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THE RELATION BETWEEN CONCEPTS AND MENTAL LANGUAGE IN WILLIAM OF OCKHAM'S THOUGHT

LAIZA RODRIGUES DE SOUZA

Paris
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Tese de doutorado apresentada como requisito parcial para a obtenção do grau de doutora na Universidade Federal do Rio Grande do Sul num quadro de cotutela com a École Pratique des Hautes Études.
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Defesa em 06 de Maio de 2021.

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Paris
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RESUMO

O objetivo dessa pesquisa é investigar a relação entre conceitos e linguagem mental no pensamento de William of Ockham. O conceito é a noção central da filosofia de Ockham e o ponto de partida de nossa pesquisa, entretanto não há uma definição unívoca da noção de conceito em suas obras. Quando Ockham aborda epistemologia, os conceitos são chamados de *atos mentais* e quando ele desenvolve sua linguagem mental, são chamados de *signos mentais*. Há ainda uma uma terceira maneira de lidar com conceitos que está ligada à noção de conceito como signo mental: os conceitos como universais. Portanto, há três aspectos de conceitos que consideramos fundamentais: o epistemológico, o semântico e o ontológico, aos quais as noções de conceito como ato, signo e universal se referem respectivamente. Assim, a primeira parte de nossa tese visa articular essas distintas acepções de conceito para elaborar uma visão geral dos conceitos em Ockham que servirá de base para a compreensão sua teoria do discurso mental. A hipótese da linguagem mental sugere que o pensamento tem uma estrutura gramatical profunda, essa teoria que atingiu seu ápice com Ockham no século XIV acabou desaparecendo no início da modernidade e retornando apenas no século XX com um modelo associado à programação de computadores. Na segunda parte da nossa pesquisa nós exploramos a linguagem mental de Ockham e suas origens conceituais. Em seguida, apresentamos o discurso mental de Thomas Hobbes, baseado no modelo computacional para fazer uma comparação com o discurso mental de Ockham. Hobbes aplica a noção de cálculo ao pensamento, o que significa que ele considera as operações mentais um certo tipo de cálculo. Comparamos um modelo de discurso mental de Ockham que é essencialmente gramatical com o discurso mental de Hobbes que é computacional. O objetivo dessa comparação é mostrar como a noção de que o pensamento é constituído como uma linguagem falada na Idade Média deu lugar à noção de que a mente funciona como uma máquina no início da modernidade. Essa transformação do modo de conceber conceitos, mente e pensamento representam, em certa medida, a mudança de paradigma da filosofia medieval para a filosofia moderna. Através dessa comparação podemos justificar o fim da linguagem mental no medievo e compreender melhor os limites da linguagem mental de Ockham.

Palavras-chave: Ockham, conceitos, ato mental, signo mental, linguagem mental

ABSTRACT

The aim of this research is to investigate the relation between concepts and mental language in William of Ockham's thought. The concept is the central notion of Ockham's philosophy and the starting point of our research, however there is no univocal definition of the concept in his works. When Ockham approaches epistemology, concepts are called mental acts and when he develops his mental language, they are called mental signs. There is also a third way of addressing concepts that is related to the notion of concept as mental sign: concepts as universal. Therefore, there are three aspects of concepts that we consider fundamental: the epistemological, the semantical and the ontological, to which the notions of concept as act, sign, and universal refer respectively. Thus, the first part of our thesis aims to articulate these different meanings of concept to elaborate an overview of the concepts in Ockham that will serve as a basis for understanding his theory of mental discourse. The hypothesis of mental language suggests that thought has a deep grammatical structure, this theory that reached its culmination with Ockham in the 14th century eventually disappeared at the beginning of modernity and returned only in the 20th century with a model associated with computer programming. In the second part of our research we explored Ockham's mental language and its conceptual origins. Then, we present Thomas Hobbes' mental discourse, based on the computer model to compare with Ockham's mental discourse. Hobbes applies the notion of calculus to thought, which means that he considers mental operations a certain type of calculus. We compare a model of Ockham's mental discourse that is essentially grammatical with Hobbes' mental discourse that is computational. The purpose of this comparison is to show how the notion that thought is constituted as a mental language in the Middle Ages gave way to the notion that the mind functions as a machine in early modernity. This transformation of the way of conceiving concepts, mind, and thought represents, to some extent, the paradigm shift from the medieval philosophy to the modern. Through this comparison we can justify the end of medieval mental language and better understand the limits of Ockham's mental language.

KEY WORDS: Ockham, concepts, mental act, mental sign, mental language

RÉSUMÉ

Cette recherche a pour objectif d'étudier la relation entre les concepts et le langage mental dans la pensée de Guillaume d'Ockham. Le concept est la notion centrale de la philosophie d'Ockham et le point de départ de notre recherche, cependant il est difficile de trouver une définition univoque du concept dans ses œuvres. Lorsque Ockham aborde l'épistémologie, les concepts sont appelés actes mentaux et lorsqu'il développe son langage mental, ils sont appelés signes mentaux. Il existe également une troisième façon de traiter les concepts qui est liée à la notion de concept comme signe mental : les concepts comme universels. Par conséquent, il y a trois aspects des concepts que nous considérons comme fondamentaux : l'épistémologique, le sémantique et l'ontologique, auxquels se réfèrent respectivement les notions de concept comme acte, signe et universel. Ainsi, la première partie de notre thèse vise à articuler ces différentes acceptions de concept pour élaborer une synthèse des concepts chez Ockham qui servira de base à la compréhension de sa théorie du discours mental. L'hypothèse du langage mental suggère que la pensée a une structure grammaticale profonde, cette théorie qui a atteint son apogée avec Ockham au XIVe siècle a fini par disparaître au début de la modernité pour ne revenir qu'au XXe siècle avec un modèle associé à la programmation informatique. Dans la deuxième partie de nos recherches, nous nous sommes consacrés au langage mental d'Ockham et à ses origines conceptuelles. Ensuite, nous présentons le discours mental de Thomas Hobbes, en nous basant sur le modèle informatique pour faire une comparaison avec le discours mental d'Ockham. Hobbes applique la notion de calcul à la pensée, ce qui signifie qu'il considère les opérations mentales comme un certain type de calcul. Nous comparons un modèle du discours mental d'Ockham qui est essentiellement grammatical avec le discours mental de Hobbes qui est computationnel. L'objectif de cette comparaison est de montrer comment l'idée que la pensée est constituée comme un langage mental au Moyen-Âge a été remplacée par l'idée que l'esprit fonctionne comme une machine au début de la modernité. Cette transformation de la façon de concevoir les concepts, l'esprit et la pensée représente, dans une certaine mesure, le changement de paradigme de la philosophie médiévale à la philosophie moderne. Grâce à cette comparaison, nous pouvons justifier la fin du langage mental médiéval et mieux comprendre les limites du langage mental d'Ockham.

MOTS-CLÉS : Ockham, concepts, acte mental, signe mental, langage mental

ABBREVIATIONS

Exp. in Perih.	*Expositio in Librum Perihermenias Aristotelis*
Exp. Porph.	*Expositio in Librum Prophyrii de Praedicabilibus*
Exp. in Praedicament.	*Expositio in Librum Praedicamentorum Aristotelis*
OPh	*Guillelmi de Ockham Opera Philosophica*
Ord.	*Ordinatio. Scriptum in Librum Primum Sententiarum*
OTh	*Guillelmi de Ockham Opera Theologica*
Rep.	*Reportatio. Quaestiones in Libros II, III, IV Sententiarum*
SL	*Summa Logicae*
Summ. Phil. Nat.	*Summula Philosophiae Naturalis*
Quaest. in Phys.	*Quaestiones in Libros Physicorum Aristotelis*
Quaest. Var.	*Quaestiones Variae*
Quodl.	*Quodlibeta Septem*

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INTRODUCTION

The aim of this research is to investigate the relation between concepts and mental language in William of Ockham's thought. Ockham is well known for his razor principle, the one according to which we should not multiply entities without necessity, or yet, that we should not do with more (elements) what we can do with fewer.[1] These emblematic phrases that summarize Ockham's philosophy are also used to represent his nominalism. Here, nominalism is understood as an ontological position. Medieval nominalism is the ontological position that does not admit that universals exist in reality, hence, it is a form of anti-realism. Realism was divided into two forms in the Middle Ages: extreme realism, the Platonist current that admits universals existing separately from particulars, while moderate realism is the Aristotelian current holding that universals exist inherently in particulars.[2] The nominalism defended by Ockham denies the existence of common essences or 'natures' in the world. He defends a radical ontological particularism according to which everything that exists, exists by itself with no connection to a universal. Ockham reduces universality to a type of signification, for example the common names of spoken and written language are universal in virtue of their signification, that is, in virtue of the way they refer to the things they signify.

The effect of nominalism, whether in medieval or contemporary philosophy, is that by denying the existence of metaphysical, abstract, or non-individual entities, there is only space left for the existence of individuals in the world. Ockham does not escape this effect. For him, universals are realities existing only in the mind, as mental concepts. Consequently, in the semantics of the universals, if there is no real universal *thing* in the world, the universal concepts that we have in the mind might invariably refer to particulars external to the mind. Therefore, Ockham admits only particulars in his ontology, and this assumption of his philosophy is due his defense of a nominalism concerning universals.

In this present work, we will emphasize, however, that Ockham's nominalism is an ontological nominalism in relation to the universals. For if we take his philosophy in

[1] "[…] pluritas non est ponenda sine necessitate" or "frustra fit per plura quod potest fieri per pauciora".

[2] Cf. Adams, M.M. (1987) *William Ockham.* Vol 2. Notre Dame: University of Notre Dame Press, p. 3.

its totality, perhaps it would be more correct to call him a conceptualist.[3] However, such precision, may not be necessary, since conceptualism is considered in the great division between nominalism and realism, a moderate form of nominalism. Nevertheless, concepts are the key notion of Ockhamian thought. The proof of this is that the attention given by Scholars to Ockham's concepts does not go unnoticed. We highlight mainly Claude Panaccio's work on concepts as the fundamental unit of thought for Ockham.[4]

Concepts

Concepts are a central notion of Ockham's thought, and we will take it to be the very ground of our research. As Panaccio suggests, in William of Ockham's works there is no unambiguous definition of the notion of concept.[5] In the works in which Ockham develops his epistemological theory, he characterizes the concept as a mental act, a cognitive act. Whereas in the works in which he builds his theory of mental discourse, the concept is defined as a mental sign capable of receiving referential functions in propositional contexts. In each approach there is little reference to the other it does not appear as a counterpoint, in the sense that they have complementary functions, but each time one sense of concept is put in evidence, and the other is given a secondary place when mentioned. However, it does not mean that the two notions of concept are incompatible or irreconcilable. On the contrary, they reflect the maturation of the author's reflection as well as the fact that each theory aims at a specific objective, that is, each concept notion developed answers a distinct philosophical problem. Considered as a mental act it belongs to the theory of knowledge while the notion of concept as a sign is linked to the theory of mental language.

For Ockham, concepts are identified both as cognitive acts and mental signs. Much work has been done to reconcile these two notions, or at least to show how they can coexist harmoniously without compromising the coherence of the Franciscan friar's

[3] Cf. Adams, M.M. (1987), p. 73.

[4] Panaccio, C. (2004). *Ockham on concepts.* Ashgate studies in medieval philosophy, p. 1.

[5] Panaccio (2004), p. 5.

thinking, especially by Claude Panaccio: *Ockham on Concepts* (2004). According to Panaccio, concepts are called mental acts when Ockham addresses epistemology, but they are called mental sign when the *Venerabilis Inceptor* develops his semantics. However, in addition to these two senses of concept discussed by Panaccio there is still in Ockham's thought a third way of dealing with concepts which is also linked to the notion of concept as a mental sign: and it is this sense that concepts are universals. Therefore, there are three aspects of concepts that must be considered as fundamental: the epistemological, the semantical, and the ontological one, to which the notions of concept as act, sign and universal respectively refer. Therefore, in a first moment our thesis aims to articulate these distinct notions of concept in order to elaborate, in a certain sense, an overview of the concepts in Ockham's thought that will be the basis for understanding his theory of mental discourse. In a second moment, Ockham's mental language and his grammatical model will be explored in order to contrast it with a calculus-based mental language such as that of Thomas Hobbes.

Mental Language

The hypothesis of mental language suggests that human thought has a grammatical structure that serves as a foundation for the acquisition and use of the languages in which we communicate. The first thesis about mental language or language of thought is normally considered to be a discover of the American philosopher Jerry Fodor in a book entitled *The Language of Thought*[6]. Fodor developed his thesis through a comparison with computer programming. He advocated for the existence of this language based on the idea that the computational process is a sort of symbol manipulation that occurs in an orderly manner and inferred from this that human cognitive processes also constitute an ordered manipulation of symbols. The orderly manipulation of symbols that would be the language of thought has an innate character so that the acquisition of any conventional language presupposes the human ability to orderly manipulate symbols, what he considers to be the "intrinsic quality of the cognitive process".

[6] See Fodor, J. A. (1981). *The language of thought*. Mass.: Cambridge.

Fodor's language of thought is not, however, the first apparition of the hypothesis of mental language in history. Since the Middle Ages, the notion of a mental language was popular among scholastics. Mental language can be found in several different ways. It can be like Augustine's inner verb[7], or in the thought that contains verbs and names, as in the case of Ammonius[8]. In any case, the idea of a *mental speech* concerns the articulation of thought in a linguistic structure. Ockham's mental language (ML) is one of the most remarkable examples of that, for his *oratio mentalis* concerns a discourse that resembles conventional discourse, — whether written or spoken — but which occurs in the mind. This mental discourse is universal to all human beings and prior to conventional spoken languages. Ockham's mental language has a grammatical structure and shares many elements with spoken language and can be analyzed by the same syntactic and semantic methods that we use to analyze conventional/spoken language.

However, there is a considerable historical distance between Ockham and Fodor, which leads us to question the distance between the *oratio mentalis* and Fodor's language of thought. Calvin Normore (2009) has investigated which reasons led to the disappearance of mental language in the 16th and 17th centuries after its culmination in the 14th century, and which reasons led to its first appearance, and its later reappearance in the 20th century with Fodor[9]. According to Normore, the development of the mental language hypothesis is connected in some way to terminist logic and nominalism in late scholastics. However, he claims that the end of terminist logic is not, as Gabriel Nuchelmans (1980) had previously pointed out, the reason for the disappearance of the mental language theories.[10] Likewise, the theory of mental language is not strictly linked to nominalism, although it is often connected to it. The reason for the end of mental language suggested by Normore is that the notion that

[7] Cf. Augustine. (1962) *De doctrina christiana*, (Martin, J. ed., "Corpus Christianorum series Latina," vol. 32); Turnholt: Brepols.

[8] Cf. Ammonius. (1991) *On Aristotle's Categories*, trad. S.M. Cohen et G. B. Mathews, Londres, Duckworth.

[9] Normore, C.G. (2009). The end of mental language. In: Biard, J. (ed), *Le langage mental du Moyen Âge à l'Âge Classique*, Louvain/Paris :Éditions Peeters. pp. 293-306. p. 294.

[10] Nuchelmans, G. (1980). *Late-scholastic and Humanist Theories of the Proposition*. Amsterdan: North Hilland.

“reasoning is a computation with terms” has prevailed over the notion that the mind has a grammatical structure.

Although the decline of medieval nominalism is not the cause of the end of mental language after the 14th century, mental language hypothesis often accompanies nominalism. The mental language hypothesis suggests an isomorphism between thought and language, while nominalism suggests an isomorphism between language and the world. However, it is possible to be a nominalist without necessarily admitting that thought has a linguistic structure.[11] This is the case of Abelard who defends a nominalist theory without defending a mental language.[12]

However, adhering to the hypothesis of mental language is in general very convenient for a nominalist thinker.[13] This seems to have been Ockham's strategy, since his mental language is at the service of his nominalism and not the other way around.[14] The approximation between mental language and nominalism is present not only concerning the end of mental language, that is, its disappearance in the 17th century, but it also appears in the explanation of what is mental language in secondary literature. However, a nominalist does not need to hold a theory of mental discourse for his nominalism to be coherent. On the other hand, when we consider a mental discourse, especially the 14th century model advocated by Ockham, it is associated with a grammatical structure of thought. Nevertheless: one question remains: would it be possible to conceive a mental discourse that does not have a deep grammatical structure?

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[11] Normore (2009), p. 300-301

[12] Cf. Pelletier, J.; Roques, M. (2017) An introduction to Mental language in Late Medieval Philosophy. In: Pelletier, J; Roques, M. (eds.) *The language of thought in Late Medieval Philosophy*. Switzerland: Springer, pp.1-26. p. 14; Cf Normore (2009) p.301

[13] However, mental language is not exclusively accompanied by nominalism, as is the case with recognized realist thinkers such as Roger Bacon, Duns Scotus, and Gauthier Burley who held both realist ideas and the theory of mental language.

[14] “Ockham’s development of a theory of mental language was, if not determined by, at least fostered within his nominalist project. Desiring to preserve the universality of scientific knowledge without a commitment to universal objects, Ockham found it attractive to take propositions, rather than common natures, as objects of knowledge, for even universal propositions could be verified, on Ockham’s nominalist semantics, only to particular individuals in the world.” Hochschild, J. (2015). Mental language in Aquinas? In: Klima, G. (ed) I*ntentionality, cognition and mental representation in medieval philosophy*. New York: Fordham University Press. p. 30.

First of all, we must consider that a mental language theory is associated with a certain way of conceiving thinking. After all, what does it mean to conceive a "thought"? The hypothesis of mental language defends the existence of a deep grammatical structure in thinking. The association of thought with language is very present in philosophy, especially in the field of analytical philosophy. However, there is another way of conceiving thought which is through the notion of idea. Starting with Aristotle (*De Anima*, III, 7, 431a, 14-17), who defended that "the soul never thinks without images"[15] until the philosophical movement called the *Way of Ideas*, which in the 17th century dominated reflections about the ways human beings think.[16] This movement argued that to think is to have ideas, the combination of ideas and the passage from one idea to another. We have on the one hand, the notion of thought as language and, on the other, as image, which are not two strictly irreconcilable positions. But assuming that thought is structured as a sequence of ideas or images is far from the assumption that thought is structured as language.

From the studies of Noam Chomsky[17] on the rapport between language and thought, the hypothesis of mental language has returned to rekindle the discussion in contemporary analytical philosophy. Despite the disappearance of mental language, we find in Thomas Hobbes in the 17th century a mental discourse theorist. Hobbes relates to this tradition that thinking is having ideas and, therefore, his mental discourse does not have a grammatical structure.

For Hobbes, thinking is not itself discursive, that is, it does not have a deep grammatical structure because he conceives thinking in a different way from that of the logician terminists of the fourteenth century. On the one hand, the hypothesis of late scholastic mental language argued in favor of the notion that our thinking is structurally discursive, that is, structured as a language, with grammar and propositions composed by subject, predicate, and *copula*. On the other hand, Hobbes conceives thinking as having ideas, or better, as having a sequence of ideas derived from the sensations we have through the body. These two conceptions of thinking, and consequently the theories of mental discourse on which they are based, represent a paradigm shift

[15] *De Anima* (III, 7, 431a, 14-17).

[16] Normore (2009), p. 304.

[17] Chomsky, N. (2015) *Syntatic Structure*. Martino Fine Books. Reprint of 1957.

between the grammatically structured thought of medieval scholastics and Hobbes' computational thought.

Panaccio has developed a deep and recognized work about Ockham's mental language, in such a way that the main difficulty that arises when we intend to do a doctoral research on this subject is: what can we still discuss about Ockham's *oratio mentalis* that has not yet been said by Panaccio? In this spirit, the second part of our research aims to introduce Thomas Hobbes' mental discourse, which is based on calculation, to confront Ockham's mental discourse, which has a deep grammatical structure. The objective is to demonstrate that Thomas Hobbes' notion of mental discourse represents the paradigm shift from a conception of thought with a grammatical structure to the conception of computational thought, in which mental operations are considered as calculus.

In the first chapter we seek to determine the nature of Ockham's concepts. There is a conceptual difficulty that arises from the fact that Ockham has not developed an unambiguous definition of concept. Therefore, to attain an understanding of what concepts are in the theory *o*f *Venerabilis Inceptor* we begin by establishing what function a concept should play in the context in which Ockham is inserted. After that, we will address the notion of concept as universal. For this purpose, we will situate Ockham's treatment of universals in his response to the Porphyryan formulation of the medieval "problem of universals", bringing the perspective of Porphyry and of Boethius, who was responsible for transmitting the question of universals to the Middle Ages and contributed to formulate the conceptual basis of the problem.

In the second chapter we will address the notion of concepts as mental acts which is the cornerstone of Ockham's theory of knowledge. The concept defined as a mental act refers to the "mature" theory of concepts. This theory developed at the core of Ockham’s epistemology is also known as the doctrine of intuitive knowledge, and the doctrine of abstract knowledge. Therefore, we believe that in order to understand the concept as a mental act it is necessary to comprehend Ockham's epistemology entirely. Therefore, we explore mainly the intuitive knowledge and the abstract knowledge which concern respectively the formation of the singular concept and the general concept. Furthermore, we stress the role of the mental *habitus* in Ockham's theory of knowledge. For Ockham's mental ontology is composed not only of acts, but also of mental habits, so that the study of habits in our research aims to bring light to

the function that habit performs, in conjunction with the intellectual act through cognition.

In the third chapter we deal with concepts as mental signs, considered the basic unit of mental language theory. It is a known fact that Ockham has a well-structured and developed notion of mental discourse. However, we also know that he has not developed this notion out of nothing. Thus, we will discuss the mental language of Ockham while we explore its possible origins, starting from the notion of inner speech of Augustine, passing through the contribution of Ammonius, until we arrive at the mental language of Buridan, considered an ultra-nominalist mental language, when compared to that of Ockham. The relevance of studying the origins of Ockham's *oratio mentalis* is evident when we consider that the notion of a language of thought developed throughout the Middle Ages until it reached its culmination with Ockham and Buridan in the 14th century, but then disappeared in the 16th and early 17th centuries. Medieval mental language seems to have a beginning and an end, being discontinued in modernity and reappearing only in the 20th century with Jerry Fodor although without referring to the mental language of late scholastics.

In the fourth chapter we address the mental language of Thomas Hobbes, who has developed a mental discourse in the 16th century. However, Hobbes' mental model is not similar to Ockham's model of thought with a deep grammatical structure. Hobbes applies the notion of calculus to thought, which means that he considers mental operations a certain type of calculus. Our goal in this chapter is to make a comparison between Ockham's model of mental discourse which is essentially grammatical with Hobbes' mental discourse which is computational. However, the motivation of using Hobbes' theory as a structural counterpoint to Ockham’s is not to engage in a genealogical investigation searching for transformations and continuities from Ockham to Hobbes. Instead, it is intended to make a comparison between two models that have important points of comparison, such as vocabulary and the description of terms which are proper to the tradition of terminist logic to which Ockham is certainly a part of, but to which Hobbes does not entirely “belongs”. There are, likewise, several points of divergence between the two theories, which we will explore in detail. Hobbes' theory is used here to display the way the notion that the mind functions like a machine in early modernity prevailed over the notion that thought is constituted as a spoken language in Middle Ages. This paradigm shift justifies the end

of medieval mental language and marks the passage from medieval to contemporary thought.

1. CONCEPT DEFINITION: WHAT IS A CONCEPT?

One of the most traditional approaches to concepts is the notion that they are the basic units composing our thoughts and beliefs. Just as sentences can be decomposed into words, our mental contents can be broken down into concepts. The notion that concepts are the compositional unit of thought has pervaded Western philosophy for a long time. This point of view goes back to the Aristotelian notion present in *De Interpretatione* when, speaking of the "*noemata*", the philosopher affirms that:

> Just as some thoughts in the soul are neither true nor false while some are necessarily one or other, so also with spoken sounds. For falsity and truth have to do with combination and separation. Thus, names and verbs by themselves — for instance 'man' or 'white' when nothing further is added — are like thoughts that are without combination and separation; for so far, they are neither true nor false.[18]

The Stagirite passage already contains the idea that our thoughts have a complex propositional structure when they are true or false. And these units that compose the complexes (propositions) cannot be true or false if considered in isolation[19]. Therefore, concepts as the simplest units of thought[20] have no truth value in isolation. Thus, understanding concepts requires understanding how they operate in relation to their context.

The sense of concepts as the basic unit of thought grounds the theory of mental language. But what is a concept after all? There are two requirements regarding the concepts. On the one hand, a syntactic condition according to which it must be a sub-propositional and re-combinable unit, which concerns its ability to be part of a proposition and to combine with other concepts to form complexes[21]. On the other

[18] See Aristotle, *Categories and De Interpretatione*, translated and with notes by Ackrill, J.L. New York, Oxford University Press, 1963 (reprinted 2002), p. 51, 16a14-15.

[19] Cf. Panaccio, C. (2011) *Qu'est-ce qu'un concept*. Paris: J.Vrin. p. 8 -9. "Son idée ici est dèjá que nos pensées, quand elles sont vraies ou fausses, ont une structure complexe de type propositionnel et sont composées d'unités plus petites qui ne sont pas susceptibles, elles d'être vraies ou fausses lorsqu'elles sont considérées isolément".

[20] Cf. King, P. (2005). Le rôle des concepts selon Ockham. *Journal Philosophiques* , 32(2): 435–447, p. 435.

[21] Cf. Panaccio, (2011), p. 8; King (2005) p. 435.

hand, there is a semantic requirement, which concerns the ability of concepts to refer to or represent external objects. Then, we should ask: what kind of existence the concept must have to satisfy these two conditions? This question leads us to consider the nature of the concepts.

1.1. THE NATURE OF CONCEPTS

One way of illustrating the concepts is by analogy with the Greek notion of idea, which in the broad sense concerns the mental representations considered in general. However, for the purposes that we are interested in, the medieval notion of concept is slightly stricter and concerns mostly a sub-propositional unity, re-combinable with others in true or false sequences[22]. For Ockham, a "*conceptus*" is a reality in mind. Therefore, besides being an element of grammar and language, a concept is a constituent of a mental proposition.

> Although every term is (or could be) a part of a proposition, not all terms are of the same kind. […] The conceptual term is an intention or impression of the soul which signifies or co-signifies something naturally and is capable of being part of a mental proposition and of suppositing in such a proposition for the thing it signifies. Thus, these conceptual terms and the propositions composed of them are the mental words which, *according to St. Augustine in chapter 15 of De Trinitate*, belong to no language.[23]

However, what we have stated so far leads in the direction that the concept as a sign satisfies the syntactic and semantic conditions required by the concept's definition: namely, that the concepts must be a syntactic unit capable" of being in a mental proposition; and that the concepts must be a semantic unit capable of representing the objects they signify. Then, why does Ockham still maintain the notion

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[22] See Panaccio (2011), p. 10.

[23] "Sed quamvis omnis terminus pars sit propositionis, vel esse possit, non omnes termini tamen eiusdem sunt naturae [...] Terminus concetus est intentio seu passio animae aliquid naturaliter significans vel cosignificans, nata esse pars propositionis mentalis, et pro eodem nata supponere. Unde isti termini concepti et propositiones ex eis compositae sunt illa verba mentalia quae beatus Augustinus, XV De Trinitate, dicit nullius esse linguae [...]*" SL*. I, 1 [*OPh* I, 7, 10-24]. For the most part of *Summa Logica I* quotations I used with some eventual alterations the translation of Michael J. Loux: OCKHAM, W. *Ockham's Theory of Terms.* Part I of the *Summa Logicae,* Translated and introduced by Michael J. Loux. St. Augustine's Press, Indiana, 1998.

that a concept is a mental act rather than just the concept definition as a sign? We suppose that the reason for concepts not only being signs, but also mental acts is related to the ontological status of concepts in the mind, in other words, what kind of reality the concepts have in the mind.

When we talk about the nature of a concept, we are mainly looking for the ontological state of the concept as a mental representation. For we know that, as a mental sign, the concept semantically represents external objects. Among the medieval philosophers the term "concept" — along with other analog terms such as *"intellectio*" — was mostly applied to designate mental representations. We can begin by considering that concepts as mental representations are situated in the mind and if we are stricter about Ockham's vocabulary, we will say that they are situated in *singular* minds. Therefore, in order to be a mental representation, the concept must be something distinct from the mind itself, as a product of the intellect that is generated within, but distinct from it.

The Ockhamian notion is that concepts are mental signs that represent external[24] singular things. Concepts are, at the same time, independent entities of the mind, in the sense that their existence is not merely a product of the mind, since their content also depend partially on external objects. Therefore, Ockham does not sustain that concepts are purely ideal objects in the mind but real singular entities existing in singular minds. This is especially true of the mature theory in which concepts are mental acts but does not apply to the first theory of concepts as *fictum* which was abandoned by Ockham in detriment to the theory of acts.

Some medieval thinkers supported the idea that a concept functions as an intermediary between the form or essence to be apprehended from the external object. The problem with this explanation is that the concept itself is neither a mental representation nor the external object but a third entity that does not really belong to either of the other two categories. For Thomas Aquinas, the concept is a purely intelligible being somehow abstracted from the external object but has no reality of its own[25]. This notion would be something we might either call intentional objects or pure

[24] External meaning outside the mind.

[25] Aquinas abstraction theory is found mostly in Aquinas, T. (1882) *Summa Theologiae*, Iª q.85 a.1. (*Sancti Thomae Aquinatis Opera Omnia*), Roma: Leonine edition. Vols. 4-12.; Pasnau, R. (1997) *Theories of Cognition in the Later Middle Ages*. Cambridge: Cambridge University Press, 31 –124; Brower, J. E.; Brower-Toland, S. (2008) Aquinas on Mental Representation: Concepts and Intentionality

objects of thought. In this way, the concept stands as an intermediary between the external reality and the intellectual activity of the agent.

Ockham's nominalist solution to the problem of concept as a purely ideal object is to transmute the concept into the mental act. The concept is a reality in the mind: a sign that represents nothing but singular external objects. The mental sign is a mental act as well, in other words, an activity or intellectual actualization. If the concept is itself an intellectual act, then it cannot be considered a purely intellectual object and that is the reason for which concepts are mental signs and mental acts in Ockham's theory.

The notion that the concept is a mental act arises in Ockham's thought as a critique of the idea that concepts are purely intentional or intelligible objects. His theory of mental acts can be divided into two moments[26].

> In fact, most of Ockham's doctrines relating to the mind and its productions will thus receive two different versions, one presupposing the hypothesis of *ficta*, the other not.[27]

First, the deconstructive part in which he rejects the notion he held at the beginning of his career, known among scholars as *fictum* theory, according to which concepts are objects of cognitive acts; then the constructive part in which he develops the arguments for the concept as a mental act endowed with subjective reality. The theory of *fictum* and the criticism directed towards it, as well as the theory of mental acts, will be examined in the second chapter. In the following section we are going to present the context of the core notions of concept we are dealing in this research, namely mental sign, and mental act.

In: *The Philosophical Review,* Vol 117, No.2, pp. 193-243; Stump, E. (1999) The mechanisms of cognition: Ockham on Mediating Species in: Spade, P.V. *The Cambridge Companion to Ockham*; Pini, G. (2015) Two Models of Thinking. Thomas Aquinas and John Duns Scotus on Occurrent Thoughts. Fordham University Press | 2015; Hochschild, J. P. (2004) Does Mental Language Imply Mental Representationalism? The Case of Aquinas's Verbum Mentis In: *Proceedings of the Society for Medieval Logic and Metaphysics,* Volume 4, pp. 12-17

[26] To see a comparison between the theory of the concept as *fictum* and the concept as a mental act Cf. Karger, E. (1994). Théories de la pensée, de ses objets e son discours chez Guillaume Ockham. *Dialogue*. 33(03: 437 – 456. About general differences between fictum and act theory see Biard, J. (1989) *Logique et Théorie du signe au XIV^e siècle,* Paris, J. Vrin.

[27] Karger, E. (1994). Théories de la pensée, de ses objets e son discours chez Guillaume Ockham. *Dialogue*. 33(03: 437 – 456. p.438 [Our translation]

1.1.2. CONCEPTS IN CONTEXT

The semantic aspect is what endows the essential identity of concepts: the representational function. Even if we were not capable of specify how a concept exists in the mind (as an act, a sing, or even a *fictum*), as long as it refers to all the particulars it is supposed to represent, a concept satisfactorily fulfills its referential function. In other words, when I think about the concept of dog, regardless of how the nature of this state of mind is considered, if it represents all dogs and nothing but dogs, then it plays its essential representational role of concept, namely its semantic role of being a sign of external objects, in this case of all dogs.

The semantic relation between concepts and their objects occurs in two different ways, one regarding the concept as a mental act and the other regarding the concept as the mental sign. In both cases, the objects of these representations are the real singular things outside the mind. The difference concerns the way each of these concepts leads to the cognition of objects.

In the case of the concept as a sign, the relation it has with its objects is a relation of natural signification. Inspired by the Augustinian definition of *De doctrina christiana II*, ch I that a "sign is a thing that of itself makes something else besides the impression it makes on the senses come into cognition"[28] Ockham defines sign as [29]:

> In one sense sign is anything which when apprehended brings something else to mind. Here, a sign need not, as has been shown elsewhere, enable us to grasp the thing signified for the first time, but only after we have some sort of habitual knowledge of the thing.[30]

When Ockham says that the sign is that which when apprehended is capable of causing the cognition of something else, he is claiming that the sign is a medium for bringing something distinct from itself to mind. Therefore, what is known through the

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[28] Augustine. (1962) *De doctrina christiana*, Joseph Martin, ed., ("*Corpus Christianorum series Latina*," vol. 32); Turnholt: Brepols. 34, 5-7.

[29] That is merely the broad sense in which Ockham defines sign. He will also distinguish a stricter sense for the linguistic sign which we will deal with in chapter 3, section 3.1.

[30] "Uno modo pro omni illo quod apprehensum ahquid aliud facit in cognitionem venire, quamvis non faciat mentem venire in primam cognitio-nem eius, sicut alibi est ostensum, sed in actualem post habitualem eiusdem." *SL.* I, 2 [*OPh* I, 8-9, 51 -57].

cognition of a sign is not a first cognition of an object. For, in this case, the first cognition is the cognition of the sign itself that leads to the secondary cognition of the object. This secondary cognition, however, is also called reminiscent cognition, that is, the second cognition is the reminiscence of a cognition that was stored in memory, habitually known and which is re-actualized because of the cognition of the sign.

