THE LOGIC OF JOHN BURIDAN


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JOHN BURIDAN AND MARSILIUS OF INGHEN ON CONSEQUENCES

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I Introduction.

The purpose of this paper is to fill in a very small detail on the map of the history of Medieval Logic. By making a comparison between two aspects of the tracts on consequences by John Buridan and Marsilius of Inghen I shall try to specify the relation between both philosophers and by discussing two points of difference my aim is to clarify the positions of each logician.

My essay has its starting-point in the well-known work of the German scholar Gerhard Ritter, entitled Marsilius von Inghen und die Okkamistische Schule in Deutschland, Heidelberg, 1921. While discussing the personal relationships of Marsilius, Ritter remarks: "Wahrscheinlich ist dagegen seine persönliche Bekanntschaft mit Johannes Buridanus, von dem er als Logiker und Physiker so vieles übernommen hat: er bezeichnet ihn gelegentlich und zwar mit Nachdruck (passionatus) als magister meus". Ritter notices Carl Prantl's opinion, that in his works of logic (such as: the Commentary of the Prior Analytics of Aristotle and his Parva Logicaia Marsilius is very much dependent on others: Peter of Spain, William of Ockham and, especially, John Buridan.

But as regards the tract on consequences, Ritter remarks: "Grössere Selbständigkeit entwickelt der Abschnitt De consequentiis, was auch dessen auffallende Verbreitung erklären mag".

The two points of difference between John and Marsilius I intend to discuss in this paper are both to be found in fundamental parts of the tracts in question: the first is the difference in their definition of the concept of consequentia, the second, and perhaps more interesting point, is Marsilius'

* I sincerely wish to thank Prof. De Rijk (Leiden) for the encouragement and advice I received while writing this essay, and Mr. E. P. Kwaadgras (Delft) for his corrections of the English.
2) Ritter, 1921, p. 11 (cp. note 1).
3) Ib., p. 49 ff (cp. note 1).
4) Ib. p. 50 (cp. note 1).
rejection of the consequentia ut nunc (consequence as of now) in contradistinction with Buridan's position. This last aspect forms part of the chapters on the division of consequence in both tracts.

There are other fundamental differences between the two tracts. For instance, there is a striking difference in the composition between the two tracts, in the degree to which both organize their tracts: Buridan's is presented much more explicitly as an axiomatic-deductive system than Marsilius' work. I will not discuss these questions here, however.

The texts I use are the following: as regards Buridan Professor Hubien from Liège was kind enough to give to me the provisional proof-sheets of his forthcoming critical edition of the tract in the series called Philosophes médiévaux. This edition will be based not only on incunabula (which alone are mentioned by Faral), but also on manuscripts.

As far as Marsilius is concerned, I am myself preparing a critical edition, with a commentary, of his Parva Logica. This edition will differ substantially from the incunabula and early printed editions, which are all abbreviata. The discussion of the 'consequence as of now', for example, is not found in the abbreviata.

As for the dates of the tracts, nothing is certain. Professor Hubien concludes tentatively that Buridan's tract was composed in 1335. If we follow Ritter, Marsilius of Inghen came to the University of Paris in 1359 and stayed there until 1379. It seems that he composed his Parva Logica in his Parisian period, and not during his later sojourn in Heidelberg. There are no clues for a more specific date in the manuscripts. The oldest is dated 1382. Buridan, as Faral thinks, died in 1358, so he and Marsilius could not have met personally, but evidence might possibly be found in the manuscripts that Buridan did not, in fact, die until some time later. In that case Faral would not have to explain away some 'data' given in the manuscripts.

For the subject in question none of the other works on logic by Buridan and Marsilius will have to be discussed directly. The Commentaries on Aristotle's Prior Analytics of both logicians have no direct bearing on our subject, neither does Buridan's De syllogismis.

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7) G. Ritter, 1921, p. 11 ff (cp. note 1).
8) MS München, Clm 4385, f. 45r ff.
II On the definition of consequence.

