituting the bread or wine by that constituting Jesus, with both the constituent monads and the appearances remaining the same. Leibniz was a Lutheran; when he says "we have no need of such theories", he is alluding to the fact that for the Lutherans all that is necessary in the Eucharist is Jesus's *real presence*.

itaque non necesse est secundum Vos a Deo monades illas aboleri vel mutari, sed tantum subtrahi id per quod ens novum producunt, nempe Unionem illam; ita cessabit substantialitas in ea consistens, etsi maneat phaenomenon quod jam ex monadibus illis non orietur, sed ex aliquo divinitus substituto unioni illarum monadum aequivalente. Ita nullum aderit revera subjectum substantiale. Sed talibus nos non indigemus qui transsubstantiationem rejicimus.

that he should take away that by means of which they produce a new being, namely this union; thus the substantiality which consists in it will cease, though the phenomenon will remain, arising now not from those monads, but from some divine equivalent substituted for the union of those monads. Thus there will really be no substantial subject present. But we ⟨Lutherans⟩, who reject transubstantiation, have no need of such theories. [This passage precedes the first suggestion of the *vinculum substantiale*.]

G.II.420 *Ltr. to Des Bosses, 8 Feb. 1711; LDB, 200–1.*
Omnino statuo potentiam se determinandi sine ulla causa, seu sine ulla radice determinationis implicare contradictionem uti implicat relatio sine fundamento; neque hinc sequitur metaphysica omnium effectuum necessitas. Sufficit enim, causam vel rationem non esse necessitantem metaphysice, etsi metaphysice necessarium sit, ut aliqua sit talis causa.

In any case, I maintain that a power of determining oneself without any cause, or without any source of determination, implies a contradiction, as does a relation without a foundation; but the metaphysical necessity of all effects does not follow from this. For it is enough that the cause or reason is not metaphysically necessitating, even though it is metaphysically necessary that there be some such cause.
Cf. PL, pp. 35, 56.

|| in margin.

very important (Sufficient Reason)

G.II.450–1 *Ltr. to Des Bosses, 16 June 1712; LDB, 254–5.*
nec ulla est monadum propinquitas aut distantia spatialis vel absoluta, dicereque, esse in puncto conglobatas, aut in spatio disseminatas, est qui-

and there is no absolute or spatial nearness or distance of monads, and to say that they are conglomerated in a point or disseminated in space is to use certain fictions of our mind, when we

busdam fictionibus animi nostri uti, dum imaginari libenter vellemus, quae tantum intelligi possunt. In hac etiam consideratione nulla occurrit extensio aut compositio continui, et omnes de punctis difficultates evanescunt. Atque hoc est, quod dicere volui alicubi in mea Theodicaea, difficultates de compositione continui admonere nos debere, res longe aliter esse concipiendas.

willingly seek to imagine things that can only be understood. And no extension or composition of the continuum occurs in this consideration either, and all the difficulties concerning points vanish. And this is what I tried to say somewhere in my *Theodicy* that the difficulties of the composition of the continuum ought to warn us that we need to conceive things very differently.
Cf. PL, p. 108.

| in margin against passage "difficultates … concipiendas." which is underlined.

Important

G.II.461 *Ltr. to Des Bosses, 10 Oct. 1712; LDB, 276–9.*
Si ratio excogitari posset, corporibus licet ad sola phaenomena redactis, explicandi possibilitatem τοῦ μετουσιασμοῦ vestri, id pridem mallem. Nam Hypothesis illa multis modis placet. Nec aliqua alia re, quam Monadibus earumque modificationibus internis, ad Philosophiam oppositis supernaturalibus, indigemus. Sed vereor, ut mysterium Incarnationis aliaque explicare possimus, nisi vincula realia seu uniones accedant.

PL, §92 (p. 273). (In part.)
⟨If an account could be devised for explaining the possibility of your *metousiasmon* [transubstantiation] even with bodies reduced to phenomena alone, I should have adopted it long ago. For that hypothesis is pleasing in many ways.⟩ Supernatural matters being opposed to philosophy, we need nothing else than monads and their internal modifications. ⟨But I fear that we cannot explain the mystery of incarnation and other things unless real bonds or unions are accepted.⟩

| in margin.

|| against 3rd sentence alongside which Russell wrote:

Important against vinculum substantiale

G.II.492 *Ltr. to Des Bosses, 15 March 1715; LDB, 330–1.*
Qui in Hybernia corporum realitatem impugnat, videtur nec rationes afferre idoneas,

The man in Ireland who attacks the reality of bodies does not seem to advance suitable arguments, nor to explain himself sufficiently.

| in margin.

Berkeley? [The 3 dialogues were in 1713][51]

[51] Berkeley's *Three Dialogues between Hylas and Philonous* was published in 1713, but his

nec mentem suam satis explicare. Suspicor esse ex eo hominum genere, qui per Paradoxa cognosci volunt.	I suspect he is the kind of person who wants to be known for his paradoxes. *Cf. PL, p. 72.*	
G.II.502 *Ltr. to Des Bosses, 19 Aug. 1715; LDB, 346–7.* Maxima versimilitudine judicamus, nos non solos existere non tantum ex principio Divinae Sapientiae, sed etiam ex principio illo communi quod passim inculco, quod nihil fit sine ratione, nec ratio apparet, cur tot possibilibus aliis nos soli praeferamur.	We judge with the greatest likelihood that we are not the only beings existing, not only from the principle of Divine Wisdom, but also from that common principle upon which I insist at every turn, that nothing happens without a reason: for there appears to be no reason why we should be preferred to all other possible beings. *Cf. PL, p. 73.*	| in margin. ***Anti-Solipsism***
G.II.503 *Ibid.; LDB, 348–9.* Sed objicis *primo* non esse principium actionis, cum sit instar Echus.	But you object, first, that it is not a principle of action, since it is like an echo.	Caret mark in margin. Last 2 letters of "Echus" deleted and ***o*** written in margin.[52]
G.II.515 *Ltr. to Des Bosses, 29 May 1716; LDB, 366–7.* ita si quis fingat, mundum creatum fuisse citius, reperiet	Thus if someone imagines the world to have been created earlier, he will discover that it was not made	| in margin. ***cf. Letters to Clarke***[53]

Treatise Concerning the Principles of Human Knowledge, in which the reality of bodies is also attacked, had already appeared in 1710. Leibniz's letter to Des Bosses which Russell is commenting on was written on 15 March 1715. At *PL*, p. 72, Russell is explicit that this passage is about Berkeley, but it is not clear why, in the marginale, he would appeal to the date of the *Dialogues* to support his attribution when the *Principles* had been published three years earlier.

[52] Since Echo is a (Greek) proper name, Russell's correction of Leibniz's "Echus" to "Echo" has some validity; but Leibniz does indeed Latinize it: see LDB, 348–9.

[53] Russell's marginale "cf. Letters to Clarke" refers to the very similar passages in Leibniz's correspondence with Clarke, especially his Third Paper, sent 25 February 1716. There Leibniz declares he has "said more than once that I hold space to be something relative, as time is; and that I hold it to be an order of coexistences, as time is an order of successions" (§4). He gives the same argument to the effect that, space being the order of situations, if God were to move the whole universe in space while

non esse factum citius, quia tempus absolutum non datur, sed nihil aliud est quam ordo successionum. Eodem modo si quis fingat, totum Universum loco moveri servatis omnium rerum inter se distantiis, nihil actum erit, quia spatium absolutum aliquid imaginarium est, et nihil ei reale inest, quam distantia corporum; verbo, sunt ordines, non res. Tales suppositiones oriuntur ex falsis ideis.

earlier, because there is no absolute time, and time is nothing but the order of successions. In the same way, if someone imagines the whole universe to be moved in space in such a way that the distances between all things were conserved, nothing would have happened, because absolute space is something imaginary, and there is nothing real in it but the distances of bodies. In a word, time and space are orders, not things. Such suppositions arise from false ideas.

G.II.552 *Ltr. to L'Abbé Nicaise, 23 July 1695.*
L'Angleterre ou plustost la Republique de lettres a perdu M. Dodwell qui estoit si profound dans l'Histoire Ecclesiastique. Mais rien n'egale la perte de l'incomparable M. Hugens. Il est tres seur qu'on le doit nommer immediatement apres Galilei et des Cartes.

England, or rather the Republic of Letters, has lost Mr. Dodwell, who was so profound in Ecclesiastical History. But nothing can equal the loss of the incomparable Mr. Huygens. It is certain that he [Huygens] must be ranked immediately after Galileo and Descartes.

| in margin against last sentence.

? Newton[54]

G.II.569 *Ltr. to Nicaise, 28 May 1697.*
On ajoute qu'une jeune damoiselle Angloise de 20 ans a admirablement bien ecrit là

We add that a young English woman of twenty wrote admirably about it in the letters addressed to Mr. Norris. It is reasonable that

| in margin by last sentence.

"preserving the same situations of bodies among themselves" there would be no discernible difference, the illusion of a difference consisting only in that "found in our chimerical supposition of the reality of space in itself" (§5).

[54] Russell's marginale "? Newton" seems somewhat incongruous in this context, where Leibniz is praising Huygens by ranking his loss to the learned world against others', and Newton is still alive.

dessus dans les lettres adressées à M Norris. Il est raisonnable que les dames jugent des matieres d'amour …	women should judge matters of love.	***!***
G.III.45 *Ltr. to Bayle, n.d.*[55] Je prouvery donc maintenant ce que j'avois avancé cy dessus, sçavoir *qu'en cas qu'on suppose que toute la force d'un corps de 4 livres dont la vistesse* (qu'il a par exemple en allant dans un plan horizontal de quelque maniere qu'il l'ait acquise) *est d'un degré, doit estre donnée à un corps d'une livre, celuy cy recevra non pas une vistesse de 4 degrés suivant le principe Cartesien, mais de deux degrés seulement*, parce qu'ainsi les corps ou poids seront en raison reciproque des hauteurs auxquelles ils peuvent monter en vertu des vistesses qu'ils ont; or ces hauteurs sont comme les quarrés des vistesses.	I will now prove, therefore, what I set forth above, namely that *if we suppose that all the force of a 4 pound body, whose velocity* (that which it has, for example, moving in a horizontal plane in some way as to have acquired it) *is of a certain degree, must be given to a one pound body, the latter will not have a velocity of 4 degrees, according to the Cartesian principle, but of two degrees only*, because then the bodies or weights will, as a result, be reciprocal to the heights to which they can rise in virtue of the velocities they have; but these heights are akin to the squares of the velocities.	| in margin. ***The principle seems to be simply that force should be measured by the work it can do***[56]
G.III.45 *Ibid.* Car il faut la même force pour elever quatre livres à un pied, et une livre à quatre pieds.	For it takes the same force to raise four pounds by one foot and one pound by four feet.	| in margin. ***Axiom. Causes equal, effects equal, & effects are work.***
G.III.45–6 *Ibid.* *qu'il y tousjours une parfaite Equation entre la cause plein et*	*PL, §42 (p. 233). (In part.)* There is always a perfect equation between the com-	| in margin. ***Cause = effect***

[55] The correspondence which occupies Gerhardt's third volume has not yet appeared in the Akademie edition.

[56] Here Russell correctly recognizes that Leibniz treated force, not as mass times acceleration as is done in classical mechanics, but as equivalent to the amount of work a body can do, namely (what he sometimes called, and what in classical mechanics came to be called) energy, dimensionally equivalent to mass times velocity squared. (See nn. 26 and 38 above.)

l'effect entier. Elle ne dit pas seulement que les Effects sont proportionnels aux causes, mais de plus, que chaque effect entier est equivalent à sa cause. Et quoyque cet Axiome soit tout à fait Metaphysique, il ne laisse pas d'estre des plus utiles qu'on puisse employer en Physique,

plete cause and the whole effect. ⟨It does not say only that the effects are proportional to the causes, but moreover, that each entire effect is equivalent to its cause.⟩ Though this axiom is wholly metaphysical, it is none the less one of the most useful that can be employed in Physics,
Cf. PL, p. 82n.

G.III.46 *Ibid.*
Ainsi presque la moitié de la force sera perdue en vertu de cette regle sans aucune raison, et sans estre employée à rien.

