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THE FORMALITY OF PETER OF SPAIN'S THEORY OF SUPPOSITION

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ABSTRACT. Relatively recent literature on supposition theory seems to use different modern logical tools of interpretation that can be generally described as formalizations. Since the act of formalizing may be understood as a process of changing its object in the sense of making it more formal, an assessment of this kind of approaches is necessary. Accordingly, our main goal in this paper is to analyze the formality of Peter of Spain's theory of supposition and to evaluate its interpretation as a quantification theory. Our main thesis is that although Peter's theory presents certain weak notions of formality, the formality presupposed by the quantificational interpretation is nowhere to be found in his considerations.

Keywords**:** *Peter of Spain, supposition theory, medieval logic, property of terms, quantification, form, formalization, William Ockham*

Introduction

Since its emergence in the terminist tradition, the medieval theory of supposition has suffered different interpretations. But never before, throughout the history of this theory, the interpretations were more diverse than in the last stage of its development, that of the contemporary studies[1]. By trying to explain its nature and role in medieval logic, the modern scholarship has offered different explanations; thus, the theory of supposition was considered by modern exegesis

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[1] The contemporary interpretations could be considered a constitutive stage of the development of supposition theory.

to be: a theory of reference[2], a theory related to conceptual notation[3], a hermeneutical theory/a theory of propositional meaning[4], a theory of inference[5] and last but not least, a theory of quantification[6].[7] By answering the question regarding what is the theory of supposition with one of the alternatives listed above, we immediately must face some particular problems concerning the methods of studying medieval logic. Almost in all cases there seems to be involved a type of anachronism[8]: the concepts in use seem to belong to our modern conceptual apparatus of understanding rather than to the medieval one. In fact, since the very beginning of the revival of the medieval logical studies, we can see that the exegesis was built in a large extent on the parallelism between medieval logic and post-Fregean logic. This parallelism was strongly expressed by Father Philotheus Boehner[9]. For him the principal resemblance between these two types of logic, modern and medieval, is that of being formal, to the extent that to speak about the formality of medieval logic is a *nugatio* or tautology.

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[2] Peter Thomas Geach, *Reference and Generality: An Examination of Some Medieval and Modern Theories*, Cornell University Press, 1964, Claude Panaccio and Ernesto Perini-Santos, "Guillaume d'Ockham et la suppositio materialis", in *Vivarium*, Vol. 42, No. 2 (2004), pp. 202-224, Gyula Klima, "Existence and reference in medieval logic", in Alexander Hieke, Edgar Morscher (eds.), *New Essays in Free Logic*, Kluwer Academic Publishers, 197-226, 2001. Paul Vincent Spade, "Ockham's Rule of Supposition: two conflicts in his theory" in *Vivarium*, XII, 1, 1974, pp. 63-73, and many more.

[3] Alan R. Perreiah, "Approaches to supposition theory" in *The New Scholasticism,* vol. XLV, nr. 3, 1971, pp. 381-408; "Supposition theory: A new approach" in *The New Scholasticism,* vol. LX, nr. 2, 1986, pp. 213-231.

[4] Catarina Dutilh Novaes, *Formalizing medieval logical theories*, Springer, 2007.

[5] Elizabeth Karger, "Modes of personal supposition: the purpose and usefulness of the doctrine within Ockham's logic" in *Franciscan Studies*, Vol. 44, William of Ockham (1285-1347) Commemorative Issue Part I (1984), pp. 87-106; "Conséquences et inconséquences de la supposition vide dans la logique d'Ockham" in *Vivarium*, Vol. 16, No. 1 (1978), pp. 46-55; Gareth Matthews, "A note on Ockham's theory of the modes of common personal supposition" in *Franciscan Studies*, Vol. 44, William of Ockham (1285-1347) Commemorative Issue, Part I (1984), pp. 81-86, and many more.

[6] Philotheus Boehner, *Medieval Logic: An Outline of Its Development from 1250 to 1400,* University of Chicago Press, 1952; "A Medieval Theory of Supposition" in *Franciscan Studies*, Volume 18, Numbers 3-4, 1958, pp. 240-289; Terence Parsons, "Supposition as Quantification versus Supposition as Global Quantificational Effect" in *Topoi*, Volume 16, Issue 1, 1997, pp. 41-63, and many more.

[7] The different interpretations listed above are not necessarily mutually exclusive: a theory of reference or inference may need a theory of quantification. A theory of inference, reference, quantification or hermeneutics may include a theory of conceptual notation.

[8] This anachronism was pointed out in Dutilh, 2007, *op. cit.*, regarding the interpretation of supposition theory as a theory of reference especially in Ockham's case. This consideration could be expanded to the other kinds of interpretations.

[9] Philotheus Boehner, 1952, *op. cit.*, p. xiv.