As can be gathered from the table of contents, Marsilius starts his exposition with a definition of consequence. Buridan's definition, on the other hand, is found after two preliminary chapters. I shall quote both definitions:

Buridan has: "Consequentia est propositio hypothetica ex antecedente et consequente designans antecedens esse antecedens et consequens esse consequens; haec autem designatio fit per hanc dictionem 'si' vel per hanc dictionem 'ergo' aut equivalentem".11

When Buridan speaks about consequentia, he means a consequentia vera which occurs if "illa propositio est antecedens ad aliam quae sic se habet ad illam aliam quod impossible est qualitercumque ipsa significat sic esse quin qualitercumque illa alia significat sic sit ipsis simul propositis"12.

Marsilius defines consequentia bona seu vera: "Consequentia bona est oratio sic se habens quod impossible est sic esse qualitercumque per antecedens secundum eius totalem significationem pronunc significatur quin ita sit qualitercumque per consequens significatur secundum eius totalem significationem pronunc"13.

In the first place one might observe that both logicians give an intensional definition of a good consequence. This is one of the possibilities of defining a consequence, as can be concluded from the list Paul of Venice gives in his Logica Magna (which is printed also in Pinborg's book, Logik und Semantik im Mittelalter). Moody was only able to consult the inamabulum for his study; this version gives an extensional definition. It should be said, however, that in defining the material consequence Buridan again gives the extensional formula, whereas Marsilius uses the intensional definition whenever he defines the several types of consequences.

A striking difference between Marsilius and Buridan can be seen in the framework within which each philosopher gives the definition. Marsilius, as I said above, begins his tract with the definition of consequence, whereas in Buridan's work it is preceded by an analysis of the truth-values of propositions and of their causae veritatis. Using the notions of supposition...
and ampliation of terms, the causes of truth play an important role in Buridan's exposition, as well as in the seventeen conclusiones he mentions in chapter VIII of his first book.

Marsilius' tract starts immediately with an exposition on the definition, in which supposition does not play a major role. More than Buridan he points to the implications of the definition.

The most explicit difference between the two definitions are the final words in them. In Buridan we find: ipsis simul propositis or illis simul formatis. In Marsilius there is nothing of the sort, instead we find: secundum eius totalem significationem pronunc. John's reason for mentioning the above words in his definition is, that the following consequence is a correct one: omnis homo currit, ergo aliquis homo currit. A definition without the additions cited would not cover this correct consequence, because the antecedent can be true without the consequent being true, indeed, even without the existence of the consequent as such.

This requirement of existence is felt to be necessary by John Buridan. He also adopts this requirement as a counterfactual condition to exclude the possibility that, if all propositions of a kind, e.g. all negative propositions, are annihilated, the consequent can not be formed at all.

The requirement of existence is retained by Buridan, also when he has transformed his provisional extensional definition into an intensional one. In this aspect Buridan has set the example for many later medieval and post-medieval logicians as is shown by Miss E. J. Ashworth in her excellent work Language and Logic in the Post-Medieval Period.

In Marsilius' tract, as we saw, we find another phrase, which is lacking in Buridan's. It runs: secundum eius totalem significationem pronunc. This formula has been introduced by Marsilius because a definition of the valid consequence without this addition would give validity to the following inference: 'homo currit, ergo asinus currit'. The expression 'significabile' or 'significatur' is an ampliative one. It can be equalled with 'potest significari'. In view of the inference proposed, if, as Marsilius puts it, the signification of "ass" is added to the signification of "man", the consequent follows from the antecedent analytically. Marsilius says: ponatur casus, which suggests that this argument is possible within the framework of the game of obligation, and in fact, the argument gives the case of "change

19) The 'ablativus absolutus'.
of imposition of terms, an issue discussed by Marsilius in his tract *De obligationibus*.  

