Perspectives in Analytical Philosophy

Studies on the History of Logic

Proceedings of the III. Symposium on the History of Logic

Edited by Ignacio Angelelli and María Cerezo
What's the Matter with Matter:
Materia Propositionum in the Post-Medieval Period

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I will examine two points in the late- and post-medieval doctrine of the matter of propositions: first, the doctrine that all propositions with identical terms are in the same matter, and second, the matter of modal propositions. Before turning to these topics, I will state the standard late-medieval version of the doctrine of the matter of propositions, and then discuss the origin of the doctrine.

I

Perhaps no text was as familiar to the Medieval college student—as well as his counterparts in the 15th and 16th centuries—as Peter of Spain's Summula of Logic. Not one to waste words, Peter of Spain tells us

"The matter of propositions is threefold: namely natural, contingent, and remote. Natural matter is that in which the predicate is of the being of the subject, or of its proprium, as for example, 'a human is an animal', 'a human is risible'. Contingent matter is that in which the predicate can belong to or be separate from a subject as in 'a human is white', 'a human is not white'. Remote matter is that in which the predicate can not belong to a subject, as in 'a human is a donkey'.'"¹

The reason for introducing the distinction, according to Peter of Spain, is to deal with some puzzles which arise for the rules for opposed propositions, that is, propositions on the traditional square of opposition. For example, the rule for universal contrary propositions is

"if one is true, the other will be false, but not the converse, for they can both be false together in contingent matter, as in 'every human is white', 'no human is white'."²

However if the propositions in the pair are "in natural matter",

"if one is true the other will always be false, and vice versa, as in 'every human is an animal', 'no human is an animal'."³
In natural matter, universal statements are actually contradictories.

The doctrine of the threefold matter of propositions has had an odd history. It is a relatively late addition to the traditional logic canon and its perceived function within logic changed before Peter of Spain wrote his text.

I say that it is a relatively late addition because the first report of the doctrine of threefold matter appears only in the 6th century A.D. in Ammonius' commentary on Aristotle's *De Interpretatione*. Aristotle of course makes a threefold distinction of propositions in the *Prior Analytics* I, 8, 29b29-30. However, Aristotle's three types of propositions are (1) propositions in which the predicate belongs to the subject necessarily, (2) those in which it belongs contingently, and (3) those in which the predicate simply belongs. Thus, Aristotle's threefold distinction is between necessary, contingent and non-modal sentences. Ammonius' threefold distinction assumes, we will see, that in every proposition there is a modal connection, even if not marked by an explicit modal operator.

It is interesting to note that the famous renaissance logician Augustino Nifo also claims that Ammonius was the first philosopher to present the doctrine of threefold matters. Nifo (1469/70-1538) reports in his commentary on the *De Interpretatione* that

"every peripatetic agrees with what Ammonius said first about this: that a predicate can have a threefold relation to the subject, which the Greeks call the matter of the enunciation or proposition."

Paradoxically, Nifo attributes the Aristotelian version of the threefold matters to Ammonius, which is quite surprising given Nifo's reputation as an avid reader of the Greek commentators on Aristotle.

However, Ammonius makes the threefold matter distinction *not* to clarify the square of opposition, but rather to determine the number (*arithmōn*) of propositions (*prägmatōn*). Thus, he is engaged in what F. W. Zimmermann has designated the "bizarre topic of the proposition count." The proposition count sought to determine how many well-formed formulæ could be generated from various combinations of logical properties such as quantity, quality, and modality. Syrinx (died c. 450 A.D.), Proclus' predecessor as head of the school of Athens, concluded, according to Boethius, that there were 144 such formulæ. Ammonius adds to the number of logical properties and ends up with 3024 formulæ.

Ammonius' presentation of the threefold matter is based on a threefold distinction between *sxeseis* or "relations" which can hold between a subject and predicate. In the first type of *sxesis* the predicate always (*aeti*) belongs to a subject, as in the propositions 'the sun moves' or 'a human is an animal'. In

the second type of *sxesis*, the predicate never belongs to the subject, as in 'the sun stands still' or 'a human is feathered'; in the third, the predicate sometimes (*potē*) belongs and sometimes does not belong to the subject, as in 'Socrates walks' or 'Socrates is educated'. Ammonius then refers to some unknown group of scholars who call the three *sxeseis* the "matters" of the propositions (*τὸν προτασεῖν δίκλην*):

"Those who concern themselves about the technicalities of these things, call these *sxeseis* the matters of propositions, and they say that the matters are either necessary, impossible, or contingent."

