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On Johannes Raue's Logic

By

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1. Preliminary Remarks on Raue and his Works*

There are at least three interesting references to Johannes Raue in Leibniz. This author, however, does not seem to have been considered by Leibniz scholars so far, or by general historians of Neuanthropologie (there are no hints at all in Ashworth1 or in Risse's Geschicchte, although some of Raue's works are listed in Risse's Bibliographia I). In such circumstances, it is fortunate to have the following biographical information provided by Schmidt: "Raue, Johannes, 1610–1679, zuletzt Bibliothekar des Kurfürsten Friedrich Wilhelm von Brandenburg". The Leibnizian text has on one occasion "Ravius" (De lingua philosophica, VE 2, 359) which, however, I have not found in the writings by our author that I have seen.

Leibniz' references to Raue are brief but intriguing. In one case we read: "Joh. Rauen Berlinensis in peculiarius suis de copula speculationibus" (Defensio Trinitatis, A VI, 1, 520; GP IV, 118); Leibniz makes this remark in the context of recommending the formulation "omnis qui est homo, est albus" rather than "omnis homo est albus". In a second text Leibniz follows Raue in the analysis of singular sentences as universal, in such a way that "Socrates est Sophronisci filius" becomes "Quicunque est Socrates, est Sophronisci filius" (De Arte Combinatoria, A VI, 1, 182; GP IV, 51). Finally Leibniz writes -- perhaps ironically -- that Raue "quaerebat mysterium" when he replaced "omnis homo est animal" by "quicunque est ille qui est homo, est ille qui est animal" (De lingua philosophica, VE 2, 359).

Leibniz, in the three references, does not cite any title of Raue's works. Leibniz' editors, in their footnotes, mention the 1638 book: Prior fundamentalis controversia, but this is apparently meant only as a scholarly information, not as the claim that Leibniz actually read that particular work.

In the bibliography of Raue's work at the end of this paper we see the phrase "logica novissima" occurring in three titles (1636a, 1637b, 1638). One surprise waiting for the reader of Raue 1638 is that the author refers several times to, and quotes extensively from, a previous work of his, titled precisely Logica novissima (cf. preface, p. 20, 21, 419, 93–99, etc.). This phrase, therefore, appears to designate not only a theory defended by Raue but also a written text, of whose

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publication date, if it was published, I have unfortunately no idea. The Logica novissima may well be our author's central work. I hope it shows up, as manuscript or otherwise, in some German library.

But there is more to it. Raue in the 1638 book also mentions and quotes long fragments from a Tractatus philosophicus of his (p. 113, 446) as well as from a disputatio on "fundamental logical questions" which has someone else as respondent but seems to express Raue's views (p. 99–111). There is also a piece titled Aristarchus, referred to several times in Raue 1638 as if it had been printed towards the end of the volume (p. 405, etc.). As the title page indicates, however, it was published or at least intended to be published separately. Finally, Raue hints on page 417 of his Prior fundamentalis controversia at a future project that any reader of that book would naturally expect: a posterior fundamentalis controversia ("quae omnia expediturus sum, quam diligentissime, cum ad posteriorem fundamentalem controversiam me accinxero").

Obviously, the first goal for further research on our author is to verify the existence of all these possible works by him.

2. An Overview of the Prior Controversia of 1638

After a dedicatio and a rather substantial praefatio ad lectorum, the main text begins with a straightforward formulation of the "first fundamental logical controversy" announced in the title page. The debated question, according to Raue, is whether the predicate cosignifies (adsignificat) time, and consequently (consequenter) whether the verb "to be" is a part of the predicate, so that sentences of the form "S est P" must be viewed as having two parts: the subject "S", the predicate "est P".

We should not worry if the meaning of this account of the first fundamental logical controversy is not clear at this point: it will be clear later on. For the time being let us just observe that Raue declares himself to be in support of the affirmative side: ista omnia affirmantur, and proceeds to a meticulous proof. His demonstratio builds on four "hypotheses", which he in turn proves carefully.