Thus almost half of the force will be lost in virtue of this rule without any reason, and without being used for anything.

|| in margin.
Force, being a metaphysical entity, must not be lost.[57]

G.III.47 *Ibid.*
Soit corps B, 2, vistesse, 1, et corps C, 1, vistesse, 2, qui vont directement l'un contre l'autre, il accorde qu'ils rejailliront avec les vistesses qu'ils avoient. Mais si on suppose la vistesse ou grandeur de l'un des corps, comme B, tant soit peu augmentée, il veut qu'ils aillent tous deux ensemble du costé où B seul alloit auparavant, ce qui sera à peu pres avec une vistesse comme 4/3, supposé le changement fait à l'egard de B si petit, qu'en calculant la quantité de mouvement, on puisse retenir

Given body B, 2, speed 1, and body C, 1, speed, 2 which are travelling directly towards one another, it follows accordingly that they will rebound with the speeds which they had. But if we suppose that the speed or mass of one of the bodies, say B, is ever so slightly increased, this means that both will go to the side where B alone was going before, which will be approximately at a speed of 4/3, supposing the change made with respect to B so small that in calculating the

Example of reasoning by the principle of continuity (perfectly valid)

Cf. p. 53

[57] Russell suggests that the conservation of force follows from the consideration that, as a metaphysical entity, it cannot be lost. This confuses primitive force, the enduring powers of a substance to act and resist, with the derivative forces of Leibniz's physics, which are instantaneous modifications of those powers. Leibniz regarded *vis viva* as a physical force, not a metaphysical one, and never gave such an argument for its conservation. He gave (correct) physical arguments that violation of its conservation would allow work to be done at no cost (perpetual motion machines), contrary to what we observe. See n. 36 above.

les premiers nombres sans erreur considerable. Mais, est il croyable, que pour un changement aussi petit que l'on voudra, fait dans la supposition à l'egard du corps B, il en resulte une si grande difference dans l'evenement, en sorte que tout le rejaillissement cesse, et que B qui devoit auparavant retourner en arriere avec une vistesse 4, maintenant, pour avoir tant soit peu plus de force, doive non seulement ne pas aller en arriere, mais aller même en avant avec une vistesse presque comme 4/3. Ce qui est d'autant plus estrange, qu'avant le choc il n'alloit en avant qu'avec une vistesse à peu pres comme 4. Ainsi le corps contraire au lieu de faire reculer, ou moins avancer celuycy par un choc opposé, le feroit avancer davantage, et l'attireroit quasi à soy, ce qui est hors de toute apparence.

quantity of motion we can retain the initial numbers without significant error. But, is it conceivable, that for a change as small as one likes made in the supposition with respect to body B, there would result such a large difference in the event that all rebounding stops, and B, which previously had to go in reverse with a speed of 4, now, to have ever so slightly more force, has not only to not go in reverse, but has to go forward with a speed close to 4/3. What is even more strange is that before the impact, it was only going forward with a speed of about 4. Thus the opposite body, instead of making this one go in reverse, or go forward less, by an opposite impact, would make it advance more, and would almost attract it to itself, which is outside all appearance.

G.III.48 *Ibid.*

J'adjouteray une remarque de consequence pour la Metaphysique. J'ay monstré que la force ne se doit pas estimer par la composition de la vistesse et de la grandeur, mais par l'effect futur. Cependant il semble que la force ou puissance est quelque chose de reel dès à present, et l'effect futur ne l'est pas. D'où il s'ensuit, *qu'il faudra admettre dans les corps quelque chose de*

PL, §42 (pp. 233–4). (In part.)

⟨I will add a remark of some consequence for Metaphysics.⟩ I have shown that force must not be estimated by the compound of velocity and size, but by the future effect. However it seems that force or power is something already real, while the future effect is not so. *Whence it follows that we*

| in margin.

Reality of force

different de la grandeur et de la vistesse, à moins qu'on veuille refuser aux corps toute la puissance d'agir.

must admit in bodies something different from size and velocity, unless we are willing to refuse to bodies all power of acting.

G.III.52 *"Un principe general utile à l'explication des loix de la nature", reply to Malebranche, n.d.*
On le peut enoncer ainsi: *Lorsque la difference de deux cas peut estre diminuée au dessous de toute grandeur donnée in datis ou dans ce qui est posé, il faut qu'elle se puisse trouver aussi diminuée au dessous de toute grandeur donnée in quaesitis ou dans ce qui en resulte,* ou pour parler plus familierement: *Lorsque les cas (ou ce qui est donné) s'approchent continuellement et se perdent enfin l'un dans l'autre, il faut que les suites ou evenemens (ou ce qui est demandé) le fassent aussi.* Ce qui depend encor d'un principe plus general, sçavoir: *Datis ordinatis etiam quaesita sunt ordinata.*

PL, §27 (p. 222):
It [the principle] may be enunciated thus: "When the difference of two cases can be diminished below every given magnitude in the data or in what is posited, it must also be possible to diminish it below every given magnitude in what is sought or in what results," or, to speak more familiarly, "When the cases (or what is given) continually approach and are finally merged in each other, the consequences or events (or what is sought) must do so too." Which depends again on a still more general principle, namely: "When the data form a series, so do the consequences" (*datis ordinatis etiam quaesita sunt ordinata*).
Cf. PL, p. 64.

Law of continuity (in Mathematics)[58]

G.III.57 *Ltr. to Bayle, 27 Dec. 1698.*
Mons. Bernoulli, professeur à Groningue, avoit esté pour l'opinion commune, mais apres avoir examiné la mienne

Mr. Bernoulli, professor at Groningen, used to be of the common opinion, but after having carefully examined mine, he has completely come round to it. It

| in margin.

Monads deduced from Dynamics

[58] It is not clear why Russell adds "in Mathematics"; although the Law of Continuity had its origins there, Leibniz conceived it as having much wider applicability, as shown, e.g., by his application of it to the Laws of Collision (see **G.II.47** above).

avec soin, il s'est rendu entierement. Il est vray que cette conservation de la force ne se peut obtenir qu'en mettant par tout du ressort dans la matiere, et qu'il s'ensuit une conclusion qui paroistra estrange à ceux qui ne conçoivent pas assez les merveilles des choses; c'est qu'il y a pour ainsi dire des mondes dans les moindres corps, puisque tout corps quelque petit qu'il soit, a ressort, et par consequent est environné et pénetré par un fluide aussi subtil à son egard que celuy qui fait le ressort des corps sensibles le peut estre à nostre egard, et qu'ainsi il n'y a point de premiers Elemens, puisqu'il en faut dire autant de la moindre portion du plus subtile fluide qu'on peut supposer.

is true that this conservation of force can only be obtained by putting elasticity everywhere in matter, and that there follows a conclusion which would appear strange to those who do not sufficiently appreciate the wonder of things; this is that there are, so to speak, worlds within the smallest bodies, since every body however small has elasticity, and consequently is surrounded by and penetrated by a fluid as subtle with respect to it as that which makes the elasticity of sensible bodies can be with respect to us, and thus that there are no first elements, for the same may be said of the least portion of the most subtle fluid that we can imagine.[59]
Cf. PL, p. 90.

G.III.60 *Ltr. to Bayle, n.d.*
Voici mon argument: Dans les mouvemens uniformes d'un même corps 1) l'action de parcourir deux lieues en deux heures est double de l'action de parcourir une lieue en une heure (car la premiere action contient la seconde precisement deux fois); 2) l'action de parcourir une lieue en une

Here is my argument: In the uniform motions of a single body 1) the action of traversing two places in two hours is double the action of traversing one place in one hour (for the first action contains the second precisely two times); 2) the action of traversing one place in one hour is double

| in margin against 1st and last sentences.

***Action* = $\int mvds = \int mv^2dt$**

The above "demonstration" merely

[59] Leibniz was a committed mechanist. So for him the elastic force that seemed to be a property of every body had to be explained by appeal to the motions of a fluid within the body; but this fluid would in turn consist in bodies which are themselves elastic, and so on down. Since infinite division for Leibniz issues in no least parts, there could be no smallest elastic bodies, and therefore no first elements.

heure est double de l'action de parcourir une lieue en deux heures (ou bien les actions qui font un même effect sont comme leur vistesses). Donc 3) l'action de parcourir deux lieues en deux heures est quadruple de l'action de parcourir une lieue en deux heures. Cette demonstration fait voir qu'un mobile recevant une vistesse double ou triple, à fin de pouvoir faire un double ou triple effect dans un même temps, reçoit une action quadruple ou noncuple. Ainsi les actions sont comme les quarrés des vistesses.

the action of traversing one place in two hours (or, actions that produce the same effects are proportional to their speeds). Therefore 3) the action of traversing two places in two hours is quadruple the action of traversing one place in two hours. This demonstration shows that a moving thing receiving a double or triple speed, so as to be able to produce a double or triple effect at one time, receives a quadruple or ninefold speed. Thus, the actions are proportional to the squares of the speeds.

defines action[60]

G.III.60 *Ibid.*
Et comme il se conserve tousjours la force pour remonter en somme à la même hauteur, ou pour faire quelque autre effect, il s'ensuit, qu'il se conserve aussi la même quantité de l'action motrice dans le monde, c'est à dire, pour le bien prendre, que dans une heure il y a autant d'action motrice dans l'univers, qu'il y en a en quelque autre heure

PL, §39 (p. 230). (In part.)
⟨And as the force for re-ascending to the same height, or for producing some other effect, is always conserved, it follows that⟩ there is always conserved in the world the same quantity of motor action, *i.e.* rightly understood, there is as much motor action in the universe in one hour as in any other hour

| in margin.

Kinetic Energy of universe constant[61]

[60] Russell has a point with this objection, as is shown by Leibniz's difficulty in persuading De Volder with this argument (which was actually original with Johann Bernoulli, on Leibniz's behalf). If one accepts that action is proportional to force multiplied by time, but believes, as did De Volder, that force is proportional to speed, then action will be proportional to force multiplied by distance; and one will not accept that "the action of traversing one place in one hour is double the action of traversing one place in two hours", but will insist they are equal. See Paul Lodge's discussion in LDV, xli–xliii.

[61] Since the force for raising a weight to the same height is a mere potential energy before the weight is released, this implies that it should be the total energy (kinetic + potential), not kinetic energy alone, that remains constant.

que ce soit. Mais dans les momens mêmes, c'est la même quantité de la force qui se conserve. Et en effect l'action n'est autre chose que l'exercice de la force, et revient au produit de la force par le temps.

whatever. But in moments themselves it is the same quantity of force which is conserved. And in fact action is nothing but the exercise of force, and amounts to the product of the force and the time.

G.III.60 *Ibid.*
prenant qu'ils

in taking what

Caret mark between "prenant" and "qu'ils"; ***ce*** written after ⁄ in margin.

G.III.66 *Ltr. to Bayle, n.d.*
S'il ne vous reste de la difficulté, Monsieur, que sur le progrès spontané des pensées principalement, je ne desespererois point qu'elle pourra cesser un jour, puisque tout ce qui est en action est dans un estat de passage ou de suite, et je ne connois rien dans la Nature qui ne le soit. Sans cela d'où viendroit le changement? Si quelcun disoit avec certains nouveaux Philosophes, que Dieu seul agit, il faut qu'il avoue que Dieu au moins est dans un progrès spontané d'action en action sur les Creatures. Ainsi un tel progrès spontané est quelque chose de possible, et il faudroit maintenant prouver qu'il n'est possible qu'en Dieu seul: mais pourquoy les ames ne pourroient elles pas estre en cela des imitations de Dieu?

If you have difficulty, sir, mainly with the spontaneous progression of thoughts, I shall not lose hope that it could one day disappear, since whatever is in action is in a state of transition or succession, and I know of nothing in Nature that is not. Otherwise, where would change come from? If someone were to say, along with some of the new Philosophers, that God alone acts, he must admit that God at least is in a spontaneous progression from action to action upon Created beings. Thus such a spontaneous progression is something possible, and it is necessary to prove that it is possible in God alone: but why could souls not be imitations of God in this respect?

| in margin against the passage "puisque tout ce qui est … qui ne le soit." Separate line against rest of passage which follows.

How about God? Is his activity in time? How about the act by which he created time?

G.III.69 *Ibid.*
la pensée estant l'action d'une

PL, §55 (p. 242):
Thought, being the action

| in margin. ***Important***

même chose sur elle même, cela n'a point de lieu dans les figures et dans les mouvemens, qui ne sauroient jamais monstrer le principe d'une action veritablement interne	of one thing on itself, does not occur in shapes and motions, which cannot show the principle of a truly internal action. *Cf. PL, p. 80n.*	
G.III.77 *Quoted in G's intro to corresp. with Basnage.* Je tiens donc, schreibt Leibniz, pour demonstré que tout arrive à l'ame aussi bien qu'au corps en vertu de leur propres loix et comme par une suite de leur estat primitif.	I therefore hold as demonstrated, Leibniz writes, that everything happens to the soul as well as to the body in virtue of their own laws and as a consequence of their primitive state.	***p. 121***[62]
G.III.144 *Ltr. to Basnage, 19 Feb. 1706.* Mais entreprendre de satisfaire tout exprés aux difficultés des M. Bayle, comme il semble que vous me le conseillés, Monsieur, c'est ce que j'apprehenderois de ne point pouvoir faire sans faire du tort à la religion. Car je ne ferois qu'exciter un si habile homme, à mettre ses difficultés dans un jour encor plus beau, s'il est possible, sans me pouvoir flatter de remedier un mal que j'aurois causé.	But expressly undertaking to satisfy Mr. Bayle's challenges, as it seems you are recommending, Sir, is what I feared being unable to do without doing harm to religion. For I would only be encouraging such a capable man to present his difficulties in a still more beautiful way, if it is possible, without being able to flatter myself that I was remedying a wrong that I would have caused.	| in margin. ***Accounts for the publication of the Theodicy after Bayle's death.***
G.III.182 *Ltr. to Burnett, 27 July 1696.* et le feu Roy	and the late King	Phrase underlined. ***Charles II?***[63]
G.III.205 *Ltr. to Burnett, 18 May 1697.* Cependant j'ay changé et rechangé sur des nouvelles lumiéres; et ce n'est que depuis	However, I changed and replaced my views by new lights; and it is only about 12 years since I managed to satisfy myself, and arrived	| in margin. "environ 12 ans" underlined.