Another reason for adding the formula is that without it, the inference "omnis homo cuprit, ergo Sortes cuprit" would be a valid consequence. And this is impossible, according to Marsilius, in the case that Socrates is dead. Therefore the definition should not comprise this consequence. This question forms a prelude to Marsilius' discussion on the material "consequence as of now", which will be the subject of our next chapter. In this part, which only treats of the definition of consequence, Marsilius says that *omnis homo cuprit* only means *omnem hominem currere*, and not *Sortem currere*. It is of no concern if Socrates is dead. These significata, Marsilius adds, can exist *naturaliter loquendo*.

There exist several medieval commentaries on Marsilius' tract on consequences. I myself was able to consult nine of the eleven that I know of. On this particular point the commentaries are of no help. Some of them do not even mention the formula added, let alone comment on it. Some others, including the oldest and best one, do not endeavour so much to interpret Marsilius; they rather use him to express their own views. Commentaries on the *abbreviata* gloss on our formula as follows: *secundum modum significationis quem termini actu habent*.

We learn from Miss Ashworth's book that several post-medieval logicians use the same formula, but for slightly different reasons, viz. to encounter the difficulties arising from the arbitrary connection between the proposition as sentence-token and the state of affairs to which the words refer.

III On the division of consequence.

In Buridan's exposition as well as in Marsilius' tract the chapter on definition is followed by one on the division of consequence. In chapter IV of Buridan's tract we find the following division:

\[
\text{consequentia} \leftarrow \begin{array}{c}
\text{formalis} \\
\text{materialis} \\
\text{simpliciter loquendo} \\
\text{ut nunc}
\end{array} \]

21) MS Vienna, CVP 5162, f. 14or.
22) MS Erfurt, Q 278, F. 57v ff.
23) Clarissimi philosophi Marsilii de ingen textus dialectices de suppositionibus, ampliationibus, appellationibus, alienationibus, restrictionibus et consequentiis abbreviatus...cum solitis questionibus ac sophismatibus perutili brevitate contextis...Viennae, 1512 (C.Pschlacher), f. 20lv ff.
And in Marsilius' work we find:

\[ \text{syllogistica} \left\langle \begin{array}{c} \text{formalis} \\ \text{non-syllogistica} \\ \text{materialis} \end{array} \right\rangle \text{simpliciter dicta} \]

A first point of difference here is that Marsilius identifies the *consequentia formalis syllogistica* with the syllogism. The syllogism is not treated of by him in this tract, but we are referred to Aristotle's discussions in the *Prior Analytics* and those by Peter of Spain in his *Tractatus*. Buridan does not give a subdivision of the formal consequence here, but in the next two chapters of his tract on consequences he deals with the syllogism, first the assertorial, then the modal syllogism. In his chapter 3 Buridan explicitly mentions the syllogism as a form of consequence. The only work of Marsilius relevant to our subject is his *Commentary on the Prior Analytics of Aristotle*, but there, as a commentator on Aristotle, he does not define the syllogism as a form of *consequentia*. Anyway, in both logicians we meet the fourteenth-century tendency to make the syllogism a form of consequence along with others.

Most striking is the fact that Marsilius does not accept the *consequentia ut nunc* (consequence as of now) in his division. He says that he will not give a subdivision of his own as regards the material consequence: "tertia divisio est de consequentia materiali, sed propter huiusmodi membrorum divisionem et subdivisionem prolixitatem divitans ipsam delinquo". Indeed, nowhere else can such a subdivision be found. Marsilius defines the "consequence as of now", which will be rejected by him, as follows: "Dicitur consequentia ut nunc bona ex eo quod in rebus se habentibus ut nunc se habent, quod non potest sic esse sicut significatur per antecedens quin ita sit sicut per consequens significatur. Exemplum ut si Sor est albus: 'Sor currit, ergo album currit'." Compare Buridan's definition: "quae non sunt simpliciter loquendo bonae, quia possible est antecedens esse verum sine consequente, sed sunt bonae ut nunc, quia impossibile est rebus omnino se habentibus ut nunc se habent antecedens esse verum sine consequente".