According to Boehner this is Ockham's thesis that no sign can give us a primary cognition of something[31]. The function of the sign-concept is, therefore, essentially reminiscent, for it leads us to the knowledge of something, only if we have already had in the past a first knowledge of that object. On the other hand, the concept as a mental act also naturally signifies its objects. The difference is that the mental act is a non-reminiscent representation of its objects. On the contrary, an act-concept is causally formed in the mind from an empirical contact with an object, by empirical contact we mean the vision of an object. The concept as an act refers to the first apprehension of an object, in other words, the act of incomplete apprehension that Ockham further divides into *intuitive* and *abstractive notitia*.[32]

Natural signification doctrine is intimately related to the formation of concepts, which, in turn, is connected to Ockham’s epistemology theory. The intuitive and abstractive cognition doctrine is an explanation of how we can acquire knowledge about contingent things or facts from the world. This theory is based on the premise that all knowledge originates from empirical contact with reality. It is important to keep in mind that only individuals exist in Ockham’s ontology, thus, in this case, contact with reality means contact with a singular object. For our purpose we can stablish that seeing an object is a contact. The product of the first immediate contact is called *notitia intuitiva* and it provides the source for further evident knowledge about the object in question. The *notitia intuitiva* allows the agent to affirm or deny something’s existence. Following the intuitive cognition of a given object that enables us to say: "this object exists" or “this object does not exist”, there is the abstractive cognition which, in a narrow sense, allows us to think about an object in its absence. In other words, this knowledge abstracts the existence or non-existence of the object. The term "abstraction" does not have here the sense of "universal" the term usually has in

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[31] Boehner. (1946). Ockham’s theory of signification. *Franciscan Studies*. 6(2): 143-170. p. 145.

[32] Boehner (1946), p. 146-149.

medieval philosophy. According to Ockham, universal is a mental concept, but not some universal nature abstracted from the object. The universal as an affection of the soul is a mental term able to represent the singular objects it naturally signifies.

Ockham's nominalism reflects his rejection of intermediate entities between the object in the real world and its representation in the mind. Moreover, there are no external or internal forms like *species in medio* and *species intelligibilis* respectively "to inform" the thing to the intellect.[33] Since all our knowledge must be based on an intuitive cognition, how is it possible that we can have universal representations of individual objects in our minds? The human ability to form general concepts is indisputable but without any common nature or universal *in re* serving as an object of the universal concepts they can only represent real individuals. How do they do that?

The universal concept derives from both intuitive and abstractive cognition. The two elements required to acknowledge anything are the thing itself and the intellect.

> In order to have an intuitive cognition, one does not need to posit anything besides the intellect and the cognized thing — no species at all. The proof for this is: what can take place by means of a restricted number of entities vainly takes place by means of more entities. But an intuitive cognition can take place by means of (i) the intellect and (ii) the thing seen, without there being any species.[34]

The causal effect of the object in our senses produces an intuitive sensation and, after that, the intellect[35] gives rise to an intuitive cognition, that is, a singular concept concerning that specific object. This concept forms immediately an abstractive cognition having the same object as its concurrent cause, except that in the abstractive cognition the mental representation is no longer of the original object, it refers, instead, to a general form of the object originally perceived that can represent all objects that are similar to the first one. The abstractive cognition is a concept that confusedly represent all similar objects to the one apprehended. The abstractive knowledge can

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[33] To see in more depth Ockham's critique Cf. sections 2.4.1 and 2.4.2.

[34] "[…] Ad cognitionem inuitivam habendam non oportet aliquid ponere praeter intellectum et rem cognitam, et nulam speciem penitus.Hoc probatur, quia frustra fit per plura quod potest fieri per pauciora. Sed per intellectum et rem visam, sine omni specie, potest fieri cognition intuitiva, igitur etc." *II Sent*., q. XII-XIII Oth V, 268, 2-7.

[35] For the difference between sensible and intellectual intuitive knowledge Cf. section *2. Mental acts theory*

be stored in the memory as a habitual knowledge, and it is a general concept. Hence, habitual knowledge seems to be the key to universal concepts formation. For, from a single contact with one individual object, our intellect can generate a universal concept by grouping several general concepts.

Abstractive knowledge does not refer to a characteristic that can be found in all objects. Abstractive knowledge is an abstraction of the accidental and contingent qualities of the perceived object, which, because it no longer represents this specific object as in the case of intuitive knowledge, can generally represent all objects of the same type as the object that generated this cognition.[36] For example, suppose a child perceives by the first time a blue pen on her mother's table. In the moment that the pen is perceived all the contingent characteristics such as the color of the pen and the other objects that surround it are included in the intuitive cognition of the blue pen. On the next day, without the pen in front of him, the child no longer has an intuitive cognition, but instead an abstract cognition of the pen that allows him to think about the pen without necessarily being able to say that it exists or not, or where the pen is. This abstract cognition is a general representation of pens that can serve to identify pens of other colors, that is, it is a general representation of a pen, not a characteristic that can be found in other pens (although in a rather broad way we can say it would be the "form"; some interpreters use the term "model" to explain how the general concept abstractly represents similar objects. However, because it is a term that is more applicable to *ficta* than to the concept as an act, it is not a very suitable term).

In other words, from the intuitive knowledge of a single thing, we can have an abstractive knowledge capable of representing all objects similar to the one we had direct contact with. The process of concept formation we described above occurs through a sequence of mental acts. The object causes a sensible act that originates an intuitive intellective act of apprehension that, in turn, gives rise to an abstractive act about the apprehended object. This abstractive act is the general concept that applies not only to the object that has caused the initial apprehension but to all the objects similar to it. Thus, the concept as a mental act is not only the final product, but the notion of "mental act" is present during all the chaining that leads to the universal concept in mind.

[36] To see in more details the process of abstraction Cf. Section 2.2 *Notitia Intuitiva et Notitia Abstrativa*

The notion of mental habits plays a significant role in Ockham's epistemology theory. Once an intuitive cognition is formed, it can, in turn, generate an abstractive cognition. Each of these intellectual operations is called mental acts. Mental acts have the ability to form mental habits that have the same content of the initial act. And the habits are dispositions to generate new acts similar to the initial one, but numerically distinct. So, each time we represent in our minds a content that is not new, habitual knowledge is involved.

Recently, the habit's theory is being revisited in Ockham's work and in medieval thought in general. Even though habits are discussed as part of works that deal with other topics in Ockham's philosophy, we can highlight two works entirely devoted to habits as *The psychology of habit according to William Ockham* written by Oswald Fuchs in 1950. Also, in 2019, *The Ontology, psychology and axiology of habits (Habitus) in Medieval Philosophy* was published, organized by Magaly Roques and Nicholas Faucher[37], in which we can find a fresh perspective from well-respected medieval researchers about habits in different contexts of medieval philosophy.

The cognitive habit is a central notion in Ockham's 'psychology' because in conjunction with mental acts they perform the cognition, retention, and articulation of concepts. The mental act concerns the initial formation or apprehension of a concept. While the sign concerns the reminiscence of that act. Habit is the element responsible for storing in memory an apprehended concept. After a first cognition of a concept, it is the habit that is responsible for keeping the content of the apprehended act in the mind. When a concept is already well consolidated in the mind (through a repetition of a conceptual act-habit-conceptual act) then the concept can be called a sign, because it provides us with a reminiscent knowledge, after a habitual knowledge. In this sense, we will work on the notion of *habitus* in Ockham's epistemology because we believe that its understanding is relevant both to the notion of mental act and mental sign.

Our thesis aims to investigate the relation between concepts and mental language in Ockham's work. Concept as a sign is what really fundaments the notion of mental language. However, in face of what we have presented, it seems clear to us that we cannot think of the notion of sign without presuppose the notion of mental act.

[37] Cf. Faucher, N.; Roques, M. (eds.). (2018) *The Ontology, Psychology and Axiology of Habits (Habitus) in Medieval Philosophy*, Historical-Analytical Studies on Nature, Mind and Action 7, Springer.

Equally, we cannot elaborate in the notion of mental act without considering mental habits. In other words, we cannot think of a concept sign that is not itself a secondary cognitive act. Similarly, we cannot speak of secondary cognition without supposing habitual knowledge. Thus, we justify the relevance of these notions insofar as they constitute the basis to comprehend the mental language proposed by Ockham.

1.2. OCKHAM AND THE PHILOSOPHY OF MIND

There is in second literature a tendency to compare Ockham's thought with the philosophy of the contemporary mind. We can highlight the comparison between Ockham and Fodor regarding mental language, sustained mainly by Panaccio. In this section we will present some approaches made between Ockham's mental language and the modern hypothesis of language of thought.

Can we discuss Ockham and philosophy of mind without being anachronic? Yes, if we think of philosophy of the mind as a philosophical domain and not as a Modern philosophical discipline. We assume that in Ockham's philosophy there is the notion of mind represented mainly through his theory of mental language which, in close relation to his theory of knowledge, deals with operations of the intellect that occur privately in what we can translate into modern terms as mind. Ockham did not develop reflections on the mind as Descartes did. However, the development of his mental language implicitly brings along a notion of mind that would be best described in terms of inner language, although it is presented in his *Summa Logicae* as mental language. Due to Ockham’s Aristotelian influence, what we today define as "mental content" would be described by him in terms of the soul's intentions. Nevertheless, we are not claiming that there is in his philosophy any specific concern or commitment to developing a theory that responds to the problems and questions posed by contemporary philosophy of mind. A reading of Ockham's philosophy of mind under such a paradigm would be an anachronism and one must understand his ideas in the light of the specific philosophical problems he was facing back at his time, most of which were quite distant from the themes discussed in the contemporary philosophy of mind. Be that as it may, while it cannot be said that Ockham's theory of mental language aims to fulfill the "agenda" of contemporary philosophy of mind, it can be

valuable to the contemporary debate, especially regarding the discussion about the possibility of having a language of thought that is universal to all human beings[38].

1.2.1. MENTAL LANGUAGE VERSUS LANGUAGE OF THOUGHT

Mental language permeates all of Ockham's work, but it develops mainly in *Summa Logicae* and *Quodlibetales Questions*. In its essence, mental language is composed of simple and complex intellectual acts and its articulation occurs in logical-grammatical terms. Thoughts are articulated through a language, common to all rational beings, that does not belong to any langue, a language that antecedes all linguistic convention.

Three essential elements in mental language and ordinary language help us understand their similarities and differences: grammar, term properties, and semantics. Mental language is largely composed of the same elements present in spoken languages. Although grammar is similar, not all elements in spoken language remain in mental language. Synonyms and genres, for example, are not a component of mental language, for the semantic capacity is what must be essentially preserved in it, not the ornamental dimension we find in spoken languages. The *proprietates terminorum* explored in *Summa Logicae's* book I are also present in mental language. The distinction between the multiple types of terms and their functions is indispensable both for the coherence of the system as a whole and as for the role it plays in the truth values of mental propositions.

Ockham especially seizes from the *proprietates terminorum* the function of *supposition*. The supposition's doctrine concerns the referential aspect of language. Ockham defines supposition as follows:

> Supposition is a property of a term, but only when it is in a proposition […] Supositing is said to be a sort of taking place of another. Thus, when a term stands for something in a proposition in such a way that we use the term for the thing and the term or its nominative case (if it is in an oblique case) is truly predicated of the thing (or the pronoun referring to the thing), the term supposits for that thing; or this, at least, is true when the term is taking significatively.[39]

[38] About mental language and an ideal representational system see Mikko, Y. William Ockham and mental language. In: *Representation and Objects of Thought in Medieval Philosophy*. Ashgate Publishing Group, p 101 -115.

[39] "De suppositione quae est proprietas conveniens termino sed numquam nisi in propositione [...] Dicitur aurem suppositio quase pro alio positivo, ita quod quando terminus in propositione stat pro aliquo, ita quod utimur illo termino pro aliquo de quo, sive de pronomine demonstrante ipsum, ille terminus vel

A certain term present in mental language has the potential to take the place of the particular object it signifies. The theory of supposition analyzes, above all, the way in which a term stands for something from the context of a proposition. The truth value of a given proposition will be determined by the conformity between what is being expressed by the proposition and the way it is. Thus, mental language also performs as a model of logical analysis[40].

Mental language works as semantics for spoken language. The meaning of spoken language is subordinate to mental language. Ockham distinguishes between natural signification and conventional signification. The mental sign is the natural sign of the objects it represents. While the spoken sign signifies the specific objects that are naturally signified by the related mental sign.

> I say that spoken words are signs subordinates to concepts or intentions of the soul not because in the strict sense of 'signify' they always signify the concepts of the soul primarily and properly. The point is rather that spoken words are imposed (*imponuntur*) to signify the very things that are signified by concepts of the mind, so that a concept primarily and naturally signifies something, and a spoken word signifies the same thing secondarily. [41]

Since the signification of the spoken sign depends on the signification of the mental sign to which it corresponds, spoken language plays the role of representing the objects of the world, rather than the concepts themselves. The reference, that is, the objects that a given spoken sign signifies are all individuals represented by the related concept. The name "dog" represents real and individual dogs in the world and not the concept of dog in my mind. However, the signification of the name is subordinate to the signification of the mental sign.

In mental discourse acts and signs as concepts are terms of mental language. Similarly, intuitive, and abstractive concepts are mental language terms. Acts of

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rectus illius termini si sit obliquus verificatur, supponit pro illo. Et hoc saltem verum est quando terminus supponens significative accipitur". *SL.* I, 63 [*OPh* I, 193, 1-15].

[40] See Normore, C.G. (1989) Ockham on mental language. In Smith, J.C. (ed.), *Historical Foundations of Cognitive Science*, Kluwer Academic Publishers. pp. 53-70, p. 65.

[41] "Dico autem voces esse signa subordinata conceptibus seu intentionibus animae,non quia proprie accipiendo hoc vocabulum 'signa' ipsae voces semper significent ipsos conceptus animae primo et proprie, sed quia voces imponuntur ad significandum illa eadem quae per conceptus mentis significantur, ita quod conceptus primo naturaliter significat aliquid et secundario vox significat illud idem." *SL* I, 1, [*OPh* 1, 7-8, 26-31].

intuitive cognition are singular terms, while acts of abstract cognition are general terms. As we have seen, mental terms have natural signification, and therefore both intuitive and abstract concepts naturally signify their objects.[42] It means that a simple concept (intuitive), while it is the intuitive apprehension of a certain object is able of stand for or suppositing for this object in a mental proposition. Similarly, a general concept (abstractive) is able of suppositing for the various objects that it has apprehended. A simple concept in mental language is the equivalent of a proper name or demonstrative pronoun, while a general concept would be a general or a categorematic absolute term as "man" which naturally signify all men.

However, simple intuitive and abstractive concepts are not sufficient to construct a mental language as “expressively complete” as conventional spoken language, in the sense that anything which can be expressed in any natural language could in principle be expressed in it.[43] In this sense, Ockham introduces some divisions between the types of terms that figure in mental language. Initially he distinguishes between categorematic and syncategorematic terms. Categorematic terms are those that have a definite and determined signification, that is, they have a definite referent, either naturally or by convention — for this division of terms is attributed to both mental and conventional language. This is the case with the term 'man', signifying all men, the term 'animal’ signifying all animals, the term 'whiteness' signifying all whiteness.[44]

Syncategorematic terms are those that do not have a definite and determined signification, for example 'each', 'none', 'some', 'all', etc. These terms only signify or supposit for something when combined with a categorematic term. The term 'every' by itself does not signify anything, but it acquires a significative function when it is coordinated with the term 'man', so that 'every man' supposit for all men. Therefore, a significative term is one that can make another term signify or stand for something.[45]

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[42] “Terminus conceptus est intentio seu passio animae aliquid naturaliter significans vel consignificans, nata esse pars propositionis mentalis, et pro eodem nata supponere”. *SL* I, 2 [*OPh* 1, 7, 19-21].

[43] Cf. Normore, C. (2009). The end of mental language. In: Biard, J. (ed), *Le langage mental du Moyen Âge à l’Âge Classique*, Louvain/Paris :Éditions Peeters, pp. 293-306, p. 294.

[44] “Termini categorematici finitam et certam habent significationem, sicut hoc nomen 'homo' significat omnes homines et hoc nomen 'animal’ omnia animalia, et hoc nomen 'albedo' omnes albedines”. *SL* I, 4 [*OPh* 1, 15,6-8].

[45] “Termini autem syncategorematici, cuiusmodi sunt tales 'omnis', 'nullus', 'aliquis', 'totus', 'praeter', 'tantum', 'inquantum' et huiusmodi, non habent finitam significationem et certam, nec significant aliquas res distinctas a rebus significatis per categoremata, immo sicut in algorismo cifra per se posita nihil significat, sed addita alteri figurae facit eam significare, ita syncategorema proprie loquendo nihil

Categorematic terms are divided into absolute and connotative terms. Absolute terms have primary signification and have no nominal definition. Having primary signification means that the term, taken significantly, refers in a direct way to what it signifies and can, therefore, stand or supposit for it in a proposition. Primary signification is the relation that associates a categorematic term to all objects to which it is applied. A purely absolute term is said to signify all its objects in a primary way (*in recto*) and it is predicated of each of its objects. The term 'animal' directly signifies cats, kangaroos, men, and other animals. At the same time, absolute terms have no nominal definition, for a name with a nominal definition has only one such definition. When a word has a nominal definition, the signification of that word cannot be expressed by different sentences, such that terms from one sentence signify things not in a way designated by terms from the other sentence.[46] Absolute terms signify the individuals to which they are or can be predicated, that is, the individuals by which they can stand or supposit for in a proposition.[47]

A connotative term is one that signifies one thing primarily and another thing secondarily. Connotative names have what is, in strict sense, called a nominal definition. In the nominal definition of a connotative term, it is frequently necessary to put one expression in the nominative case and another in one of the oblique cases. The term ‘white’ is an example: the term has nominal definition, one expression of which is in the nominative case and another, in one of the oblique cases. Thus, if

significat, sed magis additum alteri facit ipsum aliquid significare sive facit ipsum pro aliquo vel aliquibus modo determinato supponere vel aliud officium circa categorema exercet. Unde hoc syncategorema 'omnis' non habet aliquod certum significatum, sed additum 'homini' facit ipsum stare seu supponere actualiter sive confuse et distributive pro omnibus hominibus […]” *SL* I, 4 [*OPh* 1, 15,9-19].

[46] In distinguishing between different kinds of terms, Ockham often employs "name". Here, we take 'terms' and 'names' as synonyms with regard to the different kinds of terms.

[47] “Nomina mere absoluta sunt illa quae non significant aliquid principaliter et aliud vel idem secundario, sed quidquid significatur per illud nomen, aeque primo significatur, sicut patet de hoc nomine 'animal’ quod non significat nisi boves, asinos et homines, et sic de aliis animalibus, et non significat unum primo et aliud secundario, ita quod oporteat aliquid significari in recto et aliud in obliquo, nec in definitione exprimente quid nominis oportet ponere talia distincta in diversis casibus vel aliquod verbum adiectivum. Immo, proprie loquendo talia nomina non habent definitionem exprimentem quid nominis, quia proprie loquendo unius nominis habentis definitionem exprimentem quid nominis est una definitio explicans quid nominis, sic scilicet quod talis nominis non sunt diversae orationes exprimentes quid nominis habentes partes distinctas, quarum aliqua significat aliquid quod non eodem modo importatur per aliquam partem alterius orationis.” *SL* I, 10 [*OPh* 1, 35-36,56-20].

someone should ask for the nominal definition of ‘white’, the answer would be ‘something informed with whiteness’ or ‘something having whiteness’.[48]

> […] all relative names are connotative, because in the definition of a relative name, there are different expressions which signify different things or the same thing in different modes. The name ‘similar’ provides an example. Should one define ‘similar’, he would say, ‘that is similar which has a quality of the same sort as another thing’, or something to the same effect.[49]

An example of connotative relative terms: the term ‘white’ supposit for all things white primarily and secondarily supposit for the quality of whiteness. So also, the term 'father' supposit for all fathers primarily and secondarily supposit for the children who have a father.

Modern interpreters of Ockham are divided between those who consider his mental language to be a (logically) ideal language and those who do not. In 1970 John Trentman claimed that thought was for Ockham something like for Russell and other analytic philosophers a *logically perfect language*[50]. According to Normore, it was by following Trentman's footsteps that some philosophers began to read Ockham as the proponent of a logically perfect mental language theory.[51] The main requirement for those who advocate for a logically ideal mental discourse is that mental language (ML) must be as expressive as spoken conventional language. However, this requirement seems to conflict with elements that exist in Ockham's mental discourse. In particular with regard to the formation of syncategorematic concepts, connotative concepts, and

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[48] “Nomen autem connotativum est illud quod significat aliquid primario et aliquid secundario. Et tale nomen proprie habet definitionem exprimentem quid nominis, et frequenter oportet ponere unum illius definitionis in recto et aliud in obliquo. Sicut est de hoc nomine 'album’ nam 'album' habet definitionem exprimentem quid nominis, in qua una dictio ponitur in recto et alia in obliquo. Unde si quaeras, quid significat hoc nomen 'album', dices quod illud idem quod ista oratio tota 'aliquid informatum albedine' vel 'aliquid habens albedinem. Et patet quod una pars orationis istius ponitur in recto et alia in obliquo. Potest etiam aliquando aliquod verbum cadere in definitione exprimente quid nominis, sicut si quaeras, quid significat hoc nomen 'causa', potest dici quod idem quod haec oratio 'aliquid ad cuius esse sequitur aliud' vel 'aliquid potens producere aliud', vel aliquid huiusmodi.” *SL* I, 10 [*OPh* 1, 36-37,38-51].

[49] “Huiusmodi etiam nomina sunt omnia nomina relativa, quia semper in sua definitione ponuntur diversa idem diversis modis, vel distincta, significantia, sicut patet de hoc nomine ‘simile’. Si enim definiatur 'simile', debet dici sic 'simile est aliquid habens qualitatem talem qualem habet aliud', vel aliquo modo consimili debet definiri. Unde de exemplis non est magna cura.” *SL* I, 10 [*OPh* 1, 37,59-64].

[50] Trentman, J. (1970), Ockham on mental. *Mind, 79*(316), pp. 586–590.

[51] Normore, C. (2017), Likeness stories, In: Pelletier, J.; Roques, M. (eds.) *The language of thought in Late Medieval Philosophy*. Switzerland: Springer, pp.81-94.

negative concepts. Ockham himself was aware of the difficulties of these terms since when he still held the *fictum* theory. On the occasion of his *Ordinatio I* he wrote:

> The fourth problem has to do with syncategorematic, connotative, and negative concepts: where can they be taken or abstracted from? For it is precisely from things, then it is not seen how they can be distinguished from other concepts. But it is clear that there are such concepts, since to every spoke proposition, there can correspond a similar one in the mind, and therefore to this proposition 'every man is an animal' and this one 'some man is an animal', there correspond distinct propositions in the mind; something therefore corresponds to the quantifier in one proposition which is not found in the other.[52]

Ockham knew that syncategorematic, connotative, and negative concepts could not be formed through abstractive cognition as well as absolute categorematic concepts. But since their existence was undeniable, it was necessary to explain how they were generated. Yet, one of the principles of mental language is that every proposition uttered in spoken language has a corresponding proposition previously formed in mental language. The difficulty of explaining how we form these concepts, especially in Ockham's mature theory of acts, led Ockham's modern interpreters to an exhaustive attempt to explain the formation of such concepts.

In 1975, Paul Spade argued that in Ockham's mental language there are no simple connotative terms.[53] According to him, all simple connotative terms can be replaced by nominal definitions, until only absolute terms remain in mental language. This notion was refuted by Panaccio in 2004 when he explained that simple connotative terms are not excluded from mental language and cannot be fully replaced by nominal definitions.[54] Panaccio tried to prove that simple connotative terms are not only part of Ockham's mental language but also that they are formed in the mind, for "no simple connotative concept , according to it, is naturally produced by the mind on the direct basis of intuition".[55] Panaccio explains that the formation of simple

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[52] "Quartum dubium est de conceptibus syncategorematicis et connotativis et negativis: unde possunt sumi vel abstrahi? Quia si praecise a rebus, non videtur quomodo possunt distingui ab aliis conceptibus. Quod autem sint tales conceptus patet, quia omni propositioni in voce potest correspondere consimilis in mente, igitur isti propositioni 'omnis homo est animal' et isti 'aliquis homo est animal' correspondent distinctae proposiitiones in mente; igitur aliquid correspondet signo in uma propositione quod non correspondet in alia". *Ord* I, dist. 2, q. 8, *OTh* II, p. 282.

[53] Spade, P.V. (1975), Ockham's distinctions between absolute and connotative terms, *Vivarium*, 13, 55-76.

[54] Panaccio, (2004), p. 63-87.

[55] Panaccio, 2004, p. 106.

connotative concepts occurs mostly in the same way that absolute concepts are formed. He evokes the following passage from the Prologue of the *Ordinatio*.

> Similarly, an intuitive cognition is such that when some things [please note the plural here] are cognized, one of which inheres in the other, or is distant from the other or is standing in some other particular relation with the other, then straightaway in virtue of this *incomplex cognition* [note the singular] of those things [note the plural], it is known whether the thing inheres or not in the other, or is distant or not, and so on for other contingent truths ... For example, if Socrates really is white, then this cognition of Socrates and of his whiteness in virtue of which it can be evidently known that Socrates is white, is said to be an intuitive cognition (Brackets are Panaccio's).[56]

According to Panaccio "this strongly suggests that the simple intuitive grasping of two objects suffices to bring about the formation of the simple connotative concept 'white'".[57] When we grasp two objects, before any composition or division, at least one simple connotative concept is naturally formed in the intellect.

> [...] a relative concept is caused by both extremes, posited simultaneously, prior to composition and division ... Therefore, the order is as follows: When two whiteness's are seen, then, first, the specific concept of a whiteness is caused in the intellect; second, the concept of a similarity is naturally caused through the mediation of that specific concept, and, I claim, this happens immediately, from the whiteness's themselves, or from the cognitions of them; and only after that, at least in the order or nature, is a proposition.[58]

The formation of simple connotative concepts always presupposes that of at least one absolute concept, which does not imply that absolute concepts are part of simple connotative concepts.[59] He continues:

> It follows, in particular, that the possession of a simple connotative concept always implies the possession of a quidditative concept which is such that the connotative concept in question is predicable of it in a true affirmative sentence, just as Ockham stated in a previously quoted passage. Suppose, for example, that I have acquired the simple connotative concept 'black' by meeting with a black dog; then automatically I will have acquired on the same occasion — if I did not already have it — the concept 'dog'; this

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[56]: "Similiter, notitia intuitiva est talis quod quando aliquae res cognoscuntur quarum una inhaeret alteri vel una distat loco ab altera vel alio modo se habet ad alteram, statim virtute illius notitiae incomplexae illarum rerum scitur si res inhaeret vel non inhaeret, si distat vel non distat, et sic de aliis veritatibus contingentibus ... Sicut si Sortes in rei veritate sit albus, illa notitia Sortis et albedinis virtute cuius potest evidenter cognosci quod Sortes est albus, dicitur notitia intuitiva". *Ord*. I, *Prol*., q. 1, [*OTh* I, p. 31, 17-25] In: Panaccio (2004) p.107

[57] Panaccio, (2004), p. 107.

[58] "[…] nam conceptus relativus causatur ab utroque extremo simul positis ante compositionem et divisionem… Unde iste est ordo, quod visis duabus albedinibus, primo causatur in intellectu conceptus specificus albedinis; secundo, naturaliter mediante illo conceptu specifico causatur conceptus similitudinis, et hoc dico immediate ab ipsis albedinibus vel a cognitionibus earum; et post saltem ordine naturae formatur propositio". *Quodl.* IV, q 17, Oth IX, p. 386. (transl. Freddoso and Kelley 1991, p. 317-18).

[59] Panaccio, (2004), p. 108.

> concept is such, in this situation, that the sentence 'a dog is black' is true. The simple connotative concept 'black', then, will be anchored, so to say, through the quidditative concept of 'dog'.[60]

Therefore, Panaccio states that connotative concepts are produced by the mind by simultaneously grasping a plurality of individual things. In this process absolute concepts are needed because "each one of the individual things involved triggers the formation of at least one absolute concept"[61]. Panaccio's interpretation seems to have convinced Nomore to change his mind[62], even though the price to be paid for admitting simple connotative concepts into the mental is "either to admit some synonymous expressions into mental language or to deny that simple connotative terms were synonymous with their definitions".[63]It is possible that syncategorematic terms are the only terms not naturally significative in mental language. Ockham classifies them as co-significative, but his failure to explain how we acquire the syncategorematic terms obscures his theory of mental discourse. When he still held the *fictum* theory Ockham explained how we form syncategorematic concepts:

> To the fourth problem, I say syncategorematic, connotative, and negative concepts are not concepts abstracted from things are capable by their very nature to supposit for things or to signify them in some special way with respect to other concepts. And for this reason, I say that there are no syncategorematic, or connotative, or negative concepts, except by mere institution [...] Such concepts, however, can be imposed or they can be abstracted from words, and this is what happens in fact either always or generally. Strictly speaking, to the spoken word 'homo' there applies such grammatical modes as the singular, the nominative case, the masculine gender, and so on, while to the spoken word 'hominis', there applies other grammatical modes. Similarly, the spoken word 'homo' signifies a thing determinately When taken by itself, while some other term. And the same holds for spoken word 'non' and for words such as 'per se' and 'in quantum', 'si' and other syncategorematic terms. From words which thus signify, then, the intellect abstracts common concepts which can be predicated of them, and it imposes these concepts at signifying the same thing as these external spoken words signify. And in the same way, it forms with such concepts propositions which are similar to the spoken propositions and have similar properties. And just as it can institute such concepts to signify in this way, it can institute the concepts that are abstracted from things to signify in the same grammatical modes as spoken words do. In order to avoid equivocity, however, this is more convenient whit the concepts that are abstracted from the spoken words, for these concepts are distinct among themselves just as spoken words are, which is not the case for other concepts. And in this way any proposition can be distinguished, for example the proposition that corresponds to *'homo est homines*', or to '*homo est homini'*, and so on.[64]

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[60] Panaccio, (2004), p. 108.

[61] Cf. Panaccio, (2004), p.109.

[62] Normore, C. (2017).

[63] Normore, C. (2017), p. 87.

[64] "Ad quartum dubium diceret quod conceptus syncategorematici et connotativi et negativi non sunt conceptus abstracti a rebus ex sua natura supponents pro rebus vel ipsas modo distincto ab aliis

Ockham's explanation, surprising as it is, is that syncategorematic concepts are internalized through conventional language. It entails that they are conventionally instituted by imposition. Therefore, there are no natural syncategorematic concepts. The consequence is that if mental language should serve as semantics for conventional spoken language, how does one explain the fact that mental language has no "natural" logical operators? Is this equivalent of saying that the human mind is not naturally capable of performing “logical operations”?

Some scholars such as Adams 1987[65] and Normore 1990[66] have been astonished by Ockham's explanation of how the syncategorematic terms are formed in the theory of *fictum*. Since Ockham does not explain how they are formed in the theory of acts, one can assume that in his mature theory of concepts there are no natural syncategorematic concepts. However, Panaccio in 2004 tried to avoid the conclusion that mental language is devoid of logical operators by claiming that in the theory of acts the syncategorematic concepts are innate, even without an explanation of how this would work from Ockham.[67]

1.2.2. PHILOSOPHY OF MIND

coceptibus significantes. Et ideo dicerent quod nullus conceptus syncategorematicus nec connotativus nec negativus, nisi tantum ex instituitione… Possunt autem tales concetus imponi vel conceptus abstrahi a vocibus, et ita fit de facto vel semper vel communiter. Verbi gratia, istis voci ‘homo’ competit talis modus grammaticalis quod est singularis numeri, nominativi casus, masculini generis, et sic de aliis; et istis voci ‘hominis’ competunt alii modi gramaticales. Similiter, isti voci ‘homo’competit quod significet determinate rem per se; isti voci ‘omnis’ non sic competit, sed quod significet tantum cum alio. Similiter est de ista voce ‘non’ et de istis ‘per se’ et ‘in quantum’, ‘si’, et huiusmodi syncategorematicis. Tunc ab istis vocibus sic significantibus abstrahit intellectus conceptus communes praedicabiles de eis, et imponit istos conceptus ad significandum illa eadem quae significant ipsae voces extra. Et eodem modo et de talibus format propositiones consimiles et habentes consimiles proprietates quales habent propositiones prolatae. Et sicut potest instituere tales conceptus ad sic significandum; ita potest instituere ipsos conceptus abstractos a rebus ad significandum sub eisdem modis grammaticalibus sub quibus significant ipsae voces. Hoc tamen fit convenientius per conceptus abstractos a vocibus propter aequivocationem vitandam, quia illi conceptus sunt distincti sicut ipase voces, quamvis non omnes sint distinctae; conceptus autem alii non sunt distincti. Et ita quaelibet talis propositio esset distinguenda, puta propositio correspondens tali propositioni ‘homo est homines’, ‘homo est homini’, et sic de aliis.” *Ord* I, dist. 2, q. 8, [OTh II, p. 285-6, 11-22].

[65] Adams, M.M. (1987) *William Ockham.* Vol 2. Notre Dame: University of Notre Dame Press, p. 301.

[66] Normore, C.G. (1990). Ockham on mental language. In: Smith, J.C. (ed.), *Historical Foundations of Cognitive Science*, Kluwer Academic Publishers. pp. 53-70.

[67] Panaccio (2004), p. 145-163.

The central problem of the philosophy of mind can be summarized in the difficulty of establishing the relation between mind and body. However, from the semantic point of view, the problem questions how the connection between concepts and the objects of the extramental world is expressed through mental states. What is the relation between words and objects? How can the description of mental states be meaningful through common language if mental states have private content? What is precisely the characteristic that makes subjective mental states communicable about the outside world? Is there something like a language of thought that allows the content of one's mental states about the outside world to be somehow accessible to one's interlocutors? In this regard, Dennet made the following formulation about the existence of a language of thought:

> We and other creatures exhibit intelligent behavior, and since the regular production of such behavior requires thought, and since thought requires representation, and since nothing can represent except within a system, we must be endowed with and utilize a system of internal representation having its own "grammar" and "vocabulary," which we might call the language of thought.[68]

The first modern thesis about language of thought is attributed to Jerry Fodor entitled *The Language of Thought*[69]. The notion of language of thought was developed through a comparison with computer programming. The language the user adopts with the machine is an input/output language that will be encoded and translated into a language that will be accessible to other users, the machine language, the language of the computer operating system. Analogous to machine language, conventional language would be in Fodor's view, an input/output language that would allow human beings to communicate the innate universal language of all human beings. And this innate universal language would be the language of thought. Fodor advocated for the existence of this language based on the idea that the computational process consists of a sort of symbol manipulation that occurs in an orderly manner and inferred from this that human cognitive processes also constitute an ordered manipulation of symbols. The orderly manipulation of symbols that would be the language of thought

[68] See Dennet, D. (1981) *Brainstorms: Philosophical Essays on Mind and Psychology.* MIT Press. p. 90.

[69] See Fodor, J. A. (1981) *The language of thought*. Mass.: Cambridge.

has an innate character so that the acquisition of any conventional language presupposes the human ability to orderly manipulate symbols, what he considers to be the "intrinsic quality of the cognitive process"[70]. However, mental language is not restricted to an innate structure that underlies the possibility of symbol acquisition and manipulation. Besides, anyone wishing to defend the theory of mental language needs to explain how the interaction between language symbols and the objects of the outside world arises.