[62] Russell identifies the page from which Gerhardt quoted the passage.

[63] Charles II died in 1685, but his successor, James II, was forced to abdicate in 1689, leaving it a bit unclear which monarch Leibniz was referring to.

environ 12 ans que je me trouve satisfait, et que je suis arrivé à des demonstrations sur ces matieres qui n'en paroissent point capables.

at demonstrations on these matters which did not seem capable of demonstration.

May 1697

G.III.205 *Ibid.*
Il admettoit ces deux choses, je les avois aussi admises autresfois, mais j'en estois revenu, et mes raisons ébranlérent aussi Mons. Hugens, comme il me l'écrivit luy même, en avouant que je luy avois dit des choses qui luy donnoient fort à penser. Luy et moy nous avions esté justement de l'opinion de Mons. Newton sur le mouvement absolu, et par la même raison de la force centrifuge que Mons. Newton allegue; mais quand le livre de Mons. Newton parut, nous avions déja changé de sentiment tous deux de la même façon, sans que l'un en eút communiqué avec l'autre, comme nous le reconnusmes depuis par nos lettres.

He accepted these two things, which I had also formerly accepted, but I came back to them, and my arguments shook Mr. Huygens too, as he wrote to me himself, confessing that I had said things to him that gave him a great deal to think about. He and I had held precisely Mr. Newton's opinion on absolute motion, and for the same reason, that of centrifugal force that Mr. Newton claims; but when Mr. Newton's book was published, we had already both changed our views in the same way, without having communicated with one another, as we have since recognized from our letters.

| in margin against 1st sentence.
|| against 2nd sentence.
"mes raisons ébranlérant aussi Mons. Hugens" underlined.

? Huygens was dead, so Leibniz could say what he liked.[64]

G.III.324–5 *Ltr. to Burnett, 18 Oct. 1712.*

Those who say that France is quite defeated are very

| in margin.
|| against start

[64] Here Russell is being uncharitable: what Leibniz writes is perfectly true. In his letter to Huygens of 12 June 1694, Leibniz noted that Newton acknowledged the equivalence of hypotheses regarding rectilinear motions, but not circular ones, since "the endeavour of circulating bodies to increase their distance from the centre of the axis of circulation manifests their absolute motion." Leibniz then commented that "you yourself, Sir, were formerly of the opinion of Mr. Newton with regard to circular motion." To this Huygens replied: "I am amazed at your memory—that you recall that I used to be of Mr. Newton's opinion in regard to circular motion. Which is so, and it is only 2 or 3 years since I found what is truer—from which it seems that you too are not far, except that you would have it that, when several bodies are in mutual relative motion, they each have a certain degree of true motion, or of force, in which I am not at all of your opinion" (Huygens to Leibniz, 24 Aug. 1694).

Ceux qui disent que la France est assés abbatue sont fort ignorans ou fort malicieux. Nous voyons déja la France superieure, depuis que l'Angleterre s'est retirée, et quand la maison de Bourbon sera paisible possesseur de l'Espagne et des Indes comme de la France, elle sera humainement parlant irresistible; et si elle a l'Angleterre de son costé, elle abimera l'Angleterre et le reste. Il est ridicule de fonder nôtre seureté sur ce que les Bourbons se brouilleront entre eux: s'il sont sages, il ne le feront pas, et ils seront les Arbitres de l'Europe: faut-il fonder nôtre salut sur la supposition de la sottise d'autruy? Il ne suffit pas que

ignorant or quite malicious. We see already that France has the upper hand since England withdrew, and when the House of Bourbon is the peaceful possessor of Spain and the Indies as it is of France, it will be humanly speaking unstoppable; and if it has England on its side, it will destroy England and the rest. It is ridiculous to base our security on the belief the Bourbons will quarrel among themselves: if they are wise, they won't, and they will become the Arbiters of Europe: should we base our salvation on the assumption of the folly of others? It is not sufficient

of last sentence: "Dieu veuille … après la paix".

1712[65]

[65] In 1712 England, under a new Tory administration, had withdrawn from the War of the Spanish Succession, much to the surprise of her allies, Austria, Holland and an assortment of German rulers including Leibniz's employer, the Elector of Hanover. The war to that point, prosecuted strongly by the previous Whig administration, had been going disastrously for the French under Louis XIV, but, as Leibniz noted, France was far from defeated, and, with the English withdrawal, made a striking recovery and gained from the Treaty of Utrecht (which ended the fighting in 1713) far more than had previously seemed possible. The war had broken out after Charles II of Spain had died in 1700, leaving the vast Spanish empire to Louis XIV's grandson, the Duke of Anjou. The prospect of France and Spain united under Bourbon rule led to the creation of the Grand Alliance under English leadership and the outbreak of hostilities. Also at issue was the English succession where France and Spain favoured the Catholic Pretender James Stuart ("their own creature", as Leibniz calls him) rather than the Hanoverian successor. Leibniz had already intervened in this dispute on his employer's behalf a few years previously—with unfortunate consequences (*cf.* ANTOGNAZZA, *Leibniz* [2009], pp. 461–2). Stuart also had the covert support of many Tories in England, which helped account for the Tories' weakening support of the Grand Alliance. Russell, of course, as a congenital Whig would have been on Leibniz's side in this matter. In the end, Louis secured the Spanish throne for his grandson, though subject to the proviso that the two thrones should never be united. However, England did not do as badly as Leibniz feared: she acquired Gibraltar and Minorca from Spain and large parts of Canada from France, as well as various trade concessions. And, perhaps most importantly from Leibniz's point of view, Louis recognized the Hanoverian succession.

les Couronnes de France et d'Espagne soyent sur deux differentes testes: il est assez dangereux que ce soyent deux testes, dont le vray interest est de s'entendre, et qu'alors on est à leur discretion. Tout ce qu'on accorde à l'Angleterre est precaire et peu de chose. Dieu veuille qu'il ne placent pas leur creature en Angleterre, comme il leur sera aisé de faire après la paix; et il semble qu'eux et leur partisans n'attend ent que de voir les Hollandois desarmés, pour frapper leur coup.	ficient that the Crowns of France and Spain are on two different heads: it is dangerous enough that there be two heads whose real interest is to agree, so that we are at their mercy. All that is granted to England is precarious and insignificant. God grant that they do not install their own creature in England ⟨i.e. on the English throne⟩, as it will be easy for them to do after peace; it seems that they and their supporters are just waiting to see the Dutch disarmed, in order to make their move.	
G.III.328 *Ltr. to Burnett, 23 Aug. 1713.* On n'a pas besoin en Angleterre de livres pour la liberté des pensées, *Freethinking*. Il faudroit plutôt porter les hommes à penser avec soin et ordre, suivant le veritable art de penser.	In England one does not need books for freedom of thought, Freethinking. Instead people should be induced to think carefully and with order, according to the true art of thinking.	| in margin. ***Good!***
G.III.440 *Quoted in G's intro. to Jaquelot corresp.* L'ame est excitée aux pensées suivantes par son objet interne, c'est à dire par les pensées precedentes. Car il y a une suite ou liaison comme dans les momens. Le miracle ou plustost le merveilleux consiste en ce que chaque substance est une representation de l'univers suivant son point	The soul is driven to its next thoughts by its internal object, that is, by its preceding thoughts. For there is a sequence or connection as in moments. The miracle or rather the marvel consists in that each substance is a representation of the universe from its own point of view. This is the greatest richness or	| in margin against whole passage. || against 2nd sentence. ***p. 464***[66]

[66] Russell identifies the page from which Gerhardt quoted the passage.

de veue. C'est la plus grande richesse ou perfection que l'on puisse attribuer aux creatures et à l'operation du Createur, et comme un redoublement de mondes dans ces miroirs innomerables de substance, par lesquels l'univers est varié à l'infini. Ces substances simples sont toutes comme des petites divinités respectives, depuis leur commencement, car pour de la fin, elles n'en ont point. Or le point de la representation de l'univers dans chaque Monade estant establi, le reste n'est que consequences, et vos questions, Monsieur, se resolvent, ce semble, d'elles mêmes.	perfection that we can attribute to created things and to the operations of the Creator, and like a replication of worlds in these innumerable mirrors of substances, in which the universe is infinitely varied. These simple substances are all like little divinities respectively since their inception, for as for the end, they have none. But the point about the representation of the universe in each monad being established, the rest is only consequences, and your questions it seems, Sir, resolve themselves.	
G.III.458 *Ltr. to Jaquelot, 22 March 1703.* Vous demandés que le degré de mouvement est essentiel au corps.	You ask what degree of motion is essential to bodies.	"que le" underlined. ***? quel*** written in margin. Russell 1st wrote the feminine "? quelle" and then erased "le".
G.III.481 *Ltr. to Jaquelot, winter 1704/05.* On s'eloigne des Supra …	One disagrees with the Supra …	"Supra …" underlined. ***Supralapsaires?*** written in margin.[67]
G.III.532 *Ltr. to ?, 6 Feb. 1712.* Quand vous aurés un jour le loisir de bien examiner les	When you have the chance someday to properly consider the consequences of	| in margin. ***vortex atoms***[68]

[67] Russell completes the word that Gerhardt was unable to read. The Supralapsarians were those Calvinists who believed that souls were predestined to salvation or damnation before the Fall and indeed before the creation.

[68] The hypothesis that matter was composed of atoms was subject to many theoretical problems which persisted into the nineteenth century. Hardness was one of them: it was supposed that atoms must be perfectly hard otherwise they might wear out

suites du *pourquoy suffisant*, vous abandonnerés vous même les atomes: et vous n'en avés nullement besoin pour expliquer la dureté, puisqu'un fluide pourra étre meu d'une maniere qui en fasse conspirer les parties à serrer celles d'un autre corps.	sufficient reason, you will yourself abandon atoms: and you have no need of them to explain hardness, since a fluid could be made in a way that makes the parts conspire to compress those of another body.	
G.III.550 *Ltr. to Bourguet, 11 April 1710.* Necessariae, quales Arithmeticae, Geometricae, Logicae fundantur in divino intellectu a voluntate independentes; et talis est necessitas trium dimensionum, ut nec plures esse possint, nec pauciores, quod Bailio etiam arbitrarium videbatur, sed apud Geometras habetur demonstratum.	Necessary [truths], such as Arithmetical, Geometrical and Logical truths, are founded in the divine intellect, independent of the will. Such is the necessity of three dimensions, that there can be neither more nor fewer. This seems also to have been Bayle's assessment, but Geometers regard it as demonstrated.	| in margin. ***3 dimensions necessary***
G.III.569–70 *Ltr. to Bourguet, 22 March 1711.* par exemple, avec deux dés, il est aussi faisable de jetter douze points, que d'en jetter onze, car l'un et l'autre ne se peut faire que d'une seule maniere;	for example, with two dice, it is just as possible to throw twelve points, as to throw eleven, for both can only be done in a single way;	| in margin of p. 570. ***Mistake! 6–5 may be thrown in 2 ways***
G.III.583 *Ltr. to Bourguet, 5 Aug. 1715.*	*PL, §59 (p. 246):* Unity is divisible, but is not	| in margin.

through repeated impacts, yet the impact of perfectly hard atoms would create infinite accelerations (see Scott, *The Conflict between Atomism and Conservation Theory* [1970]). Leibniz's suggestion here that hardness might be emulated by a fluid was revived at the end of the nineteenth century by Lord Kelvin with the idea that atoms were vortices in a frictionless, space-pervading ether. Interestingly, Russell, who had previously dealt with the problem of hard-body impact through Boscovitch's point-atom theory in which atoms were extensionless centres of action, started in 1897, under Whitehead's influence, to consider plenal theories of matter like Kelvin's. See Russell, "Various Notes on Mathematical Philosophy" (1896–98) and "Motion in a Plenum" (1897) (*Papers* 2: 21–3, 89) and Griffin, *Russell's Idealist Apprenticeship*, pp. 210–25, for comment.

L'unité est divisible, mais elle n'est pas resoluble; car les fractions qui sont les parties de l'unité, ont des notions moins simples, parceque les nombres entiers (moins simples que l'unité) entrent tousjours dans les notions des fractions. Plusieurs qui ont philosophé en Mathematique sur le Point et sur l'Unité, se sont embrouillés, faute de distinguer entre la Resolution en Notions et la Division en parties. Les parties ne sont pas tousjours plus simples que le tout, quoyqu'elles soyent tousjours moindres que le tout.	resolvable; for the fractions which are parts of unity have less simple notions, because integers (less simple than unity) always enter into the notions of fractions. Several people who have philosophized, in mathematics, about the point and unity, have become confused, for want of distinguishing between resolution into notions and division into parts. Parts are not always simpler than the whole, though they are always less than the whole. *Cf. PL, p. 112.*	***Important***
G.III.618 *Ltr. to Remond, July 1714.* Il est vray que ma Theodicée ne suffit pas pour donner un corps entier de mon Systeme, mais en y joignant ce que j'ay mis en divers Journaux, c'est à dire, de Leipsig, de Paris, de M. Bayle, et de M. Basnage, il n'en manquera pas beaucoup, au moins quant aux principes.	It is true that my Theodicy does not suffice to give the complete body of my System, but in adding to it what I have set forth in various Journals, that is to say, from Paris, from Leipzig, from Mr. Bayle, and from Mr. Basnage, not much will be lacking, at least as to the principles.	| in margin. ***cf. on Wolff, next page***[69]
G.III.619 *Ibid.* Monsieur Wolfius est entré dans quelques uns de mes sentimens; mais comme il est fort occupé à enseigner, sur tout les Mathematiques, et que nous n'avons pas eu	Mr. Wolff has been in my thoughts; but as he is so busy with teaching, especially mathematics, and since we haven't had much communication with one another about philosophy,	| in margin against whole passage. || against last 3 lines: "il ne sauroit … publié."