The obvious reason for this terminology, Ammonius thinks, is that "they think it acceptable to call the *sxeseis* the matter because the *sxeseis* appear along with those underlying elements in the states of affairs (*pragmātōn*) of propositions, and they are not derived from our opinions or modes of expression, but from the very nature of the states of affairs (*pragmātōn*). For we say that having terms which always belong to one another makes the matter necessary, and having terms which always do not belong makes the matter impossible, and being indifferent between belonging and not belonging makes the matter contingent. Therefore, since states of affairs lie under statements, and we always say that which lies under is the matter, or we say that the word 'matter' stands for that which lies under, for this reason I think it is acceptable to call these the matter."

However, logicians in the late middle ages apply the threefold matter doctrine almost exclusively to problems surrounding the square of opposition, although one finds vestiges of the proposition count in Thomas Aquinas' commentary on the *De Interpretatione*.

II

We turn our attention now to the doctrine that all propositions with identical terms are in the same matter. An important text concerning this doctrine appears in the work of one John Dorp, who taught logic at the University of Paris around 1400. Dorp wrote a commentary on the *Compendium totius logicae* of Jean Buridan (c. 1295-c. 1358) which is noteworthy not only because the commentary is extensive and learned, but because it was very influential on the logicians of the early 16th century. Dorp states the doctrine in this way:

"a proposition of direct predication, and the proposition of indirect predication which corresponds to it, the affirmative proposition, and the negative, the universal and particular are in the same matter."
What he means is that all of these are in the same matter:

- Humans are animals (direct predication)
- Animals are human (indirect predication)
- Humans are not animals (negative proposition)
- All humans are animals (universal proposition)
- Some humans are animals (particular proposition).

How can these all be in “natural matter”, especially the negative example? Dorp responds that

“This is clear because the matter of the proposition, as I said, is nothing other than the terms (extremorum) of the proposition.”

Thus, all the previous types of propositions have the same matter because they have the same terms.

Not one to avoid paradox, Dorp points out some of implications of this view:

“It follows that there are some propositions—both affirmative and negative—in natural matter which are impossible. This is clear for negative propositions, for these are in natural matter: ‘no God is a substance’ and ‘no human is a animal’ because their affirmatives are in natural matter but the stated propositions are clearly impossible. The corollary for affirmatives is clear, for this is impossible ‘every animal is human’ but it is in natural matter, because the proposition with direct predication which corresponds to it is in natural matter. I mean this one: ‘every human is animal’.”

It is not surprising for Dorp, as a commentator on Buridan, to reduce matters to terms and in effect jettison Ammonius’ sexsa. Buridan, often called a follower of William of Ockham, was notorious for holding that the signification of propositions was equivalent to the individual or individuals referred to by the terms of the proposition. For example, the signification of the statement ‘Socrates is human’ is simply the individual referred to by the terms of the proposition, that is, by ‘Socrates’ and ‘human’. Many problems with this view no doubt spring to mind, but it should be clear that Dorp, an avid student of Buridan, is engaged in the metaphysical project of not multiplying entities beyond need (and perhaps even beyond comprehension). Thus, Ammonius’ sexsa, which became habitudines in Latin, were simply too much for Dorp’s nominalistic tastes. But, if the matter of propositions is only the terms of the proposition, then the doctrine that propositions with the same terms have the same matter will follow.

Dorp, however, is not quite able to reject tradition completely, for in several places he seems to reintroduce habitudo into his analysis:

“the matter of a categorical proposition is nothing but the subject and predicate of a categorical proposition, or the habitudo of the terms (extremorum) to each other.”

Given the other passages discussed, however, it seems to me that he is serious about reducing the habitudo of a proposition to the terms in that proposition.

Moving into the 16th century, we find logicians such as George of Brussels (b. after 1450, d. 1510) and John Mair (1467/69-1550) extending the types of propositions which have the same matter. George of Brussels includes negatives, contraries, subcontraries, contradictories, subalterns, converses, and equivalents among propositions with the same matter. He also gives the rule:

“in whatever matter a non-modal, present tensed categorical proposition is, [the corresponding] future tensed proposition, past tensed proposition, divided modal proposition—no matter what mode it has—, and hypothetical proposition are all in the same matter. So, all of these have the same matter: ‘a human is an animal’, ‘a human was an animal’, ‘a human will be an animal’, ‘a human possibly is an animal’, ‘a human necessarily is an animal’ and ‘if a human necessarily is an animal, then a human is a substance’.”

The support for the rule comes from all the propositions having similar subjects and predicates. John Mair includes the converses of propositions, equivalent propositions, as well as opposed propositions, past and future tensed propositions, as well as divided modal propositions.