The approximation between Ockham's thought and Fodor's has been recognized through the authority of Panaccio, who argued in 1999 that the *oratio mentalis* of *Venerabilis Inceptor* has something in common with the language of Fodor's thought[71]. Panaccio suggests that Ockham's mental language is an anticipation of Fodor's language of thought. In 2004, he highlights mainly the compositional aspect that the concepts develop in both Fodor and Ockham. The defense here that there is conceptual atomism and compositionalism present both in Fodor and Ockham's theories.[72] In a text from 2011 intended to be a general presentation of the concepts, Panaccio uses the teleosemantic vocabulary to analyze the functions of concepts that can be applied both in the theories of Fodor and Ockham.[73] Teleosemantic or biosemantics theories attempt to explain semantics based on the notion of natural functions. Thus, teleosemantic or teleological theories of mental content argue that the contents of mental representations depend on teleological functions.[74] In other words, a certain mental content or concept is explained on the basis of the function that this concept or mental representation has in one's life. To explain the semantic relation between concepts and their objects, Panaccio distinguished between lexical and natural concepts. Panaccio's account is a comparison of Ockham's mental language with Fodor's language of thought. According to Fodor's theory, it is necessary to have some innate concepts in order to learn or

[70] Cf. D'arc, A. F. (2010) *A linguagem mental de Guilherme de Ockham*: Contribuição frente ao externalismo contemporâneo. p. 163-164.

[71] Panaccio (1999), p. 18.

[72] Panaccio (2004), p. 55

[73] Panaccio (2011).

[74] Teleosemantics are explained in more detail in the following page.

form new concepts. The innate concepts would be the natural concepts while the learned ones would be the lexical ones. Lexical concepts are those whose semantic value is determined by the meaning of the linguistic units to which they are associated. They are one of the key pieces of the historical debate in philosophy about the connection between language and thought. Most of our beliefs, desires, and reflections are made or at least expressed through the language, and there are certain concepts whose meanings we only know through the conventions of the linguistic community in which we are inserted in. Take the example of "osteoporosis", whose meaning was conceived by associating the word with the disease. The example in question serves mainly the purpose of showing that although we do not know how to diagnose it or know all of its symptoms, we still have a mental representation of "osteoporosis" that refers to a disease[75]. Although we have never had any direct contact with the manifestation or even with enough theoretical knowledge about this particular disease, we can understand and communicate what is meant by saying "osteoporosis" because we have enough knowledge and acknowledgment of this word through the English language convention. In short, lexical concepts are those we acquire through knowledge of a language. In this case, knowing the meaning of a word, in general, is enough for us to have an idea or a mental picture of what a concept represents, even if we do not have the precise domain of its full extension.

Knowing a language is enough for us to have certain conceptual representations, at least as far as lexical concepts are concerned. However, the process of acquisition/learning lexical concepts must presuppose mastery of previous concepts other than linguistic concepts themselves. Otherwise, we would have linguistic concepts before learning the language, which seems counterintuitive. Thus, it is reasonable to think that not all our concepts are necessarily tied to language because even before we can express ourselves through words, it is already possible to have mental representations about the world.

> Human beings can probably forge themselves without using the language general categories of colors such as red or blue, animal or plant species such as dogs or trees, and even certain everyday artefacts such as automobiles, tables or houses.[76]

[75] The example is Panaccio's (2011).

[76] See Panaccio (2011). p. 63-64. [Our translation]

Thus, it can be presumed the existence of some kind of independent concept prior to language that, at the same time, can operate as the basis for the process of language acquisition. These are the so-called natural concepts. If we argue for the existence of lexical concepts on the assumption that our thoughts are structured through language, the notion of natural concepts comes from the assumption that even before we have a language, we already have mental representations as well as animals or babies who cannot speak yet. Since lexical concepts depend on our mastery of a given language, the question then arises: how do the relation between the natural concepts and their extension occur in our minds? Or rather, how do we establish in our minds the extent of natural concepts?

In the contemporary discussion of the philosophy of mind, the teleosemantics theory has emerged as a way of explaining the relation between the representational content of certain mental states and the natural function that each representation has in the agent's mental life[77]. The way in which this function is determined divides opinions, the two principal ones being the systemic and the evolutionary approach[78]. According to the systemic notion, the function of a given representation depends on the system in which it is inserted. The evolutionary approach, in turn, argues that the function of a representation is established from a natural selection that is based on the utility of representation in the survival of the agent through the evolutionary path. Both positions are based on a biological function model. In the case of the systemic approach, just as the function of an organ is determined by the organism in which it is inserted, so in the evolutionary approach, the functions of a particular organ that led a species to develop more satisfactorily are preserved. Transposing the biological vocabulary into the philosophy of mind, in the systemic approach the function of a mental representation depends on the system in which it is inserted, and its extension will take into account the proper functioning of the thinking organism to which it belongs. In the evolutionary approach, however, the function of a representation is determined by the abilities that allowed it to perpetuate itself in evolution from its ancestors. That is, if a particular person has a certain mental representation, it is

[77] About teleosemantics see Papineau, D. (1998) *Teleosemantics and indeterminacy*. London. p. 2.

[78] Concerning the systematic approach see Cummins, R. (1980) Functional Analysis In: Block, N. (org.), *Readings in Philosophy of Psychology*, vol I, Cambridge (Mass.), Harvard UP, p. 185-190.

because its function was sufficiently successful for her ancestors, in a way that it remained throughout evolution and reached that person.

We are not interested in discussing the validity and details of the teleosemantic theory and its aspects[79]. For now, it is sufficient to stick to the fact that this approach proposes a naturalistic explanation of the semantic properties of mental representations based on biological functions. The function of a given representation is usually linked to behaviors and reactions one may have toward a particular object in the world. Supposing, for example, that my representation of a dog is a natural concept, its function in my mental life, and hence its practical application, is to guide my behavior and reaction when I am in front of a dog. According to Panaccio, the extension of this concept corresponds "to all the beings of the world having regard to which the concept in question has the function of guiding expectations"[80].

Panaccio's interpretation and the distinction he makes between lexical and natural concepts is quite interesting from a didactic point of view, but it serves rather to understand the Fodor model than that of Ockham. From these notions we could compare the Ockhamian notions of concepts with lexical concepts and natural concepts.

We can consider, for example, Ockham's syncategorematic concepts which can be describe in modern terms as quantifiers or logical operators, such as "all", "none", “every”, “except”, etc.[81] According to Ockham's first theory of concepts (*fictum* theory), syncategorematic concepts[82], along with connotative and negative concepts are learned by convention from spoken conventional language.[83] In this case, a comparison could be made between Ockham's absolute categorematic and syncategorematic concepts versus natural and lexical concepts. However, Ockham abandoned this explanation about the formation of syncategorematic concepts when he renounced his theory of concepts as *ficta*. Nevertheless, in his second theory of

[79] For a deeper view of teleosemantics theory see Milikan, R. (1984) *Language, Thought, and Other Biological Categories*, Cambridge (Mass.), MIT Press, 1984.

[80] See Panaccio (2011), p.70. Panaccio uses the French term *‘l’attentes’.* [Our translation]

[81] We will discuss syncategorematic and connotative concepts in Chapter 3.

[82] Syncategorematic concepts meaning syncategorematic mental terms.

[83] Cf. 2.3 The Fictum Theory in Chapter 2.

concepts he does not explain how we form syncategorematic concepts. Therefore, modern interpreters have assumed that syncategorematic concepts are left out of the mature theory of actus-concepts. Thus, the traditional interpretation of Ockham's mature theory of concepts is that there are no mental syncategorematic concepts in it because the way concept formation is explained in the mature theory cannot be applied to syncategorematic concepts.[84] However, accepting the traditional interpretation that syncategorems do not exist in Ockham's mature theory of concepts implies saying that the mature theory of concepts contains no logical operators. Consequently, the fact that Ockham does not explain the formation of syncategorematic terms in act theory does not mean that they are not part of it.

However, it is well known that Panaccio argued that there are natural syncategorematic concepts in Ockham's *actus*-theory and that they are innate.[85] We could then suppose that the syncategorematic concepts, since Panaccio claims that they are innate, would be the natural concepts of teleosemantics. Then, consequently the absolute categorematic concepts would be the lexical concepts. Nonetheless, in Ockham's mature theory the categorematic concepts are said to naturally signify their objects. Besides, there is no evidence that logical concepts (syncategorematics) play any part in the formation of categorematic concepts.

Another possible allusion would be that absolute categorematic concepts are somehow involved in the formation of connotative concepts as Panaccio also argued to explain the formation of connotative concepts in the *actus* theory. However, once again, absolute categorematic concepts are not innate concepts, on the contrary, as we will demonstrate in chapter 2, they are causally formed from interaction with the world.

Therefore, what prevents us from making this analogy is the fact that in Ockham's philosophy there is no such thing as an innate concept like Fodor's innate concepts. For Ockham, it is the mental language itself that is innate, this structure that allows the learning of a language. In the case of Fodor, the innate concepts that Panaccio calls “natural” allow the learning of lexical concepts that are linked to a certain language. According to Fodor, the acquisition or formation of lexical concepts depends

[84] For concepts formation see Chapter 2.

[85] Panaccio (2004), p. 145-163

on a factor absent in Ockham's philosophy: the possession of innate concepts. It is possible to make from Fodor's language of thought an allusion to Ockham's *oratio mentalis*, in the sense that both are theories that seek to explain how human beings think and articulate language. Nevertheless, a comparison between these two theories cannot be accurate because they are structurally different in terms of their conception of thinking. The common thing for both thinkers is that they support the hypothesis of mental language or language of thought. However, these are two distinct hypotheses of the language of thought because Ockham's mental language has a grammatical structure, while Fodor's language of thought has an essentially computational structure[86]. In other words, the thinking for Ockham is structured as a propositional language, while for Fodor as a computational language. This entails that according to Ockham thought is shaped as discourse, while according to Fodor thought is an ordered manipulation of symbols, not necessarily linguistic.

In this context the interpretation of teleosemantics might be useful to analyze Fodor's concepts, but it is not useful for Ockham's concepts because for him the "function" of the concepts is to represent the exterior objects in the mind. An approach that resembles the teleosemantic proposal was made by Peter King but concerning the notion of *habitus*.[87] King believes that habits are something like an acquired expertise or competence, not mental disposition to act or the ability to think certain thoughts. Following his reasoning, people acquire their skills by interacting with the world, and therefore he does not consider it profitable to explain such expertise in terms of mental states. He justifies that knowing how to do certain things does not depend on a previous mental apprehension that consists in knowing the truth of different propositions.[88]

> Ockham rather proposed a theory of mental activity using the bare minimum of internal machinery and introduced a new way of talking about our competence to interact with the world, i.e., through forms of acquired expertise (*habitus*). [...] Ockham can speak directly about our abilities to evolve in the world without being tempted to give reductive explanations. Moreover, Ockham's discourse on "*habitus*" (skills) is usually expressed in

[86] As far as Fodor is concerned, the term "computational" has the modern sense used to refer to a computer. Further, when it comes to Thomas Hobbes the term "computational" refers to calculus or reasoning.

[87] King, P. (2005). Le rôle des concepts selon Ockham. *Journal Philosophiques*, 32 (2): 435–447.

[88] King (2005) p. 444-445.

terms of the ability to do things, which involves recognizing and identifying individual elements or kinds of elements.[89]

King justifies his interpretation by saying that Ockham's consideration of universals is that human beings learn to evolve in the world by separating things into groups of things that are “more or less alike”, according to the kind of experience each person has had.[90] It is rather something that most humans do in an early state of cognitive development, almost exactly the same way.

He states that "from Ockham's point of view having a concept is nothing more than being competent to evolve in the world under a certain aspect"[91]. And he also added that “Ockham states that universal concepts are nothing more than sets of skills to bring things together, what we do"[92]. This is an anti-mentalist reading of Ockham's philosophy, in which he is said to hold a sort of anti-representationalism.[93] King is refuting precisely Panaccio's notion that maximal similarity can account for universal concepts. For him, Ockham's purpose was to make a pragmatic philosophy, at least in the field of logic. In this regard, accepting this pragmatism of habits as a competence would help us understand why, in King's view, Ockham's theory of universals is, in fact, a non-theory in which attention is lacking to small details of nominalism. In other words, King seems to argue that interpreting concepts and habits as an "engagement in the world" or as competent skills is easier than trying to elaborate the causal mechanisms that leads to the cognition of the universal concept.

The problem of this interpretation is that it goes beyond Ockham's textual basis and denies two theories that are actually advocated by Ockham: mental language and its priority over spoken language, and Ockham's account of universals. King seeks to justify that Ockham claimed that logic — in which mental language is developed — is a strictly practical science. However, this is not the equivalent of saying that all of Ockham's logical work should be interpreted pragmatically, but rather that logic is a practical science as opposed to the purely speculative sciences.

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[89].King (2005), p. 445.

[90] A similar view can be found in King, P. (2005)a, Two concepts of experience, In: *Medieval philosophy and theology*. Published online by Cambridge University Press.

[91] King (2005) p. 446.

[92] King (2005) p. 446.

[93] King (2005) p. 442.

Our purpose in bringing the contemporary interpretation of concepts serves didactically to explain what Ockham intends concepts to be. We believe that to situate concepts and mental habits in a pragmatic reading is to push too far the limits of the function Ockham attributes to concepts, namely their semantic and syntactic functions. Concepts have a representational role as mental realities that is undeniable. Therefore, an interpretation that seeks to suppress this aspect is eventually outdated. The intention of our work is to account for the psychological mechanisms that lead to the formation of concepts and to understand how these concepts function in mental language without pushing Ockham beyond the limits of his theory.

In the following section the aspects of Ockham's account of universal will be briefly examined.

1.3. UNIVERSAL

One of Ockham's main philosophical motivations is his ontological concern. In this section we will discuss Ockham's position on universals and briefly present its background as it supports an understanding of the ontological dimension of concepts.

There are two main ways of approaching the problem of universals, one concerns the exposition of the problem itself and the other refers to the chronological reconstruction of the debate through the history of philosophy. In order to elucidate our view, we will expose both forms. Starting with the problem approach, we assume there is a red rose and a red apple as well. Is the red that exists in both objects the same red instantiated in two distinct things, or are they two particular reds proper to each thing?[94] From this illustration, arise the questions about the universal: is it a reality in itself prior to material things or is it just a particular quality inherent to a particular object? The biconditional seems to reduce universality to a question of whether the universal exists or not.

The other way to approach the problem, the historical approach, poses some more complex questions. The medieval discussion of universals favored mainly the metaphysical aspect of how universals exist, that is, their ontological status. Secondly,

[94] The example of red apples and red roses is inspired by Spade, P. V. (2002) *Thoughts, words and things*. An introduction to Late Medieval Logic and Semantic Theory. p. 258

the epistemological aspect also incited disputes: how do we have access to the universal? The answer set to these questions became known as the quarrel of the universals. To have an account of Ockham's notion of the universal and, especially, his critique of universal theories, one must look at the problem from the historical perspective. In this section, we will reconstruct the central problem of universals in the Middle Ages from the formulation of Porphyry and Boethius dating back to Aristotle's interpretation.

The canonical formulation of the problem of universals in the Middle Ages questioned whether universals were realities in themselves or concepts. If they are realities, are they corporeal or incorporeal, and in the latter case are they attached or apart from sensible things? This set of questions, posed by Porphyry at the time of his commentary on Aristotle's *Categories*, guided the main philosophical currents of the quarrel of the universals. We know that William of Ockham adopts what we will call moderate nominalism. He denies the reality of universals and considers them as concepts. From this ontological position, his epistemology is built as an effort to explain how our intellect comes to universal concepts from the contact with the material world in which only particulars are admitted. The major difficulty consists neither in the denial of universals as *res* nor in the ontological reduction to mere individual realities. The sensible point of his cognitive theory is to explain universalization without appealing to any mediating entity between object and intellect. Ockham develops his notion of concepts mainly when he develops the theory of intuitive knowledge and abstract knowledge. At the time, the concepts are defined as cognitive acts. Our aim in this section is to investigate whether Ockham's theory of concepts satisfactorily responds to the problem of universals.

The starting point of the quarrel of the universals in the medieval period is the *Isagoge* of Porphyry. In this work Porphyry introduces the doctrine of Aristotelian Categories and casts a question in which he seeks not to take part, emphasizing the interpretative difficulty of genera and species in Aristotle's Categories.

1.3.1. PORPHYRY

Porphyry considered some prior knowledge necessary before entering into the study of Aristotle's Categories. The *Isagoge* was written between 268 AD and 270 AD

as an introduction to the Categories and deals with the five voices: gender, species, difference, proper, and accident. It is in *Isagoge* that one finds the formulation of questions about genera and species that gave rise to the canonical formulation of the problem of universals in the medieval period.

Porphyry's doubt about the nature of genera and species that gave rise to the formulation of the universals problem lies at the beginning of *Isagoge*. Thus, the ambiguity about the nature of genera and species is presented before the definition of the five voices. Porphyry expresses his doubt as follows:

> First of all, regarding genera and species, about the question of knowing
> (1) whether they are subsistent realities in themselves or
> (1.1) consist only of mere mental concepts or, assuming they are subsistent realities,
> (2) if they are corporeal or (2.2) incorporeal, and in the latter case if
> (3) are separate or (3.3) if they exist in sensible things [...].[95]

The doctrine of the five voices presented in *Isagoge* does not constitute itself alone the problem of universals but in relation to the problematic of *Categories*. Although its instrumentality does not penetrate the depth of the problem of what is the nature of the categories — because Porphyry refuses to delve into the question — we will find synthesized in his *Isagoge* the statements that gave rise to the currents of realism, conceptualism, and nominalism, which are the substance of the medieval philosophical discussion about universals. Therefore, the work has undeniable historical importance, for it is considered the starting point of what was called the "Quarrel of the Universals". We expose the relevance of *Isagoge* in the tradition discussing the problem of universals because it is a work that formulates the problem as we know it in the philosophical tradition. Our access to *Isagoge* was through the Latin translation and commentary of Boethius, who received not only the merit of a translator but was also the first medieval thinker to demonstrate an interest in solving the problem that Porphyry left open. Then, we shall examine Boethius' position concerning the universals.

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[95] “Mox de generibus et speciebus illud quidem sive subsistunt sive in solis nudis purisque intellectibus posita sunt sive subsistentia corporalia sunt an incorporalia, et utrum separata an in sensibilius et circa ea constantia, dicere recusabo. Altissimum enim est huismodi negotium et maioris egens inquisitionis. » Porphyry (1853), Introduction (or *Isagoge*) to the logical Categories of Aristotle, Translated by Octavius Freire Owen, M. A. of Christ Church, Oxford. Rector of Burstow, Surrey; and Domestic Chaplain to the Duke of Portland, vol. 2. pp.609-633.

1.3.2 THE PROBLEM OF UNIVERSALS IN BOETHIUS

Boethius was the first medieval thinker who endeavored to solve the problem about the nature of universals posed by Porphyry in the *Isagoge*[96]. He is considered one of the most popular medieval thinkers and translated to Latin the writings of Plato and Aristotle, aiming to demonstrate that both philosophers agreed in essence[97]. Due to the translations of the Hellenic period's texts, Boethius takes credit for transmitting the ancient culture to the Middle Ages. However, he was not a neutral translator who merely translated the texts, since according to Santos "it is plausible to say that the classical tradition benefited from his work of translator, interpreter and commentator new and original meanings"[98]. Thus, it is through the translation of Boethius that we know *Isagoge* and, consequently, the medieval problem of universals. However, at the same time, his translation already contains an interpretation from Boethius. By translating *Isagoge* to Latin, Boethius formulates the problem of universals somewhat based on the original formulation:

> With regard to genera and species, Porphyry says, I will abstain when deciding,
> (1) whether they subsist or are placed solely on pure and naked intellects, and if they subsist (2), if they are corporeal or incorporeal and (3) if they are separated from or placed in the sensible ones and about these positions because this work is quite arduous and supposes a long research [99].

[96] There is an extensive bibliography about the quarrel of universals. For instance, Cf. Porphyre. (1998), *Isagoge*, texte grec et latin, traduction par A. de Libera et A.-Ph. Segonds. Introduction et notes par A. de Libera. Paris, J. Vrin; De Libera, A. (1996) *La querelle des universaux*: de Platon à la fin du Moyen Age. Paris, Éditions du Seuil,

[97] Cf. Kneale, W., Kneale, M. (1991) *O desenvolvimento da lógica*. 2 ed. Lisboa Fundação Caloust Gulbenkian, p. 181

[98] Cf. Santos (2002) p. 3

[99] "Mox, inquit, de generibus ac speciebus illud quidem sive subsistunt sive in solis nudisque intellectibus posita sunt sive subsistentia corporalia sunt an incorporalia et utrum separata a sensibilibus na in sensibilibus posita et circa ea constantia, dicere recusabo. Altissimum enim est huiusmodi negotium maioris egens inquisitionis" Boethius (1906) *Isagogen Porphurii comementa.* Ed. Samuel Brandt ["Corpus Scriptorum Ecclesiasticorum Latinorum, vol. 48.1]. Vienna, F. Tempsky, p.19

According to Boethius, the first question seeks to know whether what the mind comprehends "is constituted in the very essence of things [and therefore can be] conceived by the intellect" or "if it does not exist and an empty imagination describes it".[100] In short, he questions whether the understanding of genera and species derives from things that exist from which we get a true understanding or from things that do not exist from which we are mistaken when we form an understanding "through empty concepts of the mind"[101].

In Boethius' work, the inquiry into the nature of the universal seems to have a perspective that mainly considers the epistemological implications of the problem. For if we establish that our understanding of genera and species is true and comes from things that exist, we are assuming that genera and species exist. Another difficulty arises concerning the existence of universals in addition to the initial one. Since "everything that exists is necessarily corporeal or incorporeal"[102], then genera and species must be corporeal or incorporeal as well. And yet, "they subsist in relation to bodies or could be incorporeal without any relation to bodies"[103].

The problem of the ontological status of genera and species has been summarized by Porphyry as follows: genera and species either exist and subsist on their own or are formed by the intellect and exist only in thought. Boethius answers the first question — whether (*genera and species*) subsist or are placed solely on pure and naked intellects — by stating that genera and species cannot exist (*as substance*). According to him, "everything that is common to many things at the same time cannot be one thing", so that "it cannot happen that genus is presently and entirely whole in many things and continues to be numerically one"[104].

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[100] "Quarum prima est huiusmodi. Omne quod intellegit animus aut id quod est in rerum natura constitutum intellectu concipit et sibimet ratione describit aut id quod non est uacua sibi imaginatione depingit. Ergo intellectus generis et caeterorum cuiusmodi sit quaeritur -- utrumne ita intellegamus species et genera ut ea quae sunt et ex quibus verum capimus intellectum, an nosmet ipsi nos ludimus cum ea quae non sunt animi nobis cassa cogitatione formamus". Boethius. (1906) p. 20.

[101] *Ibid*, p. 20

[102] "Nam quoniam omne quod est aut corporeum aut incorporeum esse necesse est, genus et species in aliquo horum esse oportebit." Boethius. (1906).P. 20.

[103] Santos (2002) P.16

[104] Boethius. (1906).P. 22.

Boethius' conception that the universal does not exist as a substance presents itself as a critique of the conception of the universal as one. To Porphyry's second question he answers that genera and species cannot be situated/posited only in the intellect, for "every intellection comes from something which is brought before it from the thing apprehended (...)"[105], so that "(...)one cannot have any act of intellection without an object".[106] If genera and species were only in the intellect, they could not be the object the intellect requires to realize the intellection. Thus, he concludes "things are not placed only in the intellect but also in the nature of things".[107]The definition of genera and species that Boethius seeks must meet the requirements of being in reality without being substance and being in the intellect without being mere empty concepts. In order to solve these difficulties, Boethius resorts to Alexander of Aphrodisias[108] and states that "every intellectual act that comes through an object, if same object not being really disposed, should be seen as false or empty".[109] For the mind has the faculty of "uniting things apart and distinguishing things together", distinguishing from what comes to it through the senses, "the incorporeal nature itself without the bodies in which it is realized".[110] That is, since the mind is able to remove the incorporeal from corporeal things to contemplate the incorporeal "as if it were the form itself"[111], it similarly detects the genera and the species of corporeal things. Even if incorporeal forms or natures are blended with bodies, it is proper to the mind to separate and examine them as only incorporeal. Through divisions, intellection eliminates aspects that exist in things to find what is true in the properties of things. Thus, we can say that genera and species do not exist separately as Plato's Forms but can be separated from bodies by thought. This separation Boethius calls abstraction. Genera and species are thought of when "a similarity can be apprehended from existing

[105] Boethius. (1906).P. 24

[106] Boethius. (1906).P. 24

[107] Boethius. (1906).P.24

[108] Cf. Boethius. (1906).P.26

[109] *Ibid*, p. 26

[110] Boethius. (1906), *Ibid*, p. 26

[111]*Ibid*, p. 27

individuals".[112]What is apprehended is a similarity and when it is "thought by the mind and contemplated with truth, it becomes a species".[113] Accordingly, the similarity of various species produces the genus:

> Genus exist in singulars, but they are thought of as universal. The species should not be considered but a thought gathered from the substantial similarity of individuals who are numerically diverse. The genus is a thought collected from species similarity. That resemblance becomes sensible when it is in individuals and becomes intelligible when in universals. So too, when it is sensible is in individuals but when it is known it becomes universal. Consequently, genera and species subsist in the sensible things and are known separately from the bodies.[114]

By explaining the essential similarity between singulars through the formal nature of individuals, Boethius formalizes that individuals having the same formal nature bear an essential similarity. This resemblance is perceived by the spirit, and it is sensible at the level of each particular reality and intelligible at the level of thought. Boethius' view concerning universals raised other questions that later served to foster medieval debate. First, is the formal nature concerned by Boethius the nature proper to each individual or the common nature that is present in each one of them? Then, from the point of view of essential similarity, what underlies the passage from sensation to thinking? In this regard, he argues that genera and species have, at the same time, uniqueness and universality. They are universal when thought of, but unique when perceived in the sensible. In fact, genera and species subsist in a way, but they are known otherwise. They are incorporeal, but in sensible things they subsist as sensibles while being known to exist by themselves and not as if they were in other beings.[115]

Boethius' solution suggests that there is a unique subject, identical, for the universal and the particular, the difference between the two being linked to the type of mental faculty which relates to the said subject: if it is about the senses, this subject is grasped as a particular, if it is about the intellect, it is grasped as a universal. It was

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[112] *Ibid*, p. 28

[113] *Ibid*, p. 28

[114] *Ibid*, p.20

[115] Cf. Boethius. (1906). p. 29

Boethius' solution to Porphyry's problem that boosted the "quarrel of universals" in the Middle Ages.

When Porphyry asks, in respect of genera and species, whether they are subsistent realities in themselves or whether they consist only of simple mental concepts, he is referring to the theme of an initial debate between Plato and Aristotle: whether genera and species really exist as such "Separate Forms" or if they exist only in the spirit. The hypothesis that genera and species are subsistent realities refers to the Platonic theory of Ideas, perfect models of sensible things that are the imperfect and unrealized reflection of things that are like a deficient mode of excellence of their nature, models the soul has contemplated in an earlier life before placing itself in the world of bodies, and to which it returns by anamnesis or reminiscence[116]. The hypothesis that genera and species are mere mental concepts expresses the Aristotelian thesis that the universal is a concept abstracted from things in the order of being extracted from the sensible things by a process of abstractive induction.

From the confrontation of Aristotelian and Platonic doctrines about the universal arise the interpretative currents of the quarrel of the universals in the Middle Ages. Medieval thinkers were divided into realists and nominalists.[117] Exaggerated realism rests on Plato's doctrine of Intelligible Forms. Moderate realism, on the other hand, is based on the Aristotelian conception that universals are not reduced to signs, that they exist in extra-mental reality, but always individuated. Conceptualism has an Aristotelian basis as well, but with an emphasis on the notion that universals are general ideas that exist only in the spirit. Nominalism, at another extreme, presents itself as a critique to the Platonic theory that defends that Forms constitute the reality and argues that the reality consists only of concrete individuals, relegating universals to names.

1.3.3 OCKHAM'S NOMINALISM

[116] Cf. De Libera, A. (1998) Introduction In: Porphyre, *Isagoge,* texte grec et latin, traduction par A. de Libera et A.-Ph. Segonds. Introduction et notes par A. de Libera. Paris, J. Vrin, p. LXVIII – LXXIII. Cf. De Libera, A (1996). *La querelle des universaux*: *de Platon à la fin du Moyen Age*. Paris, Éditions du Seuil, p. 56-59.

[117] Cf. Adams, M.M., Adams, M M. (1987). William Ockham. Vol 2. Notre Dame University of Notre Dame Press, p. 3

Ockham, being a 14th century thinker, inherits the whole conceptual apparatus of the quarrel of universals that began after Boethius' translation of Porphyry's *Isagoge*, in the 5th century. As well as its predecessors, Ockham dealt with universals as he sought to answer Porphyry's questions. The attempt to resolve the questions posed by Porphyry gave rise to what we now know as the "quarrel of universals", which was a set of great doctrinal debates that emerged between the end of the 11th century and the beginning of the 12th century. During the 11th and 12th centuries, intellectuals endeavored to answer the question of Porphyry mainly through logic. Ockham's response to the universal problem was also a dialogue with the philosophical tradition of his time. Ockham's criticism was mainly aimed at the moderate realism advocated by his predecessors, in particular Duns Scotus and Thomas Aquinas[118]. Moderate realism held that genera and species exist in particulars, consequently genera and species are metaphysical components of particulars. However, they cannot be the only metaphysical components since genera and species are common to numerically distinct particulars objects. There must then be some principle of individuation to distinguish the numerically particulars. Scotus, for example, held that there was in the particulars a common nature and an individual difference that were formally distinct. Ockham explains Scotus' theory as follows:

> Nevertheless, some want to claim that the universal is, in some way, outside the soul and in particulars; and while they do not want to say a universal is really distinct from particulars, they say that is formally distinct from particulars. Thus, they say that in Socrates there is human nature which is contracted to Socrates by an individual difference which is not really, but only formally, distinct from that nature. Thus, while there are not two things, one is not formally the other. [119]

Ockham criticizes Scotus' thesis that particulars are composed of a common nature and a formal distinction. He presents a series of arguments against this notion that

[118] Even if Scotus' realism can be considered strong, here we describe it as moderate realism to precise that it is not a Platonist realism. For medieval realism see Cesalli, L. (2007). *Le réalisme propositionnel: sémantique et ontologie des propositions chez Jean Duns Scot, Gauthier Burley, Richard Brinkley et Jean Wyclif*. Vrin.

[119] "[...] videtur tamen aliquibus quod universale est aliquo modo extra animam in individuis, non quidem distinctum realiter ab eis, sed tantum distinctum formaliter ab eisdem. Unde dicunt quod in Sorte est natura humana, quae contrahitur ad Sortem per unam differentiam individualem, quae ab illa natura non distinguitur realiter sed formaliter. Unde non sunt duae res, una tamen non est formaliter alia." *SL*. I, 16 [*OPh* I, 54,4-10].

proceed along the following logic: if common nature and individual difference are not really distinct, but only formally distinct, then they are really the same thing. If common nature is the same as individual difference, then there are as many common natures as there are individual differences, resulting then not in a common nature, but in several (common) natures peculiar to each individual.[120]

> […] either the nature is the individual difference, or it is not. If it is the difference I argue as follows: this individual difference is proper and not common; this individual difference is this nature; therefore this nature is proper and not common, but that is what I set out to prove. Likewise, I argue as follows: the individual difference is not formally distinct from the individual difference; the individual difference is the nature; therefore the nature is not formally distinct from the individual difference. But if it be said that the individual difference is not the nature, my point has been proved; for it follows that if the individual difference is not the nature, the individual difference is not really the nature […] Thus, if it is true that the individual difference really is the nature, then the individual difference is the nature. […] Therefore, it follows that if the individual difference is really the nature, the individual difference is the nature. Therefore, one should grant that in created things there is no such thing as a formal distinction. [121]

For Ockham, in a substance there is nothing but particular matter and form, which implies that he denies the existence of any common nature and, consequently, of a principle of individuation as a formal distinction.

> We ought to say with the philosophers that in particular substance there is nothing substantial except the particular form, the particular matter, or the composite of the two. And, therefore, no one ought to think that in Socrates there is a humanity or a human nature which is distinct from Socrates and to which there is added an individual difference which contracts that nature. The only thing in Socrates which can be construed as substantial is this particular matter, this particular form, or the composite of the two. And, therefore, every essence and quiddity and whatever belongs to substance, if it is really outside the soul, is just matter, form, or the composite of these […].[122]

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[120] "[...] si natura communis esset eadem realiter cum differentia individuali, igitur tot essent realiter naturae communes quot sunt differentiae individuales, et per consequens nullum eorum esset commune [...]" *SL*. I, 16 [*OPh* I, 55, 26-28].

[121] "[...] aut natura est differentia individualis aut non. Si sic, arguo syllogistice sic: haec differentia individualis est propria et non communis; haec differentia individualis est natura; ergo natura est propria et non communis. Quod est intentum. Similiter arguo syllogistice sic: haec differentia individualis non est distincta formaliter a differentia individuali; haec differentia individualis est natura; ergo natura non est distincta formaliter a differentia individuali. – Si autem detur quod haec differentia individualis non est natura, ergo differentia individualis non est realiter natura; quia ex opposito consequentis sequitur oppositum antecedentes, sic arguendo: differentia individualis est realiter natura; ergo differentia individualis est natura. Consequentia patet, quia a determinabili, sumpto cum determinatione non distrahente nec diminuente, ad determinabile per se sumptum est bona consequentia. 'Realiter' autem non est determinatio distrahens nec diminuens. Igitur sequitur: differentia individualis est realiter natura, ergo differentia individualis est natura. Dicendum est igitur quor in creaturis nulla est talis distinctio formalis [...]" *SL*. I, 16 [*OPh* I, 56,49-67].

[122] "Et ideo debemus dicere cum philosophis quod in substantia particular nihil est substantiale penitus nisi forma particularis vel aliquid compositum ex talibus. Et ideo non est imaginandum quod in Sortem

Our goal in this study is not to discuss the details of Ockham's criticism of moderate realism, even though we acknowledge that they constitute an important part of his view of universals. Instead, we will concentrate on Ockham's commentary on Porphyry's Isagoge that synthetically shows his nominalist position on universals.[123]

We may say that Ockham's solution essentially has a nominalist character, for his contribution reconfigures the metaphysical character of the discussion on universals to a logical-semantic realm because he held that universals were nothing but names. The question is then analyzed in terms of proposition through logical analysis.