[69] Russell's reference to Wolff is explained by his marginale to **G.III.619**. Christian Wolff (1679–1754) was a German rationalist philosopher who since 1707 had been professor of mathematics at Halle (which explains Leibniz's remark at **G.III.619**). Wolff produced an astonishing number of books which were highly influential in their day, and he helped spread many of Leibniz's ideas. But today his work is noted more for its prolixity than for its originality.

beaucoup de communication ensemble sur la philosophie, il ne sauroit connoitre presque de mes sentimens que ce que j'en ay publié.	he would know almost nothing about my thoughts other than what I have published.	***Wolff***
G.III.636 *Ltr. to Remond, 11 Feb. 1715.* comme les Monades sont sujettes aux passions (excepté la primitive), elles ne sont pas des forces pures; elles sont le fondement non seulement des actions, mais encore des résistances ou passibilités, et leur passions sont dans les perceptions confuses. C'est ce qui enveloppe la matiere ou l'infini en nombre.	*PL, §86 (p. 268):* as Monads (except the primitive one) are subject to passions, they are not pure forces; they are the foundation, not only of actions, but also of resistances or passivities, and their passions are in confused perceptions. It is this which involves matter or the infinite in number. *Cf. PL, pp. 144, 145, 187.*	| in margin. ***Important (God called a monad)***[70]
G.III.645 *Ltr. to Remond, 22 June 1715.* Ma Dynamique demanderoit un ouvrage exprès; car je n'ay pas encore tout dit ny communiqué ce que j'ay à dire là	*PL, §13 (p. 209). (In part.)* ⟨My dynamics would require a special work; for I have not yet either said or communicated that which I have to say about it. You	| in margin. ***Important***

[70] Leibniz includes God among the monads by excluding him (the "primitive monad") from those monads which are subject to passions. Russell (*PL*, p. 187) cites this as one of only two passages known to him in which Leibniz treats God as a monad (the other is **G.VII.502**). Russell treats both these passages as slips and notes that the phrase usually attributed to Leibniz, "*monas monadum*" (the monad of monads), cannot be found in his writings. Russell went to considerable lengths to track it down, writing to both Robert Latta and Ludwig Stein about it. Stein replied (15 Feb. 1899) saying the phrase was Bruno's, not Leibniz's, which is how Russell attributes it at *PL*, p. 187. Stein complained the reason the phrase was so widely attributed to Leibniz was that the textbook writers all copied each other. This was pretty much what Latta confessed to in his reply on 12 February 1899: "as all sorts of writers about Leibniz use it, I allowed myself to follow their example." Chief among these, it turned out, was Hegel, who repeatedly attributed the phrase to Leibniz; thus Russell was able to add faulty Leibniz scholarship to the long list of intellectual crimes of which he accused Hegel. Russell kept the letters from Latta and Stein and, around 1948 when he was going through his papers, attached a note to them explaining the issue (RA 220.018300a). Rather surprisingly, Russell read the section on Leibniz in Hegel's *Geschichte der Philosophie* (1844) and underlined the phrase "die Monade der Monaden", writing in the margin: "This expression does not occur in Leibniz" (vol. 3: 418).

dessus. Vous aves raison, Monsieur, de juger que c'est en bonne partie le fondement de mon systeme, parce qu'on y apprend la difference entre les verités dont la necessité est brute et geometrique, et entre les verités qui ont leur source dans la convenance et dans les finales.	are right, Sir, in judging that it⟩ is to a great extent the foundation of my system; for we there learn the difference between truths whose necessity is brute and geometric, and truths which have their source in fitness and final causes. *Cf. PL, pp. 16, 29, 80n.*	
G.III.657 *Ltr. to Remond, 4 Nov. 1715.* le composé et ces deux	the composite and ⟨of?⟩ these two	Caret mark before "et", underlined, and ***? de*** written in margin. All this is in ink and may not be in Russell's hand.
G.III.678 *Ltr. to Remond, 19 Oct. 1716.* Mons. Clarke et moy nous avons cet honneur que nostre dispute passe par les mains de Madame la Princesse de Galles.	Mr. Clarke and I have the honour of having our dispute pass through the hands of her highness the Princess of Wales.	| in margin. ***This is the 3rd time the old snob mentions the fact in this one correspondence***
G.IV.41 Deus est substantia, Creatura accidens.	God is a substance; a created thing an accident.	Russell underlined the sentence.
G.IV.108–9 *"Confession of Nature Against the Atheists"; A VI 1: 489–93.* Ad has difficultates acutissimis istis philosophis nihil aliud superfuit quod responderent quam ut supponerent in ultima corporum resolutione insecabilia quaedam corpuscula, ipsi Atomos vocant, quae variis suis figuris varie combinatis varias corporum sensibilium qualitates efficiant. Sed in istis ultimis corpusculis nulla	To these difficulties nothing remained for these most acute philosophers to respond but to suppose certain indissectible corpuscles in the ultimate resolution of bodies, corpuscles they called atoms, which, by their various shapes, variously combined, give rise to the various qualities of sensible bodies. But in these ultimate corpuscles there	| in margin against 1st paragraph with 2nd | against last sentence. Separate line against start of 2nd paragraph. ***Against atoms (1669)*** written against 1st paragraph.

apparet ratio cohaerentiae et insecabilitatis.	seemed to be no reason for cohesiveness and indissectibility.	
Reddidere aliquam Veteres, sed ita ineptam, ut ejus recentiores pudeat. Scilicet partes Atomorum ideo cohaerere, quia nullum intercedat vacuum; …	The Ancients provided a reason, but one so inept that more recent philosophers are ashamed of it; namely that the parts of atoms cohere because no vacuum could come between them.	***(But cf. next page)*** written against start of 2nd paragraph.
G.IV.109 *Ibid.; A VI 1: 492–3.* Mens humana est Ens cujus aliqua actio est cogitatio. Ens cujus aliqua actio est cogitatio, ejus aliqua actio est res immediate sensibilis sine imaginatione partium.	The human mind is a being one of whose actions is thinking. If one of the actions of a being is thinking, one of its actions is immediately, sensible without imagining any parts.	| in margin. ***very Cartesian***
Cogitatio enim est res (1) immediate sensibilis; mens quippe se cogitantem sentiens sibi immediata est.	For thinking is (1) an immediately sensible thing, since a mind sensing itself thinking is immediate to itself.	
G.IV.109 *Ibid.* Cogitatio enim est hoc ipsum *nescio quid*, quod sentimus, quando sentimus nos cogitare.	For thought is something (I know not what) that we sense when we sense that we are thinking.	Thick | in margin. ***Excellent!***
G.IV.109 *Ibid.; A VI 1: 493.* Habemus enim imagines in animo etiam quando de iis non cogitamus, sed sentimus praeterea, nos illam Titii imaginem advertisse, in qua advertentiae ipsius imaginatione nullas partes deprehendimus.	For we have images in the mind even when we do not think of them, but nevertheless sense that, having noticed the latter image of Titius, we discern no parts in the imagination in noticing it.	| in margin. ***It would seem that thought then consists in introspection only.***
G.IV.110 *Ibid.* Cujus aliqua ratio est res sine	Any reason ⟨action?⟩ that belongs to a thing without	"ratio" underlined and

partibus, ejus aliqua actio non est motus.	parts, is an action that is not a motion.	***? actio***[71] written in margin.
G.IV.110 *Ibid.* Quicquid non est mobile, est indissolubile. Dissolutio enim est motus secundum partem.	Whatever is not moveable cannot be dissolved. For dissolution is motion into parts.	| in margin. *?*
G.IV.171–2 *"Epistola ad exquisitissimae doctrinae virum".* *Tempus* nihil aliud est quam magnitudo motus. Cumque omnis magnitudo sit numerus partium, quid mirum Aristotelem definisse Tempus numerum motus?	Letter to a Man of Most Exquisite Learning.[72] *Time* is nothing but the magnitude of motion. And since every magnitude is a number of parts, what wonder is it that Aristotle defined time as the number of motion?	| in margin.[73] *!*
G.IV.206 *"Hypothesis Physica Nova".* 52. Igitur sunt quatuor massae grandiores seu *elementa*, indefinitae replicationes seu	52. Therefore there are four larger masses or *elements*, indefinite replications or homeomeries. These are component	Russell wrote a large ***X*** against 1st 5 lines (to "fiunt").[74]

[71] Russell's perceptive correction is adopted in the Akademie edition: the text should be "Cujus actio est res" (A VI 1: 493).

[72] Namely, Jacob Thomasius, one of Leibniz's teachers at Leipzig.

[73] This definition of the magnitude of something as the number of its parts was given by Leibniz in his early work (this passage dates from 1669). Russell presumably found this definition incredibly naive, since a continuous magnitude, being infinitely divisible, would have an infinite number of parts. Leibniz himself wrote in a manuscript of early 1676, "I once used to define magnitude as the number of parts, but later I considered that worthless unless it is established that the parts are equal to each other, or in a given ratio" (A VI 3: 482). His mature definition of magnitude was "that which can be recognized in things only by their compresence or simultaneous perception" (*Mathematische Schriften*, 7: 18).

[74] Russell's astonishment at the alchemical terminology in this passage is perhaps understandable. But Leibniz had served as the secretary of an alchemical society in Nuremberg in his youth and ever since had maintained a keen interest in "chymistry" (as it is now called, to acknowledge that in the seventeenth century chemistry was not yet a distinct enterprise from alchemy, a body of knowledge from which he and his contemporaries were still trying to eradicate its irrational elements). Although Leibniz did not himself conduct chymical experiments, as did Boyle and Newton, he was in constant dialogue with other chymists such as Crafft, Van Helmont, and Stahl, and was well acquainted with chymical theory.

homoeomereiae; principia componentia indeterminata, ob graduum varietatem, deinde ob Analyseos per se impossibilitatem, unde plerumque ex resolvente, igne, menstruo etc. cum soluto *decomposita* fiunt: imo vix illa componentia haberi debent, quorum reconjunctione res regeneratur, nam haec quoque ipsa illa conjunctione destrui solent, et solutione generata sunt. Manet tamen duo principia utilia esse, tres ὡσ ἐν πλάτει principiorum utilium gradus, tria regna. *Regna* differunt partium solutione, subtilitate et varietate; *gradus* evectione, et coctione, et virtute. Quanquam plerumque quae virtute aucta sunt, et subtilitate augeantur, unde et in regno animali activitas major, sed et evanescentior.

principles, indeterminate in respect of the variety of degrees and, secondly, in respect of the impossibility of analysis per se. Hence most things come from resolving by fire, menstruum, etc. when they are *decomposed* by being dissolved: indeed, those components by the recombination of which the thing is *regenerated* are hard to obtain, since these too are usually destroyed on being combined, and are generated by solution. There remain two useful principles, however, three degrees of useful principles ὡσ ἐν πλάτει ⟨broadly speaking⟩, three regna. The *regna* differ by solution of parts, subtlety and variety; *degrees* differ by evection, by concoction and by virtue. Although most things which are increased in virtue, are also increased in subtlety, whence not only is the activity greater in the animal regna, but also more evanescent.

G.IV.209 *"Hypothesis Physica Nova", §57; A VI 2: 248.* *Cartesii Gassendique* maximorum sane virorum sectatores, et quicunque in summa illud docent, *ex magnitudine, figura et motu* explicandam omnem in corporibus varietatem, habent me prorsus assentientem.

I am in complete agreement with the followers of those most excellent gentlemen Descartes and Gassendi, and in short with anyone who teaches that all variety in bodies is to be explained in terms of size, shape and motion.
Cf. PL, p. 70.

| in margin.

1671

G.IV.229 *"Theoria Motus Abstractii"; A VI 2: 261–73.*

initium ergo corporis, spatii, motus, temporis (punctum nimirum, conatus, instans) aut nullum, quod absurdum, aut inextensum est, quod erat demonstrandum. (5) *Punctum* non est, *cujus* pars nulla est, nec cujus pars non consideratur; sed cujus *extensio nulla est*, seu cujus partes sunt indistantes, cujus magnitudo est inconsiderabilis, inassignabilis, minor quam quae ratione nisi infinita ad aliam sensibilem exponi possit, minor quam quae dari potest: atque hoc est fundamentum *Methodi Cavalerianae*,

Therefore the beginning of a body, space, motion, or time (namely, a point, an endeavour, or an instant) is either nothing, which is absurd, or is unextended, which was to be demonstrated. (5) *A point is not that which has no part*, nor that whose part is not considered; but that which *has no extension*, i.e. whose parts are indistant, whose magnitude is inconsiderable, unassignable, is smaller than can be expressed by a ratio to another sensible magnitude unless the ratio is infinite, smaller than any ratio that can be given; and this is the basis of the *Method of Cavalieri*,

| in margin.