Without doubt, since then, the characterization of medieval logic has suffered various qualifications. As already a few years later, I. M. Bochénski has pointed out that beside the resemblance in formality, there is a difference that could be applied also to the medieval supposition theory, by reason of the difference between ordinary language employed in medieval logic and the artificial one used in contemporary logic[10].

This particular character of medieval logic, alongside the already mentioned tradition of considering it as being unqualifiedly formal, could be made accountable for the various positions taken in the current debate regarding supposition. Moreover, it appears that in more recent studies the distance between medieval and modern logic regarding their formality has started to fade out. What Catarina Dutilh Novaes calls the systematic approach[11], i.e., the line of interpretation that studies medieval logic with the conceptual tools of modern logic that can be generally described as processes of interpretations through formalizations, seems to take the resemblance expressed by the notion of formality as a commune trait for both types of logic, and thus, as justification for its approach. In other words, this would imply that as long as we find commune features between medieval and modern logical theories or we consider the medieval logical theories as precursors of or proto-versions of the modern theories, the interpretation of the former with the tools of the latter is justified. But this kind of reasoning begs some answers to the questions: "Is formality truly a property of supposition theory (or of medieval logic in general), or it is a property imposed by the methods of studying it?", "Can the theory of supposition be in general characterized as formal, or its formality depends on the nature of the theory in which it is interpreted?".

Although we encounter more often the systematic approach in studies on the more resourceful and mature content of later theories of supposition, such as Ockham's and Buridan's, than on the earlier ones, the question regarding the formality of the supposition theory of someone like Peter of Spain remains a subject of great

[10] Józef Maria Bocheński, *A History of Formal Logic*, Notre Dame Press, 1961, p.173. It is trivially true that that modern logic has more elaborated methods of notation since it uses an artificial language that can express the formal aspects in a more adequate manner. Its lack in medieval logic does not disqualify from the very beginning medieval logical theories from being formal. The language that they use is not merely ordinary. Medieval Latin used in universities was not an ordinary Latin, but a highly regimented version of it. Explanations concerning formal aspects of different logical theories were given in a natural language enriched with a set of concepts and a terminological framework that is nowhere to be found in an ordinary spoken language. Such being the case, the language in play could be called without hesitation a semi-artificial one. See also L. Cesalli, "What is Medieval Logic After All? Towards a Scientific Use of Natural Language", *Bulletin de Philosophie Médiévale*, Brepols, 2010, 52.

[11] Dutilh, 2007, *op. cit*., p. 8-9.

importance. The existence or absence of the character of formality in his theory can be a tool both for the assessment of the modern interpretations of supposition theory and for answering the question regarding what Peter of Spain's theory of supposition really is. In this paper our main objective will be to establish what elements of Peter of Spain's supposition theory will allow us to qualify it as being formal and in what specific sense. Our second objective is to verify if these formal elements fit the interpretation of supposition theory as a theory of quantification.

Accordingly, in a first part, we will try to summarize the possible ways in which something could be said to be formal by using recent remarks on the notions of form and formality.

In a second part, we will identify the components of Peter of Spain's theory of supposition that could allow us to consider it as being formal taken in one of the senses described in the first part.

In a third part, we will summarize Ockham's homologous theory and argue for the presence of a higher degree of formality than in Peter of Spain's case. Then, we will argue why the interpretation of the supposition theory as a theory of quantification seems not to be an epistemological process. In spite of this fact, we will point out that the quantification interpretation seems to use a type of formality more closely related to Ockham's theory than to Peter's logical considerations.

1. Remarks on the notion of form and formality

Before discussing the elements of Peter of Spain's theory of supposition that could allow us to call it formal, we must first take a short detour. Form and formality are historical concepts that have incorporated over time multiple meanings. Although we are not strictly interested in the historical mutations of those two concepts, a specification of the many senses in which something can be called formal is a necessity, since our purpose is to find in what sense Peter's supposition theory presents the character of formality. Thus, in this section we will exhibit for our aim two categories of formality. The first one is represented by the traditional and general notions of formality that sprang from the Aristotelian tradition of doing logic that could be considered in part characteristic for Middle Ages. The second one includes the specific notions of formality that can be found in recent literature on the metalogical problem of formality.

1.1. The traditional and general notions of form and formality

As John Gordon MacFarlane has already pointed out in his thesis[12], the concept of form and implicitly that of formality regarding logic has its distant origins in the Aristotelian doctrine of hylomorphism, i.e., in the distinction between matter and form accompanied by the theory of the four causes. Hints for the explicit formality of Aristotle's logic are suggested in his discussion in *Physics,* 195a 16-21, and *Metaphysics*, 1013b 19-20[13], where he points out that the hylomorphic distinction could be applied also to a syllogism, where the premises will function as a matter for the conclusion. Then, the implicit formality could be easily observed throughout his discussion of the syllogism in *Prior Analytics*. The employment of schematic letters for propositional terms, the classification of propositions according to their components and variation in quantity and quality, the identification of valid schematic forms of inference (moods classified in figures), the use of logical principles for the demonstration of validity, are all just a few uncontested examples for the formality of his logic. In addition, a presupposed argument for the difference between a logical form of a proposition and a grammatical form could be read in his entire logical work especially in *Sophistical refutations*. But regarding again the explicit formality, this aspect is reinforced in the later peripatetic tradition, by the commentators of Aristotelian logic like Alexander of Aphrodisias, John Philoponus and Ammonius[14]. Starting with them, we can speak about what MacFarlane has coined "the tradition of logical hylomorphism", "the tradition of characterizing logic as distinctively formal"[15].