Not everyone agreed with Dorp’s line of thought. Nicolaus de Orbellis (fl. 1480) claims that this example of indirect predication, ‘every animal is human’, is in contingent matter because the predicate is neither the essence nor a proprium of the subject. Inferior terms like ‘human’ are only accidents of superior terms. Negations, however, are in the same matter as their affirmatives. Thus, ‘a human is not animal’ is not in remote matter because even though the negation removes the predicate from the subject, the predicate is not repugnant or contradictory to the subject. Animality is not repugnant to humanity. In fact humanity is included in animality according to de Orbellis.

III

We have seen how late- and post-medieval logicians extend the doctrine of threefold matters from categorical propositions to include hypotheticals and (divided) modal statements. In this last section, I wish to make some remarks about the history of the matter of modal propositions.
The extension of the discussion of the matter of propositions to the matter of modal propositions begins, as far as I can tell, with John Dorp although it never becomes a major topic of discussion. It usually arises in the midst of a discussion of the matter of propositions in general, as we have seen, or is relegated to a quick paragraph in the discussion of modal propositions.

One major shift in these discussions takes place in the 1560's in the popular logic text by the Portuguese logician and metaphysician Pedro da Fonseca (1528–1599). Fonseca actually includes the matters of modal propositions as part of a section title: ‘De qualitate, quantitate, et materia modalium’ thus making the matters of modal propositions a topic in its own right. According to Fonseca, there are two ways to look at the matter of modal propositions. One can either consider the matter between the predicate and the subject in the dictum of the modal proposition, or that between the mode and the dictum. The dictum of a modal proposition was the non-modal statement to which the modal term was attached. For example, in

that all humans are animals is necessary

‘that all humans are animals’ is the dictum, and ‘necessary’ is the modal term. In this example, ‘humans’ is the subject and ‘animals’ is the predicate in the dictum. For the subjects and predicates in the dictum, there are the three matters: necessary, impossible, and contingent, just as in the case of non-modal propositions.

However, in the case of the matter between the modal term and the dictum, there is only a twofold matter:

“Since every mode, which at some time belongs to a dictum cannot fail to belong to it, and every [mode] which at some time does not belong [to a dictum] cannot belong to it, it turns out that every relation from a mode to a dictum is either a [relation] of a necessary predicate or an impossible one, and so the peculiar matter of modal propositions either is necessary or impossible, never contingent. From this root sprouts what we said earlier, that every modal proposition is either necessary or impossible.”

This claim that the matter of modal propositions is either necessary or impossible, but never contingent, is, I think, new to Fonseca and constitutes the “major shift” I referred to earlier. Before Fonseca, in the work of Dorp, George of Brussels, and John Mair, the matter of modal propositions was threefold depending on the terms in the subject and predicate. With Fonseca, the matter of modal propositions is only twofold, and his view is followed in the few works I have been able to discover which contain a discussion of the matter of modal propositions. These include the Cursus philosophiae by Francisco Murcia de la Llama, the logic text of Bartholomaeus Mastrius and

Bonaventura Belluti, and unsurprisingly the Collegii conimbricensis... in universam logicam aristotelis, which makes explicit reference to Fonseca’s logic book and may in fact have been written by him.27

The reason for the shift stems ultimately from the general move to simplify logic in the post-medieval period. In particular, there is a simplification in the discussion of the modality of propositions which seems to take place in the work of Domingo de Soto (1495–1560). Previously, John Dorp and John Mair held that some modal propositions were contingent. With Soto there is a shift to the claim that all modal propositions are necessary.28 That is, if they are true, they are necessarily true, and if false, necessarily false. Hence, there would only be two matters: natural (necessary), and remote (impossible). The doctrine that all modal propositions are necessary was in fact so widespread that one even finds it in Peru in the works of Alfonso Peñafiel.29

Notes

1 Peter of Spain 1972, p. 7.
2 Peter of Spain 1972, p. 7.
3 Peter of Spain 1972, p. 7.
4 Niño 1507, fol. 24v. “Omnis peripateticus conveniunt eis quae Ammonius dixit primo huius quad praedicatum ad subjectum habere potest triplicem habitudinem, quam graeci materiam enunciationis sive propositionis vacant.”
5 Ammonius 1897, vol. iv, pars v, p. 88.
9 Ammonius 1897, p. 88.
10 Ammonius 1897, p. 88.
11 Aquinas 1882, p. 60. “Potest autem accipi quinta divisio enunciationum secundum materia...” That Thomas is counting divisions suggests his reading an earlier commentary—perhaps that of Boethius—in which the proposition count was the main purpose for distinguishing the three matters. For Avicenna on the matters of propositions, see Bäck 1992, pp. 218-219.
12 Buridan 1499, sign. b 5va.
13 Buridan 1499, sign. b 5va.
14 Buridan 1499, sign. b 5va.
15 Buridan 1499, sign. b 5va.
17 Buridan 1499, sign. b 5v. Dorp refers to habitudo extremorum throughout his discussion of matters: sign. b 5va–sign. b 6v.
18 Pierre Tartaret (d. c. 1522) holds a similar view. See Tartaret 1500, fol. viii.
19 George of Brussels 1497, fol. x\textsuperscript{r}b. "In quaecumque materia est propositio affirmativa, in eadem materia est sua propositio negativa correspondens, sua contraria, sua subcontraria, sua contradictoria, sua subalterna, sua convertens, et sua equipollens."