As we saw, Porphyry refused to answer the questions he posed because he thought it was addressed to a higher discipline, and we suppose he was referring to metaphysics. Boethius was prone to answer them when commenting on the *Isagoge*. They both pointed universal as entities present in the mind and in the world as well[124]. Apparently, genera and species exist in different forms, though they are identified as the very same metaphysical entity in both cases. The fact that both were metaphysical in some way required further explanation of how these entities could exist in the world and move to exist in the mind.

Boethius adopted abstraction in his explanation. For him, universals subsist in a particular way in the world and are transmitted to the mind through the senses, so that when the mind comes across these data from the senses, it abstracts the universal from the contingent circumstances in which it was grasped.

In Ockham's work, on the other hand, the relation between universals in the mind and in the world will mainly be a relation between signs and signification, that is, respectively the universals are intellections, and the singulars are their signification.

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sit humanitas vel natura humana distincta a Sorte quocumque modo, cui addatur una differentia individualis, contrahens illam naturam, sed quidquid imaginabile substantiale exsistens in Sorte vel est matéria particularis vel forma particularis vel compositum ex his. Et ideo omnis essentia et quidditas et quidquid est substantiae, si sit realiter extra animam, vel est simpliciter et absolute matéria vel forma vel compositum ex his [...]" *SL*. I, 16 [*OPh* I, 56-57,74-83].

[123] For a reconstruction of Ockham's criticism of the direct realism of Duns Scotus and Thomas Aquinas see Adams, M.M. (1987) *William Ockham.* Vol 2. Notre Dame: University of Notre Dame Press, p. 13-69. For Ockham's and Scotus views on universals see Spade, P.V. (1994), *Five texts on the mediaevel problem of universals Porphyry, Boethius, Abelard, Duns Scotus and Ockham*, Hackett.

[124] Cf. Kluge, E.W. (1973) (trans.), *William of Ockham's Commentary on Porphyry: Introduction and English Translation*. Franciscan Studies, Vol. 33, p.171-254, p. 178.

He identifies the problem of universals no longer as a metaphysical question, but as a logical-semantic problem whose resolution is linked to a theory of signification. In his *Expositio in Librum Porphyrii by Praedicabilius*, he describes Porphyry's questions as follows:

> In particular, he enumerates three questions with which he does not want to deal, implying by this that a logician ought [likewise] to abstain from considering similar question. The first question is whether genus and species are subsistent outside of the mind or, whether they are in the intellect alone; the second, whether they are corporeal or incorporeal; the third, whether - if they are incorporeal – they exist apart from sensible things or are in the sensible things themselves.[125]

First, he comments on Porphyry's refusal to answer the questions. According to Ockham, the refusal to deal with metaphysical issues is the source of error for many modern logicians.

> Now the reason why we must abstain from these is, that these questions concern the metaphysician and require a subtle discussion which cannot be given in this small book. Rather, in this small book are to be presented some of the things said by the Ancients – and above all by the Peripatetics – about the universals mentioned previously, since these things do concern the logician. Although said questions and similar ones do not concern the logician but the metaphysician, nevertheless, since out of ignorance on these points many of the moderns have fallen into error even in logic, we must deal with what must be held in regard to these matters according to the opinion of Aristotle and according to the truth; but we do so briefly, since these questions have been dealt with at greater length elsewhere.[126]

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[125] "Specialiter autem enumerat tres quaestines a quibus vul abstinere, per hoc innuens quod logicus debet a consimilibus abstinere. Prima quaestio est ista: Utrum genus et species sint subsistentia extra animam, vel sint tantum in intellectu. Secunda: An sint corporalia vel incorporali. Tertia: Si sint incorporala, an sint separata a sensibilibus vel sint in ipsis sensibilibus". *EPor. Prooem*., § 2, OPh 2, 10, 6-11.

[126] "Causa autem quare est ab istis abstiendum est ista, quia istae quaestines pertinent ad metaphysicum et indigent subtili discussione, quod non est in isto libello faciendum ; sed aliqua dieta antiquorum de praedictis universalibus, quae ad logicum pertient, et maxime dicta Peripate ticorum, in praesenti opusculo sunt ponenda. Quamvis praedictae quaestiones et consimiles non ad logicum sed ad metaphysicum sint pertientes, quia tamen ex ignorantia earum multi moderni in multiplices errores etiam in logica sunt prolapsi, ideo de ipsis breviter qui sit secundum sententim Aristotelis et secundum veritatem tenendum, est dicendum, quia de eis alibi est diffusius tractatum." *EPor. Prooem*., § 2, OPh 2, 10-11,13-22.

Here, the criticism is: instead of evading it, one must try to answer the metaphysical questions to avoid falling into errors in the logic itself. Besides answering Porphyry's questions, Ockham seems to want to elucidate the metaphysical elements that are presupposed in the question. He slightly deviates from Boethius' comment that questioned whether genera and species are subsistent outside the soul or only in the intellect, whether they are bodily or incorporeal. And if, being incorporeal, they are assembled or separate from the sensible ones.

According to Oliveira, Boethius' interpretation of Porphyry's first question refers to a dilemma between the defense of the real existence of genera and species and the possibility that they might be mere intellections without an object, that is, intellections that due to an error of "opinion" would not refer to a real thing[127]. Oliveira interprets that to exist outside the intellect consists in truly existing, while to exist inside the intellect would be a mode of existence that corresponds to nothing in reality and, therefore, corresponds to a false intellection.

Ockham, in turn, addresses the dilemma: either genera and species actually exist outside the soul, or genera and species exist only in the intellect. The three questions are reduced to a metaphysical dilemma as to whether genera and species exist outside the soul or only in the intellect.

The strategy is to deal with this bi-conditional dilemma based on two principles: "that everything that exists is singular and that nothing that exists outside the mind can simultaneously obey this principle of singularity and the character of the community assigned to what is the universal [...]"[128]; he concludes, therefore, that "[...] assuming these principles, the problem of subsistence quickly becomes a problem of significance"[129]. In other words, Ockham does not investigate whether universals subsist outside the soul or merely as intellections, because his argumentative strategy aims to deny that universals exist outside the soul, what leaves the one option in which genera and species are intellections in the mind. Thus, the question becomes: what is

[127] Cf. Oliveira, C.E. (2018). Ockham comentador de Porfírio: sobre a metafísica na querela dos universais. *Revista Ética e Filosofia Política*. XXI(III); 80-108. p.83. [Our translation]

[128] Cf. Oliveira (2018), p. 83

[129] Cf. *Ibid*, p.83.

signified outside the soul by the intellections of the mind that are genera and species? Ockham will answer this question as he answers Porphyry's questions.

Since Ockham's first question slightly deviates from Boethius' notion, the second question, namely, about the "whether they are corporeal or incorporeal" genera and species, also deviates from Boethius' original intention. Ockham divides universals between "natural" and "conventional" the latter being the words designated to signify many things. In this sense, some universals can be bodily, for example, the voice or writing of the term "man" when intended to signify many men. Thus, the question of whether universals are corporeal or incorporeal starts to investigate whether universals by convention have the same status as "natural" universals[130].

The third question in Ockham's work, on the other hand, aims to address the relation between universal intellections and the things they signify. According to Oliveira[131]:

> [...]it is, therefore, a kind of 'inversion' of the interest of the first question. If at first the interest was to know what, outside the soul, is signified by the intellection, now the question seeks to know how intellection maintains a relationship with its object.[132]

After commenting on the reasons why he will answer Porphyry's questions, Ockham presents two principles that will guide his comment:

i) Now it must be maintained as indubitable that any existing thing imaginable is in itself and without any addition a singular thing and one in number (numerically one), such that no imaginable thing is singular in virtue of having something added to it. But this is a property which immediately belongs to everything, because everything is per se either the same as or distinct from others.

ii) Secondly, it must be maintained that no universal is outside of the mind, really existing in individual substances; nor does it belong to their substance or essence. Rather, a universal either exists in the mind alone, or it is a universal by convention, in the way in which the spoken word 'animal', and likewise 'man', is a universal:

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[130] Cf. *Ibid* p. 85.

[131] Cf. *Ibid*, 2018, p.86

[132] Cf. *Ibid,* p. 86. [Our translation]

because it is predicable of many, not as standing for itself but as standing for the things it signifies. [133]

The first principle is, in fact, the conclusion Ockham intends to reach with his argument. It follows, thus, from the first principle that any whole that essentially contains several things, provided it is not in infinite number, is numerically a singular thing and, therefore, singular. That is, he intends to link existence to singularity. So that considering the universal as an existing thing, it will necessarily be singular. He argues that anything which is numerically one, even though if not singular by itself, does not essentially contain several things. The conclusion is that the universal, being considered as an existing thing, even if it essentially contains several, will always be singular. Here Ockham explicitly concerns the universal under a metaphysical consideration, in which it exists outside the mind.

For Ockham, the first conclusion is proved both on the basis of reason and authorities. He states that if there is something that is not a singular thing, then that thing either essentially contains several things, or it is a single thing. In the first case, about these essentially included things, do they have a defined number or not? If they contain an indefinite number, then they constitute an infinite, which is impossible. If it is a defined number, each is numerically one, and, as a result, the resulting whole is numerically one. If that thing is not several, nor does it essentially contain several, then we have the conclusion that Ockham wishes to draw. For anything that does not include a multitude of different things is numerically one. Consequently, this universal thing will be numerically one and, therefore, singular.

The second argument seeks to prove that anything that is undefined in number can be reduced to a defined number. For example, Socrates and the universal thing A are two separate things, each of which is numerically one, since each is one thing and not several. Thus, this universal thing is one thing and, consequently, numerically one thing, therefore, singular.

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[133] "Est autem tenendum indubitanter quod quaelibet res imaginabilis exsistens est de se, sine omni addito, res singularis et una numero, ita quod nulla res imaginabilis est per aliquid additum sibi singularis ; sed ista est passio conveniens immediate omni rei, quia omnis re per se vel est eadem vel diversa ab alia.

Secundo tenendum quod nullum universale est extra animam exsistens realiter in substantiis indiviuis, nec est de substatia vel essentai earum ; sed universale vel est tantum in anima, vel est universale per institutinem quomodo haec vox prolat 'animal', et similiter 'homo', est universalis, quia de pluribus es praedicabilis, non pro se sed pro rebus qua significat." *EPor. Prooem*., § 2,1 1,24-34.

The following argument states that it cannot be said that, although the universal is not several things, it is in several things and is of the essence of several things, just as "humanity" and "man" are in all men and are [part] of the essence of all men. According to him, such a thing is either differentiated as [because] it is diverse in several things, or it is undifferentiated as [because] it is not diverse. In the first case, each of these things is necessarily singular and, consequently, since there is nothing else above them, it follows that anything that satisfies these statements is singular. In the second case, we come to the same conclusion, because no matter how much [the universal] is in several things, it is really singular, as it is one and not many.

The example Ockham employs for this topic is that in spite of how much, numerically, the same matter is in the air and is part of the air, and then it is in the fire and is part of the fire, even so, it is the same matter, a matter numerically one. Similarly, "humanity", which is said to be universal, despite in how many men it is present, if it is not many, but the same humanity, then it is numerically one. Ockham's question is whether a thing existing in several can numerically remain one. He continues to argue that an existing thing that remains the same is numerically one and singular. Here he relies on Averroes' opinion:

> Since there is not a distinct intellect in you and in me, therefore, according to him, it is numerically one, such that quite generally being in diverse things or with diverse does not prevent something from being numerically one as long as it itself is not diverse. And so, everything which is not many things is necessarily numerically one thing and consequently is a singular thing.[134]

The thesis that is being defended by Ockham is that everything that exists is singular, which is quite clear when he resorts to Averroes once again when he writes that only one particular thing is truly a being, and therefore, every being is particular, and he adds "there can be no demonstrations of a particular, although in truth it alone is a being"[135]. He relies on Averroes and continues:

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[134] "Similier secundum intentionem Commentatoris, quia non est alius intellectus in te et in me, ideo secundum eum est unus numero, ita quod generaliter esse in diversis vel cum diversis vel sub diversis nihil facit quin sit unum numero, dummodo non sit aliud et aliud ; et ita omni res quae non est plures res necessario est una res secundum numerum et per consequens est res singularis." *EPor. Prooem.*, § 2,12,75-80.

[135] "De particulari non potest esse demonstration, quamvis ipsum tantum sit ens in rei veritate." Averroes, sed rectius In Aristot. Metaph., XII, t. 28 (ed. Iutina, VIII, f.146vb). In: *EPor. Prooem.*, § 2,12-13, 82-83.

> Since according to Aristotle what definitions signify are the substance of things, and definitions are made up of universals which are predicated of particulars, he begins to investigate whether the substances of things are universals or whether they are merely the particular substances of which these universals are being predicated. And this is necessary in order to say that the substantial forms of individuals are substances, and that there is no substance in any individual except the matter and the particular form of which it is composed.[136]

And through this argument of authority, he concludes that in the individual there is only the particular form and the particular matter of the thing.

Regarding whether the universal really exists in individual substances or being its essences, Ockham states that no universal can be a substance and for that he relies on *Book VII* of *Metaphysics* from Aristotle, who defends that a universal is neither a substance nor part of a substance. The reason for that is that here the universal is taken in a predicative way, so that it is not possible for a substance to be something that is said universally[137].

Then, Ockham turns to Averroes's comment on *Metaphysics* Book X when he writes:

> Since universals are not substances, it is clear that a common being (*ens commune)* is not a substance existing outside of the mind; just as a common being is not a substance". […] Since universals are not substances, therefore genera are not substances either. […] Neither are substances genera, for genera are universals. [138]

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[136] "Cum declaravit, supple Aristoteles, quod ista quae significant definitiones sunt substantiae rerum, et definitiones componuntur ex universalibus quae praedicantur de particularibus, incepit perscrutari utrum universalia sint substantiae rerum, vel tantum substantiae particulares de quibus praedicantur ista universalia ; et hoc est necessarium in declarando quod formae individuorum substantiae sunt substantiae, et quod in individuo non est substantia nisi materia et forma particularis ex quibus componitur" Averroes, In Aris. Metaph., VII, t. 44 (ed. Iuntina, VIII, f. 92vb) In: *EPor. Prooem*., § 2,13,86-93.

[137] "Secundum, quod nullum universal est realiter exsistens in substantiis individuis nec est de essentia earum, patet manifeste per Aristotelem VII *Metaphysicae* [Atistot., Metaph., VII, c. 13, t. 44 (1038b 7-8)] ubi quaerit istam quaestinem : na scilcet aliquod universal sit substatia. Et ex intentione determinat quod nullum universale est substantia nec pars substantiae nec realiter in substantia ; unde dicit sic : "videtur autem universale causa quibusdam esse maxime et esse principium, supple substantiarum". Unde de hoc tractando et determinando dicit : "Videtur impossibile substantiam esse quodcumque universaliter dictorum" , et istam conclusionem, quod nullum universale sit substantia, probat ipse ibidem per multas rationes quas propter brevitatem omitto." *EPor. Prooem*., § 2,13, 99-109.

[138] "Cum uiversalia non sint substantiae, manifestum est quod ens commune non est substantia exsistens extra animam quemadmodum unum comune non est substantia. [...] “Cum universalia non

Thus, based on the authority of Averroes and, consequently, of Aristotle, Ockham concludes that universals exist only in minds and not in external things. This metaphysical "basis" about the status of the universal is the basis of his answer to Porphyry's questions, as well as the basic principle of his ontology, called "metaphysics of the singular": in external world there is nothing but singulars, for universals exists only in the mind.

After commenting on the metaphysical aspect of the universal, Ockham begins to answer Porphyry's questions. On the first question, he writes that genera and species are not substances outside the mind but exist only in the intellect.

> [...] because they are nothing but certain intentions or concepts formed by the intellect, expressing the essences of things and signifying them. Nor are they the things themselves, just as a sign is not its own significate. Neither are they part of things, any more than a word is a part of its own significate. Rather, *they are certain terms that are predicable of things;* but not as standing for themselves, because when a genus predicates of a species, the genus ant the species do not stand for themselves because they do not have simple supposition; instead, they have personal supposition and thus stand for their significates, which are singular things. But these genera and species are predicates of things: the very things which they signify. For instance, in 'Socrates is an animal', the word 'animal' does not stand for itself but for a thing', in this case for Socrates himself.[139]

Ockham adopts an answer that classifies universals and, therefore, genera and species as terms that are predicable of things, thus his explanation of what is universal includes already a property of the terms, namely, the property of supposition. When a universal, that is, a term, supposes personally, it supposes for the things of which it is predicable. He also clarifies that, just as the genera and species suppose by their

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sint substantiae, igitur neque genera sunt substantiae" [...] "neque substantiae sunt genera, quia genera sunt universaliza".". Averroe*s,* In Aristot*. Metaph. X,* t. 6 (ed. Iutina, VIII, f. 120rb) In*: EPor. Prooem*., § 2,14, 114-119.

[139] "Nam quantum ad primam quaestionem, tenendum est quod genera et species non sunt subsistentia extra anima, sed tantum sunt in intellectu, quia non sunt nisi quaedam intentiones vel conceptus formati per intellectum exprimentes essentias rerum et significantes eas, et non sunt ipsae, sicut signum non est suum significatum. Nec sunt partes rerum,non plus quam vox est pars sui significati ; sed sunt quaedam praedicabilia de rebus, non pro se, quia quando genus praedicatur de specie, genus et species non supponunt pro se quia non supponunt simpliciter, sed personaliter, et ita supponunt pro suis significatis quae sunt res singulares ; sed ista genera et species praedicantur de rebus pro ipsis rebus quas significant. Sicut in ista, 'Sortes est animal', li 'animal' non supponit pro se, sed supponit pro re, puta pro ipsomet Sorte." *EPor. Prooem*., § 2,14, 129-141.

significates, the words that correspond to the genera and species also signify the objects of which the genera and species as intentions are predicable. But one should not confuse the universal genera and species that are terms or intentions in the mind with "universal" words, since the latter signify exclusively by convention.

The solution to the second question is that genus and species are incorporeal: since they exist in the mind, nothing in the mind can be corporeal. The solution to the third question is that universals are not in sensible things, nor they are of the essence of sensible things, nor part of them. And here Ockham still relies on Averroes to chapter VII of *Metaphysic* in commentary 47 when he says that it is impossible that universals should be parts of substances existing in their own right (per se). That is, universals are neither part of substances nor part of the essence of substances. They simply indicate the substance of things in the same way a sign indicates their *significata*. And, since universals are not the things they designate, attention is drawn to the fact that it is necessary to distinguish between a sign and the signified thing.

Therefore, the Ockhamian solution to Porphyry's questions indicates that the universal exists only in the mind, so it is nothing *in re* or in the essence of things. Instead, it is a sign in the mind that indicates external things.

From what has been said so far, we have seen that Ockham presents a logical response to the problem of universals. However, the logical-semantic theory of signification that delivers a solution to the problem of the generality of universals is built upon a strong ontological position. That is, his criticism towards the way his contemporaries dealt with this problem is essentially metaphysical. That becomes clear when we analyze another text in which universals are considered, namely, in its *Summa Logicae*, where we see that *Venerabilis Inceptor's* main concern is to ontologically define the place of the universal as existing exclusively in the soul. Therefore, we consider it relevant to further investigate the metaphysical assumptions to which Ockham is committed, as his logic, semantics, and epistemology are based upon it.

From a metaphysical point of view, Ockham radically cuts the ten Aristotelian categories when he considers that only substances and qualities can agree with the "being told of" and "being in" present in *Categories II*, since his ontology only includes individuals, and the qualities are individually and numerically distinct. For Ockham, the categories are not realities existing outside the mind, nor principles constituting their

essence; rather, they are terms that signify things. According to Paola Müller, the division of categories is not a division of extramental realities, but the subdivision of uncomplex words. The categories are not extramental realities that are really different from each other, but they are distinct words and intentions in the soul, or concepts that signify external things. According to Ockham, the division of substances concerns not a distinction of things, but a question asked about the reality of things[140]. For instance, the category of substance answers the question "what is it?", while the category of quantity answers the question "how many?" and so on[141]. In the end, Ockham only accepts that substance and quality are distinct categories, the other eight, namely, quantity, relatives, somewhere, sometime, being in a position, having acted, and being acted upon are inherent to the substance.

Regarding the substance, Ockham considers only the first substances:

> (...) no second substance is a true substance, the which can become evident from what has been said. Indeed, it was rather proved that no universal is a substance, but all second substance is a universal since it is a gender or a species, according to Aristotle; no second substance, therefore it is a substance.[142]

According to Ockham, the division between first and second substances concerns the division of a common name into a less common name[143]. Names that

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[140] "Simitur autem distinctio istorum praedicamentorum, sicut innuit Commentator *VII Metaphysicae*, ex distinctione interrogativorum de substantia sive de individuo substantiae. Unde secundum quod ad diversas quaestiones factas de substantia per diversa incomplexa respondetur, secundum hoc diversa in diversis praedicamentis colloncantur. Unde omnia incomplexa per quae convenienter respondetur ad quaestionem factam per 'quid est' de aliquo individuo substantiae sunt in praedicamento substantiae, cuiusmodi sunt omnia talia 'homo', 'animal', 'lapis', 'corpus', 'terra', 'ignis', 'sol', 'luna', et huiusmodi. Illa autem per quae convenienter respondetur ad quaestionem factam per 'quale' de substantia sunt in genere qualitatis, cuiusmodi sunt talia 'album', 'calidum', 'sciens', 'quadratum', 'longum', 'latum', et sic de aliis. [...]" SL., I, 41, 116, 65-75.

[141] Cf. Müller, P. (1999) Introdução. In : Ockham, Guilherme de. *Lógica dos termos*; trad. Fleck, F.P.A. Porto Alegre: EDIPUCRS. p. 54-57.

[142] "[...] nulla secunda substantia est substantia', quae patere potest ex praecedentibus. Probatum est enim prius quod nullum universale est substantia; omni autem secunda substantia est quoddam universale, cum sit genus vel species secundum Aristotelem; nulla igitur secunda substantia est substantia." SL. I, 42, 118, 20-24.

[143] "Et ideo dicendum est quod ista divisio non est nisi divisio unius nominis communis in nomina minus communia, ut sit aequivalens isti divisioni: nominum importantium seu significantium substantias extra animam quaedam sunt nomina propria uni substantiae, et illa nomina vocantur hic primae substantiae; quaedam autem nomina sunt comunia multis substantiis, et illa nomina vocantur secundae substantiae. Quae nomina postea dividuntur, quia quaedam sunt genera et quaedam sunt species, quae tamen omnia vere sunt qualitates." SL. I. 42, 119, 50-57.

designate or signify substances outside the soul are divided. Some are names proper to a single substance, and such names are here called first substances; other names, however, are common to many substances, and these names are called second substances. The second substances are divided into genus and species, which according to Ockham are, in fact, qualities.

> Thus, all those common names that are called second substances are in the category of quality at least in one sense of 'to be in a category', for the term 'quality' is always predicable of the pronoun referring to a second substance. However, in another sense all second substances are in the category of substance, since 'substance' is always predicable of them when they are taken significatively. [144]

Ockham believes that Aristotle mistakenly uses the term "first substance" in the *Categories* when referring to the names proper to substances outside the soul. What Aristotle sometimes calls substances that exist outside the soul concerns not the subject that really exists in relation to others, but the logical subject of the propositions[145].

> It is clear from this that the Philosopher sometimes call names and signs of substances existing outside the soul first substances; for he says that second substances are said of first substances as subjects, but this could only be by way of predication. Thus, first substance is the subject in predication and second substance its predicate; but no proposition is composed of substances outside the soul; therefore, that first substance which is the subject of a proposition with respect to second substance is not a substance existing outside the soul.[146]

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[144] "Et ita onmia illa nomina communia quae vocantur secundae substantiae sunt in praedicamento qualitatis, accipiendo 'esse in praedicamento' pro eo de cuius pronomine demonstrante ipsum praedicatur 'qualitas'. Omnia tamen illa sunt in praedicamento substantiae, accipiendo 'esse in praedicamento' pro illo de quo significative sumpto praedicatur 'substantia'." SL. I. 42, 119-120, 57-62.

[145] Cf. SL I, 42, 121, 103-111.

[146] "Ex quo patet quod Philosophus quandoque vocat substantias primas nomina et signa substantiarum exsistentium extra animam, nam dicit secundas substantias dici de substantiis primis tamquam de subiectis; quod non potest esse nisi per praedicationem. Igitur substantia prima in praedicatione est subiecturn et secunda substantia est praedicaturn; sed nulla propositio componitur ex substantiis extra animam; igitur illa prima substantia quae est subiectum propositionis respectu secundae substantiae non est substantia exsistens extra animam." SL.,I, 42, 121-122, 119-126.

Thus, due to his denial of second substances, in his minimalist ontology there is nothing other than substance and quality. Consequently, for him, universals have no real existence in the physical world: "no universal is a substance outside the soul"[147]. Ockham's reductionism had previously revealed his position about the universals: there are no second substances from which to inquire about their ontological state, nor common qualities.

Ockham begins the consideration of universals from a logical point of view when he deals with the terms of first and second intentions. First intention terms are singular terms, while second intention terms are terms such as "universal", "genus", "species", etc. First, he distinguishes the universal from a singular that opposes it. The singular can be considered using two different approaches. In a first sense, "singular" means all that is one and not many. In this sense, even the term "universal" is singular because:

> […] the soul's intention, signifying many external things, is truly and truly singular and numerically one, because it is one and not many things, although it signifies many things.[148]

In this passage we can already see that Ockham intends to attribute to the universal a quality of name capable of signify many things, that is, we already have some indications that the universal will be a sign and not something outside the mind. In the sequence, he deals with the second sense of "singular", the one in which it is considered as everything that is unique, but not many, and is not destined to be a sign of many things. In this sense, "universal" may not be singular, since it is meant to be predicated on many things. Ockham calls attention to the confusion that is made in relation to the universal considered in itself and its function:

> So, calling something universal that is not numerically one - a meaning that many attributes to the universal -, I say that nothing is universal, unless one abuses this word, saying that the people are universal, because they are not one, but many; but that would be childish.[149]

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[147] " [...] Nullum universale sit aliqua substantia extra animam exsistens evidenter probari potest." SL I. XV, 50, 5.

[148] "[...] Ita intentio amimae, significans plures res extra, est vere et realiter singularis et una numero, quia est una et non plures res, quamvis significet plures res. " SL I, 14, 48, 20-22.

[149] "Unde vocando universale aliquid quod non est unum numero, — quam acceptionem multi attribuunt universali -, dico quod nihil est universale nisi forte abuteris isto vocabulo, dicendo populum esse unum universale, quia non est unum sed multa; sed illud puerile esset." SL I, 14, 48, 27-30.

And that is why he writes that "[...] every universal is a singular thing, and therefore it is not universal except by signification, because it is the sign of many things"[150]. Ockham defines universal as a singular intention of the soul:

> [...] the universal is a singular intention of the soul itself, destined to be predicated of many [things], in such a way that, because it is destined to be predicated of many [things], not by itself, but by these many [things] are said to be universal; however, because it is a form, really existing in the intellect, it is said to be singular.[151]

Thus, the intention of the soul is universal because it is a sign that can be predicated on many things, but it is, at the same time, singular because it is one thing and not many. “Such a universal is but the intention of the soul, so that no substance outside the soul, nor any accident outside the soul is such a universal”[152]. The problem of universals will be addressed through his minimalist ontology, in which we can find only singulars constituted by the only two categories Ockham accepts from Aristotle, namely substance and quality. It should be clear that we refer to first substance. Therefore, in the singular, there is no substance other than matter and the particular form of which it is composed. Each substance has its own individual form and individual matter. That avoids the emergence of shared qualities or forms. However, Ockham believed that human beings are essentially similar, even though there is no real or formal 'likeness' as a universal in them.

Ockham gives us multiple arguments stating that the universal does not exist outside the soul. According to him, no universal is a substance outside the soul: “That no universal is a substance existing outside the soul can be proved in a number of ways: no universal is a particular substance, numerically one”[153].

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[150] “[...] Quodlibet universale est une res singularis, et ideo non est universale nisi per significationem, quia est signum plurium.” SL I, 14, 48, 31-33.

[151] "[...] Quod universale est una intentio singularis ipsius animae, nata praedicari de pluribus, ita quod propter hoc quod est nata praedicari de pluribus, non pro se sed pro illis pluribus, ipsa dicitur universalis; propter hoc autem quod est una forma, exsistens realiter in intellectu, dicitur singularis. " SL I, 14, 49, 39-43.

[152] "Et tale universale non est nisi intentio aniimae, ita quod nulla substantia extra animam nec aliquod accidens extra animam est tale universal." SL I, 14, 49, 56-58.

[153] “Quod enim nullum universale sit aliqua substantia extra animam exsistens evidenter probari potest. Primo quidem sic: nullum universale est substantia singularis et una numero.” SL. I, 15, 50, 5-7.

The first argument is that no universal is a particular substance, numerically one. For, if this were the case, then anything could be a universal, since there is no good reason why one substance should be a universal rather than another.

> For every substance is either one thing and not many, then it is numerically one; for that is what we mean by 'numerically one'. But if on the other hand, some substance is several things, it is either several particular things or several universal things. If the first alternative is chosen, then it follows that some substance would be several particular substances; and, consequently that some substance would be several men. But although the universal would be distinguished from a single particular, it would not be distinguished from several particulars. If, however, some substance was to be several universal entities, I take one those universal and ask, "It is many things or is it one and not many?" If the second case is the case then it follows that the thing is particular. If the first is the case then I ask, "Is it several particular things or several universal things?" Thus, either an infinite regress will follow or it will be granted that no substance is a universal in a way that would be incompatible with its also being a particular. From this it follows that no substance is a universal.[154]

From the extract above we can notice that for Ockham a universal cannot be a particular substance, for, if this were the case, then we would not know if it is several particular things or several universal things, since we cannot distinguish the universal from several particulars. Thus, every substance is numerically one and singular, but no particular substance is a universal.

The second argument further defends that if a substance were universal, it would be a unique substance existing in singular substances and distinct from it [the universal], which would result that the universal could exist without the singulars, since everything that is naturally prior to something else can, by God's power, exist without that thing, which would result in an absurd consequence[155].

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[154]"Si est una et non plures, est una numero; hoc enim ab omnibus vocatur unum numero. Si autem aliqua substantia est plures res, vel est plures res singulares vel plures res universales. Si primum detur, sequitur quod aliqua substantia esset plures substantiae singulares, et per consequens eadem ratione aliqua substantia esset plures homines; et tunc, quamvis universale distingueretur a particulari uno, non tamen distingueretur a particularibus. Si autem aliqua substantia esset plures res universales, accipio unam istarum rerum universalium et quaero: aut est plures res aut una et non plures. Si secundum detur, sequitur quod est singularis; si primum detur, quaero: aut est plures res singulares aut plures res universales. Et ita vel erit processus in infinitum vel stabitur quod nulla substantia est universalis ita quod non singularis, ex quo relinquitur quod nulla substantia est universalis." SL. I, 15, 50-51, 12-24.

[155] "Item, si aliquod universale esset substantia una, exsistens in substantiis singularibus, distincta ab eis, sequeretur quod posset esse sine eis, quia omnis res prior naturaliter alia potest per divinam potentiam esse sine ea; sed consequens est absurdum." SL. I, XV, 51, 25-28.

The third argument is that if the universal were a substance outside the soul, no individual could be created. “Something of the individual would have to pre-exist it, for the whole individual would not take its existence from nothing if the universal which is in it were already in something else”[156]. Likewise, God could not annihilate one individual without implying in annihilating other individuals of the same kind.

> If He were to annihilate some individual, he would destroy the whole which is essentially that individual and, consequently, He would destroy the universal which is in that thing and in others of the same essence. Consequently, other things of the same essence would not remain, for they could not continue to exist without the universal which constitutes a part of them.[157]

As a fourth argument, he states that, moreover, a universal cannot be considered something totally external to the individual’s essence, because in this case the individual is constituted of universals and would not be more singular than universal[158].

The fifth argument affirms that "something of the essence of Christ would be miserable and damned, since that common nature really existing in Christ would be damned in the damned individual; for surely that essence is also in Judas. But is absurd"[159]. Ockham also uses the authority in the arguments of Aristotle and Averroes. He relies on Book X of *Metaphysics* where he states that the universal is not a

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[156] “[...]quia non totum caperet esse de nihilo si universale quod est in eo prius fuit in alio.” SL. I, XV, 51, 30-31.

[157] "Propter idem etiam sequeretur quod Deus non posset unum individum substantiae adnihilare nisi cetera individua destruret, quia si adnihilaret aliquod individuum, destrueret totum quod est de essentia individui, et per consequens destrueret illund universale quod est in eo et in aliis, et per consequens alia non manerent, cum non possent manere sine parte sua, quale ponitur illud universale." SL.I, XV,51, 31-37.

[158] "Item, tale universale non posset poni ahquid totahter extra essentiam individui; esset igitur de essentia individui, et per consequens individuum componeretur ex universalibus, et ita individuum non esset magis singulare quam universale." SL.I, XV,51, 38-41

[159] "[...] sequeretur quod aliquid de essentia Christi esset miserum et damnatum, quia illa natura communis exsistens realiter in Christo et in damnato esset damnata, quia in Iuda. Hoc autem absurdum est." SL. I, XV, 51, 42-44.

substance "[...] in the sense of a one over against many"[160]. Ockham concludes that "no universal is a substance, although it supposes by substance"[161], bringing the perspective that the universal can receive the referential function from the supposition.

From the statements based on Aristotle's authority, Ockham concludes that no universal is a substance, no matter how we consider it. For the intellect's consideration of the universal is not capable of making something a substance or not. It is the signification of the term, alone, that makes the name "substance" be predicated or not, "just as if the term dog is for the animal that barks at the proposition 'The dog is animal', it is true; if it is for the celestial stars, it is false"[162].

Ockham relates universality to signification and predication, which are logical terms.

> Therefore, it ought to be said that every universal is one particular thing and that it is not a universal except in its signification, in its signifying many things.[163]

In the sequence, the universal is defined as an intention of the soul:

> Therefore, it ought to be granted that no universal is a substance regardless of how it is considered. On the contrary, every universal is an intention of the soul which, on the most probable account, is identical with the act of understanding. [164]

Ockham was interested in, besides avoiding the ontological position of universals as substances outside the soul, avoiding the postulation of intermediate elements between things and the concepts we have of them in the mind. In the *Summa Logicae*, the universal that will later be said "concept" is the act of intellection. But, in

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[160] Item, X Metaphysicae [1038b 8-9] dicit: « Si itaque nullum universalium esse substantiam est possibile, sicut in sermonibus de substantia et ente dictum est, nec ipsum hoc substantiam ut aliquid unum praeter multa" SL. I, XV, 52, 51-53.

[161] "[...] nullum universale est substantia, quamvis supponat pro substantiis". SL. I, XV, 52, 55.