It is quite clear that the medieval logic was developed under the shadow of Aristotle's logical considerations, and consequently inherited its tradition of logical hylomorphism. But there is another part of Aristotle's logic that deserves our attention. Through the introduction of peripatetic logical doctrines in the medieval universities, we can discover besides formality as use of schematic letters and formality as the existence of a form (of a syllogism, of a proposition etc.), a much broader or general sense of formality: formality as conceptual rigor and methodological coherence. This particular kind of formality, deeply reflected in the specialized university language, has emerged from the understanding of logic as an *organon* for the general activity of reasoning. Its existence can be clearly seen from the place

[12] John Gordon MacFarlane, *What does it mean to say that logic is formal?*, Phd thesis, 2000.

[13] *Ibidem*, p. 255 and Catarina Dutilh Novaes "The Different Ways in which Logic is (said to be) formal" in *History and Philosophy of Logic*, 32:4, 2011, p. 305.

[14] See MacFarlane, *op. cit.,* p. 260.

[15] *Ibidem*, p. 6.

and role of logic in the university curriculum. In this regard, logic was studied at the beginning of academic career, in the Faculties of arts, in the group of disciplines called trivium (grammar, dialectic, rhetoric). Its priority was justified by the fact that logic was considered to be a method or tool for studying and regulating other disciplines and university practices. Peter of Spain for examples, in the beginning of his *Tractatus* gives a definition of logic inspired by Aristotle's *Topics,* 100a-101b, which is nothing else but a common place of medieval conception of logic or dialectic. This definition comprises exactly those aspects mentioned above. First, dialectic or logic offers the principles and method without which other disciplines could not legitimately be called sciences in the Aristotelian way. Second, it offers the logical framework that dictates how the university disputations, mandatory practices of an academic career, should properly be made[16].

But, given that medieval logic is not a simple resumption or reinterpretation of the Peripatetic logical doctrines, its formality could not simply be reduced to the Aristotelian heritage, which otherwise does not constitute the direct object of our inquiry. *Logica modernorum* with its study of the properties of terms adds new situations for logic that beg for a study of the formality unfolded in different terms. For such an endeavor, in addition to the traditional notion of formality and the general one, both transmitted by Aristotle and summarized above, we will need a specification of the different ways in which something could be said to be formal in a more rigorous manner.

1.2. Specific notions of form and formality

After we have examined the traditional and general notions of formality, we must focus on the contemporary notions of formality. On this subject we can stress two aspects. The first one is that MacFarlane[17] and Catarina Dutilh Novaes[18] have separately and with different purposes tried to identify the ways in which logic can be said to be formal. From their studies we obtained two series of six types of formality.

[16] See Peter of Spain, *Summaries of logic,* text, translation, introduction and notes by B. P. Copenhaver with C. Normore and T. Parsons, Oxford University Press, 2014, I.1., p. 101. (I will abbreviate Peter's work with SL and William Ockham, *Opera Philosophica I - Summa Logicae,* St. Bonaventure, N.Y.: Editiones Instituti Franciscani Universitatis S. Bonaventurae, 1974, eds Boehner, Philotheus, Gál, Gedeon, 1915- Brown, Stephen, on www.logicmuseum.com with Sl)

[17] MacFarlane, *op. cit.*

[18] Dutilh, 2007, 2011, *op. cit*.

MacFarlane's first set of notions, i.e. (M1.) 1-formal, (M2.) 2-formal, (M3.) 3-formal[19], has the purpose of establishing the three ways in which contemporary logic can be properly said to be formal. A reformulation for each type of formality in a more intuitive manner is made on the basis on the concept of abstraction from content or subject matter, resulting in a description of logic as independent from: a particular domain of conceptual application for M1, particular object or individual for M2, semantic content for M3. Accordingly, M1 represents the property of logic of being applicable in any domain of conceptual activity, M2 the property of logic of treating each individual entity the same without being concerned about its individual features and finally, M3 the property of logic that makes the logical content void of factual meaning.[20] The other three notions of formality are listed in the second chapter of his book. They are considered as decoy notions, i.e. notions which fail to demarcate the logical domain from that of the non-logical: (M1*) syntactic formality[21], (M2*) schematic formality[22] and (M3*) grammatical formality[23].