According to the first hypothesis, every subject term of a simple enunciation implies a time reference (debit accipi cum certo tempore, p. 18). "Implies" is taken to be weaker than "signify" or "co-signify" (implicat, dico, non significat aut consignifiat, p. 24). Raue proves his first hypothesis through a consideration of the scholastic properties of terms, such as status, distractio, ampliatio;

4 I have omitted from the formulation of the first logical controversy the phrases "materialiter consideratum" (in this sense the predicate is said to cosignify time) and "materialis pars praedicati materialiter considerati" (in this very qualified sense the copula "est" is said to be a part of the predicate).

5 With regard to the notion of a "simple enunciation" it should be observed that it includes modal, exponible, and similar sentences, that hardly appear as "simple" to us (p. 79).
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each of these properties implies time and the subject term of each simple enunciation has one such property.

The time implied by the subject term or “implicit” in the subject term must be rendered explicit; this is a process called resolutio (explicita positio partium in aliquo toto subintellectarum, p. 29). The question arises now of how precisely to carry out this “resolution”. In, for example, “Petrus est homo” the subject term “Petrus” must be taken with a specific time, but how shall we do this? The answer is to replace the word “Petrus” by a phrase of the form or similar to phrases of the form “qui jam est Petrus”, “qui fuit Petrus”, etc. Thus the “resolved” sentence will be: “Qui jam est Petrus est homo” (which is true) or “Qui fuit Petrus est homo” (falsissima, p. 18). At any rate, by resolutio the subject term of any simple enunciation not merely implies but cosignifies time (aliquam certam temporis differentiam adsignificat); this is the second hypothesis.

The counterpart of resolution is omission. Raue enters into a detailed discussion of the different ways in which parts of sentences are omitted (partes in oratione quadrupliciter omittuntur: aut pure grammaticae, aut pure rhetorices, aut pure logices, aut grammatica aut logice simul, p. 33, where the fourth member of the division is omitted, as one learns from the errata at the end of the volume6). Raue, of course, is only interested in logically relevant omissions.

In the third hypothesis Raue discusses the necessary and as he puts it, “formal” character of resolutio: it applies to all enunciations without exception.

Finally, in the fourth hypothesis, Raue observes that once the resolution has been carried out, time is no longer merely implied by the subject term but co-signified (adsignificatum).

After having established the four hypotheses Raue moves to the demonstratio of his position in the first fundamental logical controversy. But before we look into this, let us summarize our author’s achievements so far. He wants to prove that the predicate term cosignifies time and that the copula “est” is part of the predicate and that sentences of the type “S est P” are to be divided into a subject “S” and a predicate “est P”. On the other hand, what Raue has meticulously established in his four hypotheses is that the subject “S” cosignifies time and that this is expressed by expanding “S” into something like “qui est S” or “qui fuit S” etc. How do these two results fit together? Simply enough, by conversion: Omnis enunciatio simplex potest converti, ut ex eo, quod fuit subjectum fiat praedicatum, et vice versa (p. 89). In fact, conversion (in the just mentioned sense) is the trick of Raue’s demonstratio. He may have thought that it was easier to begin by persuading the reader with the subject than with the predicate, using conversion in a second move in order to transfer his results from subject to predicate.

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6 On p. 33 the fourth member is missing. On p. 36 it is given as "4. Grammaticae simul et Logice". In the errata it is given as "Grammaticae aut logice simul", the "aut" in the errata is again an error: should be "et".
Leaving aside this curious strategy, the important thing to be observed is that Raue's theory, emerging from what we have seen up to this point, turns out to be quite confusing. Given an ordinary sentence “S est P” it seems that not only “S” must be replaced by something like “qui est S” but also “P” must be replaced by something like “qui est P”. This was not at all apparent in the formulation of the first logical controversy at the beginning of the book, but is definitely required by the point about conversion. The problem is however that, if we replace both “S” and “P” as just indicated, our initial sentence becomes “qui est S qui est P” which is no longer well-formed.