[162] "Sicut si iste terminus 'canis' in ista propositione 'canis est animal' stet pro animali latrabili vera est, si pro caelesti sidere falsa est." SL.I, XIV,52, 73-75.

[163] "Dicendum est igitur quod quodlibet universale est una res singularis, et ideo non est universale nisi per significationem, quia est signum plurium." SL.I, XIV,48, 31-33.

[164] "Et ideo simpliciter concedendum est quod nullum universale est substantia, qualitercumque consideretur. Sed quodlibet universale est intentio animae, quae secundum unam opinionem probabilem ab actu intelligendi non differt." SL.I, XIV,53, 78-81.

addition, he reinforces the notion of supposition in the consideration of the universal, which is the main theory in *Summa Logicae.*

> Thus, it is said that the act of understanding by which I grasp men is a natural sign of men in the same way that weeping is a natural sign of grief. It is a natural sign such that it can stand for men in mental propositions in the same way that a spoken word can stand for things in spoken propositions.[165]

He ends chapter XV, in which he devotes to argue that the universal is not a substance outside the soul, by stating that the universal is an intention of the soul destined to be predicated on many things.

> […] For everyone agrees that a universal is something predicable of many, but only a intention of the soul or a conventional sign is predicated. No substance is ever predicated of anything. [166]

Thus, it is concluded that the substance cannot be predicated because, if it were so, a proposition would be composed of substances, which would lead to an absurd consequence since no proposition can be composed of substance. And since the proposition is made up of universals, universals cannot be substances.

Ockham's account of universals is also a critique of the multiple types of realism and their distinct theories. He aims to assert that the only possible distinction between universal and singular is that the universal is a concept, therefore, it belongs to reason; while the singular is something real belonging to the world. The point of convergence between universal and singular occurs at first in the intellection of universals and, later, as sign-concepts that refer to the real particulars they naturally signify:

> Therefore, it ought to be said that every universal is one particular thing and that it is not a universal except in its signification, in its signifying many things.[167]

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[165] "Unde dicunt quod intellectio qua intelligo hominem est signum naturale hominum, ita naturale sicut gemitus est signum infirmatatis vel tristitiae seu soloris; et est tale signum quod potest stare pro hominibus in propositionibus mentalibus, sicut vox potest stare pro rebus in propositionibus vocalibus." SL.I, XIV,53, 81-84.

[166] "[...] nam omne universale, secundum omnes, est de multis praedicabile ; sed sola intentio animae vel signum voluntarie institutum natum est praedicari et non substantia aliqua ; ergo sola intentio animae vel signum voluntarie intitutum est universale." SL.I, XV, 53, 94-98.

[167] "Dicendum est igitur quod quodlibet universale est una res singularis, et ideo non est universale nisi per significationem, quia est signum plurium." SL.I, XIV,48, 31-33.

The universal is said to be an intellectual act and, as the soul's intention, a sign. However, whether as an intention of the soul or as an intellectual act, it is necessary to establish how the universal relates to its objects. In Ockham's minimalist ontology, we know that he only considers particulars to be realities which, in turn, will be the objects of both cognitive acts and soul intentions.

The explanation of how the "natural" significant concept was formed is: the object is the cause of an intuitive cognitive act from which an abstract cognitive act will later form, which refers to the initial intuitive cognitive act. This explanation is known as the doctrine of intuitive and abstract knowledge, Ockham's cognitive theory (to be explored in the next chapter).

In general, the cognitive process is described as a complex causal sequence of cognitive acts. The external object first causes a sensory intuition to the agent, and then, with the help of sensation, it also causes an intuitive intellectual act that brings to the intellect a simple abstract act. This abstract cognition causes the formation of what Ockham calls *habitus*, a disposition that in the future will allow the agent to reactivate the abstract act even when the object is no longer present. Habits are the disposition to generate acts similar to the acts that generated them, and due to this disposition, after a sequence of acts and habits of the same type, we have, as a result, a concept that is itself an abstract intellectual act.

As we saw, the act of intellection is itself a mental sign.

> […] The act of understanding by which I grasp men is a natural sign of men in the same way that weeping is a natural sign of grief. It is a natural sign such that it can stand for things in spoken propositions.[168]

The generality of the universal concept in Ockham's work is due to its signification. However, what makes the cognition of one particular sufficient to generate a universal concept capable of representing all particulars of the same type? Two elements are

[168] "[...] Quod intellectio qua intelligo hominem est signum naturale hominum, ita naturale sicut gemitus est signum infirmitatis vel tristitiae seu doloris; et est tale signum quod potest stare pro hominibus in propositionibus mentalibus, sicut vox potest stare pro rebus in propositionibus vocalibus. SL.I, XV, 53,80-85. Translation from Michael J. Loux : OCKHAM, W. *Ockham's Theory of Terms.* Part I of the *Summa Logicae,* Translated and introduced by Michael J. Loux. St. Augustine's Press, Indiana, 1998, p.81.

evoked. First, there is the causality exerted by the object that causes the intellection. Secondly, the similarity. According to King, similarity is a common medieval explanation to the mental representation of a concept. And the reason for this derives from *De interpretatione* de Aristotle, according to which the mental act is a type of *similitude* (likeness of) referring to the thing[169]. "The concepts represent what they represent because of the fact that they are (natural) similitudes of these things, and also because of this fact they are also signs of these things"[170]. It is relevant to say that, in the paper here mentioned, King does not agree himself that similitude is a good explanation to concepts representation in Ockham's mature theory. There is not a consensus about how valid it is that Ockham holds similitude as the mode of representation of concepts. Panaccio, for instance, affirms that representationality of concepts is a version of similitude when he states that "Ockham holds that a concept is a likeness of whatever it represents, a similitude"[171]. We also find a good example of this interpretation in Boehner when he writes that the cognition "[…] is similar both to the object and the intellect, to the latter by being immaterial or spiritual, to the former by being a similitude of it; in other words, the act of cognition is a spiritual assimilation of the object known"[172]. According to him, it is almost impossible to further specify similarity because it is "an ultimate fact of cognitive psychology"[173]. However, he attempts to explain that by saying:

> […] that a mental sign of a singular represents or expresses to the mind one thing or one singular object, for instance, the individual Socrates or Plato ; a universal mental sign represents or expresses to the mind in an act of intellection the nature, essence, or quiddity of many things indiscriminately, that means, such a universal intellection equally expresses many things without their individual differences.[174]

[169] Cf. King (2005). p. 437.

[170] Cf. King (2005). p. 437 [our translation].

[171] Cf. Panaccio (2004). p. 119.

[172] Boehner, P. (1946). Ockham's theory of signification. *Franciscan Studies*. 6(2): 143-170, p. 156.

[173] Cf. King (2005), p. 437 [our translation].

[174] Boehner (1946) p. 157.

He does not intend to develop about how the intellect converts from single intellection to universal intellection, which is precisely what we discuss in Chapter 2. So far, we can affirm the universal intellection is the abstractive cognition that occurs following the intuitive cognition of a particular, which is a type of "confusing" cognition that cognizes at the same time all particulars similar to the particular grasped by intuitive cognition.

> To have a confused intellection of a human being is nothing other than to have one cognition by which one human being is no more cognized than another, and nevertheless by that cognition a human being is more intellectively cognized than is a donkey.[175]

Therefore, the likeness is used to explain how universal concepts represent.

At this point in his career, Ockham has abandoned the notion that concepts can be objects of intellection[176]. In his mature theory, concepts are simple acts of intellection. The acts of intuitive and abstract intellection are the concepts. The acts of intuitive intellection give rise to singular concepts that represent a single object. While the acts of abstract cognition give rise to general concepts. For example, if I see a dog for the first time, my intellect will conceive the singular concept of that particular dog, this concept is an intuitive intellection or cognition. We suppose that later I think about the dog when he is no longer present. If at a certain point I think about that dog but not about his contingent features, then I have an abstract concept that can represent all dogs. As Karger explains:

> The acts of intuitive intellection and the acts of abstract intellection are both simple acts of intellection, they will both form concepts. The firsts, being acts of apprehension of one thing and one only, will form singular concepts and the seconds, being acts of apprehension of a multitude of things, will form general concepts. These, being formed by acts of apprehension of things of the same species, or of those of the same genus, or of being in general. To these general concepts will, in turn, be identified the universals. Concepts and

[175] "[…] Habere intellectionem hominis confusam non est aliud quam habere unam cognitionem qua non magis intelligitur unus homo quam alius, et tamen quod tali cognitione magis cognoscitur sive intelligitur homo quam asinus" *(ExPer.* I prooem. sec. 6; *OPh* II, *355)*

[176] See section 2.3 The *fictum* theory

> universals will thus cease to coincide, since there are concepts, namely singular concepts, which are not universals.[177]

In Ockham's mature theory of concepts, there are singular concepts in addition to general concepts. Therefore, one cannot simply say that universal are concepts, for concepts can also be singular, and these are undoubtedly not universal. Both singular and general concepts play a fundamental role in the mental discourse developed by Ockham. In mental language, the singular concepts – the intuitive intellections – are singular terms, whereas general concepts – the abstractive intellections – are general terms.[178]

It is by defining universals as mental signs that Ockham is considered a nominalist. However, he does not support a nominalist theory according to which universals are conventional signs. On the contrary, for him, universals are natural signs of the objects they signify.

Ockham's theory of signification has been extensively revisited[179], especially in regard to its semantic dimension. For, since the universal is considered a sign, the relation between the universal and its objects is analyzed through the logical-semantic doctrine of supposition, which analyzes the ways a term can take the place of an object in a proposition. This analysis will allow the assignment and verification of the truth value of a proposition. And this is relevant because, in the late Middle Ages, the notion of truth was closely associated with the truth of a proposition, in the sense that if something is true, then it must be expressed by means of a true proposition.

In most of the secondary literature on the problems of universals, Ockham is commonly considered as a nominalist or as a conceptualist, and great emphasis is given to how he handles universals from a logical-semantic perspective. However, when we ask whether Ockham's theory of concepts answers the problem of universals,

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[177] Karger (1994), p. 447 : « Les actes d'intellection intuitive et les actes d'intellection abstractive état, les uns comme les autres, des actes simples d'intellection, ils formeront, les uns et les autres, des concepts. Les premiers, étant des actes d'apréhension d'une chose et d'une seule, formeront des concepts singuliers et les seconds, étant des actes d'appréhension d'une multitude de choses, des concepts généraux.Ceux-ci, étant formés par des actes d'appréhension des choses d'une même espèce, ou de celles d'un même genre ou d'être en général. À ces concepts généraux seront, à leur tour, identifiés les universaux. Concepts et universaux cesseront donc de coïncider, puisqu'il y a des concepts, à savoir les concepts singuliers, qui ne sont pas des universaux. »

[178] Cf. Karger (1994) p. 447

[179] Cf. Boehner (1946); Michon, C. (1994). *Nominalisme: la théorie de la signification d'Occam*. Paris: J. Vrin.; Adams, M.M. (1987). *William Ockham.* Vol 2. Notre Dame: University of Notre Dame Press.

we ought to make some considerations. Ockham addresses numerous criticisms towards theories postulating a sensible species that exists alongside objects and intelligible species that carry and inform the objects' "intelligible form" to the intellect. Moreover, according to his mature theory of concepts, the development of the universal concept in our mind involves no purely intentional object other than the cognition of the singular object. Therefore, we can conclude that the theory of concepts as mental signs in Ockham provides a response to the problem of universals that does not involve postulating a metaphysical entity but that is nonetheless a solution.

Just as there is a way of directly approaching the problem of universals by exposing the problem and another way that concerns its historical view, in Ockham's work there are two moments he deals with the problem of universals. At first, there is the metaphysical approach consisting mainly of its ontological reduction in which he defends the absolute reality of the particulars and categorically denies the notion of *universal res*, that is, that universal things or entities actually exist in the objective world.

A second moment concerns the cognition of universal concepts. For since the world is composed of singulars only, it is necessary to explain how we can still have mental representations of universals. In other words, how do we form universal concepts in the mind based on empirical contact exclusively with particulars? Secondary literature often generally treats Ockham's concepts as something apart from the metaphysical problem of universals. This approach is understandable as we know that Ockham denies the reality of universals in a strong sense, reducing them to mental general concepts. In fact, we cannot say that he has developed a doctrine of universals precisely because of his denial of universals as substances or realities outside the soul. On the contrary, Ockham's ontology is based on the singular.

Nonetheless, we can summarize Ockham's account on universals considering three essential aspects. First, the universal is not a reality outside the soul, that is, no particular substance is a universal. Second, the universal is not a common essence or form that is part of the basic composition of the object along with matter. Each object is composed of its unique matter and form. Third, the universal is essentially a second intention, that is, a second intention term whose generality concerns its ability to signify multiple similar things.

These three characteristics of the universal are present in some moments of our research. First, the definition that the universal is not a substance outside the soul is a key notion in the Ockhamian philosophy. This notion underlies his ontology, hence his theory of concepts, epistemological theory, and logic. In the second chapter of our research, we will explore how universal concepts are mental acts in *Venerabilis Inceptor's* philosophy. In a second moment, the notion that universals are not part of the basic constitution of objects will be useful to understand the rejection of the theory of intelligible species as an explanatory medio for the cognition of objects outside the mind. And in a third moment, the notion that universality is exclusively linked to signification will help us understand the notion of concepts as mental signs in mental language.

Although we are not necessarily engaged in defending an Ockhamian theory of universals, we believe that his view on universals provides a good basis to understand his theory of concepts as we illustrate in the present study.

2. MENTAL ACTS THEORY

In Ockham's mature theory the concepts — considered as the basic components of our reasoning — are identified as cognitive acts. In the medieval period, the notion of acts derives from the Aristotle's idea of actuality as opposed to the idea of potency. The Aristotelian sense of act is not necessarily the act of someone. Instead, an act is the actuality of something, for example heating is an act of fire. Similarly, a mental act is an actualization of a mental content. However, it is important to stress that for Ockham the notion of act is quite distant of its modern sense, in which an act is always intentional. Instead, his notion of act relates more to Aristotle's, according to which an act is not always intentional, as in the case of the fire producing the heat. The medieval sense accounts more to an act as the actualization of a potential.[180] Nevertheless, Ockham's acts account is not a mere reproduction of Aristotle's. In Aristotelian theory intellectual acts are distinct from concepts, whereas in Ockham's theory acts are the very concepts. Furthermore, all cognitive processes are acts for Ockham, which represents an innovation in relation not only to Aristotle but to many of his contemporaries. The mediaeval scholars used to differentiate the activity of intellect from their products such as, for example, intellections and concepts. Ockham, for his part, considers both intellections and concepts as mental acts.

The intellectual acts theory is exposed mainly in Ockham's *Ordinatio Prologue*[181] and in a short version of *Quodlibetal Questions*[182]. According to Ockham, acts are mental states actualized in the instant the agent is thinking, feeling, wishing, or perceiving something. It is somehow analogue to what the modern philosophers of mind call mental episodes[183].

There are acts of will, desire, perception and so on. To our purpose, the intellectual acts are the most relevant. Ockham distinguishes the act of judgment (*actus iudicativus*), by which an agent judges a certain proposition false or true, as

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[180] Cf. Panaccio, C. (2004). *Ockham on concepts*. Ashgate studies in medieval philosophy, p. 21.

[181] Ockham, W. (1967). *Scriptum in Librum Primum Sententiarum Ordinatio*: Prologus Et Distinctio Prima. Front Cover. William (of Ockham). Franciscan Institute.

[182]. Ockham, W. (1980). *Quodlibeta septem*. St. Bonaventure University, the Franciscan Institute.

[183] See for instance Sellars, W. (1981). Mental Events in *Philosophical Studies*. 39, pp.325-45.

contrasted with the act of apprehension (*actus apprehensivus*), which is a mere intellectual apprehension.

> The first distinction is between two acts of the intellect. The first act is an act of apprehension and relates to everything that can be the term of an act of the intellective power, whether this be something complex or non-complex. For we apprehend not only that which is non-complex, but also propositions and demonstrations, and impossibilities and necessities, and, in general, anything within the scope of the intellective power. The second act may be called an act of judgment, by which the intellect not only apprehends its object, but also gives its assent or dissent to it. This act has to do with a proposition [*complexum*] only. For our intellect does not assent to anything unless we believe it to be true, nor does it dissent from anything unless we believe it to be false. It is clear, therefore, that in reference to a proposition, a twofold act is possible, namely an act of apprehension and an act of judgment […].[184]

Ockham attempts to clarify that these are two different acts. The first proof is that having apprehended a proposition, the intellect can be indifferent to it and give neither assent nor dissent. The same is true of someone who does not speak a language and hears several propositions in that language, to which he cannot assent or dissent. On the other hand, the intellect can agree to one proposition and dissent from another, so that the acts of apprehension and judgment are distinct.[185]

The act of apprehension or apprehensive act can be divided into complex and incomplex. The complex apprehensive act is the apprehension of a mental proposition, whereas the incomplex apprehensive act is the apprehension of a term. The incomplex apprehensive act is divided between intuitive cognition and abstractive cognition.

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[184] "Est igitur prima distinctio ista quod inter actus intellectus sunt duo actus quorum unus est apprehensivus, et est respectu cuiuslibet quod potest terminare actum potentiae intellectivae, sive sit complexum sive incomplexum; quia apprehendimus non tantum incomplexa sed etiam propositiones et demonstrationes et impossibilia et necessaria et universaliter omnia quae respiciuntur a potentia intellectiva. Alius actus potest dici iudicativus, quo intellectus non tantum apprehendit obiectum sed etiam illi assentit vel dissentit. Et iste actus est tantum respectu complexi, quia nulli assentimus per intellectum nisi quod verum reputamus, nec dissentimus nisi quod falsum aestimamus. Et sic patet quod respectu complexi potest esse duplex actus, scilicet actus apprehensivus et actus iudicativus." *Ord. Prol.*, Q.I, [*OPh* I 16. 6-19].

[185] "Hoc probatur: quia aliquis potest apprehendere aliquam propositionem et tamen illi nec assentire nec dissentire, sicut patet de propositionibus neutris quibus intellectus nec assentit nec dissentit, quia aliter non essent sibi neutrae. Similiter laicus nesciens latinum potest audire multas propositiones in latino quibus nec assentit nec dissentit. I§ Et certum est quod intellectus potest assentire alicui proposirioni et dissentire alteri; igitur etc. §I" *Ord. Prol.,* Q.I. [*OPh* I 16-17, 19-2].

There are two distinct levels of cognition in the Ockhamist system, the intellective cognition, which concerns the immaterial or spiritual reality, and the sensitive cognition or sense-cognition, which concerns the order of material things or sensations. The relation between them is causal: the sensible intuition causes an intellective intuition, that in turn will be followed by an abstractive cognition. Both have the same object, namely the real external object. However, there is a difference between sensible and intellectual intuitions. The sensible intuition, despite having the same object of the intellective intuition, is not enough to assent to evident judgments in contingent matters: “The evident knowledge of a contingent truth is never sufficiently caused by the incomplex knowledge of the terms, because then it would be known immediately.”[186] The reason is that cognitive complex acts presuppose causally incomplex apprehensive acts from the same cognitive power.

> Every act of judgment pre-supposes in the same faculty a non-complex cognition of the terms; for it presupposes an act of apprehension, and the act of apprehending a complex presupposes non-complex cognition of the terms. […][187]

Ockham divides the soul in two main parts, the intellective and the sensitive. When he says that cognitive complex acts causally presuppose incomplex apprehensive acts from *the same cognitive power*, he is stating that in order to have a cognitive complex act in the intellect, it is necessary that it was caused by an incomplex apprehensive act from the intellect and not from the sensitive part of the soul.

Acts of judgment causally presuppose acts of incomplex apprehension in the same cognitive power for only the intellect can produce such 'complex', that is, only the intellect can form propositions and judge them which the senses cannot. Thus, the evident knowledge in contingent matter needs the incomplex intellectual acts of intuitive apprehension.[188]

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[186] “Si dicatur quod notitia evidens veritatis contingentis nunquam causatur sufficienter ex notitia incomplexa terminorum, quia tunc sciretur cognitis terminis.” *Ord. Prol.,* Q.I. [*OPh* I, 6, 10-12].

[187] […]quod omnis actus iudicativus praesupponit in eadem potentia notitiam incomplexam terminorum, quia praesupponit actum apprehensivum. Et actus apprehensivus respectu alicuius complexi praesupponit notitiam incomplexam terminorum [...]” *Ord. Prol.,* Q.I. [*OPh* I, 21, 6-10].

[188] “Prima conclusion praeambula est ista quod actus iudicativus respect alicuius complexi praesupponit actum apprehensivum respect eiusdem”. *Ord. Prol.,* Q.I. [*OPh* I, 17,15-17].

Therefore, no act of the sensitive part of the soul is either partially or totally the immediate and proximate cause of the intellect's own act of judgment.[189] As he proves as follows:

> No act of the sensitive part of the soul is either partially or totally the immediate and proximate cause of the intellect's own act of judgment. A persuasive argument can be adduced for this conclusion. If we assume that contents of the intellect suffice as proximate and immediate causes to produce some act of judgment, then they suffice to produce every such act. Now contents of the intellect suffice for some act of judgment, namely a conclusion; because when the knowledge of the premises is in the intellect, the conclusion is immediately known without the help of anything else. Therefore, contents of the intellect suffice as the proximate cause of every act of judgment. Furthermore, since the causes existing in the intellective part can be sufficient, the assumption of other causes is superfluous.[190]

The fact that the sensible intuitive act is not the cause of the intellect's own act of judgment does not mean that it is dispensable. Sensible intuition is but a partial, mediate, and distant cause of intellectual judgment acts even though it is not sufficient to cause it. Yet, it is relevant because intuitive sensory knowledge is a causal requirement of the intellective intuition of sensible realities: "[…] the intuitive knowledge of these sensitive things cannot be possessed without their intuitive sensitive knowledge. Therefore, the sensitive knowledge is not superfluous [...]."[191] Ockham does not exclude, however, the possibility that intellectual intuitive knowledge occurs without sensitive intuitive knowledge, as in the case of divine intervention. However, the main objective of his discussion is to state that the intellect can have a twofold knowledge about something purely intelligible and about something sensible as well.

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[189] "Similiter patet prius quod nullus actus partis sensitivae est causa proxima et immediata respectu alicuius actus iudicativi. " *Ord. Prol.,* Q.I. [*OPh* I, 26, 11-12].

[190] "Tertia conclusio est quod nullus actus partis sensitivae est causa immediata proxima, nec partialis nec totalis, alicuius actus iudicativi ipsius intellectus. Haec conclusio potest persuaderi: quia qua ratione ad aliquem actum iudicativum sufficiunt illa quae sunt in intellectu tamquam causae proximae et immediatae, et ad omnem actum iudicativum. Sed respectu alicuius actus iudicativi sufficiunt ea quae sunt in intellectu, scilicet respectu conclusionis, quia to si sit in intellectu actus sciendi praemissas, statim scitur conclusio omni alio circumscripto. Ergo ad omnem actum iudicativum sufficiunt ea quae sunt in intellectu tamquam causae proximae. Praeterea, ex quo causae quae sunt in parte intellectiva sufficere possunt, frustra ponuntur aliae causae." *Ord. Prol.,* Q.I. [*OPh* I, 22, 4-15].

[191] "[…] Quia notitia intuitiva intelectiva istorum sensibilium pro statu isto non potest habeti sine notitia intuitiva sensitiva eorum. Et ideo sensitiva non superfluit [...]". *Ord. Prol.,* Q.I. [*OPh* I, 27,12-14].

When an intelligible thing can be known only by the intellect, but not by the senses, it is possible that there are two non-complex cognitions of the thing, a) one that is sufficient for the evident knowledge of a contingent truth (about that thing) and b) another that is not enough.

> […] Whenever an intelligible thing can be known only by intellect and in no way by sense, if there can be one non-complex cognition of the thing that suffices for evident knowledge of a contingent truth and another that does not suffice, then the two cognitions are specifically distinct.[192]

However, acts of intellect, emotions, pleasures, griefs, and the like, can be apprehended only by the intellect and not by the sense-faculty. Then, a) some non-complex knowledge of them suffices as evident knowledge of whether they exist or not, and whether or not they exist in such and such subject. However, b) not all non-complex knowledge of them suffices for this; therefore, etc. Ockham intends to prove the existence of two cognitions as follows:

> Everyone experiences in himself that he understands, loves, is pleased, is sad. Since such knowledge concerns contingent facts, it cannot be obtained from necessary propositions. Therefore, either (1) it must be obtained from a non-complex knowledge of the terms, or the things for which the terms stand, or (2) from a contingent proposition obtained from non-complex cognition of the terms or things, or (3) we can go on in infinitum with such contingent propositions. The third case is impossible, since there must be an end in the series of such propositions. If the second case is assumed, then the contingent proposition either contains some term which can be obtained from a sensible object, or it does not. The first alternative cannot be admitted; for there is no proposition about a sensible thing from which it would necessarily follow that love is occurring in the will, as will be made clear elsewhere, and consequently there is no contingent proposition in virtue of which it is evidently knowable that this man loves. If the second alternative is conceded, we have

[192] "[...]Omne intelligibile quod est a solo intellectu apprehensibile et nullo modo sensbile, cuius aliqua notitia incomplexa sufficit ad notitiam evidentem alicuius veritatis contingentis de eo et aliqua notitia incomplexa eiusdem non sufficit, potest cognosci ab intellectu duabus cognitionibus specie distinctis." *Ord. Prol.,* Q.I. [*OPh* I, 28, 5-10].

> the result we wanted: that a non-complex knowledge of purely intelligible terms is sufficient for evident knowledge of such a contingent truth.[193]

He proves the second premise by saying that it is not inconsistent to suppose that someone knows whether an intelligible thing exists or not and still has a non-complex knowledge of it. Similarly, the same can be assumed of a sensitive thing. And he continues:

> If, therefore, someone's intellect should directly perceive another person's love and he were thus as certain of this other person's love as of his own love, then there would not be any difficulty about supposing that later on he could still think of this love and nevertheless not know whether it continued to exist, even though it did still exist; just as may happen with some sensible thing which. is first seen and then though t of.[194]

Thus, he concludes that are two ways of knowing something non-complex, in other words, that are the two different cognitions of an incomplex as said above, namely (a) intuitive cognition and (b) abstractive cognition:

> The one can be called ‘abstractive cognition', the other 'intuitive cognition'. But I am not concerned whether others wish to call this non-complex cognition 'intuitive cognition' or not. For what I intended to prove in the first instance was just that our intellect can have two specifically different non-complex cognitions of the same thing.[195]

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[193] “[...] Quia quilibet experitur in se quod intelligit, diligit, delectatur, tristatur ; et ista notitia, cum sit respesctu contingentis, non potest accipi ex propositionibus necessariis. Igitur oportet quod accipiatur vel a notitia incomplexa terminorum vel I§ rerum vel §I ab aliqua contingente quae accipitur a notitia incomplexa terminorum vel I§ rerum importatatum, vel §I erit processus in infinitum in talibus contingentibus. Tertium est impossibile, quia est ponere statum in talibus. Si detur secundum : vel igitur ista contingens habet aliquem terminum qui potest accipi ab aliquo sensibili vel nullum. Primum non potest dari, quia nulla est propositio de aliquo sensibuli ex qua sequatur necessario dilectionem esse in voluntate, sicut alias patebit, I§ et per consequens nulla est talis propositio contingens virtute cuius potest evidenter cognosci quod iste diligit. §I Si detur secundum, habetur propositum, quod sola notitia incomplexa terminorum mere intelligibilium sufficit ad notitiam evidentem talis veritatis contingentis.” *Ord. Prol.,* Q.I. [*OPh* I, 28-29. 15-5].

[194] “Unde si intellectus primo videret dilectionem alterius et esset ita certus de dilectione alterius sicut de dilectione propria, non esset inconveniens quin post dilectionem eadem intelligeret et tamen ignoraret ipsam esse, quamvis esset, sicut est de aliquo sensibili primo viso et post intellecto.” *Ord. Prol.,* Q.I. [*OPh* I, 29. 9-14].

[195] Dico igitur quantum ad istum articulum quod respectu incomplexi potest esse duplex notitia, quarum uma potest vocari abstractiva et alia intuitiva. I§ Utrum autem alii velint vocare talem notitiam incomplexam intuitivam, non curo, quia hoc solum intendo principaliter probare quod de eadem re potest

The doctrine of intuitive and abstract knowledge is the cornerstone of Ockham's theory of knowledge. In this theory, all phases of cognition are considered cognitive acts. These acts, also called mental acts because they are intellectual and, therefore, situated in the mind, accompany mental habits. For, in the beginning of the text *Prologue of Ordinatio* by distinguishing apprehensive and judicial acts, he says:

> The first distinction is between two acts of the intellect. The first act is an act of apprehension and relates to everything that can be the term of an act of the intellective power, whether this be something complex or non-complex. For we apprehend not only that which is non-complex, but also propositions and demonstrations, and impossibilities and necessities, and, in general, anything within the scope of the intellective power. The second act may be called an act of judgment, by which the intellect not only apprehends its object, but also gives its assent or dissent to it. This act has to do with a proposition [*complexum*] only. For our intellect does not assent to anything unless we believe it to be true, nor does it dissent from anything unless we believe it to be false. It is clear, therefore, that in reference to a proposition, a twofold act is possible, namely an act of apprehension and an act of judgment […].[196]
> The second distinction is that **just as in regard to a proposition there can be a twofold act, so also there can be two corresponding *habitus*; the one inclines the intellect towards an act of apprehension; the other towards an act of judgment**.[197]

Here we can see that Ockham includes the notion of *habitus* in his epistemology. Mental acts and habits that accompany them constitute the ontology of Ockhamian

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intellectus habere duplicem notitiam incomplexam specie distinctam. §l" *Ord. Prol.,* Q.I. [*OPh* I, 30. 6-11].

[196] "Est igitur prima distinctio ista quod inter actus intellectus sunt duo actus quorum unus est apprehensivus, et est respectu cuiuslibet quod potest terminare actum potentiae intellectivae, sive sit complexum sive incomplexum; quia apprehendimus non tantum incomplexa sed etiam propositiones et demonstrationes et impossibilia et necessaria et universaliter omnia quae respiciuntur a potentia intellectiva. Alius actus potest dici 'iudicativus, quo intellectus non tantum apprehendit obiectum sed etiam illi assentit vel dissentit. Et iste actus est tantum respectu complexi, quia nulli assentimus per intellectum nisi quod verum reputamus, nec dissentimus nisi quod falsum aestimamus. Et sic patet quod respectu complexi potest esse duplex actus, scilicet actus apprehensivus et actus iudicativus." *Ord. Prol.,* Q.I. [*OPh* I, 16. 6-18].

[197] "Secunda distinctio est quod sicut respectu complexi est duplex actus, sic respectu complexi est duplex *habitus* correspondens, scilicet unus inclinans ad actum apprehensivum et alius inclinans ad actum iudicativum." *Ord. Prol.,* Q.I. [*OPh* I, 17. 3-6]. [our bold]

mental language, as well as being the only mental elements present in the cognitive process. We will further analyze these two elements and explain the intuitive and abstractive cognition.[198]

At the intellectual level, cognition encompasses current knowledge and memory of past experiences. Current knowledge involves in a causal order: perception of reality, assertions, and negations about reality, and, finally, inferences and argumentation. The two main types of cognition, namely intuitive cognition (*notitia intuitiva*) and abstract cognition (*notitia abstrativa*) perform, according to Fuchs, the perception or what might be called the Ockhamian perceptive theory. [199]

Beginning with intuitive cognition, we have at its basis the perception which is also the most basic and fundamental act of all intellectual cognition. The *notitia intuitiva* is the current knowledge of a singular object that when perceived is called *incomplexum* and is apprehended by an incomplex act. This apprehensive act serves as the basis for existential judgments about the perceived object.

> Intuitive cognition of a thing is cognition that enables us to know whether the thing exists or does not exist, in such a way that, if the thing exists, then the intellect immediately judges that it exists and evidently knows that it exists, unless the judgment happens to be impeded through the imperfection of this cognition. And in the same way if the divine power were to conserve a perfect intuitive cognition of a thing no longer existent, in virtue of this non-complex knowledge the intellect would know evidently that this thing does not exist. [200]

Therefore, the main feature of *notitia intuitiva* is that it allows us to have evident knowledge about the object's actual existence or non-existence. This evident knowledge allows the intellect to assent to propositions about the existence or non-existence of the object. It is the intuitive *notitia* that provides the necessary evidence for later judgments by the intellect about these propositions.

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[198] Cf. 2.2 *Notitia intuitiva et notitia abstrativa*

[199] Cf. Fuchs, O. (1952) *The psycology of Habit According to William Ockham***.** New York: The Franciscan Institute, p. 18.

[200] "[...]Quia notitia intuitiva rei est talis notitia virtute cuius potest sciri utrum res sit vel non, ita quod si res sit, statim intellectus iudicat eam esse et evidenter cognoscit eam esse, nisi forte impediatur propter imperfectionem illiius notitiae. Et eodem modo si esset perfecta talis notitia per potentiam divinam conservata de re non exsistente, virtute illius notitiae incomplexae evidenter cognosceret illam rem non esse." *Prol. Ord.*, Q. I, 31,10-16.

In general, the cognitive process is described as a complex causal sequence of cognitive acts. The external object first causes a sensory intuition in the agent and then, with the help of the sensation, also causes an intuitive intellectual act that brings two things into the intellect[201]: an evident singular true existential judgment, a simple abstract act. This abstractive cognition causes the formation of what Ockham calls a *habitus*, a disposition that in the future will enable the agent to reactivate the abstract act even when the object is no longer present.

The term 'habit' is used to explain many aspects of the human behavior. So much is discussed in psychology about how the transformation of habits plays significant changes in people's lives.[202] But, *what a habit is* remains somewhat obscured. In the philosophic field, the first habit-theory in the empiric psychology was developed by Aristotle. The theory was reviewed and amplified by the scholastics of the late 13th Century and the different definitions gave rise to a different sense of the term among the medieval thinkers. We will present an overall view about habits and then, analyze the habit's role in Ockham's cognition theory.

2.1 HABIT DEFINITION

Ockham's habit theory was influenced by the definitions of habits found in the Aristotelian corpus[203]. As we will state further, concerning to intellectual habits he adopts the definition of *De Anima* (*De an.* 2.5, 417a32) in which Aristotle defines them as the result of a change of quality, through the repetition of corresponding acts. The habit acts in two levels, physical and mental. On the physical level, habit is "a matter of experience": an acquired ability observable by experience. On the mental level, habit is a non-observable knowledge or a virtue. Although the mental habit is non observable, it can be perceived by the individual himself or by others: "when a person recognizes in himself as a result of repeated acts, an acquired ability to do things or a

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[202] M. Roques remarks that this common and modern sense of habit would be more precisely translated from the Latin word *consuetudo*. Cf. the introduction of N. FAUCHER, M. ROQUES (eds.), *The Ontology, Psychology and Axiology of Habits (Habitus) in Medieval Philosophy*, Historical-Analytical Studies on Nature, Mind and Action 7, Springer, 2018, pp.xxx.