Regarding Catarina Dutilh Novaes[24], we can find six different notion of formality that are used in various ways in the action of formalizing through axiomatization, symbolization and conceptual translation. They are grouped in two clusters according to two general meanings of the notion of 'formal'. The first two types correspond to 'formal' as strict application of rules (opposed to informal) and the following four to 'formal' as form (opposed to matter) as follows: (D1.) 'formal' as regimentation, (D2.) the algorithmic notion of 'formal', (D3.) 'formal' as structure and abstraction from content, (D4.) 'formal' as absence of meaning, (D5.) 'formal' as variation, (D6.) 'formal' as indifference to particular objects[25]. According to this classification, logic, formal theories or formalizations made through logic can be considered formal because: (D1) their formal language is generated by applying explicitly defined rules, (D2) the inference-making can be made by a machine by strictly applying rules, (D3) they deal with the relation between objects and not with their matter, (D4) symbols are not considered meaningful expressions but only simple objects, (D5) the logical form of an expression permits the variation of specific objects under schematic letters or (D6) objects are not considered in their particularity or accidental properties but in their property of simply being objects.

[19] MacFarlane, *op. cit.*, p. 51.
[20] See idem.
[21] *Ibidem*, p. 31.
[22] Idem.
[23] Idem.
[24] See Dutilh, 2007, *op. cit*., section 4.1.3. The notion of the formal.
[25] See idem.

The taxonomy considered by Dutilh that takes into account the formality of logic is not so different from the considerations put forward by MacFarlane. In fact, with the exception of the pejorative shade of decoy senses of formal and the transcendental import of the M1, M2 and M3 formality, we can corelate the two mentioned taxonomies: M1* - D4; M2* - D5; M3*, M3 – D3; M2-D6; M1-D1, D2. MacFarlane's syntactical and schematic formality are associated by Dutilh with the fourth and fifth type of formality[26], grammatical formality and 3-formality can be correlated with the third sense and 2-formality with the sixth. Only the formal as pertaining to rules seems to be omitted as a specific type by MacFarlane, being instead presupposed by 1-formality. In fact, our intuitions are partially confirmed by Dutilh herself in a more recent analysis of the same subject[27]. Without insisting to much on these notions, we can see that the notions of form and formality present different degrees of strength. 'Formal' as regimentation for example could arguably be considered less formal than the algorithmic notion of formality. This fact leads us to the second aspect, the notion of formalization. If form and formality are a matter of degree, then formalization is the process of obtaining a higher degree of formality or of showing the formality of an object. Axiomatization, symbolization and conceptual translation are canonical ways which are using different notions of formal to formalize objects[28]. If we put the notion of formalization in relation with that of modeling or idealization as Sven Oven Hansson does regarding philosophy in general, then formalization seems to be a process which implies a change of the object to be formalized in two steps, from common language to a regimented one and from a regimented one to a mathematical or logical language[29]. The question of whether we have the same object before and after formalization, i.e. if the object to be formalized is different or not from the product of formalization after the conceptual tools of formalization have been applied, has a direct interest to our purpose.

Many scholars have argued for the interpretation of the theory of supposition as a theory of quantification by formalizing it in different ways. If the theory of supposition can be interpreted legitimately as one of the theories suggested above, then it must be argued that:

a. the formalization used is an epistemological process of interpretation which does not change to a large extent its object of interpretation

[26] See Dutilh, 2007, *op. cit.*, p. 228, note 402; pp. 227-228.
[27] Dutilh, 2011, *op. cit*.
[28] See *Part 4 The philosophy of formalization* in Dutilh, 2017, *op. cit*.
[29] See Sven Ove Hansson, "Formalization in Philosophy" in *The Bulletin of Symbolic Logic*, Vol. 6, No. 2 (Jun., 2000), pp. 164-165.

b. the formality of the object to be formalized is not different to a large extent from the formality of the formalized object.

We will use this preliminary remark as a guide to argue for a degree of formality in the Peter of Spain's theory of supposition which would justify or not some of the instances of its interpretation in modern theories.

2. The formality of Peter of Spain's supposition theory

Regarding the interpretation of supposition theory as a theory of quantification, it seems that the analysis of the propositions into constituent elements which could be classified in a modern way as logical (pertaining to the form of proposition, or to syntax) and non-logical (pertaining to the matter of the proposition, or to semantics) was the starting point. As far as we know, one of the first scholars who made a classification of the modern interpretations of supposition theory and simultaneously thought that they present some particular problems was Alan Perreiah. His article[30] is pointing out that there is a syntactical interpretation on supposition represented by Philotheus Boehner and especially by Ernest Addison Moody which are seeing supposition as "a system regulating inferences between propositions in virtue of the relationship between their component terms"[31]. In this view, the syntactic, logical or formal elements of proposition are used to describe how a specific inference could take place from a categorical proposition with quantified general terms to an equivalent non-quantified proposition with discrete terms. Since then, we can identify almost a dozen more scholars that will agree on this matter. But for such an interpretation to take place, we need (a.) a distinction between the elements of a proposition and their function in the supposition theory such that a syntactic interpretation could be argued for and (b.) rules that will explain how the syntactic elements will facilitate the inference from one proposition to a second one that is equivalent to the first. What I will try to argue in this part of my paper is that, in a first place, although Peter of Spain makes some remarks that resemble a syntactic-semantic distinction and thus a syntactic formality, the supposition theory is not as syntactically defined as a modern interpretation would want, and that, in a second place, the rules of inference are missing, making the supposition theory something entirely different from a theory of quantification.