Connects monads & differential calculus

"*Methodi Cavalerianae*" underlined.[75]

G.IV.229 *Praedemonstrabilia of the "Theoria Motus Abstractii"; A VI 2: 264–7.*

Nam (8) ubi semel res quieverit, nisi nova motus causa accedat, semper quiescet. (9) Contra, quod semel movetur, quantum in ipso est, semper movetur eadem velocitate et plaga.

For (8) once a thing comes to rest, it will always be at rest, unless a new cause of motion occurs. (9) Conversely, that which is once moved always moves, in so far as it is able, with the same velocity and in the same direction.

| in margin.

1st law[76]

G.IV.232 *Ibid.*

20 pendet ex nobilissimo illo

20 depends on that most noble proposition of ours,

| in margin.

1st statement of

[75] Russell draws attention to the connection between the monads of Leibniz's later theory of substance and the points in his early metaphysics of motion: each is described as partless and lacking extension. Leibniz's understanding of Cavalieri's Method of Indivisibles at this time came through his study of Hobbes's *De corpore*. See JESSEPH, "Truth in Fiction" (2008).

[76] Newton's first law of motion asserts that a body remains in a state of rest or of uniform rectilinear motion unless acted upon by an external force.

(24) *Nihil est sine ratione*, cujus consectaria sunt,	(24) *Nothing is without a reason*,	***law of sufficient reason***
G.IV.233 *Ibid.* 7. *Si duo corpora concurrunt aequivelociter* (vel etiam alterum incurrit, alterum praetervehitur, vid. Theorema 4) *et fit angulus* (quod semper fit in accursu, nunquam in occursu recto) *isque est bisectilis;*	7. *If two bodies collide with equal velocity* (or even if one runs into another, and the other is carried away, see Theorem 4), *and an angle is made* (which always occurs when they run into one another, never when they join together) *and it is bisectible*;	***These theorems are all wrong for want of the idea of <u>mass</u>***
G.IV.297 *Ltr. to M. Philipp, n.d.* C'est pourquoy les trois illustres Académies de nostre temps, la Societé Royale d'Angleterre qui a esté établie la première, et puis l'Academie Royale des Sciences à Paris et l'Academie del Cimento à Florence ont protesté hautement de ne vouloir estre ny Aristoteliciens ny Cartesiens ny Epicuriens ny sectateurs de quelque Auteur que ce soit.	This is why the three illustrious Academies of our time, the Royal Society of England which was established first, and then the Royal Academy of Sciences in Paris, and the Academy of Experiment in Florence, objected strongly, not wanting to be Aristotelians or Cartesians nor Epicurians or followers of any Author whatsoever.	| in margin. ***Pity the Royal didn't keep up this resolve.***[77]
G.IV.396 *Untitled document, May 1702.* Via derivativa	Derivative way ⟨should be "force"⟩	"a" in "Via" deleted and ***s*** written after caret mark in margin

[77] It is difficult to be certain what exactly Russell had in mind here. One obvious possibility is the control over the Society which Newton exercised after he was elected President in 1703, which his biographer described as "a viselike domination that lasted for almost a quarter-century" (CHRISTIANSON, *In the Presence of the Creator* [1984], p. 436). During this period those who had any kind of disagreement with Newton were excluded from or manoeuvred out of the Society. On the other hand, Russell had a very Cambridge loyalty to Newton (to which other marginalia testify), and it was undoubtedly the case that Newton transformed the Royal Society, which was almost moribund when he took it over, into the major scientific institution that it is today, so it cannot be taken for granted that Russell would see Newton's dictatorship as unfortunate.

G.IV.440 *"Discourse on Metaphysics", §14; A VI 4: 1551.* On pourroit donc dire en quelque façon, et dans un bon sens, quoyque eloigné de l'usage, qu'une substance particuliere n'agit jamais sur une autre substance particuliere et n'en patit non plus, si on considere que ce qui arrive à chacune n'est qu'une suite de son idée ou notion complete toute seule, puisque cette idée enferme déja tous les predicats ou evenemens, et exprime tout l'univers.	So we can say, in some sense, and in a good sense though remote from usage, that a particular substance never acts on another particular substance and is not affected by it either, if we consider that what happens to each one is only a consequence of its idea or complete concept alone, since this idea contains already all of the predicates or events and expresses the whole universe. *Cf. PL, p. 134.*	***Important for Pre-Established Harmony***
G.IV.534 *"Comments on Bayle's Dictionary entry on Rorarius".* Nous en sommes redevables à Monsieur L. et il *se peut rien imaginer qui donne une haute idée de l'intelligence et de la puissance de l'Auteur de toutes choses*.	We are indebted to Mr. L. and *can imagine nothing which gives a (more?) elevated idea of the intelligence and the power of the author of all things*.	Caret mark between "une" and "haute", and ***? plus*** added in margin.
G.IV.551 *Ibid.* Mr. L. suppose que l'Ame ne connoist point distinctement ses perceptions à venir, *mais qu'elles les sent confusement*	Mr. L. supposes that the soul does not know its future perceptions distinctly, *but senses them confusedly*.	"s" in "qu'elles" struck through.
G.V.9 *G's intro. to NE, 12 Mai 1709.*	12 May 1709	"1709" underlined. ***1704: v. G.III.297***[78]

[78] Russell corrects the date in Gerhardt's commentary about the composition of the *Nouveaux Essais*. Gerhardt quotes a letter to Thomas Burnett of 12 May 1704 which indicates that Leibniz's work on Locke will soon be finished and that he thought it would be valuable. The letter in question is published in **G.III.293–7** and dated there 1704 (at **G.III.297**, as Russell indicates). The mistake is a curious one for Gerhardt to have made and illustrates his carelessness. Previously on **G.V.9** he had cited Leibniz's letter to Burnett of 26 May 1706 indicating that after Locke's death he had lost the desire to publish the *Nouveaux Essais*. By misdating the other letter,

G.V.79 *NE, I, 1: 18*[79]*; A VI 6: 36–7.* TH. Point du tout, car les pensées sont des actions, et les connoissances ou les verités, en tant qu'elles sont en nous, quand même on n'y pense point, sont des habitudes ou des dispositions; et nous savons bien des choses, auxquelles nous ne pensons guères. PH. Il est bien difficile de concevoir qu'une verité soit dans l'esprit, si l'esprit n'a jamais pensé à cette verité.	TH. Not at all. For thoughts are actions, whereas items of knowledge (or truths), in so far as they are within us even when we do not think of them, are tendencies or dispositions; and we know many things which we scarcely think about. PH. It is very hard to conceive of "a truth in the mind, that it has never thought on." ⟨Remnant and Bennett transl., *NE*, I, i, §26.⟩	Russell put a double-headed arrow in the margin with ***? tr.*** written alongside it, indicating speeches should be interchanged.[80]
G.VI.163 *"Théodicée", §110.* Car il faut considerer que lorsque je dis, *cela me plait*, c'est autant que si je disois, je le trouve bon.	Since one must consider that when I say *it pleases me* it is as if I were saying I find it good.	| in margin. ***Fallacy***
G.VI.319 *Ibid., §345.* J'ay decouvert en même temps, que les loix du mouvement qui se trouvent effectivement dans la nature, et sont verifiées par les experiences, ne sont pas à la verité	*PL, §13 (p. 209). (In part.)* The laws of motion which actually occur in nature, and are verified by experiments, are not in truth absolutely demonstrable, as a geometrical proposition	| in margin. ***Laws of motion contingent***

Gerhardt is led to wonder why Leibniz apparently changed his mind—for the letter of 12 May clearly seems to suggest that Leibniz was then still expecting to publish. Correctly dated, however, the 12 May letter was written two years before the 26 May one—and before Locke's death, which occurred in October 1704.

79 Gerhardt and, following him, Langley put this passage in *NE*, Book I, Chapter i, §18. The Akademie edition and Remnant and Bennett put it in I, i, §26.

80 Another error of Gerhardt's, but not the one Russell thinks. Given the text which Gerhardt prints, it is natural to think (as Russell does) that Theophilus' comment is a response to Philalethes' rather than vice versa. But in fact Theophilus' comment is a reply to a different remark by Philalethes—"If there are innate truths, must there not be innate thoughts?"—which Gerhardt leaves out entirely (along with about three preceding pages of additional dialogue). Philalethes then replies with the remark quoted here. So Gerhardt has the correct order but, by omitting the preceding dialogue, makes Theophilus' opening "Not at all" incomprehensible since the preceding speech was by Theophilus himself. See Remnant and Bennett (*NE*, I, i, §§19–26 (1st sentence) for the missing dialogue. Langley's translation follows Gerhardt.

absolument demonstrables, comme seroit une proposition geometrique: mais il ne faut pas aussi qu'elles le soyent. Elles ne naissent pas entierement du principe de la necessité, mais elles naissent du principe de la perfection et de l'ordre; elles sont un effect du choix et de la sagesse de Dieu. Je puis demontrer ces Loix de plusieurs manieres, mais il faut tousjours supposer quelque chose qui n'est pas d'une necessité absolument geometrique. De sorte que ces belles loix sont une preuve merveilleuse d'un être intelligent et libre,

would be: but also it is not necessary that they should be so. They do not spring entirely from the principle of necessity, but they spring from the principle of perfection and order; they are an effect of the choice and wisdom of God. ⟨I can demonstrate these Laws in several ways, but we must always assume something that is not of an absolute geometric necessity, so that these beautiful laws are a marvellous proof of an intelligent and free being.⟩

G.VI.326 *Ibid., §356.*
La representation a un rapport naturel à ce qui doit être representé. Si Dieu faisoit representer la figure ronde d'un corps par l'idée d'un quarré, ce seroit une representation peu convenable; car il y auroit des angles ou eminences dans la representation, pendant que tout seroit egal et uni dans l'original. La representation supprime souvent quelque chose dans les objets, quand elle est imparfaite; mais elle ne sauroit rien adjouter: cela la rendroit, non pas plus que parfaite, mais fausse.

The representation has a natural relation to what is to be represented. If God had represented the round figure of a body by the idea of a square, that would not be a very suitable representation, as there would be corners or protrusions in the representation, while everything would be equal and uniform in the original. The representation often omits something in the objects when it is imperfect; but it does not add anything: this would make it, not better than perfect, but false.

| in margin.

Nature of perception

G.VI.550
en exceptant les corps animés,

excepting animated bodies

"a" in "exceptant" deleted and ***e*** written after caret mark in margin.

G.VI.583 *"Entretien de Philarete et d'Ariste".* Je réponds donc au *premier* point, que la definition du concret n'a pas besoin de la substance; car des Accidens peuvent être aussi des concrets. Par exemple, la chaleur pourra estre grande ou avoir de la grandeur: Or grand est un concret.	Thus I am replying to the *first* point, that the definition of the concrete does not require substance; since Accidents can also be concrete things. For example, heat can be a magnitude or have a magnitude: But magnitude is a concrete thing.	| in margin. ***Important***
G.VI.605 *"Principes de la Nature et de la Grace", §15.* sans une espèce de	without a kind of	"s" in "sans" deleted and ***d*** written in ink after caret mark in margin, unlike other marginalia, which are in pencil.
G.VII.20 *G's intro. to "Scientia Generalis".* Ego plus etiam addo, ipsam Algebram non esse veram characteristicam Geometriae, sed longe aliam invenire debere, quam certus sum ad usus Geometriae in mechanicis disciplinis fore algebra ipsa utiliorem.	*PL, §105 (p. 283):* ⟨I would also add, further, that⟩ Algebra itself is not the true characteristic of Geometry, but quite another must be found, which I am certain would be more useful than Algebra for the use of Geometry in the mechanical sciences.	| in margin. ***Grassmann? (No: Differential Calculus)***
G.VII.38n. *Ibid.* Der viel besprochene Aufsatz: De vita beata, den Erdmann aus den Leibnizischen Papieren hat abdrucken lassen (*Leib. op. philosoph.* pag. 71 sqq.), ist lediglich nur eine Vorstudie zur *Scientia generalis*.	The much discussed essay, *De vita beata*, which Erdmann had published in the Leibnizian papers (Leibniz, *Opera philosophica*, p. 71ff), is merely a forestudy of the *Scientia generalis*.	| in margin. ***This accounts for its being in several languages.***
G.VII.43–4 *"Scientia Generalis, Praecognita ad Encyclopaediam"; A VI 4a: 135.*	A proposition is what expresses the attributes or terms of two things, one of	| in margin. ***This must***

Propositio est quae exprimit ex duobus rerum attributis sive terminis unum qui *praedicatum* dicitur, in altero *subjectum* appellamus contineri, ita ut cui subjectum tribuitur, eidem et praedicatum sit tribuendum. Hoc autem exprimitur vel absolute vel conditionaliter, tanquam consequens ex posita alia propositione quae dicitur antecedens. Omnisque adeo propositio exprimit vel praedicatum in subjecto vel antecedens in consequente contineri.

which, called the predicate, is contained in the other, the subject, in such a way that when the subject is attributed to anything, the predicate must also be attributed to the same thing. But this is expressed either absolutely or conditionally, as the consequent of some supposed proposition which is called the antecedent. And so every proposition either expresses the predicate in the subject or contains the antecedent in the consequent.

precede his mature philosophy. But law of Sufficient Reason occurs on next page. written at foot of p. 43.[81]

G.VII.44 *Ibid.; A VI 4a: 135.* Duorum ergo generum sunt propositiones per se certae, aliae scilicet ratione constant sive ex terminis patent, quas per se notas vel etiam identicas appello, aliae sunt facti et nobis notae fiunt experimentis indubitabilibus, et talia sunt ipsa testimonia conscientiae praesentis. Quanquam autem et quae facti sunt, rationes suas habeant adeoque sua natura resolvi possint, non tamen a nobis a priori per suas causas sciri possent nisi cognita tota serie rerum, quod humani ingenii vim superat, itaque a posteriori discuntur experimentis.