[203] For an overview about the different meanings *habitus* has in Aristotle works Cf. Faucher and Roques (2018), p. 2-3

certain facility of action which did not exist before, one can be said to possess a habit."[204]

Given that the habit is something that has a double aspect, a physical and a mental one, can we demand what is the ontological status of habits? This question has its relevance due to the fact that Ockham claims that his epistemological theory should not contain any unnecessary metaphysical entities. Furthermore, habits are a metaphysical category according to Aristotle. However, Ockham considers that of the ten categories, only quality and substance are actual categories. For this reason, the ontological status of habits is a sensitive issue insofar it can jeopardize the coherence of his ontological minimalism. We shall begin recalling some of the major metaphysics principles in Ockham's thought. He abandons the 10 categories from Aristotle and only admits two categories existing out of mind: substance and quality. Therefore, if there are habits in Ockham's theory, they might be either substance or quality. Once we cannot think of habits as substances, they are a *positive* quality of the soul.

> And I think that he who wants to hold this opinion [the act theory] will speak more suitably if he were to say that *all* propositions, syllogisms, any sort of intentions of the soul, and universally all things that are called beings of reason are truly positive, real beings and true qualities of the mind really informing the mind - as whiteness really informs the wall and heat the fire.[205]

There is a relation of similarity and a strong causal relation between acts and *habitus*, for a habit is directly caused by an act which in turn is a quality[206]. Thus, we infer that a habit must be of the same kind of its cause, that is, the acts. Therefore, both acts and habits must have the same ontological status because of their relation of similarity.

2.1.1. HABIT FORMATION

[204] Cf. Fuchs (1952), p. 1

[205] "Et qui vult tenere istam opinionem, reputo quod magis dicet convenienter, si dicat quod omnes propositiones, syllogismi, quaecumque intentiones animae, et universaliter omnia quae vocantur entia rationis, sunt vere entia realia positiva et verae qualitates mentis realiter informantes mentem, sicut albedo informat realiter parietem et calor ignem". *ExPer.* I, prooem. sec. 6; [*OPh* II, 358]

[206] "Praeterea actus elicitus est qualitas absoluta; igitur *habitus*. Consequentia patet, quia *habitus* est causa actus." *Quodl*. I, Q. 18 [*OTh* IX, 94]

Habits are not inborn, they are acquired. An accurate definition of habits would be that they are qualities of the soul originated from acts and are capable of producing acts[207]. Thus, how the acts can cause the habits? This question probably relies in physiological explanations involving personal motivation, environment influences, etc. However, in the theoretical perspective we are interested to know how habits are acquired and how do they succeed from *mental* acts. Shortly, the habit formation has an explanation very similar with the common sense we have about habits: a repeated action becomes a habit. Therefore, a repeated mental act will form a mental habit. In a philosophical approach, we must distinguish between acts and habits. In an ordinary sense, when someone is doing some habitual activity, we may say he has a habit or is making a habit. Similarly, the habit is not the act itself, but something that is possible through the repetition of an act: "Acts are not only the causes of the genesis of habits but also of their development or strengthening".[208] Accordingly, habits development is explained through causality: an act performed repeatedly forms a habit capable to reproduce another act of the same type of the original act because it is endowed with an ability described as an *inclination*, the ability to determine a power of the soul to producing acts similar to those which produced it.[209] Ockham did not specify how many times an act must be repeated to become a habit. But we suppose that just like the ordinary habits we build into ours, an action or act repeated a certain number of times becomes a habit. Once this act or action is discontinued, the habit will be weakened. However, this does not present a weakness in his theory. For, even today science tries to find a formula for the construction and establishment of habits in human beings.

We must distinguish two different relations the habits hold with acts. First, we know that acts are efficient causes of habits, hence they are not innate because they depend on the previous existence of an act to be formed. Therefore, the existence of a habit is entirely depending on the previous existence of an act for Ockham defines a

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[207] "Quantum ad secundum articulum dico quod actus est causa efficiens respectu *habitus*, quod probatur: quia illud ad cuius esse ponitur aliud debet esse causa nisi evidente appareat quod sit neganda causalitas. Sed posito actu frequenter elicito, ponitur *habitus*, et non potest poni naturaliter sine actu; et non apparet causa quare activitas debet negari ab actu. Ergo est causa effectiva actus." Rep. III, IIt D.

[208] Cf Fuchs (1952), p. 8.

[209] "*Habitus* proprie non dicitur nisi quia vel inclinat adactus alicuius potentiae vel quia est inclinativum causatum ex actibus et remanens in absentia actuum." *Rep*. III, q. 12 [*OTh* VI: 396].

habit as a quality that is immediately generated by an act, without which that habit could not have come into existence.[210] The acts are the condition of existence to habits. Secondly, due to the similarity relation between acts and habits, the latter receives the same ontological status of their causes, hence, both acts and habits are qualities in the soul. Still, due the similarity between acts and habits, the content of given habit remains the same of the act that caused it. These features are related to which we are going to call "the act as a cause". However, there is another relation between the acts and habits, and it concerns to the function of habit as dispositions of which acts are manifestation. In this case, what is the difference between the act as cause and the "act as a manifestation"? Are these the same act? In a strict sense, they are not the same act because it is simply impossible that something be at once an efficient cause and the effect of something. The act cannot efficiently cause the habit and be itself the effect of its own cause. However, the nature of the habit is dispositional, which means that it is naturally apt to incline an act with the same content of that act that caused it, but different in number.[211]

2.1.2 HABIT AS AN INCLINATION

We know beforehand that the prompter act and those acts produced are not numerically identical, but they are of the same kind. The relation between the habits and the acts produced by it are based in the notion of inclination. The Ockhamian notion of *habitus* derives from Aristotle. In *Categories* 8 (8b25-9a19) a habit is said different from a disposition because the former is more firmly established, for a habit is more difficult to displace than a disposition is, therefore it lasts longer. Every quality difficult to displace is a *habitus*.[212] In the account of habits as active causal principles

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[210] "Aliter accipitur '*habitus*' stricte pro habitu immediate generato ex actu, qui *habitus* aliter generari non potest." *Quodl*. II, q. 18 [*OTh* IX: 190]

[211] "Assumptum patet quia si activitas esset neganda ab actu, vel hoc esset... quia *habitus* potest totaliter causari a potentia, vel quia actus causatur ab habitu et non econverso propter certitudinem...

Nec secundum (impedit) quia si potentia est tota causa *habitus*, igitur potest causare habitum sine omni actu, quod falsum est, quia actus saltem primus potest causare sine omni habitu et non econlverso. Nec tertium impedit quia in causis particularibus potest bene esse circulatio; et per consequens actus potest esse causa *habitus*, et ille *habitus* potest esse causa alterius actus et sic deinceps." *Rep. III,* Q. 11, [*OPh* VI, 354]

[212] "Et vocatur *habitus* omnis qualitas de difficili mobilis sive spiritualis sive corporalis. " *SL.* ,. 55 [*OPh* I, 181, 38-39]

of acts, Roques explain that the true causal power of the habit is the origin of a psychic causal process, and the exercise of the causal power is distinct from it.[213] The causal power is the inclination since "a habit is a disposition, and it is really distinct both from its exercise, which is an inclination and from the effect of this activity, which is a psychic act".[214] As important as the disposition of habit to incline new acts from itself is the nature of this inclination which always leads the habit to generate acts of the same kind as the original act.[215] Thus, there must exist some principle that unifies the content of such acts and habits related. However, what allows both to have the same content?

Not only habits existence but also their nature depends on the nature of the act that has caused them. However, ontologically speaking, a distinction is necessary, a mental act, while actualization is performed by something different from itself. We know that both mental acts and *habitus* exist in the soul. Thus, actualizing these acts is an action of the soul. Ockham believes that there is no difference between the essence of the soul and its capabilities. According to him, all the sensitive activities of the soul can be performed by the activity of one and the same soul, this is true for both sensitive and intellectual soul.[216]

The activity of the soul is performed by the power of the soul, which also concerns the acts that the soul can perform.[217] Similarly, Ockham makes no distinction between active and passive soul as he considers there is only one intellect capable of acting and being acted upon.

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[213] For an account about the inclination on habits Cf. Roques (2018) p. 270

[214] Cf. *Ibid*, p. 273

[215] "[…] distincti actus specie causant distinctos *habitus* specie, quod patet ex hoc quod *habitus* generatus ex istis actibus non inclinat immediate nisi ad consimiles actus et non ad alios; et alius *habitus* generatus ex aliis actibus inclinat ad alios actus; igitur etc." *Quodl*. II, q. 18 [*OTh* IX: 190]. Cf. *Rep*. III, q. 12 [*OTh* 6: 403.11–16].

[216] "Secundo modo [potentiae sensitivae] non distinguuntur realiter, sicut res et essentiae distinctae, nec inter se nec ab anima sensitiva. Quod probatur, quia frustra fi per plura quod potest firi per pauciora. Sed per unam animam sensitivam quae se tenet a parte principii elicientis indistinctam possunt elici omnes operationes sensitivae, ergo frustra ponuntur plures formae." *Rep*. III, q. 4 [*OTh* VI: 136.16–21)

"Nam intellectus est sic una potentia et habet diversas operationes specie distinctas, sicut actum simplicis intelligentiae et actum componendi, dividendi et discurrendi. Eadem voluntas habet volitionem et nolitionem tanquam operationes distinctas specie." *Rep*. II, q. 4 [*OTh* V: 58.6–10]

[217] "Potentia intellectiva sic accepta non tantum significat essentiam animae sed connotat actum intelligendi. Et eodem modo voluntas." *Rep*. II, q. 20 [*OTh* V: 438].

The difference between a habit and a power of the soul is that the first is caused by an act: "[…] a *habitus* is always generated from acts which incline to similar acts of the same kind".[218]

> For Ockham, the main difference between a habit and a power is that a power of the soul is by definition innate and is what precedes any act, while a habit is by definition not innate but is posterior to at least one act. Thus, in answer to Aquinas, Ockham insists on a crucial element of his definition of habit as a quality of the soul generated by an act and inclining to acts of the same species, namely, that it is an acquired disposition.[219]

However, regarding concepts as mental acts and *habitus*, there are two distinct concerns in Ockham's nominalist program. On one hand, the ontological state of the concept: as an act, it is a singular quality in the singular mind. This status guarantees that the mental concept is not itself a metaphysical entity. On the other hand, the concept needs to have a specification of the content in relation to its objects, otherwise it will necessarily fall into an innatism. In this sense, inclination seems to be central in the metaphysics of habits. Roques advocates that the active causal principle of habits is more powerful than the power of the soul. [220]

> It is because of inclination that a habit must be considered an active principle, a characteristic that distinguishes it from the powers of the soul properly speaking, such as the intellect or the senses. A habit is an active causal principle, while a power of the soul is a passive causal principle.[221]

The nature of a mental act is determined by the nature of the object that caused it, for habits and acts of the same species have objects of the same species as well.

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[218] "[...]*habitus* semper generater ex actibus inclinantibus ad consimiles actus eiusdem speciei." *Rep* II, Q. 12-13 [OTh V, 262, 2-3]

[219] Cf. Roques (2018), p. 268.

[220] "Et ex hoc sequitur facilitas et promptitudo quod magis inclinatur nunc quam prius, ita quod ponitur propter inclinationem, sed principalia propter inclinationem, secundario propter alia duo. Sed tantum ponitur principium activum propter inclinationem. Et quando dicitur de triplici inclinatione, dico quod non est inclinativum per modum principii passivi, sed tantum per modum principii activi. Et in hoc differt a potentia naturali ut distinguitur contra violentum, quia illa potentia est principium passivum. Patet de gravi." *Rep.,* III, q. 7 [*OTh* VI, 217]

[221] Cf. Roques (2018), p. 271.

[222] Thus, acts of the same sort create habits of the same nature of the initial act. This is what Pelletier calls co-specification of habits and their acts. The causal relation between prior act > habit > posterior act(s) rests on the basis of their objects.[223]

According to what she calls Principle of Object-Act-Habit Specification (POHAS): the specific distinction between acts and habits is determined by the species of the object that the original act grasps[224]. A specific distinction between objects will determine the specific distinction between the acts and habits related to the object. Thus, any specific distinction between acts will result to a specific distinction between habits and vice versa.[225] Therefore, it is impossible for an act to generate a habit of a different species. Similarly, a habit will only produce acts like itself and the act that caused it.

The strong causal principle between object, act, and habit sustains intentionality in Ockham's cognitive process, which we shall see further. This will be particularly important regarding the process of concept formation, for the intentional relation that the object bear towards the mental act, that is, to the concept, is what allows concepts formed from an intuitive apprehension to be truly about the objects they represent.

Through a sequential repetition of acts and habits of the same type, we will have a strong habit of the same kind as the initial act. The same follows for habits caused by various acts of the same nature: they form a singular entity. This notion of specific unity explains why a set of acts of the same type form a single similar habit. Since the acts and habits are specified based on the apprehended object, their effects are also specified accordingly. Empirically, we can say that the specific skills acquired during the process of learning a language will only produce the ability in that specific language, but will never improve the ability to pedal, for example. In this sense, we say that by defining habits as disposition Ockham was at the same time defining the mode

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[222]: "[…] *habitus* et actus obiectorum eiusdem speciei sunt eiusdem speciei." *Quodl.* II, q. 18. [*OTh* IX, 191]

[223] See Pelletier, J. (2018) William Ockham on the mental ontology of scientific knowledge In: Faucher, N., Roques, M. (eds.), *The Ontology, Psychology and Axiology of Habits (Habitus) in Medieval Philosophy*, Historical-Analytical Studies on Nature, Mind and Action 7, Springer. p. 285-299. p. 290.

[224] Cf. Pelletier (2018), p. 290.

[225] "Ideo dico quod semper tanta est distinctio actuum quanta habituum et econverso; et ideo si diversorum obiectorum specie sint diversi actus specie, sequitur quod erunt diversi *habitus* specie. Et si *habitus* aliquorum obiectorum sint eiusdem speciei, et actus erunt." *Quodl.* II, q. 18. [*OTh* IX, 191-192].

of action or actualization of habits, namely inclination to a similar habit or action, as well as defining the causal relation between acts, habits and their objects. This configuration of habits and acts will be especially useful for consideration of the habits of knowledge, since in general a specific set of habits will correspond to a specifically distinct knowledge as we shall see in a further section[226].

2.2 NOTITIA INTUITIVA ET NOTITIA ABSTRACTIVA

One of the meanings of Scientia or knowledge in the *Prologue to the Expositio super viii libros physicorum* is that:

> […]'knowledge' means an evident cognition, namely when we are said to know something not merely because someone has told us about it, but should assent to it, even if there were no-one to tell us about it, mediately or immediately on the basis of a non-complex cognition of certain terms. For instance, if no-one told me that the wall is white, I should still know that the wall is white, just by seeing whiteness on the wall. It is the same with other truths. In this sense we have knowledge not only of necessary facts, but also of some contingent facts, whether it is that their existence or non-existence is contingent, or whether they are contingent in any other sense.[227]

Ockham says that all knowledge has to do with a proposition or propositions. And just as the propositions [*complexum*] are known by means of a science, likewise the incomplex terms compounding propositions are that subject matter which is considered by a science.[228] This means that a simple apprehension or incomplex knowledge is specifically distinct from complex knowledge or judgment. The first distinction is between two acts of the intellect. The first act is an act of apprehension and relates to everything that can be the term of an act of the intellective power,

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[226] See section 2.4.3 Habits as knowledge

[227] "Aliter accipitur scientia pro evidenti notitia, quando scilicet aliquid dicitur sciri non tantum propter testimonium narrantium, sed etsi nullus narraret hoc esse, ex notitia aliqua incomplexa terminorum aliquorum mediate vel immediate assentiremus ei. Sicut si nullus narraret mihi quod paries est albus, ex hoc ipso quod video albedinem quae est in pariete, scirem quod paries est albus ; et ita est de aliis. Et isto modo scientia non est tantum necessariorum, immo etiam est aliquorum contingentium, sive sint contingentia ad utrumlibet sive alia." *Exp. Phys. Prol., [OPh* IV. 2,1, 6, 35-40].

[228] We are using the term "complex" referring to proposition and the term "incomplex" referring to terms.

whether it is something complex or incomplex. For we apprehend not only that which is incomplex, but also propositions and demonstrations, impossibilities and necessities, and, in general, anything within the scope of the intellective power. The second act may be called an act of judgment, by which the intellect not only apprehends its object, but also gives its assent or dissent to it. This act has to do with a proposition only. We do not assent to anything by intellect (*nulli assentimus per intellectum*) unless we consider it to be true, nor do we dissent of anything unless we consider it to be false. It is clear, therefore, that in reference to a proposition, a twofold act is possible, namely an act of apprehension and an act of judgment.[229]

Knowledge of a complex always presupposes knowledge of an incomplex[230], which means that our cognition does not starts with the apprehension of necessary propositions but with the apprehension of contingent things or events. Direct or indirect contact with an object is what enables all knowledge. This experienced object can cause two specifically distinct types of incomplex knowledge in our intellect:[231] one may be called intuitive, the other abstractive cognition that form the cognition theory for Ockham.

The mental acts we have discussed so far are just the basic level of cognition. A fuller account of cognition should begin by saying that the main purpose of cognition theory is knowledge and the (evident) assent to mental complex. A mental complex is a proposition. However, in this meaning of *Scientia,* the knowledge of a mental complex is possible through the knowledge of the incomplex compounding the complex. In other words, knowledge of terms of a proposition are required in order to one really know a contingent proposition. All the theory of intuitive cognition is an account of this basic

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[229] "Est igitur prima distinctio ista quod inter actus intellectus sunt duo actus quorum unus est apprehensivus, et est respectu cuiuslibet quod potest terminare actum potentiae intellectivae, sive sit complexum sive incomplexum; quia apprehendimus non tantum incomplexa sed etiam propositiones et demonstrationes et impossibilia et necessaria et universaliter omnia quae respiciuntur a potentia intellectiva. Alius actus potest dici 'iudicativus, quo intellectus non tantum apprehendit obiectum sed etiam illi assentit vel dissentit. Et iste actus est tantum respectu complexi, quia nulli assentimus per intellectum nisi quod verum reputamus, nec dissentimus nisi quod falsum aestimamus. Et sic patet quod respectu complexi potest esse duplex actus, scilicet actus apprehensivus et actus iudicativus." *Prol. Ord*., Q.1, [*OTh* I,16. 6-18].

[230] "[…] quia dictum est prius quod formatio propositionis praesupponit in intellectu notitiam incomplexam terminorum (…)". *Prol. Ord*. Q. 1, [*OTh* I, 26]

[231] "[…] primo ostendam quod intellectus noster etiam pro statu isto respect eiusdem obiecti sub eadem ratione potest habere duas notitias incomplexas specie distinctas, quarum una potest dici intuitive et alia abstractiva." *Prol. Ord*. Q. 1, [*OTh* I, 15, 13-17].

level of cognition, in which the subject can form the concepts, the basic units of cognition and thinking. The incomplex knowledge is ante-propositional, which means that the features of intuitive and abstractive knowledge are applied to all contingent proposition in the present that can be the object of an evident judgement.[232]

The scope of the Ockhamian doctrine of intuitive and abstractive knowledge is the contingent propositional knowledge. If we are searching for a stricter sense of knowledge, it will not be found in this theory. According to Piché, it is the necessity to find a gnoseological foundation to the possibility or impossibility of evidence in contingent matters of existential judgment that leads Ockham to claim that, in the intellect, there are two types of incomplex acts of cognitive apprehension which are irreducible one to another.[233] He also says that the Ockhamian distinction between intuition and abstraction does not come from a positive observation of the cognitive mechanisms implied in the passage from perception to conceptualization. In another sense, this distinction comes from a transcendental analysis of complex cognitive acts aiming to identify their ultimate components. Thus, he affirms that the *duplex notitia incomplexa* doctrine is not a matter of metaphysics of cognitive acts nor an introspective exam of mental states, neither an empirical explanation of cognitive processes. Instead, it is an actualization of the primitive condition of possibility of *actus iudicativus*. Thus, it is from this perspective that we would like to present the theory of intuitive and abstract knowledge.

The cognitive process of forming concepts in Ockham has the singular object as the starting point. A singular object is the cause of sensitive intuitions which, in turn, give rise to an intuitive knowledge about the perceived object. *Notitiae intuitivae* are apprehensive acts that carries contingent facts about the perceived object and serves as the basis for existential judgments about it. When a judgment is about the object's present existence or non-existence, this judgment may be evident if the reality described (by the sentence) is the same as that reported at the time of the apprehensive act. Thus, *notitia intuitiva* enables us to make judgments about the object's actual existence or non-existence. Since Ockham claims that by its very nature

[232] See *Ibid*, p. 17

[233] *Ibid*, p. 18

intuitive knowledge cannot lead the intellect into error[234], we say that intuitive knowledge suffices to produce an evident judgment about the existence or non-existence of something. For, once intuition is produced in the intellect, it leads to the formation of an evident judgment.

The other way by which a singular object or an incomplex can be cognized is through abstractive cognition. One of the basic premises of Ockham's system is that abstract cognition always presupposes acts of intuitive cognition.[235] However, in his explanation of habit formation there is no direct causal relation between intuitive acts of cognition and habits. That intuitive knowledge produces habits of abstractive knowledge would be an explanation that would require no intermediate factor between perceptual intuition and the formation of habits of abstract cognition. However, the most distinctive feature of habit's theory is the double-hand causality between acts and habits. In order to maintain the coherence of intuitive cognition and habit theory, Ockham must give up either causality as a determinant of habit formation, or intuitive knowledge as the source of habitual knowledge. Intuitive knowledge is not capable of causing or producing habitual knowledge[236]. Instead, to solve this dilemma, he puts an intermediary between intuitive cognition and abstractive knowledge. Thus, to take a closer look at this, we shall turn for the consideration of abstract cognition.

2.2.1 NOTITIA ABSTRATIVA

Ockham distinguishes two senses for the term cognitive abstraction. In the first sense, cognitive abstraction refers to something abstracted from several singulars, so in this sense cognitive abstraction is the cognition of a universal extracted from various

[234] According to Ockham the intuitive knowledge of something is the one by which we can know whether the thing exists or not, in a way that if the thing exists, then the intellect judges it exists and knows evidently that it does exists, unless (the intellect) is impeded by the imperfection of this knowledge. "[...] quia notitia intuitiva rei est talis notitia virtute cuius potest sciri utrum res sit vel non, ita quod si res sit, statim intellectus iudicat eam esse et evidenter cognoscit eam esse, nisi forte impediatur propter imperfectionem illius notitiae". *Prol*. *Ord.* Q. 1, [*OTh* I, 31, 10-13].

[235] "Secundo dico quod cognitio simplex propria singulari et prima tali primitate est cognitio intuitiva. Quod autem ista cognitio sit prima patet, quia cognitio singularis absctractiva praesupponit intuitivam respectum eiusdem objecti et non econverso." *Quodl.* I, Q. 13. [*OTh* IX, 73, 38-41].

[236] "[...] quod ex nulla cognitione intuitiva sensitiva vel intelectiva generari potest *habitus*. Quia si sic, aut ille *habitus* inclinat ad cognitionem abstrativa aut intuitivam." *Rep. II*, Q. 12-13, [*OTh* V p. 264].

singulars.[237] However, opposing this position he argues that if the universal is an existing quality in the mind, then it can be intuitively known, so that the knowledge of such a universal would be at once intuitive and abstract. Thus, there would be no contrast between intuitive and abstract cognition. The abstraction defended by Ockham is not the abstraction of the singularity or individual features of a thing, as abstraction is usually conceived. On the contrary, it is an abstract knowledge whose object is a singular thing.[238] The object known by intuitive knowledge is the same object known by abstractive knowledge. In a second sense, abstract cognition is opposed to intuitive cognition for abstract knowledge is that which abstracts existence and non-existence as well as all other conditions that contingently belong or are predicated of something. Therefore, the abstractive cognition does not allow the intellect to make a judgment of existence or non-existence of the object.[239] It is a non-existential knowledge that dispenses the existence or non-existence of things, as well as the present inherent qualities of accidental objects.

> Abstractive knowledge is understood, in a second sense, as that which abstracts from existence and non-existence and from other conditions which, contingently, belonging to or are predicted of the thing.[240]

To know something abstractly is to know it without precise if it exists or not. It is not an object that neither exists nor does not exist. Abstract knowledge is a psychological phenomenon recognized as a kind of cognition that makes things known to us as objects of knowledge, but it does not allow us to affirm whether they exist or not, because it does not carry with contingent facts about the object as is the case of

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[237] "[...] notitia abstractiva potest accipi dupliciter: uno modo quia est respectu alicuius abstracti a multis singularibus; et sic cognitio abstractiva non est aliud quam cognitio alicuius universalis abstrahibilis a multis, de quo dicetur post." *Prol. Ord,* Q. 1, [*OTh* I*,* 30. 12-15].

[238] "Non quod aliquid cognoscatur per notitiam intuitivam quod non cognoscitur per notitiam abstractivam, sed idem totaliter et sub omni eadem ratione cognoscitur per utramque notitiam". *Prol. Ord.* Q. 1, [*OTh* I*,* 31, 6-9].

[239] "Notitia autem abstractiva est illa virtute cuius de re contingente non potest sciri evidenter utrum sit vel no sit. Et per istum modum notitia abstractiva abstrahit ab exsistentia et non exsistentia, quia nec per ipsam potest evidenter sciri de re exsistente quod exsistit, nec de non exsistente quod non exsistit, per oppositum ad notitiam intuitivam." *Ord. Prol*. Q.1, [*OTh* I*,* 32.2-9].

[240] "Aliter accipitur cognitio abstractiva secundum quod abstrahit ab existentia et non exsistentia et ab aliis condicionibus quae contingenter accidunt rei vel praedicantur de re". *Ord. Prol*. Q.I, [*OTh* I*,* 31.4-6].

intuitive cognitive acts. Therefore, through abstractive cognition no contingent truth, at least none relating to the present, can be evidently known.[241]

2.2.2 THE COGNITIVE OBJECT

The same thing is known fully, and under the same aspect, by both intuitive and abstractive cognition.[242] The difference between the two types of cognition does not concern a difference in the object, but to the way the object is known through each cognition. An intuitive cognition of a thing is one that enables us to know whether the thing exists or not in such a way that, if the thing exists, then the intellect immediately judges and evidently knows that it exists. The object known by the perceptual intuition is the singular object considered existing in the reality here and now. It is not an abstract object, or a reality composed of essence and existence. Likewise, the object of abstract cognition is the same as that of sense-cognition[243] because the material objects perceived by the senses can also be perceived by the intellect in the present state, since abstraction does not presuppose the composition of essence and existence nor separation of the essence and material composition of the object. [244] It means that there is no aspect or immaterial reality in the singular object that can be a medium between intuitive apprehension and habitual knowledge. In this case habits are responsible for this mediation. However, intuitive acts can produce only intuitive habits, but no abstractive habit. Therefore, to fill the gap between intuitive cognition (comprising its acts and habits) and abstractive cognition, Ockham postulates the *prima abstractiva* as a medium between the intuitive and abstractive knowledge.

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[241] "[…] per notitiam abstractivam nulla veritas contingens, maxime de praesenti, potest evidenter cognosci." *Ord. Prol.* Q. 1, [*OTh* I*,* 32,10-11].

[242] "[…] Quia idem totaliter et sub eadem ratione a parte obiecti est obiectum intuitivae et abstractivae." *Ord. Prol*. Q.1, [*OTh* I*,* 36.15-16].

[243] "Si dicatur quod intellectus abstrahit a materia et a condicionibus materialibus, dico quod ista abstractio non est intelligenda ex parte obiecti, et hoc in omni intellectione. Quia dico [...] quod idem totaliter sub eadem ratione a parte obiecti est primum obiectum sensus exterioris et intellectus primitate generationis, et hoc pro statu isto; et ita obiectum intellectus in illa intellectione prima non est magis abstractum quam objectum sensus." *Ord. Prol*. Q.1, [*OTh* I*,* 64-65,29-5].

[244] "Hoc patet, quia nulla res est, saltem in istis inferioribus, nec aliqua ratio sibi propria sub qua potest res intuitive cognosci quin illa cognita ab intellectu possit intellectus dubitare utrum sit vel non sit, et per consequens quin possit cognosci abstractive. Igitur omne idem et sub eadem ratione quod est obiectum intuitivae notitiae potest esse obiectum abstractive [...] Et manifestum est quod quidquid reale potest cognosci abstractive, potest etiam cognosci intuitive; igitur etc." *Ord. Prol.* Q.1, [*OTh* I*,* 36-37.16-3].

2.2.3 PRIMA ABSTRACTIVA

The *prima abstractiva* occurs simultaneously with the intuitive cognitive act. And this initial abstractive act is capable of producing abstractive habits. The intuitive act competes as a partial cause of the *prima abstractiva*, which is postulated as a necessary theoretical factor for the explanation of the causal connection between intuitive cognition and habits, that is, between intuitive knowledge and habitual knowledge. After the first abstract cognitive act the abstractive habit is possible, and once the habit is formed, the intuitive act is no longer necessary for habitual knowledge. Although not every intuitive act is enough to establish a habit, the one who causes the first habit is the *prima abstractiva*.

The habitual abstractive knowledge opens the way to the memory discussion. In Ockham's cognitive psychology memory is a complex process composed of three moments. The first of these is retention, in which our experiences leave psychological traces in the mind that enable future remembrance. The second is recognition, which is the ability to remember or recognize individual characteristics of the objects or people we know. The third stage is recalling, that concerns to the ability to remember some experience as belonging to the past.

2.2.4. RETENTION

It is called retention the formation of a habit: that trace left by the past experiences by which they can be remembered in the future. The trace is always a trace of something and directs the mind to something it represents or signifies. Since habit conveys the content of the object, the initial act of cognition signifies the known object and the remembered act signify the same object. Here again, the intentionality of the object towards the cognitive acts is based on the strong causal principle. Thus, this principle also ensures that the same object will always produce the same kind of act and habits in different knowers for acts and habits related to the same kind of object are similar in the human mind. And it warrants the comparison and communication of thoughts between human beings which would not be possible if our reactions to

individual objects would be essentially different.[245] It means that in this system, an object will always cause a similar impression to different agents. Here, we are on the level of habit formation, that is, in the intuitive cognition. The intuitive cognition is always a cognition of a particular singular object, but from this cognition the intellect produces an abstract cognition that abstracts the contingent features and the existence of the object. Therefore, once a person is having a sensorial experience of an object, she is at the same time cognizing that object and all objects similar to it.

No single abstract act is capable of signifying or representing an individual singular object. Concepts of abstract cognition are simple and, therefore, are not unique to a single object as in the case of intuitive cognition. They equally represent all the individuals who are similar to each other. Therefore, an abstractive act has the representational feature we expect of a general concept.

The retention is based on the perception that provides evidence concerning the existence or non-existence of objects. Therefore, retention starts with intuitive cognition. When we apprehend something intuitively in the present moment, we have a perfect intuitive cognition. On the other hand, when the evidence of existence or non-existence is about the past, it is called imperfect intuitive cognition.[246] In this case, intuitive cognition resembles abstract cognition because both do not require the presence of the object. The difference between imperfect intuitive cognition and abstractive cognition is that the former, besides representing an object, carries one additional content: a temporal reference.[247]

The retention of past experiences, even those containing a temporal reference, also originate with *notitia intuitiva*. The *prima abstractiva* that occurs simultaneously to the intuitive cognition can be of two sorts: one containing the temporal reference and other not containing.[248] In other words*,* the *prima abstractiva* has in addition to the

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[245] Cf. Fuchs (1952), p. 13.

[246] "Sed intuitiva subdividitur quia quaedam est perfecta, quaedam imperfecta. Perfecta cognitio intuitiva est illa de qua dictum est quod est cognitio experimentalis, qua cognosco rem esse etc [...]. Cognitio autem intuitiva imperfecta est illa per quam iudicamus rem aliquando fuisse vel non fuisse. Et haec dicitur cognitio recordativa [...]." *Rep. II*, Q. 12-13, [*OTh* V*,* 261, 7-15].

[247] Unde dico quod actus recordandi habet duplex objectum, scil. partiale et totale. Partiale est actus recordantis praeteritus . . . totale, complexum puta prepositio composita ex actu recordantis et termino significante tempus praeteritum. *Rep.* IV, [*OTh* VI, 12].

[248] Et est hic notandum quod, stante cognitione intuitiva alicuius rei, habeo simul et semel cognitionem abstractivam eiusdem rei. Et illa cognitio abstractiva est causa partialis concurrens cum intellectu ad

content of the intuitive perfect cognition some elementary habits (among them the temporal reference that original experience occurred in the present moment). Here, we can inquire if the same rule follows for what we are going to call “the past cognition”. Does only a perfect intuitive cognition can be a source for an evident knowledge, that is, for an evident assent? Through an imperfect intuitive cognition, the intellect can assent evidently to a complex about the existence or non-existence of something? The negative seems very intuitive, for if a person saw a tree for the first time yesterday, today she will not be able to affirm or deny “that tree exists” unless she sees the tree again today.

However, Ockham has a different point of view. The second moment of the memory concerns to a reflective act that reflects upon the original act. The remembered act can be any cognitive act, intuitive or abstractive, for an imperfect intuitive cognition does not require the existence of an object.[249] Hence, it is called intuitive because the reference is somehow an experience of something that existed in the past. Whereas the reflexive act is a complex act or judgement. The object of this reflexive act is no external object, but an act of intellect. The reflexive act is composed of the original act and a time-reference. For, during the original occurrence of an act there is a reflexive awareness attesting it is happening in the present moment and, hence, our intellect grasps the time-reference. Due to this reflexive awareness is possible recall an act and assent it occurred in the past.[250]

This awareness is associated with a special complex habit, originated from a complex act that asserts that the original act now exists for the first time, then it can in

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generandum habitum inclinantem ad cognitionem intuitivam imperfectam per quam iudico rem aliquando fuisse [...]

Igitur si *habitus* inclinans ad cognitionem intuitivam imperfectam generetur ex aliquo actu cognitivo, illa cognitio erit abstractiva, et illa erit simul cum cognitione intuitiva perfecta. Quia statim post cognitionem intuitivam perfectam, sive obiectum destruatur sive fiat absens, potest intellectus eandem rem, quam prius vidit intuitive, considerare et formare hoc complexum ‘haec res aliquando fuit’, et assentire evidenter, sicut quilibet experitur in se ipso.” *Rep. II,* Q.12-13, [*OTh* V*,* 261-262, 19-17].

[249] “Ex dictis apparet differentia inter cognitionem intuitivam perfectam et imperfectam: quia prima non est nec esse potest naturaliter, nisi obiectum existat, secunda potest esse, etsi objectum destruatur.” *Rep*. II, Q. 12-13, [*OTh* V*,* 266, 11-14].