[30] Perreiah, 1971, *op. cit.*
[31] *Ibidem*, p. 382.

2.1. The elements of a categorical proposition and the semantic-syntactic distinction

In a first step, a semantic-syntactic distinction could be made on the basis of the distinction between categorematic and syncategorematic words that we can find in the first tract and at the beginning of the sixth one. According to Peter of Spain, the minimal structure of a categorical proposition, i.e. a composed phrase (*oratio*) that signifies the truth or falsity, contains a subject and a predicate to which it could be added a copula or other parts of proposition[32]. The subject and the predicate are called categorematic words or terms not only in virtue of the fact that they appear in a propositional context as constituent parts, but also because they can signify, i.e. they represent on their own to the hearing by convention, a universal or a particular extra-mental and extra-propositional entity. In contrast, syncategorematic words cannot signify a universal or a particular but merely co-signify something with a categorematic term[33]. If we could admit that syncategorematic words signify something, they signify only in an improper and indirect manner an intra-propositional state, the disposition *(dispositio)* of the subject or predicate term within the proposition[34]. The most notably syncategorematic terms in a simple categorematic proposition are the universal affirmative and negative signs and the particular ones (omnis, nullus, aliquis, aliquis… non). As we can see, a distinction between syntactic and semantic level starts to emerge. Syncategorematic words, the universal and particular signs and the copula, do not have an independent signification or meaning, although they are not as void of meaning as our logical symbolism is, because they are words expressed in natural language which co-signify with other words of the proposition. However, along with the categorical notions of subject and predicate they form what could be called the syntactic level of proposition. The semantical level will be then the actual categorematic terms of the proposition with their specific meaning(s). If from these remarks we can make a clear-cut distinction between semantic and syntactic levels of a proposition is an entirely different debate, but for now these will suffice for an argument for the syntactic formality of Peter's theory.

[32] See SL I.7.
[33] See SL I. 5; SL VI. 1-2.
[34] See SL 12. 5.

2.2. The definitions of supposition and the conditions of its modes[35]

In a second step, another argument for a presupposed syntactic formality could be made from the definition of the supposition and its specific modes. First, supposition is defined *as the taking of a subject term in place of something*[36]*,* but as we will see, it is also used for a predicate term that has a substantive form. This suggests that supposition might be seen as a relation between a propositional entity, the term, and a certain kind of different entity. But this relation does not have a rigorous definition after all. In fact, it is based on an analogy. In Latin *suppono*, *supponere* is a verb which describes the action of substituting an object with another object; accordingly, *suppositio* will describe in a common spoken language the relation between two physical objects: the one which substitutes (the *supponens*) and the one which is substituted (the *suppositum*). In our case the objects of the relation of supposition are not all physical. One is a propositional term, and the other is, at a first look, an unspecified entity. But if we take into account Peter's signification theory, the theory on which the supposition notion is defined, we must find an answer for the type of the second entity[37]. Since supposition is based on signification and Peter of Spain's theory of signification presupposed that the thing that could be signified is either a universal or a particular[38], then the entity for which a term stands in supposition is either a universal or a particular object. In these terms, according to this realist assumptions, the supposition could be defined as a relation between a term and an entity which is extralinguistic and extramental. This fact weakens from the very start the syntactic interpretation of supposition which considers supposition to be an inferential relation between terms. We shall next see what happens in the specification of the different modes of supposition.

Secondly, the types of suppositions that a term could have are analyzed in a series of divisions, or in other words, in a binary tree structure. The nature of the conditions for a specific supposition to take place depends on the level of the tree, marked by a distinction between types of suppositions.

The first division is that between discrete supposition (*suppositio discreta*) and common supposition (*suppositio communis*)[39]. "Discrete supposition is what is

[35] Given the space limitations, I will consider the basic features of the theory of supposition as known.
[36] See SL VI. 3.
[37] Idem.
[38] See SL VI. 1-2.
[39] See SL VI. 4.

produced by a discrete term, like 'Socrates' or 'that human'"[40]. Accordingly, in case of the first division of supposition we arguably have a syntactic or logical condition: the types of the *supponens* terms, which function as placeholders for any term of that specific type.