There are therefore two kinds of propositions that are certain per se: those which are established by reason or evident through their terms, which I call propositions known per se or also identical propositions; and those that are facts and become known to us through indubitable experiences, and such are the testimonies of present consciousness. But although those that are facts also have their reasons and thus by their nature can be resolved, they could not be known by us a priori through their causes unless

| in margin.

Sufficient Reason

[81] This piece, "Praecognita ad Encyclopaediam sive Scientiam universalem" (A VI 4a: 133–6), is dated by the Akademie editors as Winter 1678/79 (?), based partly on the watermark, and partly on the fact that the technical term "*scientia generalis*" is introduced here for the first time but is used in Leibniz's French correspondence (as "*science generale*") from December 1678 onwards. It is not clear why Russell claims that the piece "must precede his mature philosophy": perhaps because he believes it is not consistent with his concept-containment theory of truth.

	the whole series of things were known, which is beyond the power of the human mind, and so they are learned a posteriori through experience.	
G.VII.81 De la Vie Heureuse.	On the Blessed Life	***De Vita Beata [E. 71]***[82]
G.VII.92 *"Initia et Specimina Scientiae novae Generalis", II. Von der Tugend.* Weil unser willen nicht angetrieben wird etwas zu erhalten, oder auch zu fliehen, es sey dann dass es ihm von dem verstande vorgewiesen wird als etwas guthes oder auch was böses, so wird gnug seyn dass wir allezeit recht urtheilen, umb allezeit recht zu thun.	*PL, §120 (p. 295):* Since our will is not drawn to obtain or avoid anything, except as the understanding presents it to the will as something good or bad, it will suffice that we should always judge rightly, in order to our always acting rightly. *Cf. PL, pp. 143, 196.*	| in margin. ***Important***[83]
G.VII.95 *Ibid., III.* 1. Welcher allezeit thut, was der verstand ihm anweiset, der kan stets im gemüth sich vergnüget befinden.	Whoever always does what the understanding directs him to do, can find himself constantly in a cheerful mood.	| in margin. ***Contrast p. 92***
G.VII.108 *Ibid.* H. ⟨Heading⟩		***This is certainly not earlier than 1686***
G.VII.131 *Ibid., VII.* unde quod Sinenses dicere feruntur, se solos utroque oculo videre, Europaeos monoculos esse, caeteras	Hence what the Chinese are led to say, that only they see with both eyes, while the Europeans see with one eye only, and the	| in margin.

[82] Russell refers to the edition of Leibniz's *Opera Philosophica* (1840), edited by J. E. ERDMANN, which is in his library. There, on p. 71, an abbreviated Latin version of the text begins.

[83] Russell gives a close paraphrase of this quotation in his discussion of Leibniz's ethics (*PL*, p. 196). The importance of this doctrine is that it allows Leibniz to claim that we should not follow our passions but "what the understanding indicates as most useful"—a thesis that is part of what Russell regards as a "discreditable subterfuge to conceal the fact that *all* sin, for Leibniz, is original sin …" (*PL*, p. 197).

gentes caecas, id ego paulo aliter inflectens dici posse putem, Scholasticos in speciali physica fuisse caecos, recentiores monoculos, sed oculatum tamen satis in hac scientia mortalium hactenus nullum videri et potissima adhuc agenda superesse nec nisi a collatis, sed aliter quam hactenus, operis exspectanda.	other peoples are blind, this I think could be said with a different inflection, that the Scholastics were blind in physical matters, more recent thinkers monocular, but no one seems sufficiently sighted in this science of mortals up to now, and what most of all remains still to be done can only be expected from the collating of works together, but in a different way than it has hitherto.	***God said "Let Newton be" etc.***[84]
G.VII.177 *Ibid., X. "Discours touchant la methode de la certitude de l'art d'inventer"; A VI 4a: 955.* Ce qu'Alexandre fit faire par Aristote, n'entreroit point en comparaison et déja les Memoires de l'Academie et les productions de l'observatoire le passent infiniment.	What Alexander was made to do by Aristotle does not begin to compare, and the *memoires* of the Académie and the outputs of the observatory infinitely surpass it.	| in margin. ***!***
G.VII.184 *Ibid., XI. "De Numeris Characteristicis ad Linguam"; A VI 4a: 263–4.* Vetus verbum est, DEUM omnia pondere, mensura, numero fecisse. Sunt autem quae ponderari non possunt, scilicet quae vim ac potentiam nullam habent; sunt etiam quae carent partibus ac proinde mensuram non recipiunt. Sed nihil est quod numerum non patiatur. Itaque numerus quasi figura metaphysica est,	An ancient saying has it that God made everything according to weight, measure and number. There are many things, however, which cannot be weighed, namely whatever has no force or power; also, there are things that lack parts, and therefore cannot be susceptible to measure. But there is nothing that is not subsumable under number. So number is a sort of	| in margin. ***Praise of Arithmetic***

[84] Russell's marginale, "God said 'Let Newton be'", etc. is a reference to Pope's famous couplet: "Nature and Nature's laws lay hid in night, / God said, 'Let Newton be,' and all was light."

et Arithmetica est quaedam Statica Universi, qua rerum potentiae explorantur.	metaphysical figure, and Arithmetic is a sort of statics of the universe, by which the powers of things are revealed.	
G.VII.190 *Ibid., XII; A VI 4a: 20.* XII. Dialogus. ⟨Chapter title⟩	*PL, §111 (p. 289):*	***Important*** written against title. | in margin against 1st 17 lines of dialogue.
G.VII.191n. *Ibid.* Leibniz hat am Rande des Manuscripts bemerkt: Cum DEUS calculat et cogitationem exercet, fit mundus.	Leibniz has remarked in the margin of the manuscript: When God calculates and exercises thought, the world is made.	|| in margin. ***Spinoza!***[85]
G.VII.194 *Ibid., XIII. "De Veritatibus Primis"; A VI 4b: 1442.* XIII. ⟨Chapter title⟩	*Cf. PL, p. 197n.*	Written above chapter title: ***Gerhardt seems to suggest, pp. 41–2, that this paper belongs to approximately 1677. It is highly Spinozistic. It seems almost certainly prior to the time when Leibniz read the Phaedo, or rather before he was influenced by it, i.e. before***

[85] Again Russell sees Spinoza in this (very Neoplatonistic) remark of Leibniz's; this is odd given Spinoza's comment in his Letter on the Infinite that "that measure, time and number are nothing but modes of thinking, or rather, of imagining. So it is no wonder that all those who have endeavoured to understand the process of nature by similar notions, and badly understood ones at that, should have tangled themselves up so marvellously that in the end they have been unable to untangle themselves again except by forcing their way through everything, oblivious to any absurdity, no matter how gross" (A VI 3: 278).

1680. Cf. Stein, pp. 62, 119. Observe that he already differs from Spinoza in thinking not all possibles are actual, but has difficulties on this point (p. 195)[86]

G.VII.194 *Ibid.; A VI 4b: 1442–3.*

Veritates absolute primae sunt inter veritates rationis *identicae* et inter veritates facti haec, ex qua a priori demonstrari possent omnia experimenta, nempe *Omne possibile exigit existere*, et proinde existeret nisi aliud impediret, quod etiam existere exigit et priori incompatibile est, unde sequitur, semper eam existere rerum combinationem, qua existunt quam plurima, ut si ponamus *A. B. C. D.* esse aequalia quoad essentiam se aeque perfecta sive aeque existentiam

PL, §121 (p. 296):

Absolutely first truths are, among truths of reason, those which are identical, and among truths of fact this, from which all experiments can be proved *à priori*, namely: *Everything possible demands that it should exist*, and hence will exist unless something else prevents it, which also demands that it should exist and is incompatible with the former; and hence it follows that that combination of things always exists by which the greatest

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This agrees exactly with the Ultimate Origination of Things (G.VII.303)[87]

"se" in "se aeque perfecta"

[86] This piece (**G.VII.194–5**), entitled "De veritatibus primis" [On First Truths] by the Akademie editors (A VI 4: 1442–3), is dated by them as from the middle to the end of 1680. Russell's claim (derived from his reading of STEIN) that this piece is "almost certainly prior to the time when Leibniz read the Phaedo, or rather before he was influenced by it, i.e., before 1680" is now known to be mistaken. The *Phaedo* is one of the Platonic dialogues of which Leibniz made a Latin précis in the summer of 1676. But Russell's further remark is perceptive: "Observe that he already differs from Spinoza in thinking not all possibles are actual, but has difficulties on this point (p. 195)." Here Russell refers to the passage: "People, however, are still ignorant of where the incompossibility of different things comes from, that is, how it could happen that different essences could conflict with one another, since all purely positive terms seem to be compatible with one another."

[87] Russell correctly draws attention to the agreement of its content with "On the Ultimate Origination of Things" (**G.VII.302–8**) of 1697, first published by ERDMANN in 1840. He also rightly corrects Gerhardt's "*se aeque perfecta*" to "*seu aeque perfecta*".

exigentia, et ponamus *D* esse incompatibile cum *A* et cum *B*, *A* autem esse compatibile cum quovis praeter cum *D*, et similiter *B* et *C*, sequitur existere hanc combinationem *A. B. C*, excluso *D*; nam si *D* existere volumus, non nisi *C* ipsi poterit coexistere, ergo existet combinatio *CD*, quae utique imperfectior est combinatione *ABC*.

possible number of things exists; as, if we assume *A*, *B*, *C*, *D* to be equal as regards essence, *i.e.* equally perfect, or equally demanding existence, and if we assume that *D* is incompatible with *A* and with *B*, while *A* is compatible with any except *D*, and similarly as regards *B* and *C*; it follows that the combination *ABC*, excluding *D*, will exist; for if we wish *D* to exist, it can only coexist with *C*, and hence the combination *CD* will exist, which is more imperfect than the combination *ABC*.
Cf. PL, p. 197n.

underlined and caret mark inserted before it, and ***? seu*** written in margin.

G.VII.195 *Ibid.; A VI 4b: 1443.*
Quoniam vera propositio est quae identica est, vel ex identicis potest demonstrari adhibitis definitionibus, hinc sequitur Existentiae *definitionem realem* in eo consistere, ut existat quod est maxime perfectum ex iis quae alioqui existere possent, seu quod plus involvit essentiae. Adeo ut natura sit possibilitatis sive essentiae exigere existentiam.

Since every true proposition is an identical one, or can be demonstrated from identical ones by applying definitions, it follows that the *real definition* of existence consists in this, that from among those things that might otherwise exist there should exist something maximally perfect, i.e. which involves the most essence. It follows that it is the nature of

| in margin.

This fixes the date as anterior to the discovery that some propositions are synthetic[88]

[88] Leibniz had always recognized that some propositions are contingent ("synthetic" in Russell's terminology; *cf. PL*, pp. 16ff.), but only treated "eternal truths" in his "Ars Combinatoria" of 1666. So Russell's comment that this piece must predate "the discovery that some propositions are synthetic" should perhaps be interpreted to mean "before Leibniz accommodated contingent propositions in his logic". This issue is embroiled with Russell's criticism of Leibniz (in 1900) for not realizing that the truths of arithmetic and geometry are synthetic, as Kant had discovered (*PL*, p. 21); but, as he relates in the preface to the second edition, after his study of Cantor later that same year he came to repudiate that view (p. viii).

Nisi id esset, ratio existentiae rerum reddi non posset.	possibility or essence to demand existence. Unless this were so, a reason for the existence of things could not be given.	
G.VII.196 *Definitions beginning "Bonum est quod confort ad perfectionem"; A VI 4a: 406.* *Infinitum* est id quod magnitudinem habet absolute, *finitum* involvit negationem quorundam ejusdem generis.	*The infinite* is what has absolute magnitude, the finite involves a negation of certain things of the same kind. *Cf. PL, p. 145n.*	| in margin. ***Spinoza*** "finitum … generis" is underlined[89]
G.VII.198 *Ibid., XIV.*[90] XIV. ⟨Chapter title⟩		***After 1684.***
G.VII.199 *Ibid.; A VI 4a: 911.* deque perfecta *spontaneitate* et *ingenerabilitate* et *incorruptibilitate* substantiarum, deque *unione rerum* et conspiratione substantiarum inter se.	and on the perfect *spontaneity*, *ungenerability* and *incorruptibility* of substances, and on the *union of things* and the perfect agreement of substances with one another.	| in margin. ***Not before 1686***[91]
G.VII.200 *Ibid.; A VI 4a: 913.* Quo facto, quando orientur controversiae, non magis disputatione opus erit inter duos philosophos, quam inter duos Computistas. Sufficiet enim calamos in manus sumere sedereque ad abacos, et sibi	With this done, whenever controversies arise, there will be no more need of disputation between two philosophers than between two accountants. For it will suffice for them to take their pens in hand and sit	Several scribbled lines in margin. ***Optimistic!***

[89] By this laconic marginal comment Russell is presumably drawing attention to the similarity of this doctrine to that outlined by Spinoza in his *Ethics*: "if something is absolutely infinite, whatever expresses essence and involves no negation pertains to its essence" (*Ethics*, ID6.Exp).