[250] Ad aliud dico quod illud complexum est evidenter notum; et dico quod illa notitia est evidens notitia qua intellectus evidenter assentit huic complexo: hoc vidi, hoc audivi, hoc intellexi. (Illa notitia) causatur ex notitia intuitiva terminorum, (i.e.) intuitiva imperfecta terminorum. Et haec praesupponit, naturaliter loquenldo, intuitivam perfectam. *Rep*. IV, [*OTh* VI*,* 12], Cf. FUCHS, 1952, p. 37.

the future produce judgments asserting that this act existed in the past.[251] In other words, the complex reflective act that judges whether the thing happened in the present moment generates a complex habit that, when remembered, will originate a habit stating the thing happened in the past. Therefore, we can say that, in a broad sense there is evident knowledge of the past, since the habit that produces judgment asserting something was formed in the past, that is, it was caused by a judgement asserting something exists.[252]

2.2.5 CONSIDERATIONS

In this section we strive to stress the relevance of habits in Ockham's cognitive theory. The review of the doctrine of intuitive knowledge and abstract knowledge, commonly used to explain the formation of concepts and their identification with intellectual acts, sometimes fails to emphasize the relevance of habits in the cognitive process. Habits are present at all levels of cognition, since the sensory level until the abstract knowledge performed by the intellect. Thus, the habit has a relevance not only in the process of conceptual formation, but especially in a later moment of storage and recollection of the already consolidated knowledge. Both the knowledge we want to acquire or form and the knowledge we want to maintain involve mental habit.

2.3 THE *FICTUM* THEORY

The process we describe in the previous section shows Ockham's mature account of concepts. During the late Middle Ages, most metaphysical theories based on the thesis that universals are realities held that objects are composed of a universal part and a singular part. This double constitution also required a double cognition. Which perfectly matches the idea inherited by Aristotle that the soul is divided into a sensitive part and an intellectual part. Thus, each part of the soul can know a different part of the essential composition of the object. The singular/particular part could be known by the sensitive part, called the lower part of the soul while the universal part

[251] Cf. Fuchs (1952), p. 37

[252] Cf. *Ibid*, p. 38.

should be known by the intellective part of the soul. At that period, cognition followed the Aristotelian model according to which it was always supposed to consist in a process of transmission of a form from an external object into the intellect.

The epistemological theory built on the metaphysical assumption that objects have a dual constitution is known as the theory of intelligible species. Species function as a medium between objects and intellect. Roughly, we can say that species keep or carry the essential form of the object to be transmitted to the intellect. Since Ockham does not accept that objects have a double constitution, he does not adhere to the theory of intelligible species to explain the cognition of universal concepts. According to this model, a phantasm of the object is formed after it is perceived. This phantasm is transmitted to imagination and further the intellect abstracts a concept of the thing from the phantasm and transfer it in the passive intellect. The transmission of the concept in the passive intellect is the act of intellection.[253]

The intellectual habits are part of this type of cognition either as responsible for the way the acts of cognition are accomplished or containing intentional content of these acts. [254] However, Ockham does not include in his cognitive program any mention to sensible or intelligible species. Since he denies the necessity of postulate species in the cognitive theory, we shall discuss his objections towards it. We will examine his arguments against the notion of phantasm or *ficta* in the cognition process, especially because he had sustained its existence in an early version of his cognition theory.

Before adopting the notion of concept as an act, Ockham held a theory nowadays called *fictum*-theory. According to this theory, the concepts were mere objects of thoughts. Yet, at that times, Ockham was concerned in avoiding universals and common natures like the ones held by Duns Scotus. However, he admitted that the thoughts required some kind of special objects. In fact, his first notion of concepts was similar to Aquinas', according to which the concepts are products or objects of cognitive acts. Thus, the concepts had no real existence, only an intentional or objective being (*esse obiectivum)* called *ficta.* Besides his efforts to avoid common natures and universals, the postulation of these unreal beings leaded Elizabeth Karger

[253] Faucher, N., Roques, M. (2018), p. 16.

[254] Faucher, N., Roques, M. (2018), p. 17.

to hold that the *ficta* ended up in some way replacing the common natures because they are a mediation between the external world and the concepts themselves[255].

The process of *fictum* formation initiate in a similar way to the process of general concepts generation we saw previously. An intuitive apprehensive act of a given thing originate immediately a first abstractive apprehensive act of this thing. This abstractive act is the condition of further remembrance acts.[256] An intellective intuitive or abstractive act of something generates immediately another act by which the mind abstracts a *fictum* of the apprehended thing.

There can be even two *ficta* abstracted of one given thing apprehended intuitively or abstractively. The first one represents the essential constitution, the purely model of the thing. It can be called "similitude" of the thing from which it was abstracted but also of all the things of the same species.[257] The second *fictum* is more general and capable of represent all existent things.[258] According to the *fictum* theory there are two types of abstraction. First, the abstraction said opposed to the cognitive intuition, that abstracts the existence or non-existence of the object. And the second type of abstraction is the abstraction of *fictum* from an intellective act, whether is intuitive or abstractive. Is in the second sense that abstractive knowledge is said in function of its generality.[259]

Apparently, Ockham admitted the *fictum* in his cognitive theory to guarantee some sort of unity capable to play the roles of subject or predicated in a mental proposition without the need to postulate any universal in the world. For, *ficta* were at the same time identified as the universals and as the concepts. However, according to Panaccio, Ockham's adherence to *fictum* doctrine was not that strong even at the time

[255] Karger, E. (2004). Mental sentences according to Burley and to the Early Ockham. Vivarium, 34, p. 192-230. In: Panaccio, C. (2004). *Ockham on concepts.* Ashgate studies in medieval philosophy, p. 26.

[256] "Et est hic notandum quod stante cognitione intuitiva alicuius rei, habeo simul et semel cognitionem abstractivam eiusdem rei. Et illa cognitio abstractiva est causa partialis concurrens cum intellectu ad generandum habitum inclinantem ad cognitionem intuitivam imperfectam per quam iudico rem aliquando fuisse." Cf. *Rep.II*, q. 12-13, [*OTh* V*,* 261-262].

[257] Cf. *Ord.* I D.2, Q. 8 [*OTh* II]

[258] Cf. *Ord*. *I*, D.3, Q. 5 [*OTh* II]

[259] Cf. Karger (1994), p. 437

of the first writing of the *Ordinatio*.[260] The biggest proof of it is that he eventually abandoned this theory in favor to the theory of a concept as an intellectual act.

It was due to Walter Chatton's argumentation that Ockham was convinced to abandon the *fictum* theory.[261] In *Quaestiones in libros physicorum*, Ockham stands in favor of the concept as an act. He argues that whatever can be preserved by positing *fictum* can be preserved by positing an intellectual act.[262] Thus, he gives five reasons in favor of dropping the *fictum* theory.[263] The first reason is that the *fictum* is not identified with any natural entity, be it an accident, be it a substance. Therefore, holding it makes an ontological complexification that can be counter-intuitive, because the object of the cognition is not a real thing.[264] Secondly, defending the *ficta* can also require a complexification in the cognitive process because the idea of an intellectual cognition requires an object, but this object does not have necessarily to be a *fictum*. Third, the notion of *ficta* threats epistemological direct realism since it puts an intermediary between the cognitive act and the thing cognized itself.[265] Fourth, the representational function of general concepts is based in the similarity the concepts have with the things they represent. And the *fictum* does not seems to have any similarity with the things, given it is a non-real and non-natural entity. Fifth, the existence of *ficta* imply in the eternal and necessary existence of a realm of purely intelligible objects to assure the cognoscibility of the real existing things.[266]

All that said, the *ficta* seems to require a theorical complexification. The five reasons presented above enlighten part of the motivation Ockham had to reject this

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[260] Cf. Panaccio (1999), p.262

[261] Cf. Karger (1994), p. 445

[262] "[...]Quod tam intentio prima quam secunda est vere actus intelligendi, quia per actum potest salvari quidquid salvatur per fictum, eo quod actus est similitudo obiecti, potest significare et supponere pro rebus extra, potest esse subiectum et praedicatum in propositione, potest esse genus, species etc., sicut fictum." *Quod.* IV, q. 35, [*OTh* IX, 474. 115-120].

[263] These five reasons are presented by Panaccio not as being the ultimate reasons why Ockham abandoned the *fictum* notion, but they offer a general overview of the consequences of holding this theory. Cf. Panaccio, (2004). p. 24-25.

[264] *Quaest. In Phys.* q. 1, [*OPh* VI, p. 398].

[265] "Praetera tale fictum impeditet cognitionem rei; igitur non est ponendum propter cognitionem, Assumptum patet, quia illud nec est cognition nec albedo extra cognita nec ambo simul, sed quoddam tertium medium inter cognitionem et rem; igitur si illud fictum intelligitur, tunc res extra non intelligitur." *Quodl*. IV, q. 35, [*OTh* IX, 473, 83-87].

theory. Following, he presented some reasons in favor of the intellective act theory. First, if the truth of propositions requires only two things, namely the cognitive act and the external thing, it is inappropriate to postulate a third thing. Second, concepts should take the place of subject or predicate in mental proposition and mental acts can fulfill this role as much as *fictum.* For, to be subject or predicate of a given proposition is necessary only having *supposition*, that is, having the referential function, and the cognitive act can play this role. Thus, abandoning the *fictum* would cause no loss to the theory. The more substantial reason seems to be the realization that the intellective act can represent, signify and suposit for something outside the mind.

Apparently, the reasons to adhere to the mental act theory are intrinsically connected to the mental language. On holding the *ficta* notion presupposes in the mental speech the identification of concepts with simple objects of intellection. Thus, all simple objects of intellection can be subject or predicated in a mental proposition.[267] Therefore, if one is able to find simple objects of intellection that can be subject and predicated of a mental proposition without committing to ideal entities like *ficta*, there is no reason to stick to it. It is exactly what happens when he attributes the referential semantical functions once performed by the *fictum* to intellective acts. Once the intellective act can hold all the functions of representation, signification and supposition, *ficta* are no longer necessary.[268] Ockham says that "... to supposit for something else and to signify something else may be suitable for the act of intellection as well as for another sign.[269]" And this is the main thesis held by Panaccio: that by conceiving the concept as an intellective act Ockham turned the concept in a sign. In fact, since the mental language is composed essentially by concepts, a theory of concepts should provide an account for concepts both in the mental speech and in the cognitive process. By considering concepts as intellective acts, Ockham is stating that the simple intellective acts can be extremes of the mental propositions and, therefore, they are signs of the mental speech. In both *fictum* and *actus* theory the concept is a

[267] Cf. Karger (1994), p.441.

[268] "[…] Quod tam intentio prima quam secunda est vere actus intelligendi, quia per actum potest salvari quidquid salvatur per fictum, eo quod actus est similitudo obiecti, potest significare et supponere pro rebu extra, potest esse subiectum et praedicatum in propositione, potest esse genus, species, etc., sicut fictum." *Quod*. IV, q.35, [*OTh* IX 474.115-120].

[269] "[…] Quod supponere pro alio et significare aliud ita potest competere actui intelligendi sicut alii signo." *SL*. I, 12, *[OPh* I, 43, 36-38].

significant term of mental speech. Even if in a strict sense the idea of a mental term can be also accurate — for, in the *Summa Logicae* I, Ockham describes a term as everything that can be a subject or predicated in a mental proposition — the notion of sign can be better described as the significative feature of the mental concept as an act. But, more important than that, we suspect he wanted to use a vocabulary more appropriate to not leave space for the ambiguity between "*terminus*" and "*terminare*", For in the *fictum* theory, the intellective acts required an object in which they could terminate. And according to this petition, the object in which the intellective act terminated was the *fictum*. When presenting the notion of a concept as an act, the term "*terminare*" disappear. And the reason is that in the act theory there is nothing in which the mental acts terminate other than the external object. [270]

Besides that, the adoption of the mental act theory in account of concepts avoid all the complexifications caused by the *fictum* theory we are going to explore forward. The first consequence of *fictum* theory is the fact that there is no concept of concept. Since the *ficta* are abstractions of an intuitive or abstractive cognition of something, it is impossible to the intellect to abstract a *fictum* from a *fictum*, for it a cannot be intuitively apprehended. There is no incompatibility in the idea that a concept of second order derive from an intuitive or abstractive cognition. The incompatibility concerns to the *fictum* as a concept being abstracted to form a more general concept from itself, for an objective being cannot be intuited. However, it does not follow that there is no universal in the *fictum* hypothesis. As we saw above, this theory has two types of abstraction, one producing the *fictum* and a second one producing a more general concept. This second abstraction is precisely the universal concept. In both kinds of abstraction, the object remains the same: the intuitive or abstractive cognitive act of something.

Another consequence of the *fictum* hypothesis is the lack of a singular concept. Since the *fictum* is conceived as a similitude with the things it represents, there is no place for a singular concept of the thing. For in this theory the intuitive knowledge is

[270] Perini-Santos notes that there is a changing in the structure of the intellective act accompanying the passage of a theory of concepts to another. And he claims that the missing of the term "terminates" in the second theory does not call the attention of Ockham's interprets. The change in the very structure of the cognitive act is precisely that in the theory of concepts as acts there is terminate the intellective act other than the singular thing. Cf. Perini-Santos. (2007), La structure de l'acte intellectif dans les théories ockhamiennes du concept. In *Vivarium*, Vol. 45, No. 1 pp. 93-112. p- 96-109.

not considered as a concept, thus it cannot be said to represent the singular. However, despite the absence of singular concepts, this theory contains singular terms in the mental language. Karger sustains a “controversial” theory that Ockham had admitted in his *fictum* theory, namely, the possibility of a real thing as a term in a mental proposition.[271] We are going to avoid this discussion and go straight to the notion of a singular term. Due the natural signification in the mental language, there can be a term[272] signifying naturally a thing, and this term can be a proper name, a demonstrative pronoun or even a concept capable of signify all the things of the same species or genus. Nonetheless, all these terms are absolute and categorematic terms, and with them we are only able to form sentences denying or affirming something about different absolute terms, like “Peter is a man” or “A man is not a horse”. [273] Therefore, is vital to assure the expressive power of mental speech that it also contains connotative and syncategorematic terms. Thus, considering the hypothesis of *ficta* in the mental language the connotative and syncategorematic terms are all concepts — *ficta* — that were also abstracted from things individually apprehended. The main difference between the absolute terms and the connotative or syncategorematic ones is that the first are always formed to signify naturally whereas the second are used according to the signification attributed to them by the agent. [274]

Regarding to the mental proposition in the *fictum* theory, all complex terms, as well as all mental propositions, are apprehended through an intellective act called complex. Contrary to the act theory, in *fictum* hypothesis, the mere apprehension of a mental proposition does not mean the “knowledge” of it. It is necessary the assent act

[271]Cf. Karger (1994), p. 441-442.

[272] Or a thing if we agree with Karger’s statement. Cf. Karger (1994), p. 441-442.

[273] Cf. *Ibid*, p. 443

[274] Is worth to mention that Karger defines natural signification as being the one in which there is no participation of the subject’s will. Cf KARGER, *Ibid*, p. 444. She says : « La signification «naturelle» s'oppose a la signification *«adplacitum»,* qui est accordee a une chose par la volonte de celui ou de ceux qui l'utilisent comme signe, telle la signification accordee a une certaine production de la voix par ceux qui l'utilisent comme un terme du discours oral. » *Ibid*., p. 453.

by which the intellect judge it true.[275] In this case the mental proposition is the object of both the apprehensive act and the assent act.[276]

In the act theory the mental propositions are no longer object of intellection. Rather, in the very moment they are apprehended, they are at the same time formed, therefore, the apprehensive act coincides with the formation act[277]: "the act of assent (…) differ from the first apprehension of a proposition, that is the formation".[278] However, the assent act is still necessary. In other words, in order to "know" the proposition, the intellect still must judge it true.

The intellective acts theory is the one that suffers the most impact from the change from *fictum* to the intellectual act. For, if there is no *fictum*, then it does not exist an intellective act to abstract a *fictum* from one or several things apprehended. The doctrine of intuitive and abstractive cognition takes the place of *fictum* theory and the simple acts of intellection will be, from now on, not composed of the intellective acts as in the previous theory. In the *fictum* theory the intuitive act could at the same time grasp one or several things. In *actus* theory the intuitive cognition ceases to be about one or multiple things and become now the knowledge of an individual thing. However, the intuitive act remains the one by means of which the intellect can further assent the existence or non-existence of something. The account of abstractive knowledge will face deeper changes. The abstractive act will derive from an act of intuitive cognition but abstracting the existence or non-existence of the thing. The abstractive act is, in this sense, the knowledge not only of the thing intuitively apprehended, but the knowledge of all the things similar to the one apprehended. The rest of the process concerning to intuitive and abstractive cognition in the *actus* theory remain the same described in the previous section.

Through the conceptual act theory Ockham changed the ontological status of the concept when he became aware that the act of intellection can without any

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[275] *Ibid*., p. 444.

[276] Alius actus potest dici iudicativus, quo intellectus non tantum apprehendit obiectum sed etiam illi assentit vel dissentit. *Ord., Prol.,* q. 1, [*OTh*. I, 16, 12-14].

[277] [...]Dico quod aliud est loqui de actu sciendi propositionem et aliud de actu apprehendendi, quia apprehendere propositionem non est aliud quam formare propositionem. » *Phys., quest*. 6, [*OPh*. VI, 409-410, 106-108].

[278] […]Quod actus assentiendi utroque modo acceptus differ a prima apprehensione, quae est formatio propositionis. *Quod. V, quest. 6*, [*OTh*. IX, 501, 26-28].

inconvenience be a sign and play all the desired semantic roles. Thus, the act of intellection became indispensable, while the *fictum* proved superfluous. Besides that, the mental act also has in its favor the fact of being a simple quality of the spirit that requires no special mode of existence. Thus, Ockham seems to be able to reconcile his logical, ontological, and epistemological aspirations regarding concepts by abandoning the theory of the *fictum* in favor of the theory of mental acts.

2.4 THE NECESSITY OF POSITING HABITS

All we saw concerning to the *fictum* theory has led us to make some considerations about the role of habits in Ockham's mature theory of concepts. Once the cognitive process is essentially constituted by a succession of intellective acts linked to each other by a causal principle, it might be necessary an element to warrant a) that the acts are of the same type, that is, similar, but also; b) that they have a relation of intentionality towards the object of which they will be concepts of and c) that it can be stored in the memory. The habit is the dispositive, or better, the disposition that Ockham utilize to explain similarity, intentionality, and memory.

In the current section we are going to discuss the necessity of positing habits in Ockham's theory. It is well known that Ockham reject the notion of sensible and intelligible species to explain the cognition. And all the scholar attention concerning to it was focused on his mature theory of concepts as mental acts which does not require species to account for the cognition. However, little attention was put in the habit as the theorical element that makes the act theory coherent.[279] Our main aim in this section is to show how the notion of habits plays somehow the same cognitive role attributed to intelligible species without multiplicity of metaphysic entities.

In *De Anima* II, 12 (424ª 17-21) Aristotle sustain the hylomorphic thesis about the composition of material things. Namely, that they are compounded by matter and form. This notion serves as base for the epistemological claim that we can know material things because we receive their form without matter in the intellect.[280] All the

[279] Cf. Roques (2018), p. 280 "(…) the scholarly debate on the meaning of Ockham's claim has focused on intellectual acts; no one has tried to spell out in details how habits enter the picture".

[280]Cf. Perler, D. (1996) Things in the Mind. Fourteenth-Century Controversies over "Intelligible Species**".** *Vivarium*, 34. pp. 231-253, p.231.

medieval thinkers in the Aristotelian tradition between the late XIII and the XIV centuries tried to explain how we can know the material world through their forms. Perler formulates the question that seems to synthesize the core problem: “how is it possible for us to abstract or to ‘strip of’ the form from the matter? What psychological process are necessary to do that? And what kind of cognition do we acquire when we receive the form?” In the XIII century some authors as Thomas Aquinas and Duns Scotus developed some intentionality theories to answer these questions and explain our cognitive access to the material world and they are well known as the intelligible species theory.

Narrowly speaking the species doctrine is based in the Aristotelian view that we cognize the things because we receive their form without matter. According to this theory, receiving the form without matter means that the soul receive special entities called intelligible species that are endowed with representational functions. There are two kinds of species, one for each part of soul distinguished by Aristotle, the intellective and the sensitive that receive respectively the intellective and sensitive species.

The sensible specie represents something in the way it is perceived in the real sensible world. The sensible species is received by the sensitive part of the soul. Thus, when someone sees a tree, she receives a sensible species representing the tree in the same way it is in the real situation, comprising all the contingent features like color, shape, etc.

The intellective part of the soul abstracts from the sensible species an intelligible species representing the pure form of the thing but without the contingent features proper to the perceived object. After someone receiving the sensible species of a concrete tree the agent intellect abstracts an intelligible species representing the pure form of the tree, a form without any singular features. The state in which occur assimilation of something can be said in the medieval vocabulary of species theory when the person was “informed by the thing”, that is, when she possesses the intelligible species. Due this process of “being informed” the thing is somehow “present” in the intellect, that is, represented in the intellect and can be cognized even in its absence or after being destroyed.[281]

[281] Cf. Perler (1996), p. 232.

2.4.1 THOMAS AQUINAS INTELLIGIBLE SPECIES DOCTRINE

Thomas Aquinas cognition theory aims to answer how we cognize exterior things and it is one of the most standard version of intelligible species theory. At the basis of his theory is the transmission of the form of an object to the intellect. Therefore, perception is not the start point of his theory. In Aquinas's account of cognition, the phantasia has a major role as an intermediary between the senses and the intellectual activity.

Firstly, the sensible species of the object is transmitted to a *medio* receiving the species with "spiritual reception". The spiritual reception of a form in a *medio* means that the *medio* receives the form without turning itself into the form. For example, when the air is the medio receiving the sensible species of a tree, it does not become brown and green or take the form of the tree. The sensible species are the accidental forms of the perceived objects. Each different sense organ is responsible for receiving different species concerning to it. In the case of sight, the species include the color and shape of the object. The transference of the accidental features of the object in the *medio* is an impression of an encoded information through the sensible species.

The second part of cognition after the *medio* has spiritually received the form is that the *medio* is going to spiritually transfer the form to the eye or the respective organ. Likewise, the eye does not incorporate the object accidental features. Instead, the sense organ receives the sensible information in an encoded way. The sensible species is not what is cognized by the senses, it is a *medio* to the cognition.

The third part of cognition involves *phantasia*. The cognition is a function of the intellect. However, besides rational we are sensorial beings. The raw material of the intellect are the sensorial experiences which in turn can be source of error or illusion. Is due to the perception possibly being a source of error that the philosophical tradition put big effort to distinguish reality from appearance. The investigation of appearance emerges from Aristotle's discussion about the soul. For the Stagirite, appearance is the same of *phantasmata*, a product of *phantasia*. The investigation of phantasia can shed some light in Aquinas account of cognition.

Aristotle deals with *phantasia* in De Anima III, 3, right after discussinh sensation in II, 5-III-2 and before starting the consideration of thought. The maxim is well known: "just as there is no *phantasia* without sensation, there is no thought without *phantasia*".

Then, *phantasia* plays this intermediary role which explanation is necessary for two reasons: firstly, because there is a dependence upon the cognitive powers (faculties) of the soul and it is not possible to understand the soul without understanding the relation between its faculties. Thus, it is not possible to have a broader understanding of the soul without understanding how *phantasia* operates in relation to the other faculties; second, because *phantasia* is important in developing the explanation of human thought.

The term *phantasia* carries a triple function: capacity, activity or process and product or result. The best way to understand this complexity is by comparing with the sight that also carries this triple function. According to Frede's explanation, vision has three functions “it means the ability to see, the activity of seeing and what is seen”[282]. This complexity that carries the term makes it difficult to come up with a unified concept of phantasia. According to White[283], phantasia translated as "imagination" poses several problems, and according to his historical research the closest term to translate into English would be "appearances". Here for the sake of consistency with the texts dealt with we will keep the term 'phantasia' without opting for a specific translation. According to Aristotle's psychological work *phantasia* has two fundamental roles. First, through it we represent objects of perception or thought to ourselves when objects are not present, that is, through phantasia objects of perception or thought appear to us in their absence. Regarding the objects of perception and thought Aristotle maintains that the content of theoretical thinking derives from perception, which can be paraphrased by the medieval maxim: "There is nothing in the mind that was not previously in the senses." Despite Aristotle’s view, scholars were not in agreement about how phantasia contributes to in the cognitive process. According to Stump, the role of phantasia is “to render available to consciousness the information about the extramental material objects that the senses have received”.[284] The senses transmit the sensible species to the phantasia which in turn transform them in phantasmas. The phantasms are responsible for the mental images we have, and they are probably accessible to

[282] Cf. Frede, D. (2013) The cognitive role of *phantasia* in Aristotle. In: Nussbaum, M.C.; Rorty, A.O. *Essays on the Aristotle’s De Anima*. Oxford University Press. pp. 1-23.

[283] Cf. White, K. (1985) The Meaning of *phantasia* in Aristotle’s *De Anima,* III, 3-8. In**:** *Dialogue.* Vol. 24, Cambridge University Press. Pp. 485-505.

[284] Stump, E. (1999) The mechanisms of cognition: Ockham on Mediating Species in: Spade, P.V. *The Cambridge Companion to Ockham*. p. 171.

consciousness. When a person has the sensible species and the phantasm of given object, let us say a tree, she only has access to the object qualities/accidents, but we cannot say yet she has the concept of the tree. In order to possesses the concept, she needs to have the quiddity of the thing in her consciousness. At this point all one has is the knowledge that she sees something, a general notion of the object, but she is not able to identify it.

In order to have the concept of the thing one needs the quiddity provided by the intellect. The intellect will abstract the specie intelligible from the phantasma which is the form or quiddity of the object in phantasia.[285] The senses receive the accidental form and the intellect receives the quiddity form. Likewise, the intelligible species is received with spiritual reception. It means that when the intellect takes the form of a tree it does not become one.

The intelligible species is abstracted from phantasm. If at the moment of perception, the object acts on the senses and the sense organs act on phantasia, in the process of cognition it is the intellect that acts on phantasia to abstract the object.[286] This is what we call the agent intellect in Aquinas. He is a top-down causer, which means it is able to initiate causal chains without himself being caused by something else. After abstracting the intelligible species, the intellect needs to turn toward phantasms in order to actually understand.[287] Therefore, the possession of the intelligible species does not yet make the thing accessible to consciousness. [288]

> An intelligible species is related to intellect just as a sensible species is related to sense. But a sensible species is not what which is sensed, but rather that by which sense senses.

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[285] "But we apprehend the particular through sense and imagination. And so it is necessary, in order for intellect actually to understand its proper object, that it turn toward phantasms so as to examine the universal nature existing in the particular." Aquinas, T. (1882) *Summa Theologiae*, Iª q.85 a.1. (*Sancti Thomae Aquinatis Opera Omnia*), Roma: Leonine edition. Vols. 4-12. [ST. I, Q.84, art 7, 57-61. p. 154].

[286] "But to cognize that which is in individual matter, not as it is in such matter, is to abstract the form from the individual matter that the phantasms represent. And so it is necessary to say that our intellect understands material things by abstracting from phantasms." ST. 1, Q.85, art 1, 53-57, p.158.

[287] "[…] The intellect abstracts from phantasms and yet does not actually understand except by turning toward phantasms." ST. 1, Q.85,art.5, 48-51, p.172.

[288] "[…] An intelligible species is not that which is actually understood, but that by which the intellect understands." ST.1, Q.85, art.2, 17-18, p.162.

> Therefore, an intelligible species is not what is actually understood, but that by which the intellect understands. [289]

The real concept of a cognized thing concerns to the intention of universality abstracted by the intellect from the intelligible species. After abstracting the intelligible species, the intellect forms a universal or an intention of universality. [290]

> The nature that is in fact being understood or abstracted, or to which the intention of universality applies, exists only in singular things. But its being understood or abstracted, or the intention of universality, exists within intellect.[291]

The main feature of Aquinas' cognitive theory is that species are the means and also the condition of knowledge. Without intelligible species there is no intellectual knowledge and without sensitive species there is no intelligible species. In general, the medieval scholars conceived the mind as a form of the body. The intellectual cognition was produced by the immaterial mind and the object of human knowledge is the essence or quiddity of sensible things. Although human knowledge takes place exclusively in the mind, it is grounded in the information provided by the sensible world.[292] However, there is a distance between mind and reality and intelligible species play the role of intermediary between the two.

Perception sense — the beginning of all knowledge — occurs when sensitive organs are affected by external stimuli and give rise to sensory representations called "*phantasmata*". Phantasms are not mere pictorial images, as sensory representations they are a synthesis of the information received by the senses[293]. They serve as basis

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[289] ST.I, Q.85, art.2, 19-23, p.162.

[290] "[…] As the universal nature is considered at the same time as the intention of universality. And since the intention of universality (namely, that one and the same thing has a relashionship with many) comes from the abstraction of intellect […]" ST. I, Q.85, art. 3, 72-76, p.167.

[291] Cf. ST. I, Q.95, art.2, 90-93.

[292] "Intelligible things are related to intellect as sensible things to sense. But the causes of the sensible species that are in sense, by which we sense, are sensible things that are actual outside the soul. Therefore, the intelligible species by which our intellect understands are caused by certain actually intelligible things that exist outside the soul." ST. I, Q.84, art 4, 2. 14-18. p.143

[293] Cf. Spruit, (1994), p. 5 Phantasms, as sensory representations, are the product of a dynamic complex of inner forces (the so-called inner senses: common sense, imagination or phantasy, "aestimativa" and/or "cogitativa"), capable of organizing and transforming the information received from sense organs and external senses.

for the production of intelligible species [the start points of any intellectual activity]. Intellectual knowledge begins with perception. And it is followed by the simple apprehension (*simplex apprehendio*) of an individual essence which is an act of discrimination without judgment.[294] In *simplex apprehesio* the agent intellect abstracts the intelligible species from sensible representation, that is, from phantasm. The intelligible species is abstracted from sensorial representation.[295] The sensible species arise from the action of external objects in the sensory organs that are synthesized in perceptual representation: phantasms, from which the intelligible species are abstracted.

Although perception is considered the basis of cognition, according to the process we have described, we may notice that perception itself only happens after the cognizer has the concept of the external object. [296] When he has the sensible species and the intelligible species, he cannot be said to be perceiving the thing. It is almost like he had the information of the thing but was unable to associate it with the object in the outside world. Thus, one of the most sensitive points of Aquinas's theory is that the first cognition is the cognition of the universal instead of the particular. In order to link / associate the universal with the material object being known, the intellect must work in conjunction with phantasia and relate the universal with the phantasma caused by the material object. Once the intellect formed the intentional intellect of the thing and related the universal with phantasma in phantasia "the cognizer itself perceives the object".[297] Therefore, perception seems to be the last stage of the cognitive process in Aquinas rather than the first. Here we must distinguish sense-

[294] Cf. Ibid, p. 5

[295] "And this is to abstract the universal from the particular, or an intelligible species from phantasms: to consider the nature (naturam) of the species without considering the individual principles that are represented by the phantasms." ST. 1, Q.85, art. 1,84-88, p.159.

[296] "[...]The human intellect does not immediately, in its first apprehension, acquire a complete cognition of a thing; instead, it first apprehends something about it, namely the quiddity of that thing, which is the first and proper object of intellect, and then it thinks about the proper attributes, accidents, and dispositions surrounding the thing's essence."

[297] "In the case of material things, our intellect cannot directly and primarily cognize the singular. The reason for this is that the basis of singularity in material things is individual matter, whereas our intellect, as was said above, operates by abstracting an intelligible species from such matter. But that which is abstracted from individual matter is universal. Consequently our intellect is directly cognitive only of universals. Indirectly, however, and through a kind of reflection, as it were, it can cognize the singular." ST.I, Q.86, art.2, 15-22, p.179.

perception from intellectual cognition. One thing is the perception that the senses have of a particular object. Another thing is for the intellect to have the information of the object in question. From the fact that the intellect only cognizes the material object indirectly, it does not follow that the cognizer's perception of the object is indirect.[298]

> […] to cognize things by means of their similitudes [or species] existing in the cognizer is to cognize them in themselves or in their own natures.[299]

That is, the perception of the material world remains direct and immediate. But apprehension occurs only after the intellect has abstracted the universal of the sensible species. Based on our description of Aquinas' cognitive theory, we shall move to Ockham's main criticisms of this view.

2.4.2 OCKHAM'S CRITIQUE TO AQUINAS ACCOUNT OF SPECIES

Ockham rejected both intelligible and sensitive species and made some specific critics towards this theory. He applies the principle of parsimony and states that cognition only requires two elements: the material thing and the intellect.

> In order to have an intuitive cognition, one does not need to posit anything besides the intellect and the cognized thing – no species at all. The proof for this is: what can take place by means of a restricted number of entities vainly takes place by means of more entities. But an intuitive cognition can take place by means of (i) the intellect and (ii) the thing seen, without there being any species. [300]

Unlike Aquinas, he does not divide the intellect into agent and passive. Thus, it is the thing that acts upon the intellect which, in turn, responds to that action. Ockham considers superfluous to posit a third entity that functions as an intermediary between

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[298] "[…] It [the intellect] understands the universal itself through an intelligible species whereas it indirectly understands the singulars that the phantasms concern." ST.I, Q.86, art.2, 26-28, p.180.

[299] Cf. ST I.12.9.

[300] "[…] Ad cognitionem inuitivam habendam non oportet aliquid ponere praeter intellectum et rem cognitam, et nulam speciem penitus.Hoc probatur, quia frustra fit per plura quod potest fieri per pauciora. Sed per intellectum et rem visam, sine omni specie, potest fieri cognition intuitiva, igitur etc. » *II Sent*., q. 12-13 [*OTh* V, 268, 2-7].

the material object and the intellect itself. The existence of an entity mediating the thing and the intellect is not only superfluous but can also compromise the intellect's immediate access to the thing. An entity that stands between the intellect and the thing represents a barrier between the two. Thus, in species theory the intellect would have immediate access to the species rather than the thing itself. If the intellect has no direct access to the object of cognition how can we warrant the reliability of cognition?

The function of species can be compared to a photograph. If one looks at a photograph to know, for example, the city of Venice, one's intellect will only have access to a representation of the city through the picture, but not a knowledge of the city itself. And if one does not know Venice, she will have no way of comparing and judging the difference between the city and its representation. The same is true of specie as a representation of the thing. According to species theory, we have immediate access to species, that is, to the form of the thing and not to the thing itself. But we cannot be sure that the intelligible species provides a reliable representation of the object because all cognitive access we have to it is mediated by the species.