The second division is of common supposition into natural (*suppositio naturalis*) and accidental supposition (*suppositio accidentalis*)[41]. In this case, we have as conditions: the parent condition and (a) a syntactic condition, i.e. whether a word is added or not to the *supponens* and (b) a semantic condition, the range of *suppositum* which vary in function of the semantic value or meaning of the other elements of the proposition[42].

The third division is of accidental supposition (*suppositio accidentalis*) into simple (*suppositio simplex*) and personal supposition (*suppositio personalis*). In this case the conditions are: the parent conditions and a semantic condition, i.e. the type of objects which are the *suppositum*, a universal entity or the inferiors of a superior, particular entities[43].

The forth division is that between determinate personal supposition (*suppositio personalis determinata*) and confused personal supposition (*suppositio personalis confusa*), where the conditions are: the parent conditions and a syntactic condition, the type of sign which is added to the *supponens* term, a universal or particular sign[44].

The fifth division is not a proper distinction between the modes of supposition, but rather a distinction between the movability or immovability of a personal confused supposition that can be caused by the necessity of the sign or mode. Peter of Spain uses the notion of descent, i.e. of an inference from a proposition with a *supponens* in confused personal mode to a proposition with a term in discrete mode of supposition. The conditions are: parent condition and the possibility or impossibility to descent from a common term to its inferiors, condition that seems to be a syntactical one although it is not regulated by specific rules[45].

To summarize Peter's theory of supposition, we could point out the following aspects. The theory of supposition is a logical tool that helps to establish the type of entity for which a term can stand in a propositional context. In defining it Peter

[40] Idem.

[41] Idem.

[42] It is true that if we take into account Peter's examples for the accidental supposition and not his laconic definition, then the (b) condition can be spelled out as a weak formal condition, i.e. grammatical formality, because the only thing that conditions the changes of the *suppositum* in his examples is a grammatical aspect, the time of the verb.

[43] See SL VI.5-6 SL VI.7.

[44] Ibid; SL VI. 8-9.

[45] See SL VI. 9.

relies unfortunately more heavily on examples rather than on rigorous definitions and rules. If we rethink his theory in terms of categorical propositions and try to establish for each subject and predicate of them a kind of supposition, then we will arrive at the same result as the one partially suggested by John J. Swiniarski[46]. In the universal affirmative the subject term has personal confused and distributive (movably) supposition in virtue of the universal sign and the predicate term has simple supposition in virtue of the passage from SL VI. 6[47]. In the universal negative the subject and the predicate term have confused and distributive (movably) supposition because of the negative sign[48]. In the particular affirmative proposition, the subject term has personal determinate supposition in virtue of the particular sign and the predicate has simple supposition considering the same passage from sixth tract. In the particular negative proposition, the subject has personal determinate supposition for the same reason as in the previous case and the predicate has personal distributive (movably) supposition being that the negation confuses and distributes the term.

2.3. Conclusions

From the previous definitions and conditions, we can conclude that

1. The types of supposition that a term could have do not rely only on syntactical conditions but on semantical conditions as well. What makes the difference between the supposition of the term "homo" in "homo est currens" and "homo est species", i.e. between a personal determinate supposition and a simple supposition, is not a syntactic criterion but a semantical one, the meaning or signification of the verb that is predicated to the subject.

2. Although, the confused and determinate modes of personal supposition are defined by syntactic criteria – the type of syncategorematic words (the universal or particular sign) that is added to the common term – they inherit the sematic criteria of their parent node – the type of *suppositum* for which the common term stands, i.e. an extramental and extra propositional inferior, an individual.

3. We cannot find sufficient textual evidence to state that the modes of personal supposition are defined by the relation of descent. In fact, only in the case of the fifth level, which is not a per se distinction of modes of supposition, this notion plays a significant role. If, however, we made a concession, we would have

[46] See John J. Swiniarski, "A New Presentation of Ockham's Theory of Supposition with an Evaluation of some Contemporary Criticisms", in *Franciscan Studies*, Volume 30, 1970, p. 203.
[47] "Of simple supposition […] another is of a common term put in an affirmative predicate".
[48] See SL XII.14.

specific rules of inference for each mode of supposition that will describe how the descend will take place. In their absence, we can see that the notion of descent or of inference is used only to verify if the supposition of the term was well-chosen. And on a further note, the notion of ascent that could make the inferred proposition equivalent to the original one is missing.

4. If we were to equate in an unfaithful manner the notion of descent to that of personal supposition, so that an interpretation of it as a quantification theory could take place, then we will be forced to ignore Peter of Spain's realist thesis, and to regard the relation of supposition as an intra-propositional relation, a relation between quantified common terms and discrete terms or more exactly a relation between propositions that are containing them. If we take his theory of supposition as a whole and if we take a careful look at his examples and his conditions of establishing the modes of supposition, this thesis is hard to maintain.