[90] This essay, dated by Russell as "after 1684", is given the title "De arte characteristica ad perficiendas scientias rationenitentes" by the Akademie editors (A VI 4a: 909–15), who tentatively date it as Summer 1688, from Leibniz's time in Vienna. In agreement with Russell, they say it must come after November 1684, when "Meditationes de Cognitione, Veritate, et Ideis" (N. 141) appeared in print.

[91] Russell's note "not before 1686" is based on his belief that Leibniz first articulated these theses concerning substances and their perfect agreement in 1686 in his *Discourse on Metaphysics*.

mutuo (accito si placet amico) dicere: *calculemus*.

at their abaci, and to say to one another (having called a friend, if it pleases them): let us calculate!
Cf. PL, p. 170.

G.VII.214 *Ibid., XVII. "Difficultates quaedam Logical".*
Caeterum hinc etiam manifestius apparet fons erroris in tali conversione: omnis ridens est homo, Ergo quidam homo est ridens, cum tamen fieri possit et fieri potuisset ut nullus homo nunc revera rideat, imo unquam riserit, imo ut nullus homo exstiterit. Omnis ridens est homo, id est Ridens et Ridens homo aequivalent, sed ridens est Ens, ex hypothesi. Ergo Ridens homo est Ens, Ergo homo ridens est Ens, seu quidam homo est ridens. Ubi Ens in propositione: homo Ridens est Ens, eodem modo sumi debet ut in propositione: ridens est Ens. Si sumatur Ens de possibilitate seu ut sit ridens in regione idearum, etiam quidam homo est ridens, non aliter accipi debet, quam homo ridens est Ens, nempe possibile seu in regione idearum.

Furthermore, it also appears evident from this what the source of error is in a conversion such as "Every laugher is a man, therefore some man is laughing", when, however, it could happen and could have happened that no man is now really laughing, or even will ever laugh, or even that no man should exist. "Every laugher is a man", that is, "a laugher" and "a man laughing" are equivalent, but a laugher is a being, by hypothesis. Therefore, a man laughing is a being, that is, "Some man is laughing". Where there is a being in the proposition "A man laughing is a being", in the same way it must be assumed that there is in the proposition "A laugher is a being". If being is assumed to concern possibility, that is, that there is a laugher in the realm of ideas, then also that some man is laughing must be taken in no other sense than that a laughing man is a being, namely a possible, or a being in the region of ideas.

| in margin.

Cf. Bradley

on arsenic poisons[92]

The 2 marginalia were written with different pencils.

[92] Russell refers to F. H. BRADLEY's remark that "arsenic poisons" remains true even when it is poisoning nobody (*The Principles of Logic* [1883], p. 42n.). Russell used the same example in "The *À Priori* in Geometry" (1896); *Papers* 1: 291.

G.VII.214 *Ibid.*

Hinc etiam patet, Universalem Affirmativam cum sua opposita P. N. toto coelo differre ab Universali negativa cum sua opposita, cum in posterioribus Ens assumatur, non in prioribus. In omnibus tamen tacite assumitur Terminum ingredientem esse Ens.

Omne *A* est *B* id est *AB* ∞ *A* quoddam *A* non est *B* id est *AB* non ∞ *A*

Hence it is also clear that a Universal Affirmative proposition, together with its opposite, the Particular Negative, differs in all of heaven from the Universal Negative, together with its opposite, since a being is assumed in the latter, not the former. In all of them, however, it is tacitly assumed that being is an ingredient term.

Every *A* is a *B*, that is, *AB* ∞ *A* Some *A* is not a *B*, that is, *AB* not ∞ *A*

Cf. PL, p. 170n.

The essence of the Logical Calculus is here.

G.VII.225 *Ibid., XVIII. "Ad Specimen Calculi Universalis Addenda"; A VI 4a: 293.*

Deus est sapiens. Deus est omnipotens, justus omnipotens punit malos. Deus non punit aliquos malos in hac vita. Qui punit, et non punit in hac vita, punit in alia vita. Ergo Deus punit in alia vita.

God is wise, God is omnipotent. A just omnipotent being punishes the wicked. God does not punish some wicked people in this life. Whoever he punishes, he does not punish in this life, but in another life. Therefore God punishes in another life.

| in margin.

"sapiens" underlined and ***justus*** written in margin.[93]

G.VII.233n. *"Non inelegans specimen demonstrandi in abstractis"; G.VII.228–35; A VI 4a: 851, dated Feb.–April 1687 by the Akademie editors.*

V. g. Homo non rationalis est absurdum seu impossibile. Sed licet dicere: Simia est homo nisi quod non est rationalis. Homines nisi qua bestiis differt homo, ut in Jambo Grotii. Homo—Rationalis aliud quam homo non rationalis. Nam Homo—

"Man is not rational" is absurd or impossible. But one may say: "An ape is a man except that he is not rational"; "Men except for that by which man differs from beasts", as in James Grotius. "Man—Rational" is different than "Man is not rational". For Man—Rational ∞ Brute. But "Man is not rational" is impossible. *Man—Animal—rational* is nothing.

| in margin.

Subtraction

[93] Russell means that if the argument is to be valid "sapiens" should read "justus".

Rationalis ∞ Brutum. Sed homo non rationalis est impossibile. Homo—Animal—Rational. est Nihilum.		
G.VII.255 *G's intro. to "Philosophische Abhandlungen".* vollkommenstes	most perfect	***m***[94]
G.VII.290 *"Philosophische Abhandlungen", VIII.* (9) Interim ex conflictu omnium possibilium existentiam exigentium hoc saltem sequitur, ut Existat ea rerum series, per quam plurimum existit, seu series omnium possibilium maxima.	(9) Meanwhile, from the conflict of all possibles striving for existence this at least follows, that there exists that series of things through which the most exist, that is, the greatest series of all possibles.	***Cf. G.VII.194***[95]
G.VII.293 *Ibid., IX. "De Synthesi et Analysi Universali seu Arte Inveniendi et Judicandi"; A VI 4a: 539.* Si enim sit species *y*, cujus notio *abcd*, et pro *ab* ponatur *l*, pro *ac*, *m*, pro *ad*, *n*, pro *bc*, *p*, pro *bd*, *q*, pro *cd*, *r*, quae sunt biniones: rursus terniones pro *abc*, *s*, pro *abd*, *v*, pro *acd*, *w*, pro *bcd*, *x*, ista quidem omnia erunt praedicata ipsius *y*, sed praedicata convertibilia ipsius *y* erunt tantum haec: *ax*, *bw*, *cv*, *ds*; *lr*, *mq*, *np*.	(9) For if there is a species *y*, whose notion is *abcd*, and for *ab* let us take *l*, for *ac*, *m*, for *ad*, *n*, for *bc*, *p*, for *bd*, *q*, for *cd*, *r*, which are binions: likewise for the ternions let us take for *abc*, *s*, for *abd*, *v*, for *acd*, *w*, for *bcd*, *x*, then all these will be predicates of *y*, but the only convertible predicates of *y* will be these: *ax*, *bw*, *cv*, *ds*; *lr*, *mq*, *np*.	| in margin. ***Symbolic Logic***
G.VII.299 *Ibid., X. "De Principiis Praecipue Contradictionis et Rationis Sufficientis"; A VI 4a: 804.*	First of all I assume that every proposition (that is, every affirmation or negation) is either true or false.	| in margin. ***Law of***

[94] Russell's "m" is puzzling. It looks as if it's the correction of a typographical error. It is hard against the word "vollkommenstes", which is hyphenated, but correctly printed. Maybe Russell thought the word should have only one "m".

[95] The reference to **G.VII.194** is to the short paper "On First Truths" excerpted from and discussed above.

Ante omnia assumo Enuntiationem omnem (hoc est affirmationem aut negationem) aut veram aut falsam esse,		***contradiction***[96]
G.VII.301 *Ibid.; A VI 4a: 806.* Exempli causa Archimedes vel quisquis est autor libri de aequiponderantibus assumit, duo pondera aequalia eodem modo in libra respectu centri vel axis sita esse in aequilibrio.	For example, Archimedes, or whoever is the author of the book on equilibrium, assumes that two equal weights situated in the same way in a balance with respect to the centre or an axis are in equilibrium.	| in margin. ***1686 ?***[97] "Archimedes" underlined.
G.VII.309 *Ibid., XII; A VI 4a: 806.* vel ut vulgo ajunt, quod nihil fit sine causa.	or, as is commonly said, that nothing happens without a cause.	All but 1st word underlined.[98]
G.VII.309n. *Ibid.; A VI 4b: 1616–17.* Aus dem Manuscript hat Leibniz Folgendes daneben bemerkt: Vera causa cur haec optius quam illa existant, sumenda est a liberis divinae voluntatis decretis, quorum primarium est, velle omnia agere quam optime, ut sapientissimum decet. Itaque licet interdum perfectius excludatur ab imperfectiore, in summa tamen electus est ille modus	On the manuscript Leibniz has made the following remarks beside this: The true cause why these things exist rather than those is to be taken from the free decision of the divine will. Of these the primary one is the will to do everything as well as possible, as befits the wisest being. Thus although the more perfect may occasionally be excluded by the more imperfect, nevertheless all	| in margin. ***Important***

[96] Strictly speaking, this is the Law of the Excluded Middle (or requirement of bivalence). But it is equivalent to the Law of Contradiction in the form Leibniz gives it, where p is false if it leads to a contradiction, and the "true is whatever is opposed to or contradictory to what is false" (*Monadology*, §31). In intuitionistic logic one denies bivalence but still upholds the principle that if p leads to a contradiction, then $\neg p$ is true (while denying that one can infer that p is true from the falsity of $\neg p$).

[97] This is Russell's ascription of the date.

[98] Gerhardt gives the most substantial part (but not all) of the important essay "Specimen inventorum de admirandis naturae generalis arcanis" [A Specimen of Discoveries of the Admirable Secrets of Nature in General] (**G.VII.309–18**). A complete version is given in A VI 4: 1615–30 and, together with two interleaved notes, in Latin and facing English translation in *LoC*, pp. 302–33.

creandi mundum, qui plus realitatis sive perfectionis involvit, et DEUS agit instar summi Geometrae, qui optimas problematum constructiones praefert. Itaque omnia Entia quatenus involvuntur in primo Ente, praeter nudam possibilitatem habent aliquam ad existendum propensionem, proportione bonitatis suae, existuntque volente Deo, nisi sint incompatibilia perfectioribus, quod posterius fit si nimium voluminis habeant proportione virtutis, ita ut plus spatii occupent quam impleant, ut angulosa aut sinuosa. Exemplo res erit clarior. Hinc etiam determinata praeferuntur indeterminatis, in quibus ratio electionis nulla intelligi potest. Itaque si sapiens decreverit tria assignare puncta in aliquo spatio, nec ulla sit ratio pro una potius quam alia specie trianguli, eligetur aequilaterum, in quo puncta tria similiter se habent. Et si tres globi aequales et similes sint collocandi inter se, nec alia praeterea detur conditio, collocabuntur ut se tangant.