This problem is clarified by a reading of the later parts of the book. But before solving the mystery in the next section of this paper, let me mention that after the demonstratio of his position in the great controversy, Raue displays a vast set of quotations from his *Logica novissima* (pp. 93–99), from a *disputatio* (pp. 99–112) and from his *Tractatus philosophicus* (pp. 113–139). He asks for benevolence on the reader’s part, in case discrepancies are found between his earlier writings and the present 1638 volume (p. 139). There follows a scholarly discussion of Aristotelian texts and *Dubia quaedam* on the first logical controversy (p. 152–176). On p. 176 we are introduced by Raue to the *Labyrinthus logiconorum* which extends over more than two hundred pages (till p. 382) and consists of a series of selected texts from other logicians, clearly intended to reveal how confused all of them were. As if being rescued from Dante’s Inferno, when the *Labyrinthus* is over, the reader is guided, through some transitional remarks (p. 382–4) into the open sky of the *Filum Ariadnaeum*, a long section (p. 385–481) which is, in my view, the best part of the volume. The book ends with a final message to the benevolent lector and a valuable set of errata.

3. Raue’s Main Thesis

The main thesis is especially clear in the section of the 1638 book called *Filum Ariadnaeum*, where we learn that all logicians before Raue failed to recognize the proper, deep structure of the basic statements of predication, which is according to him, not “S est P” but rather “id, quod est S, est id quod est P”, with certain variants in the choice of the pronouns and the possibility of having quantifiers (omnis, etc.) instead of the first pronoun. To use Raue’s favorite example, the sentence “homo est animal” is only an abbreviation of “is qui est homo, est is qui est animal” (alternatively, “id quod est homo [. . .]”).

Now we can easily clarify the problem left open in the preceding section. The two fragments we had ended up with: “qui est S”, “qui est P” are to be glued together by means of a *t h i r d* copula. Thus, instead of the unique “est” in the initial sentence, we have three in the analysis proposed by Raue. Of these three occurrences, the one in the middle is the most important: it is what Raue proudly calls the *ve r a* copula. This designation must be understood in contrast with that of f a l s a copula, which is Raue’s way of referring to the “est” of “homo est animal”.
The semantic function of the pronouns “is” or “id” etc. is to point to the commune tertium, the third common entity underlying both S and P, both homo and animal. There are many references to this commune tertium (pp. 387, 400, 401, 406, etc.). While the first pronoun is semantically vagum (in its reference to the commune tertium) the second one is semantically fixum, which means obviously that it is bound to refer to the same commune tertium picked up by the first pronoun (p. 398).

The “regular and universal form” of the basic predicative sentences includes partes materiales and partes formales: the former are the termini: subjectum, praedicatum, or more exactly, the phrases “est S”, “est P”, that is the original subject and predicate, each preceded by the verb “to be” in past present or future tense. The partes formales are all the rest, that is the two occurrences of the pronouns and the vera copula or verbum substantivum “est”, which occurs only in the present tense, tantum in praesenti (p. 416).

Raue is so sensitive to logical form (forma logica ab omni materia abstracta, p. 116) that he introduces a special notation of vertical strokes to separate, exactly, material and formal parts. The example with “homo” and “animal” becomes: “is qui est homo est qui est animal”. These lineolae help to make inference rigorous (p. 466).

In practice, Raue tolerates the ordinary formulation “homo est animal” as customary extra logicam, in commune usuloquendi (p. 400). Somehow there is nothing wrong with it: “homo est animal” is satis perfecta ad sensum et grammaticam; however, logice perfecta non est; the formulation “homo est animal” lacks any of the formal parts and even some of the material parts: neque enim una pars formalis, neque subjectum plenum integrumque (adest) (preface). Among other things, we definitely appreciate here that when Raue formulates the first controversia at the beginning of his text – saying that his position implies that the sentence “S est P” is to be divided into two parts: “S”, “est P” – he is not merely supporting a two-part versus a three-part analysis; rather he is disqualifying “est” as copula of the whole sentence, as “form” of the sentence, relegating it to a secondary role within the predicate.

Even logicians, however, have the right to occasionally abbreviate the lengthy canonical form; in this case Raue inserts a reminder, which is a double vertical stroke, in order to indicate that the formal parts have been omitted; for example, “homo est animal” (pp. 388, 392; observe however that in this example not only the formal parts have been omitted but also the first “est” – the one preceding “homo” –, which is a material part).