3. The formality of Ockham's theory of supposition

We have already seen that Peter of Spain's classification of modes of supposition is made by a series of syntactical and semantical conditions which hinders the syntactical formality of his theory. From this point of view, his theory seems to be defined as a relation between a propositional entity, a term, and an extra-mental and extra-propositional entity, an object. If we are to blame his realist assumptions for this result, next we shall take a look on a nominalist account on supposition. In what follows I want to show that Ockham's theory of personal supposition has a more rigorous kind of treatment which makes it to be a better candidate for syntactic formality.

Ockham's first division of supposition is that between simple, material and personal supposition, but, because personal supposition is the only supposition where a term "supposits for the thing it signifies and does so significatively", we will only take this last one into account, and more precisely the confused common personal supposition (merely confused and confused and distributed) and determinate common personal supposition[49]. In this case, the formality rests on the fact that the types of personal supposition are more rigorously defined using the notion of descent and ascent, which are inferences from categorical propositions to a proposition or a concatenation of propositions where the quantified common term with a type of personal supposition is replaced with unquantified discrete terms and arguably vice versa.

[49] See Sl. 63.3-4.

Personal supposition[50] is first divided into determinate and confused supposition. Determinate supposition takes place when we can descend under a common term to singulars by a disjunctive proposition, and from any of the singulars we can ascend to the original proposition.[51]

Then, confused supposition[52] is divided into merely confused and confused and distributed supposition. Merely confused personal supposition takes place when we cannot descend to singulars under the common term by a disjuctive proposition without any modification, but we can descend to a proposition of disjunctive predicate, and it happens that we can ascend from any of the singulars to the original proposition[53].

Next, the confused and distributive supposition is defined as the type of supposition that takes place when we can descend to a proposition copulatively, if it has many things contained and from no single one thing we can formally infer or ascend to the original proposition[54].

Besides these definitions, we have specific syntactic rules for each type of personal supposition[55]. Those rules allow us to ascribe to each predicate and subject of the classical categorical propositions a specific kind of supposition

- A proposition (universal affirmative): the subject has confused and distributive and the predicate merely confused supposition
- E proposition (universal negative): the subject and the predicate have confused and distributive supposition
- I proposition (particular affirmative): the subject and the predicate have determinate supposition
- O proposition (particular negative): the subject has determinate supposition and the predicate confused and distributive supposition.

In conclusion, in Ockham's case, the general picture is more complete than in Peter's case. The latter does not formulate explicit rules that allow us to establish a classification of this sort in the terms of ascending and descending inferences. In at least two cases, that of affirmative categorical proposition, e.g. "Every man is an animal" and "Some man is an animal" or "A man is an animal", Peter rejects the possibility to descend under the predicate, and consequently to form a presupposed

[50] See Sl. 64.1.
[51] See Sl. 70.4-5.
[52] See Sl. 70.6.
[53] See Sl. 70.7.
[54] See Sl. 70. 8.
[55] See Sl. 71. 2, Sl. 73. 1; Sl. 74. 1-3.

equivalent proposition, since he considers that here "animal" has simple supposition, standing in the place of a universal entity. But even in Ockham's case we must be cautious not to make a confusion between the notion of personal supposition and the notion of descent and ascent (inferences with the aid of quantifiers). For personal supposition takes place when a term supposits for its *significatum*, whether that *significatum* is an utterance, an intention of the soul, written, imaginable or probably more importantly a thing outside the soul. The foundation of the supposition on the semantic notion of signification and especialy the last acceptance of *significatum* as an extra-mental and extra-propositional entity excludes the possibility that supposition is only a syntactic or inter/intra-propositional property. Even if we granted that the notions of descent and ascent are not used only as verification principles of the modes of personal supposition but are the supposition itself, as a quantification theory would want, we must face some serious difficulties, as we will see in the following part.

If we consider that Ockham's personal supposition theory is a theory of quantification, i.e. a theory that shows how from categorical propositions with quantified common terms we can obtain specific equivalent propositions with discrete terms, therefore, if supposition is some kind of substitution of quantified variables with individuals, as in quantified logic, then we are facing some difficulties. Many of them could be found in relatively recent literature and are ranging from general ones regarding the differences between medieval and modern logic, like the fact that medieval logic is quantifying over terms and modern quantification theory over variables[56] or the fact that one is expressed in natural language and the other in a formal one, to more specific ones like a. the problem of the equivalence between the original categorical proposition and the one which is inferred from it, b. the problem of the complete analysis of a proposition, c. the problem of the supposition of the predicates in O-type propositions and d. the problem of the priority of analysis, to name just a few.

a. The problem of the equivalence between propositions

Gareth Matthews[57] and John Corcoran and John Swiniarski[58] have pointed out that if Ockham's theory will be interpreted as a theory of quantification, there needs to be an equivalence between the categorical proposition and the proposition

[56] See Gareth B. Matthews, "Ockham's Supposition Theory and Modern Logic", in *The Philosophical Review*, Vol. 73, No. 1, 1964, pp. 91-99.