Buridan, hereafter, proceeds to the reduction of the "consequence as of now".

25) MS Vienna 5162, f. 108r ff.
29) MS Vienna, CVP 5162, f. 108v.
30) Ch. 4, ed. Hubien (cp. note 6).
now" to a formal one. In treating material consequences Buridan always applies such a reduction. He also extends the notion of a consequence whose truth-value is dependent on situations of a particular time, to the material consequentia ut tunc (consequence as of then), and to the future, to the so-called consequentie promissive. Legitimation of this extension is, again, the possibility of the reduction to a formal consequence by way of a true proposition.

Marsilius, objecting to such a consequence, remarks that the very same people who accept a "consequence as of now" say that only a valid consequence is a consequence. Nevertheless they call the "consequence as of now" no real consequence, because it simpliciter loquendo is no valid consequence. We hear the echo of Buridan. Marsilius is not even prepared to call the "consequence as of now" a consequence by equivocation.

While discussing the definition of consequence we have already seen that the consequence omnis homo currit, ergo Sortes currit is not considered valid by Marsilius, viz. in the case that Socrates is dead. Here also the validity of the consequence depends on the situation of a particular time. This situation can be the existence of a subject in question, of the qualification of a certain subject at a particular time. The modus ponens is not valid without qualification.

In his chapter on the rules (regule) of material consequence Marsilius returns to this question: arguing from a so-called "higher" distributive term to a "lower" one, in the affirmative or the negative, is possible only with a subject remaining constant (cum constantia subjecti)\textsuperscript{31}. This constancy is expressed in the antecedent, and so these reduced consequences can not any more be properly called "material consequences".

As far as I know, Marsilius is one of the few\textsuperscript{32} prominent medieval logicians who explicitly reject the "consequence as of now", although this form of consequence has always been treated with suspicion, e.g. by Ockham\textsuperscript{33}. In spite of what Bocheński states\textsuperscript{34}, the "consequence as of now" kept a place in the systems of logicians after Paul of Venice.

Here I want to mention Albert of Saxony, the pupil of Buridan, but only to give a specimen of the discussion about our form of consequence within Buridan's circle. Albert knows of objections against the "consequence as of then", but he defends this consequence on the occasion of a particular

\textsuperscript{31} Regula 6a. The counterpart in Regule 7a. Cp. also Regule 26a and 34a.
\textsuperscript{32} Like Marsilius: Ralph Strode, Nicolaus Druken de Dacia.
\textsuperscript{33} W. & M. Kneale, The Development of Logic, Oxford 1962, p. 289 ff.
\textsuperscript{34} I.M. Bocheński, Formale Logik, München, 1956, p. 243. See also: Ashworth, 1974, p. 13o ff. (cp. note 2o).
argument against it. It has been said that the following consequence is invalid: *omnis currrens est asinus, omnis homo est currrens, ergo omnis homo est asinus*. This consequence is said to be invalid because an impossible consequent follows from a possible antecedent, which is an impossible inference even following Albert's lines. But Albert responds that the antecedent is also impossible because the parts of this copulative proposition are *incompos-sibles* (taken separately they are possible, indeed). Albert concludes that this reduced *ut nunc consequentia* is valid.\(^35\)

Again, this case has only been put forward by me as an example.

We do not have much secondary literature on the subject I have discussed. Even the commentaries fail to give an interpretation of Marsilius' arguments which is relevant to the topic.

My conclusion must be that Marsilius' rejection of the "consequence as of now" also permeates his treatment of the definition of consequence, while this same type of material consequence still kept its place in Buridan's work and in the work of his pupil, Albert of Saxony.

APPENDIX: MARSILIUS OF INGHEN, DE CONSEQUENTIIS.

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