I pointed out that the true copula occurs tantum in praesenti. Tenses, the differentiae temporis, are transferred to the two occurrences of the verb “to be” preceding subject and predicate respectively. For a Fregean reader, Raue’s thesis is very attractive, as it appears to move in the direction of the Fregean analysis of categorial sentences, today standard, according to which “homo est animal” becomes “Ax (x est homo ↔ x est animal)”. Raue delights a Fregean reader when he emphasizes that “S”, the subject, “homo”, in his analysis is predicated of the tertium commune just as is the predicate “P”, “animal”. With regard to the
example "omnis philosophus est naturae consultus", once properly "resolved" into "Omnis qui est philosophus est is, qui est naturae consultus", Raue makes the following comment:

"Omnis ille, cui attribuitur esse philosophum, est idem ille, cui attribuitur esse naturae consultum. Ubi ulla quae attribuuntur, sunt duo termini et illud cui attribuuntur, est commune tertium. Cum communi tertio propriere attribuitur terminus praedicati quia scilicet attribuitur ei terminus subjecti."

(pp. 166f.)

But there are limits to these Fregean gestures. 1) Although Raue clearly recognizes the predicative nature of the so-called subject, as we just saw, he continues to call it "subjectum". 2) Raue's way of emphasizing that the second pronoun does not choose a new object but picks the same (idem), already fixed by the first pronoun, may mislead us into reading his canonical form as an identity rather than as a subordination of concepts (to use Fregean terminology). Raue in fact writes that the second pronoun has the meaning of the demonstrative "idem" (habeatque sensum demonstrativi idem); he gives the example of the sentence "Deus est homo", which properly analysed becomes "is qui est Deus est is (sive est idem ille) qui est homo" (p. 400f.).

Raue thinks of himself as highly revolutionary in the history of logic. He proudly states: "all logicians ignore the true copula" (p. 428). The early paragraphs of the Labyrinthus logicorum strike the reader with such bold claims as the following:

"Primo autem rejecio Aristotelis et omnium interpretum doctrinam super modalium vel enunciationum vel syllogismorum ut et conversionis, oppositionis, aequipollentiae, consecutionis, tantum peculiari et a forma absolutarum distincta longe diversa, natura" (p. 177).

Raue's self-confidence seems to be based on two reasons: 1) he thinks that as a consequence of his analysis the variety of traditional types of sentences is reduced to one single common structure, 2) he thinks that as a consequence of his view of the ordinary copula as not really the true copula but as a part of the predicate, all the expressions regarded so far as determinations of the copula, hence as determinations of the entire sentence, become mere determinations of the predicate (p. 385 bottom). I want to leave open, in this paper, the question of whether these two "advantages" claimed by Raue are really helpful or merely shift the problems.

Bibliography

1636b: Joh. Rauen Invitatio ad sacrae eloquentiae studium, ecclesiae Dei praecipue et nunc quidem maxime necessarium, Rostochii, Praelio Reusneriano, anno MDCXXXVI (about thirty pages, I have seen a photocopy from the original in the Universitätsbibliothek Rostock).
1637a: Tractatus de propositionibus modalibus contra Scharfium, Rostochii, 8, 1637 (as reported by Risse).
1637b: Joh. Rauen Profess. Rostochiensis Obestatio Publica ad D. Georgium Kruiquium de rationibus, quas habeat adversus logicam novissimam, scripto communicandis [...] praesertim in principali controversia, ex qua tota pars formalis emenda est, Rostochii: praelio Nicolai Kili, Anno MDCXXXVII (this is a short piece: thirteen pages plus a final two-pages "mantissa", I have seen
a (none too legible) film of a copy found in the Universitätssbibliothek Rostock, signatur: Ec-3297; according to Risse's Bibliographia, a copy in Hannover, too).


Beyond this "established" list of writings there is a question concerning the existence of other works referred to by Raue either as already written by him: 1) Logica novissima, 2) Tractatus philosophicus, 3) Disputatio, 4) Aristarchus, or as projects: 4) Posterior fundamentalis controversia. Cf. section 1 of this paper.