[57] See Matthews 1964, 1984, *op. cit.*

[58] See John Corcoran, John Swiniarski, "Logical Structures of Ockham's Theory of Supposition", in *Franciscan Studies*, Volume 38, 1978, pp. 161-183.

obtained by descending under the subject or predicate term according to their specific supposition. This means that for each descent from a categorical proposition to the corresponding proposition (conjunctive, disjunctive or with disjunctive predicate) there must be an ascent from that particular proposition to the original categorical one. But as the previously mentioned authors have pointed out, this equivalence is nowhere to be found in Ockham's texts, but rather is invalidated by the fact that only determinate and merely confused suppositions are characterized by a relation of ascent.

b. The problem of the complete analysis of a proposition

Another problem is that, in supposition theory interpreted as a quantification theory, the proposition will be always fully analyzed, i.e. the proposition will suffer two successive descents, one for the subject term and one for the predicate, so that all the terms will finally be discrete terms. But as follows form the previous considerations, the descent according to the supposition of the subject term and of predicate term is made independently or separately and not successively. Therefore, the entire proposition will not be fully analyzed into discrete terms. When the subject term will be analyzed with a descending the predicate term will remain unanalyzed and vice versa.

c. The problem of the supposition of the predicate in O-type propositions

Ockham is ascribing for the predicates of O type proposition a confused and distributive supposition. John Swiniarski[59] and Paul Vincent Spade[60] have pointed out that we can find instances of O-type false propositions where according to the rules of confused and distributive supposition we can descend under the predicate term but with an undesired result, because the conjunctive proposition obtained is true. This fact has made some authors like Graham Priest, Stephen Read[61] and the same Paul Vincent Spade[62] to believe that Ockham is ascribing wrongly the confused and distributive supposition to the predicate of O-type proposition, and instead he should have chosen a merely confused supposition. John Swiniarski's solution leads us to the forth problem.

[59] Swiniarski, *op. cit.*, p. 211.

[60] Paul Vincent Spade, "Priority of Analysis and the Predicates of O-form Sentences" in *Franciscan Studies*, Volume 36, 1976, pp. 263-270.

[61] Graham Priest, Stephen Read, "The Formalization of Ockham's Theory of Supposition" in *Mind*, New Series, Vol. 86, No. 341 (Jan., 1977), p. 109.

[62] Spade, *op. cit.*, p. 269.

d. The problem of the priority of analysis

To avoid the problem raised by the predicate of O type proposition, John Swiniarski, inspired by Peter Geach, is employing a priority of subject rule. According to it, the full analysis of a proposition must start with the subject term of that particular proposition. In this way, the truth of an O-type proposition will be preserved since the predicates in the proposition obtained from a descent under a subject term in an O type proposition will be in a determinate supposition. But this rule brings other problems. Although, Earline Jennifer Ashworth[63] has pointed out that a rule of priority of analysis in function of the type of supposition and not of the type of the term is to be found in sixteenth century, in the works of someone like Domingo de Soto, in the case of Ockham or Hispanus such rules are nowhere to be found. Another problem that we must face because of the rule of subject priority is that the merely confused supposition, the type of supposition that is explicitly ascribed by Ockham to the predicate term of a universal affirmative proposition, will cease to play a role in the analysis of categorical propositions, as Swiniarski is suggesting in the same paper.

From those four points we can easily see that the interpretation of personal supposition as a quantification theory comes with a price that makes us question the general benefit of such an endeavor.

4. Conclusion

The notions of supposition theory in Peter of Spain and William of Ockham are founded on the semantical notion of signification. In the first case, the specific modes of personal supposition are less syntactically defined than in the second one. This fact could make Ockham's theory a candidate for the quantification interpretation but only if we can deal with the shortcomings presented in the last part of the paper. If the formalization or reconstructions of supposition theory are employing the equivalence thesis, the full analysis, the change of supposition for the predicate of O-type proposition or a priority rule, then we have reasons to think that a. the medieval theory of supposition is not formal enough to support a quantification approach and b. the formalizations employed by modern scholars are not epistemological processes, i.e. processes that leave the object to be formalized unchanged.

Moreover, from the many senses of the notion of formality that were exposed in the first section of this paper, it seems that in Peter of Spain's theory of supposition we can identify only two. The first one, a version of formality as regimentation, sine

[63] E. J. Ashworth, "Priority of analysis and merely confused supposition" in *Franciscan Studies*, Vol. 33 (1973), pp. 38-41.

the theory tries to form from natural language a conceptual device that captures the relation between words and things in the general purpose of clarifying the meaning of a given proposition. The second one, a weak version of syntactical formality. Nonetheless, supposition remains a notion defined using the theory of signification and the behavior of its syntactical components cannot fully explain it.

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