20 George of Brussels 1497, fol. x\textsuperscript{r}b. "Secunda regula est talis: quod in quaecumque materia est propositio cathelogica de inesse et de presenti, in eadem materia est propositio de futuro, de preriterito, propositio modalis divisa de quaecumque modo sit, et propositio hypothetica, ut omnes istae propositiones, 'homo est animal', 'homo fuit animal', 'homo erit animal', 'homo possibiliter est animal', 'homo necessario est animal', et 'si homo est animal, homo est substantia' sunt in eadem materia."

21 George of Brussels 1497, fol. x\textsuperscript{r}b. "Et ratio istarum duarum regulatwm est quia in illis propositionibus sunt similia subjecta, similia predicata, ergo tales propositiones in eadem materia."

22 Mair 1514, fol. xxv\textsuperscript{r}a. "Omnem propositionem compositam ex eisdem extremis . . . sunt in eadem materia . . . Infero quod conversa et convertens sunt in eadem materia, equipollentes, propositiones oppositae, propositiones de presenti et de extrinsecis temporibus, cum modalibus divisivm . . . ."

23 Orbellis 1489, sign. b 1\textsuperscript{r}a. "Omne animal est homo' et 'nullum animal est homo' . . . non sunt in materia naturali sed contingenti. Pradicit enim non est de essentia subjecti nec proprium eius, cum inferiora non sint de essentia superioris sed accidentis eis."

24 Orbellis 1489, sign. b 1\textsuperscript{r}a. "Et si arguitur quod idem 'homo est animal' sit in materia remota quia pradicitum removet a subjecto, respondeo quod pradicitum removetur per negationem, id est, negatur a subjecto . . . non tamen removetur per repugnantium ad subjectum, quia animalius non repugnatur humanitati, immo includitur in ipsa."


26 Fonseca 1964, p. 164.

27 Murcia 1644, pars 1, p. 43. "Notandum est, quod licet materiam propositionum sit tripexus, omnes tamen propositiones modales ad duplexem materiam referuntur, videlicet ad materiam necessariam et ad materiam remotam."

Mastrius 1704, p. 19a. "Hoc tamen adversandum est, quod modals in quaecumque materia formetur, aut est necessaria, aut impossibilis, nulla contingens, nam in materia contingenti eius est necessaria, nam si dicamus, contingens est hominem currere, certum est applicationem modi ad dictum esse necessarium, quia necesse est, ut cursus contingenter ei convenit, nec alterei ei convenire potest."

Conimbricensis 1604. Tomus I, p. 259a-b. "Quod tandem attinet ad materiam, altera cernitur inter modum et dictum; altera inter praedicatum et subjectum dicti. Et haec quidem posterior tripexus est: necessaria, contingens, et impossibilis, quemadmodum in absolutis enunciationibus. Illa vero, qua propria est modalium est duplex, necessaria inquam, aut impossibilis; nulla vero est contingens, cujus ratio est, quoniam materia dicti non potest mutare sum naturam, ita quod ea quae est contingens, fiat aliud si necessaria aut impossibilis: aut quae est necessaria aut impossibilis, fiat contingens: Ac proptereaque modus qui semel convenit aliqui dicti, non potest ei non convenire, et quia aliud non convenit: non potest igitur eadem accommodari. Unde efficaciter id, quod paulo superius diximus: omnes modalem enunciationem esse necessariam aut impossibillem."
George of Brussels

Mair, John
1514 Summulae Majoris sive antea imprese in Collegio Montis acuti composite. Parrhesis (reprinted in the microfilm series Italian Books before 1601, roll 85, n° 3).

Mastrius, Bartholomaei et Belluti, Bonaventura

Murcia de la Llana, Francisco
1644 Cursus philosophici sive Disputationes circa universam Aristotelis philosophiam selectarum ex subtilior Doctrina Academiae Complutensis. Coloniae Agrippinae. [Copy in Bamberg Staatsbibliothek.]

Nicolaus de Orbellis (see Orbellis)
Nifo, Augustino

Nuchelmans, Gabriel

Orbellis, Nicolaus de
1489 Summulam Nicolai de orbellis. Venetiis: per Bernardinum de choris de Cremona.

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Peñafiel, Ilephonsius de
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Tartaret, Pierre

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