in all that way of creating the world is chosen which involves more reality or perfection, and God acts like a first-rate geometer who prefers the best constructions of problems. Thus all beings, in so far as they are involved in the first being, have, in addition to bare possibility, some propensity for existing in proportion to their goodness; and, if God wills it, do exist, unless they are incompatible with more perfect beings, or with a greater number of beings. The latter occurs if they have too great a volume in proportion to their potential, so that they occupy more space than they fill, like angular or sinuous things. An example will make the matter clearer. Hence also determinate things are preferred to indeterminate ones, in which no reason for a choice can be understood. Thus if a wise person decided to assign three points in some space, and there were no reason for one kind of triangle rather than another, he would choose an equilateral triangle, in which the three points are similarly disposed. And if three equal and similar globes are to be arranged together, and no further condition is attached, they will be arranged so as to touch

	each other. *Cf. PL, p. 36n.*	
G.VII.314 *Ibid.; A VI 4b: 1622; LoC, 314.* Sequitur etiam, aut nullas esse substantias corporeas et corpora esse tantum phaenomena vera sive inter se consentientia, ut iris, imo ut somnium perfecte cohaerens, aut in omnibus substantiis corporeis inesse aliquid analogum Animae, quod veteres formam aut speciem appellarunt.	It also follows either that there are no corporeal substances and bodies are only true or mutually consistent phenomena, such as a rainbow or a perfectly coherent dream; or that in all corporeal substances there is something analogous to the soul, which the ancients called form or species.	| in margin. ***The hesitation on this point, as well as the view of substance, points to 1686 as the date.***[99]
G.VII.316 *Ibid.; A VI 4b: 1625–6; LoC, 318, 320.* licet enim de notione circuli non sit ut ligneus vel ferreus sit, est tamen de notione hujus circuli praesentis non tantum ut sit ferreus, sed etiam quicquid ipsi est eventurum. Cum vero omnia cum aliis mediate aut immediate commercium habeant,	thus although it does not belong to the notion of a circle that it should be, for example, wooden or iron, it does belong to the notion of this existing circle, however, not only that it is iron, but also whatever will happen to it. But since all things have dealings with others, either mediately or immediately,	| in margin. ***This again may be compared with the sphere of Archimedes*** "Cum vero … habeant" underlined. ***Does Leibniz regard this as an indubitable premiss?*** written in inner margin.
G.VII.329–30 *XV. "Ohne Überschrift, in Betreff der Seele der Thiere".* Sed res etiam argumento positivo et necessario probari potest ex eo, quod omnis Entelechia primitiva debet habere perceptionem. Nam omnis Entelechia prima habet	*PL, §74 (p. 258):* ⟨But the matter can be proved by a positive and necessary argument from the fact that⟩ every primitive entelechy must have perception. For every first entelechy has internal variation, according to which	| in margin. ***There is a vicious circle here, which probably underlies Leibniz's***

[99] In his remarks on the dating of this passage, we again see Russell making an educated guess on the basis of content. The Akademie editors favour 1689 on this point, mostly on the basis of content and the type of paper, but it could well have been written as early as 1686, as Russell surmises.

variationem internam, secundum quam etiam variantur actiones externae. Sed perceptio nihil aliud est, quam illa ipsa repraesentatio variationis externae in interna. Cum ergo ubique dispersae sint per materiam Entelechiae primitivae, ut facile ostendi potest ex eo, quod principia motus per materiam sunt dispersa, consequens est, etiam animas ubique per materiam dispersas esse, pro organis operantis, et proinde etiam corpora brutorum organica anima praedita esse.

its external actions also vary. But perception is nothing but that very representation of external by internal variation. Since, therefore, primitive entelechies are dispersed everywhere throughout matter—which can easily be shown from the fact that principles of motion are dispersed throughout matter—the consequence is, that souls also are dispersed everywhere throughout matter, ⟨in the service of the working organs, and that therefore even the bodies of brutes are organic and endowed with a soul.⟩
Cf. PL, pp. 107, 129.

philosophy.[100] ***Matter can only be obtained by presupposing perception.***

G.VII.353 *Leibniz–Clarke corresp., XV.*
Sir *Isaac Newton* doth not say, that Space is the *Organ* which God makes use of to perceive Things by; nor that he has need of any *Medium* at all, whereby to perceive Things: But on the contrary, that he, being *Omnipresent*, perceives all Things by his immediate Presence to them, in all Space wherever they are, without the Intervention or Assistance of

| in margin.

This is just Leibniz's view in G.IV.439[101]

[100] Russell amplifies his remarks here about a probable vicious circle in Leibniz's philosophy in *PL*. See especially §§74, 77, pp. 129–35.

[101] Russell likens the views expressed by Clarke in this passage (concerning God perceiving all things by his immediate presence to them) to those of Leibniz in the *Discourse on Metaphysics*, §14, where he writes of God creating substances "according to the different views he has of the universe", so that our perceptions agree with his (**G.IV.439**; A VI 4: 1549–52).

any *Organ* or *Medium* whatsoever.

G.VII.367–8 *Clarke's 3rd Reply.*
And the Case is the same, even though *Space* were nothing *real*, but only the mere *Order* of *Bodies*. For still it would be absolutely *indifferent*, and there could be no other reason but mere *Will*, why 3 *equal* Particles should be placed or ranged in the order 1, 2, 3, rather than in the *contrary* Order. And therefore no Argument can be drawn from this *Indifferency of All places*, to prove that *no Space* is *real*. For *different Spaces* are *really different* or distinct one from another, though they be *perfectly Alike*. And there is This evident absurdity in supposing *Space not to be real*, but to be merely the *Order of Bodies*; that, according to That Notion, if the Earth and Sun and Moon had been placed where the *remotest fixt Stars* now are, provided they were placed in the *same Order et* ⟨*sic*⟩ *Distance* they now are with regard *one to another*; it would not only have been (as this Learned Author rightly says) *la même chose*, the *same thing in Effect*; which is very true: But it would also follow, that they would Then have been in the

| in margin.

Gross petitio written at end of passage.[102]

[102] Russell accuses Samuel Clarke of a gross begging of the question in this passage from his Third Reply to Leibniz. Clarke assumes as a premiss what Leibniz's argument is designed to refute, namely that "different Spaces are really different from one another", independently of the order of bodies in them.

same Place too, as they are Now: Which is an express Contradiction.

G.VII.369 *Ibid.*
That because Space is *Uniform* or *Alike*, and One Part does not *differ* from Another; therefore the Bodies created in One place, if they had been created in *Another* Place (supposing them to keep the same *Situation with regard to each other*) would still have been created in the *Same Place* as before: Which is a manifest contradiction.

No!

"Which is a manifest contradiction" underlined.[103]

G.VII.370 *Ibid.*
But we are sure it cannot perceive what it is *not present to*; because nothing can *act*, or be *acted upon*, where it *is not*.

| in margin.
Denial of action at a distance

G.VII.376 *L's 4th paper.*
38. Ceux qui s'imaginent que les forces actives se diminuent d'elles mêmes dans le monde,

Those who imagine that active forces decrease by themselves in the world, do not know very well the

| in margin.

Cf. inf. p. 387[104]

[103]Again, in his marginale Russell takes Clarke to task for his mishandling of Leibniz's *reductio ad absurdum*: Leibniz has supposed *p* (that space is "something in itself apart from the order of bodies among themselves") to argue that, since one point of an absolutely uniform space does not differ in any respect from another, there would be nothing to distinguish God's placing them "after one certain particular manner and not otherwise", for example, "by changing East into West", provided the bodies preserved their mutual situations. Therefore God could not have a sufficient reason for preferring to place them one way rather than another. To suppose the two situations different is a contradiction, from which Leibniz infers $\neg p$. Clarke suggests that Leibniz is simply contradicting himself in claiming that if the bodies had been created in another place, they "would still have been created in the same place as before". But he does go on to cede that Leibniz's argument proves that, given the uniformity of space, God could have no "external reason" for his choice. But then he suggests that God's will alone could constitute a sufficient reason, thus missing Leibniz's point that (given these premisses) there are not two discernible options for him to choose from.

[104]By "Cf. inf. p. 387" (i.e. compare below at p. 387) Russell is referencing Clarke's response (in his Fourth Reply) to Leibniz's claims in this paragraph.

ne connoissent pas bien les principales loix de la nature, et la beauté des ouvrages de Dieu.	principal laws of nature, and the beauty of the works of God.	
G.VII.381 *Clarke's 4th Reply.* there way be very good reason to *act*,		"w" in "way" deleted; ***m*** inserted after caret mark in margin
G.VII.382 *Ibid.* if you thake them of equal figure		"thake" corrected to "take".
G.VII.383 *Ibid.* 9. Void Space, is not an *Attribute without a Subject*; because, by *void Space*, we never mean *Space void of every thing*, but void of *Body* only. In all void Space, *God* is *certainly* present, and *possibly* many other Substances which are not Matter;		| in margin. ***Rot!***
G.VII.384 *Ibid.* This Argument is a Mathematical one; showing, from *real Effects*, that there may be *real Motion*, where is *none relative*; and *relative Motion*, where there is *none real*: And is not to be answered, by barely *asserting* the contrary. 14. The *reality of Space* is not a *Supposition*, but is proved by the fore-going Arguments, to		| in margin. ***This argument had, in fact, been urged by Leibniz himself, but he disliked its consequences. Cf. Duncan, 61, 269; & inf. p. 404***[105]

[105]According to Duncan, Leibniz had earlier accepted the distinction between true and apparent motion here advocated by Clarke on Newton's behalf. Russell's acceptance of this interpretation allows him here (as elsewhere) to accuse Leibniz of bad faith for rejecting an argument that he had previously accepted after recognizing its consequences. But actually Leibniz's endorsement of the distinction between true and apparent motion (repeated on p. 404, as Russell notes) is not in conflict with his rejection of Newton's claim that true motion is motion with respect to absolute space. For Leibniz allows that true motions can be assigned "with respect to cause", with causes being assigned by identification of "the most intelligible hypotheses".

which no Answer has been given. Nor is any Answer given to That Oter ⟨*sic*⟩ Argument, that *Space* and *Time* are *Quantities*, which *Situation* and *Order are not*.		
G.VII.409 *L's 5th paper.* Voyés ce que j'ay dit cy dessus num. 9 et num. 74.	See what I say above no. 9 and no. 74.	"74" underlined and ***? 73*** written in margin.
G.VII.525 *Ltr. to Wagner, n.d.* 13. Stelle dahin, ob und wie weit zu sagen: purus logicus est asinus. Scaliger wolte auch dergleichen von Mathematicis sagen;	Put in here, whether and how far to say: a pure logician is an ass. Scaliger wanted to say the same about mathematicians.	| in margin. ***!***

INDEXING LABELS

Passage in Gerhardt	Translation	Label
G.I.52:25–**53**:18	In part §69 (p. 253)	***Crude monadology***
G.I.53:25–34	Not included	***Soul & body***
G.I.57:30–**58**:10	§105 (p. 283)	***Ars Combinatoria***
G.I.61:5–20	Not included	***Monads***
G.I.118:7–14	Not included	***Leibniz's opinion of Spinoza in 1677***
G.I.318:11–14	Not included.	***Opinion of Descartes in 1679***
G.I.327:33–**328**:4	Not included	***Descartes***
G.I.328:11–12	Not included	***Matter not extension***
G.I.331:10–11	*PL*, §118 (p. 293)	***Freedom***
G.I.382:29–35	Not included	***Monads***
G.I.382:35–**383**:2	*PL*, §79 (p. 263)	***Pre-Established Harmony***
G.I.384:3–9	Not included	***Extension***

This analysis is offered as sufficing to underwrite the truth of the Copernican hypothesis, e.g., according to which the true motions are distinguished from the merely apparent. But, Leibniz claims, this makes no difference to motions as understood "geometrically", in which case the relativity of motion precludes the identification of an absolute space. See ARTHUR, "Leibniz's *Mechanical Principles*" (2013), for details.

G.I.403:10–13	*PL*, §45 (p. 234)	***Law of continuity***
G.I.403:16–22	In part *PL*, §58 (pp. 243–4)	***Infinite divisibility***
G.II.54:22–31	*PL*, §17 (p. 214)	***Identity of Indiscernibles***
G.II.62:23–5	Not included	***Sufficient Reason***
G.II.122:30–**123**:14	Not included	***Pre-for-ma-tion*** written in separate syllables down the margin.
G.II.131:16–26	*PL*, §23 (p. 220). (In part)	***Identity of Indiscernibles***
G.II.133:13–18	Not included	***Motion & force***
G.II.146:1–3	Not included	***Definition of substance***
G.II.435:1–10	Not included	***Vinculum substantiale***
G.III.58:16–26		***Nature of substances***
G.III.58:27–**59**:4	Not included	***Free will***
G.III.168:1–25	Not included	***Free will***
G.III.605:19–33	Not included	***Characteristica Universalis***
G.III.612:20–34	Not included	***Locke***
G.III.620:13–30	Not included	***Opinion of Gassendi***
G.IV.496:31–2	Not included	***Pre-established harmony mentioned***
G.IV.432:34–**433**:28	§17 (pp. 213–14)	***Important***[106]
G.IV.433:29–**434**:17	Not included	***Identity of Indiscernibles (important)***
G.VI.127:16–25	Not included	***Sufficient Reason***

RUSSELL'S DATING OF DOCUMENTS

G.I.321: Russell dates the first letter to Malebranche "***ca. 1674***" following Gerhardt's dating at G.I.317.

G.I.346: Russell dates the "supplement" (*Beilage*) to Malebranche's letter "***1692***".

G.I.390: Russell dates the letter to Foucher "***1687***".

G.IV.105 "Confessio Naturae Contra Atheistas": "***1669***" written to right of title.

G.IV.274 "***1677?***" written above first section of untitled document.

G.IV.427 "***Jan. 1686***" written at head of 2nd section of untitled document.

[106] This long passage concerning substances and their predicates was a key text for Russell's interpretation of Leibniz.

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LDB *The Leibniz–Des Bosses Correspondence*. Transl. and ed. BRANDON LOOK AND DONALD RUTHERFORD. New Haven: Yale U. P., 2007.

LDV *The Leibniz–De Volder Correspondence*. Transl. and ed. Paul Lodge. New Haven: Yale U. P., 2013.

LoC G. W. Leibniz. *The Labyrinth of the Continuum; Writings on the Continuum Problem, 1672–1686*. Transl. and ed. Richard T. W. Arthur. New Haven: Yale U. P., 2001.

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