What is at stake is the thesis that the intellect has immediate access to the material world. According to Ockham's empiricism, all knowledge begins with intuitive knowledge. Which means that all contingent knowledge presupposes the causal action of objects upon the senses and upon the intellect. Thus "being informed by the thing" is for Ockham to suffer the action of external things in the intellect. When the intellect is affected by an external object, it gives rise to cognitive acts that are at once the very action of cognizing the objects and their very "representation". As we saw in the previous section, the process of cognition does not include or presuppose any intermediate metaphysical entity other than the human intellect and the object.

However, the account of cognition in Aquinas is not quite simplistic. In his doctrine an intelligible species is seen as a *quo intelligitur* and not a *quod interteligitur*. Which means that it is a medium to know something and not what is known in itself. It is not the object of cognition. It is a representation of sensory information. The intelligible species is a formal principle of cognition. While the true cognitive content of cognition is the quiddity or essence of the object that is contained in the intelligible species.[301]

[301] It should be specified here that Ockham's interpretation is that species are the known object in Aquinas' theory. However, there is a major debate about whether species are representative: experts strive to show that they are a medium quo and not the object of knowledge.See, for instance: Michon,

This raises another kind of question: is pure reception enough to cause cognition? Both sense perception and cognition are two acts of receiving. And all that is received is affected by the nature of the recipient. That is, can we trust the senses to receive the sensory content? Is this content also affected by the organs that receive them? How is it possible to guarantee the objectivity of what is known according to this knowledge model? However, in the doctrine of species, perception does not mean cognition. For only the senses have direct access to the object, but not the intellect and it is in the intellect, in the intellective part of the soul that knowledge occurs. There must be the activity of the agent intellect so that sensory images hitherto only potentially intelligible actually become intelligible.[302]

In addition, no apprehended content can be classified as true or false. For simple apprehension predates any and all judgments, rational discourse, and logically predates any and all propositional attitudes. This means that one cannot make a judgment and assign truth value to a simple apprehension. From the distinction between simple apprehension and judgment emerge some epistemological difficulties. First, how can we have simple apprehensions outside a propositional context? We have said that quiddities or essences are the direct object of cognition. However, essences are non-linguistic representations that we grasp. Is the species intelligible theory committed to an abstract / abstraction theory of concept formation? Species theory offers a consideration of the perception and cognition of sensible reality that by positing intermediate devices at both the sensory and intellectual levels can be considered a representational theory of the mind. However, can species theory be said to be a representational theory of mind? Representational theories of mind aim primarily at explaining the phenomena of perception and mental representation. The link between the doctrine of species and the representational theories of perception is a causal theory of perception. That is, the notion that perception is causally determined by the action of an external object.

In causal theories of perception, the perception of a material object means being in a certain kind of perceptual state that results from a causal action of the object.

C. (2007) L'espèce et le verbe. La question du réalisme direct chez Thomas d'Aquin,Guillaume d'Ockham et Claude Panaccio , In: Couloubaritsis, L. ; Mazzù,dir, A. *Questions sur l'intentionnalité*, Bruxelles, p. 125-155.

[302] Cf. Spruit (1994), p.6-7.

However, it is not physical objects that cause direct perceptual experience. Thus, one must distinguish between phenomenal objects and physical objects. One of the major historical exponents of causal theory of perception is representative realism. According to this, current sensations are representations of physical objects which are also the cause of such sensations. The presupposition of these representations always implies a representational mediation to arrive at the perception of an object. This mediation is always grounded in sense data. For this reason, it is said that most representative realists are also sense data theorists.[303]

If we return to the theory of species, we find that structurally they have much in common with the representative theories of perception. Except that in the doctrine of species what contemporary thinkers call 'perception' is called cognition. Thus, the arguments against both representational theories of perception and species theory are very similar. First, in the theory of representational models of perception, intermediates are quite difficult to characterize. Similarly, no precision about the ontological status of intelligible species was given by the Peripatetics. Moreover, in modern theories of perception the intermediary almost always becomes the object of perception. Species theory was refuted throughout the disputes mainly on the grounds that they were (the species) an intermediate object that limited cognitive acts. Ockham mainly criticized the standard theory of species by arguing that, as an intermediary, they obscured the knowledge of the essences themselves. Spruit believes that while this objection may be valid in the case of representational theories of perception, it is not the case for the species doctrine. For "Species cannot be identified with any intermediate object: it is neither the direct object of perception nor the immediate (mental) object of cognition"[304] Moreover, if species were the primary objects of knowledge, then we would know only the passions of our own soul. However, "the scientific knowledge concerns *res* rather than species or intentions."[305] That is, what is really known are real things rather than species or intentions, which act as a medium for knowledge of these things.

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[303] See Spruit (1994), p. 12.

[304] Cf. *Ibid*, p. 10

[305] In De anima, III, lectio VIII, 7 1 8: "Manifestum est enim quod scientiae sunt de his quae intellectus intelligit. Sunt enim scientiae de rebus, non autem de speciebus, vel intentionibus intelligibilibus, nisi sola scientia rationalis. Unde manifestum est, quod species intelligibilis non est obiectum intellectus, sed quidditas rei intellectae"; Summa contra Gentiles, I, c. 46, 391 . The scientia rationalis Thomas refers to is logic. In: Spruit, L. (1994) *Species Intelligibilis: From Perception to Knowledge vol 2. Renaissance Controversies, Later*

Another difference is that a representational theory of mind usually presupposes a perceptual experience whose content cannot be identified with anything in the outside world. Species, on the other hand, subscribe to a possibility of capturing essences from material reality. Sense data are impressed whereas intelligible species are not. Sensory data theorists are trapped in the idea that the mind is a *tabula rasa* on which objects leave their imprint. Already the standard theory of intelligible species says that sensory information is "qualitatively processed" by the inner senses and the agent intellect. This information is not only imprinted on the mind. Although there is a dependence between the mind and sensitive representational devices, such dependence does not mean that sensitive images imprint their content on the mind. However, the sense perception is undeniably important in the formation of intellectual cognition.

For Peripatetics the "quiddity" of the material object is the direct and natural object of the mind. The cognitive model that accepts quiddity as a representation of the object is based on Aristotle's model of De Anima III, 6-8. Modern versions of this theory are criticized by Sellars for what has become known as the die myth. According to Spruit what the doctrine of species accepts as given is not the specie itself, but the fact that the content represented by sensory images and transformed by the agent intellect into mental content is sufficient to guarantee the objectivity of intellectual cognition. The doctrine of species ends up not identifying what is immediately present in perception (i.e., what immediately affects our sensory organs) with object properties as in the case of naive realism. For the agent intellect in extracting the phantasma for sensible species is extracting the content of sensory reality rather than a mere copy or replica of it.[306]

2.4.2.1 HOW SPECIES REPRESENTS

Some problematic aspects of species theory mainly concern its mode of representation. The activity of the agent intellect is the mental processing necessary for our cognitive “knowledge” of the world. The product of the agent intellect and

Scholasticism, and the Elimination of the Intelligible Species in Modern Philosophy. Leiden/New York/ Köln, Brill's Studies in Intellectual History. p. 159.

[306] Cf. Spruit (1997), p. 16.

respectively of mental processing are the intelligible species that are defined as the mental representation necessary for a theory of mental content. The function of intelligible species is to represent the properties of sensible reality in a way to be decoded by the human mind. Species are seen as likeness, which in other words means that they have a resemblance to objects. Due this resemblance species can represent these objects in the mind. It is not the object that produces this likeness in the mind, but the species is produced by the sensory representation devices and the active characteristics of the mind. However, all objective reference is due to sensory representation devices. Internal representation devices are the final products of sensory information processed by inner senses. The adequacy between species and the essences they represent is due to an adequacy of the physical environment, sense organs and inner senses.

The fact that representational devices are unconscious can help solve some problems of naive direct realism. Species are inaccessible and unconscious, as are mental representations in contemporary cognitive science and this feature distinguishes them from sensory reality. According to Pasnau, Aquinas take cognition to be a matter of a species informing the cognitive faculty. Thus, the explanation of the mode of representation of the intelligible species also involves the cognitive explanation of how something is known through the species.

> Every cognition occurs in virtue of some form that is the source of cognition in the cognizer. But a form of this sort can be considered in two ways – in one way in terms of the existence it has in the cognizer, in another way in terms of the relation it bears to the thing of which it is a likeness. In virtue of the first relation, it makes the cognizer actually cognize; in virtue of the second, it determines the cognition to some determinate cognizable thing.[307]

It is the similarity or *similitudo* between the species and the represented object that allows our knowledge to be about one thing and not another. Aquinas distinguish between natural and representational resemblance. The natural likeness is the agreement in nature between two things. The representational likeness is a non-

[307] "Omnis cognitio est secundum aliquam formam quae est in cognoscente principium cognitionis. Forma autem huiusmodi dupliciter potest considerari: uno modo secundum esse quod habet in cognoscente, alio modo secundum respectum quem habet ad rem cuius est similitudo. Secundum quidem primum respectum facit cognoscentem actu cognoscere, sed secundum respectum secundum determinat cognitionem ad aliquod cognoscibile determinatum" *(QDV* 1O.4c). See also IV *Sent. 49.2.1* obj. 8; *ST* 1a 55.1C, 56.1C, 75.5c, 85.2C. In PASNAU, 1997, p. 105-106.

symmetric relation where one thing is the likeness of the other, but the contrary is not required. The second type of likeness is the one between the cognizer and cognized [thing], the likeness concerning representation. As much as the sensitive species has fewer characteristics of the material object than the sensitive species, it does not mean that natural likeness is indicative of greater representational capacity. On the contrary, the intellect is supposedly more effective in cognizing, even though it has no natural resemblance to objects. The fact that it is not a natural resemblance between the object and the species explains why throughout the cognitive process, neither the senses nor the intellects acquire the characteristics of cognized objects, because their likeness is representational, and therefore no agreement in nature is required for cognition.

> All that is required between cognizer and cognized is a likeness in terms of representation, not a likeness in terms of an agreement in nature. For it's plain that the form of a stone in the soul is of a far higher nature than the form of a stone in matter. But that form, insofar as it *represents* the stone, is to that extent the principle leading to its cognition.[308]

No accidental quality of the object needs to be possessed by the cognitive agent for cognition to occur. For the forms of objects are intentionally received. The process of receiving forms concerns receiving formal information from that object. Thus, sensitive and intelligible species need not share the qualities of the objects they represent. The likeness or similarity that underlies the mental representation of the species concerns a formal identity between the cognized object and the species. It means that the only quality shared between them is the form. However, sharing the form does not mean that they have any natural resemblance, but that the sensitive and intelligible species represent the objects with which they share the form.[309]

For Aquinas, cognition is an active assimilation: in producing intelligible species, the agent intellect is the efficient cause of a causal specification. The whole content of our conceptual knowledge depends on intelligible species because they are the likeness of a thing to be cognized. However, this knowledge is abstract. The intellectual cognition we have through intelligible species concerns only the universal dimension.

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[308]"Inter cognoscens et cognitum non exigitur similitudo quae est secundum convenientiam in natura sed secundum repraesentationem tantum: constat enim quod forma lapidis in anima est longe alterius naturae quam forma lapidis in materia, sed in quantum repraesentat earn sic est principium ducens in cognitionem eius" *(QDV* 8.11 ad 3). Cf. *IV Sent.* 49.2.1 ad 7. In: PASNAU, 1997, p.108.

[309] See Pasnau (1997). p.109 -110.

Abstraction is an actualization of the intelligible potential of sensible content which through the mediation of the intelligible species makes known the essence or quiddities of the sensible thing. But how do we know sensitive reality in its individual aspect? From Thomas's explanation of conceptual knowledge, we are tempted to think that knowledge of outer reality also occurs via abstraction.

However, Aquinas account of cognizing means to apprehend the determinate matter of an object. And apprehending determinate matter mean apprehending the object here and now, which can involve locating the object in a determinate place and time. To be able to know singulars is necessary to be in a certain causal relation to the object. This also helps to differentiate why a particular mental content is about this particular and not about that one, because in order to the knowledge of a particular to occur it had to be in a causal relation with it and not with any other, so that the mental content regarding a particular is always about the object that the cognizer had a correct causal relation.

2.4.2.2 OCKHAM AGAINST REPRESENTACIONAL EXISTENCE OF SPECIES

Ockham's critique of the theory of species in Aquinas begins with his critique of the manner of their existence. In relation to species in medium he describes them as "colors existing purely materially in the visible object, immaterially in the eye and medium existing somehow both immaterially and spiritually. Ockham denies that colors can exist immaterial either spiritually or intentionally. For him, he has no consideration of the species. Species must be either of the same character (ratio) as the object by which they are caused or of a different character. Therefore, species cannot be qualities with real extended existence in matter and has only spiritual or intentional existence.[310]

The second point is that for him spiritual or intentional existence is confined only to things inside the soul.[311] In Scholastic period, intentional existence was thought to

[310] "Igitur habet verum esse reale. Mirum est quomodo illud est vera qualitas materialis et corporalis et vere extensa in materia, tamen solum habet esse spirituale sive intentionale." *Rep.* III Q.2 *[OTh* VI, 57]

[311] "Item, ilia species non habet esse intentionale et spirituale, quia hoc dicere includit contradictionem, quia omne ens extra animam est vera res et verum esse reale habet suo modo, licet non ita perfectum sicut unum castrum vel domus" *Rep.* III.2; [*OTh* VI, 60].

be contrasted with real existence. Yet, there is a distinction between the strict and broader sense of intentional. Although intentional existence is one of those things that exist only through an operation of the intellect, there is a sense in which intentional and real are not mutually exclusive. Intentional existence could also be said of things with weak or incomplete existence such as light. Even for Aquinas intentional existence was sometimes contrasted with "complete existence."[312]

Although for Ockham immateriality, spirituality, and intentionality were confined to the soul, while holding the *fictum* theory he thought that intellectual concepts had "mere intentional or objective existence.[313] *Ficta* were said to explain mental representation at the level of the intellect in his philosophy of mind. They do not exist to you unless they are cognized.[314]. *Ficta* have no real existence in the soul like cognitive acts. They are mind-dependent, which real beings are not. “Ockham, at the time he was advocating *ficta*, pointed to this same division of beings in the soul and beings outside the soul. He took the division to draw a qualitative distinction between two kinds of beings: one kind that exists objectively, the other subjectively”.[315] But once Ockham gave up *ficta*, he gave up this qualitative distinction between these kinds of existence. All entities have real, subjective existence and can be classified among the ten Aristotelian categories. Mental acts, as they are real qualities in the mind, become the only inner representation necessary for mental representation. Hence, he concludes that there is no need to postulate such a fictitious existence to account for the representation.

For Ockham intentional existence is incompatible with real physical or even real nonphysical existence. Hence, he says that species are unintentional. If they existed, they should be of the same character as the things they represent. However, this leads to representationalism. For if they were of the same character as the object, then

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[312] See Pasnau (1997), p. 77

[313] Sed posset poni quod talia non sunt verae qualitates mentis, nec sunt entia realia exsistentia subiective in anima, sed tantum sunt quaedam cognita ab anima, ita quod esse eorum non est aliud quam ipsa cognosci" *ExPer.* I, prooem. sec. 7; [*OPh* II, 359].

[314] "Potest etiam vocari intentio animae pro eo quod non est aliquid reale in anima ad modum quo *habitus* est aliquid reale in anima, sed habet tantum esse intentionale, scilicet esse cognitum, in anima" *ExPer.* I, prooem. sec. 7; [*OPh* II, 360].

[315] *Ord.* 2.8 *[OTh* II, 273].

species would be that which is immediately seen. For Ockham, if species existed, they would be seen more immediately than the object itself. He directs his critique mainly on species in medio which as intermediaries between us and external objects would also become perceptual intermediaries. Ockham is assuming that species in medium exist not intentionally but in the same way as objects. Although it does not clarify what "being of the same character" means precisely.[316] Anyway, we should ask why do we need intermediaries to grasp the outside world? Why does the apprehension not occur immediately?[317]

Ockham claims that the cognitive content is determined at least in part by the likeness of cognizer to cognized. However, he doesn't hold that mental representation is due only to resemblance. For, if mental representation were entirely determined through resemblance, then would not be possible distinguish from which particular a given mental representation is from. Thus, causal facts are called to explain why we cognize one thing and not another. In this matter Ockham explanation is that the intellect apprehends a particular instead of another because only one of them if the efficient cause of cognition.

> Although in the case proposed the intellect is equally assimilated to all the individuals, nevertheless it can determinately cognize one and not another. But this is not on account of assimilation; rather, the cause is that every naturally producible effect determines for itself, by its nature, that it should be produced by one efficient cause and not by another.[318]

Nonetheless, it does not mean that the causal relation determines the mental content of cognition. It is rather the cognitive act character that "determines for itself" that it should be caused by one thing and not another. In this case causal relation is not the key to explain representation. Instead, the intellection by its nature can determine that it leads the intellect to the intellection of the object of which it is partial

[316] Cf. Pasnau (1997), p.248.

[317] These questions are posited by Pasnau (1997), p. 249.

[318] "[...] Nam licet intellectus assimiletur omnibus individuis aequaliter per casum positum, tamen potest unum determinate cognoscere et non aliud. Sed hoc non est propter assimilationem, sed causa est quia omnis effectus naturaliter producibilis ex natura sua determinat sibi quod producatur ab una causa efficiente et non ab alia." *Rep.* II *.Q.* 12-13, [*OTh* V, 288].

cause.[319] It is cognition itself that carries the information that it was caused by this object and not by another. [320]

The intentional reference of a cognition is determined by the intrinsic nature of cognition.[321] By the very nature of the cognitive act it has a particular as its content. For what in fact determines the mental content of a cognition is that by its very nature it may have been caused only by one particular. This conception, as at other times when Ockham appeals to a 'nature' of the cognitive act to explain representation, has an obscure aspect. Apparently, by his explanation, representation is a product of the inner properties of the cognizer.

Since cognizing for Ockham is described as an actus, then we might think that this has to do with updating the intellect. But it is not the action of the intellect that is likeness, but the intellection itself. According to Pasnau, the likeness between the object and the cognitive act can be understood in a more phenomenological approach. For our experiences have a certain phenomenological feel. And this certain feel present in the perceptual act is like the external object: "there are not both acts of perception and inner experimental objects of those acts. The experience is the act".[322] Therefore, as Pasnau suggests, there is no special difficulty in treating acts as likeness.[323]

For Ockham mental representation is at least partially a likeness. But, unlike Aquinas there is no sensible or intelligible specie to be likeness. Therefore, the likeness explains the representation.

> No prior assimilation through a species is required before an act of intellectively cognizing. Rather, the assimilation suffices that comes about through the act of intellectively cognizing, which is [itself] a likeness of the thing cognized. For, according to Augustine,

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[319] "[…] Ex natura sua determinat sibi quod ducat intellectum in cognitionem illius obiecti a quo partialiter causatur" *Rep.*II Q.12-13, [OTh V, 289].

[320] "Ita determinat sibi causari ab illo obiecto quod non potest causari ab aliquo alio. Et ideo sic in eius cognitionem ducit quod non ducit in cognitionem alterius" (*Ibid*.). For some discussion of these passages in the context of Ockham's causal theory, see ADAMS (1987), pp. 756-58.

[321] See Pasnau (1997), p. 118.

[322] Pasnau (1997), p. 123

[323] *Ibid,* p. 124

> when something is intellectively cognized as it is in itself, then the intellection will be just like the thing, and no other likeness is required beyond the intellection.[324]

Ockham maintains a coherence in his doctrine by not adding a third entity besides object and intellect to account for representation. However, by positing likeness he left some aspects a little obscure. For, the act of cognition is itself a likeness of external object. But it is not evident how acts can be likeness of objects. Nonetheless, this question seems out the scope of our research. For now, we shall return attention to another important question, namely, why posit habits? Considering Ockham's critique to Aquinas species theory, it is clear that he aims to avoid a theory of representation both in sense and intellectual cognition.[325] However, his epistemological theory would have only two physical elements: the object of cognition and the cognizer agent (and his intellect). But how a theory can survive with so few elements? The habits are the other significant elements of his theory, though they are not given that much of highlights.

To highlight the importance of habits, let's do an exercise in imagination. Suppose there are only cognitive acts in the human mind. At a more basic level of apprehensive acts, if we had only intuitive acts and abstract acts, we would have an infinite number of distinct acts each time we thought of something. Or rather, each thought should then be the first thought about something or a new occurrence of a thought about a particular object. Thus, various cognitive acts on the same or similar objects would have no connection in our mind.

The function of habit in this theory is precisely to retain cognitive content so that it can be actualized. It is habitual knowledge that allows concepts to function as mental signs, because they refer to some knowledge that we already have about something. In a broad sense we can say that a habit is a disposition to be actualized into a mental sign. Without habits it is impossible to think about demonstrations, syllogisms, propositions, because it is a cumulative knowledge. Habit is the epistemological

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[324] " […] Non requiritur ante actum intelligendi aliqua assimilatio praevia quae sit per speciem. Sed sufficit assimilatio quae fit per actum intelligendi qui est similitudo rei cognitae. Quia secundum Augustinum, V *De trinitate* [XV, nn. 21-23], quando aliquid intelligitur ut est in se, tunc intellectio erit simillima rei, et non requiritur praeter intellectionem alia similitudo" *Rep.* II, Q.12-13; [*OTh* V, 295-296].

element that allows our mind not to be a collection of chaotic mental states. We can say that it is a disposition that organizes thought according to its causality.

2.4.3 HABITS AS KNOWLEDGE

In the Prologue to the *Expositio super viii libros Physicorum* Ockham says that knowledge is a certain quality which exists in the soul, or more precisely, that the *habitus* which is knowledge is a quality in the soul. Ockham attributes various meanings to the term *scientia* in Aristotle's Commentary on the Book of Physics, and the purpose of these various meanings he gives is, precisely, to define the precise sense by which natural philosophy is called *scientia* and to determine the place of natural philosophy among the sciences.[326] At the same time the analysis of the various meanings of *scientia* is part of the construction of the conditions of knowledge.[327] There are the meanings of *scientia*:

> In one sense, knowledge is certain cognition of something that is true. In this sense, some truths are known only on trust; that are not' evidently' known.[328]

The first definition of science as a non-evident cognition of something true. Knowledge is a certain cognition of something that is true. In this case the truths are not evidently known, but only known on trust.

> In another sense, 'knowledge' means an evident cognition, namely when we are said to know something not merely because someone has told us about it, but should assent to it, even if there were no-one to tell us about it, mediately or immediately on the basis of a non-complex cognition of certain terms. [329]

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[326] Cf. Goddu (1984), p. 23

[327] Perini-Santos (2006), p. 130

[328] “Una est quod scientia uno modo est certa notitia alicuius veri; et sic sciuntur aliqua per fidem tantum. Sicut dicimus nos scire quod Roma est magna civitas, quam tamen non vidimus; et similiter dico quod scio istum esse patrem meum et istam esse matrem meam, et sic de aliis quae non sunt evidenter nota; quia tamen eis sine omni dubitatione adhaeremus et sunt vera, dicimur scire illa.” *Exp. Phys*., prol., §2 [*OPh* IV, 5, 29–34].

[329] “Aliter accipitur scientia pro evidenti notitia, quando scilicet aliquid dicitur sciri non tantum propter testimonium narrantium, sed etsi nullus narraret hoc esse, ex notitia aliqua incomplexa terminorum aliquorum mediate vel immediate assentiremus ei.” *Exp. Phys*., prol., §2 [*OPh* IV,6, 35–38].

The second sense of knowledge involves evident cognition, namely when we are said to know something not merely because someone has told us about it, but should assent to it, even if there were no-one to tell us about it. The evident cognition it is said to be the cognition of some true complex whose nature is to be caused immediately or mediately by the incomplex cognition of terms.[330] When one says that the evident knowledge of contingent propositions is in a sense *scientia*, one is saying that it is possible to know contingent propositions with evidence. Science, which concerns the knowledge of a contingent proposition, is science only because it presupposes the evident assent. However, this is not the strong sense of *scientia* for Ockham.

> In a third sense, 'knowledge' means an evident cognition of some necessary truth. In this sense, no contingent facts are known, but only first principles and the conclusions that follow from them. [331]

If we consider in isolation the third sense of *scientia* according to which it is the evident knowledge of a necessary proposition, we will say that the contingent proposition is not *scientia*. There is a metaphysical condition that whatever is known must be necessary. This condition that what is known is necessary leads to the possibility of theoretical knowledge about the world. This knowledge cannot be contingent because it is an organized discourse, a discourse composed of necessary propositions.[332]

> In a fourth sense, 'knowledge' means an evident cognition of some necessary truth caused by the evident cognition of necessary premises and a process of syllogistic reasoning. In this sense, knowledge is distinguished from understanding, which is the possession of first principles, and also from wisdom, according to the teaching of the Philosopher in the sixth book of the Ethics. [333]

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[330] Cf. *Ord. Prol*., Q.1, [*OTh* I, p.5].

[331] "Tertio modo dicitur scientia notitia evidens alicuius necessarii. Et isto modo non sciuntur contingentia, sed principia et conclusiones sequentes." *Exp. Phys*., prol., §2 [*OPh* IV, 6.43–45].

[332] Cf. Perini-Santos (2006), p. 130.

[333] "Quarto modo dicitur Scientia nottitia evidens veri necessarri nata causari ex notitia evidenti praemissarum necessariarum applicatarum per discursum syllogisticum. Et isto modo distinguitur scientia ab intellectu qui est *habitus* principiorum, et etiam a sapientia, sicut docet Philosophus in VI Ethicorum" . *Exp. Phys*., prol., §2 [*OPh* IV 6.46–50].

The definition of a strictly scientific knowledge that Ockham is attached to is the same as that developed by Aristotle in the Posterior Analytics. According to Aristotle those propositions only are scientifically known which are obtained by a syllogistic process from evident propositions which are necessary, i.e., always true and never false.[334] Thus, the scientific knowledge in this strict sense is the knowledge of a necessary proposition. In this sense there is scientific knowledge only when we know a proposition which remains true regardless of our existing world. In other words, the strict sense of knowledge is the result of a demonstration.

> According to another distinction, knowledge is sometimes taken for a *habitus* numerically one, which does not include several specifically distinct *habitus*; sometimes it stands for a collection of several *habitus* related according to a certain and determinate order. In this second sense, the Philosopher frequently uses the term 'know- ledge'. And in this same sense, a science somehow contains as integral parts the possession of first principles and conclusions, the concepts of terms, the rejection and refutations of sophistries and errors. In this sense, metaphysics is called a science and philosophy of nature a science, just as other sciences are so designated. [335]

Ockham defines science as a collection of habits. Scientific knowledge, as a kind of knowledge, is likewise conceived as a habit or collection of many habits and their acts. Based on Ockham's notions of knowledge, we see already that habit plays a role in his theory of knowledge along with mental acts. And it concerns both for the notion of knowledge as a habit and for the definition of science as a set of habits.

> As to the first point, we must say that knowledge is a certain quality which exists in the soul as its subject, or a collection of several such qualities of forms of the soul.[336]

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[334] Cf. Boehner (1964), p. xxiii, In: *Ockham*, *William* of. *Philosophical Writings*.Trans. *Philotheus Boehner*. Indianapolis: Bobbs-Merrill, *Library* of *Liberal Arts*.

[335] "Alia distinctio scientia est quod scientia aliquando accipitur pro uno habitu secundum numerum non includente plures *habitus* specie distinctos, aliquando accipitur pro collection multorum habituum ordinem determinatum et certum habentium. Et isto secundo modo accipitur scientia frequenter a Philosopho. Et scientia isto modo comprehendit tamquam partes aliquo modo integrales *habitus* principiorum et conclusionum, notitias terminorum, reprobationes falsorum argumentorum et errorum, et solutiones eorum. Et sic dicitur metaphysica esse scientia, et ita de aliis." *Exp. Phys*., prol., §2 [*OPh* IV, 6, 53–59].

[336] "Circa primum dicedum est quod scientia vel est quaedam qualitas exsistens subiective in anima vel est collectio aliquarum talium qualitatum animam informatium." *Exp. Phys*., prol., §2 [*OPh* IV, 4-5.1-5].

And the reason he says emphatically that knowledge is a quality is because it could not be a relation. If it were a relation, *scientia* would be related to something outside the soul, implying that a change taking place in the external world would be sufficient to invalidate it. Therefore, *scientia* is an absolute quality and, at the same time, a connotative term that means in a secondary way that the known proposition is true.

A *habitus* is something acquired that disposes the intellect to an action entirely similar to those for which the habit was acquired. That is why it is said that knowledge or *scientia* is a *habitus*, because it is more difficult to remove than many qualities and can be acquired by successive transactions from one state to another.

> Knowledge is a *habitus* ('habitual knowledge) is no less such a quality than an act of knowledge is; but an act of knowledge is such a quality; therefore, knowledge as a *habitus* is such a quality also. The major premise seems clear. I proceed to the proof of the minor: It is impossible that contradictory statements should successively be made true of something, unless there be some change somewhere, namely the acquisition or loss or production or destruction of something, or a local motion. But, though there be no chance in anything but the rational soul, the soul is able to consider something it did not consider before, merely by willing to consider something it did not consider before. Therefore, the soul now has something it did not have before. But this something cannot be anything but either an act of intellection or a volition; therefore, either an act of intellection or a volition is such quality. However, for the same reason that a volition is a quality, an act of intellection also is such a quality. And consequently, for the same reason the *habitus* of knowledge is also such a quality or a qualify or a collection of such qualities.[337]

[337] "[…] quia non minus est scientia, quae est *habitus*, talis qualistas quam actus scientiae ; sed actus scientiae est talis qualitas ; ergo et scientia, quae est *habitus*, est talis qualitas. Maior videtur satis manifesta. Minorem probo : quia impossibile est contradictoria successive verificari de aliquo, nisi sit alicubi, mutatio, scilicet acquisitio alicuius rei vel deperditio vel productio vel destructio vel motus localis; sed nulla tali mutatione exsistente in aliquo alio ab anima rationali potest anima aliquid intelligere quod non prius intelligebat, per hoc quod vult intelligere aliquid quod non prius intellexit; ergo anima habet aliquid quod prius non habuit. Sed illud non potest dari nisi intellectio vel volitio, ergo volitio vel intellectio est aliqua talis qualitas ; sed qua ratione volitio est talis qualitas, eadem ratione et intellectio. Et per consequens eadem ratione *habitus* scientiae est talis qualitas vel aggregans tales qualitates. Praeterea, potentia quae habet quod prius non habuit, est magis habilis ad actum quam prius ; sed manifeste experimur quod post multas cogitationes est aliquis habilior et pronior ad consimiles cogitationes nunc quam prius ; ergo aliquid habet nunc quod priur non habuit. Sed illud non potest poni nisi *habitus*, ergo *habitus* est subiective in anima ; sed non potest esse aliquid tale subiective in anima, nisi sit qualitas ; ergo *habitus* est qualitas. Et per consequens multo fortius *habitus* qui est scientia, erit qualitas animae. *Exp. Phys*., prol., §2 [*OPh* IV5.6-26]. Translated by BOEHNER, 1964, p. 4-5.

To Ockham the habitual knowledge is an act. This is explained as follows. The rational soul can shift from ignorance state to understanding state. It is a passage, a change. Every change needs a place, and the place where this passage occurs is the soul. This change consists in the acquisition of anything by the soul: either a will or an intellection, but a quality is acquired anyway. The science acquired in the process of transition from ignorance to understanding is a quality in the soul. This is not a production but an acquisition and this is not explained. Both ignorance and understanding are two cognitive states.[338]

According to Ernesto Perini-Santos (2006, p.133) the theory of *scientia* is a theory about the cognitive states of the knowing subject, its acquisition, and its relation to the world.[339] *Scientia* is something that corresponds to a cognitive state of the knowing subject and these cognitive states are the cognitive acts themselves. Through these acts the soul acquires a power that it did not possess before, that power is a *habitus* that inclines the soul to produce actions entirely similar to those by which that *habitus* was acquired. It is the possession of this power, that is, of this habit that means the possession of a science. And now we can understand better in which sense Ockham says *scientia* is a *habitus* that is a certain quality subjectively existing in the soul or a collection of such qualities in the soul.

The notion that science is either a numerically singular habit or a collection of habits informing the soul has a relevant implication. For to meet the strict conditions of the fourth sense of *scientia* there must be a certain order, and only a collection of habits can correspond to such a condition.[340] This is especially important when it comes to proving that a *scientia* is not a unite habit.[341] According to this argument the *scientia* concerning each conclusion is a quality of a different kind. And similarly, a *scientia* composed of two or more numerically distinct knowledges cannot be numerically one.

Just as *scientia* does not constitute a numerically one *habitus*, neither does Ockham designate a single subject of science. According to him, science does not have its own subject, but as many subjects as there are parts.

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[338] Cf. Perini-Santos (2006), p. 132.

[340] Cf. Perini-Santos (2006), p. 140.

[341] For a reconstruction of the argument that logic is not a habit one in number See Perini-Santos (2006), p.141- 144.

> A science which has only a collective unity has not just one subject. Rather it has different subjects according to its different parts. [342]

He further distinguishes the two senses from the term "subject." In a first sense subject taken as that which receives knowledge is the intellect. [343] In a second sense, "subject of knowledge" is said of what something is known about, according to the Aristotelian notion of subject in Posterior Analytics. In this sense the subject of knowledge is the subject of conclusion. In the case of a science that has different conclusions each with a different subject, this science which is an aggregate of all scientifically known conclusions has for each different part a different subject rather than a single subject. If, however, all conclusions have the same subject, then the conclusion aggregate has a single subject that is the subject of all these conclusions.[344]

For Ockham there is no unity of science, so every assigned unity is only in an 'improper' sense according to a priority conventionally established by imposition. And not because there is indeed a unit, but because whatever the unit does not derive from a natural order, but from a conventional and accidental order.[345]

There is still a differentiation between the object and the subject of knowledge.

> The object of knowledge is the whole proposition that is known; the subject, however, is only a part of this proposition; namely the subject-term.[346]

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[342] "Tertia conclusio sequens est quod talis scientia uma unitate collectionis non habet unum subiectum, sed secundum diversas partes habet subiecta diversa." *Exp. Phys*., prol., §2 [*OPh* IV, 8.64-66].

[343] "Propter quod sciendum quod 'subiectum scientiae' dupliciter accipitur. Uno modo pro illo quod recipit scientiam et habit scientiam in se suiective; sicut dicitur quod corpus vel superficies est subiectum albedinis et ignis est subiectum caloris. Et isto modo subiectum scientiae est ipsemet intellectus, quia qualibet scientia talis est accidens ipisius intellecus. " *Exp. Phys*., prol., §2 [*OPh* IV, 8-9-5.70-75].

[344] "Alio modo dicitur subiectum scientiae illud de quo scitur aliquid. Et sic accipit Philosophus 'subiectum' in libro *Posteriorum* ; et sic idem est subiectum conclusionis et scientiae ; nec dicitur subiectum, nisi quia est subiectum conclusionis. Et ideo quando sunt diversae conclusiones habentes diversa subiecta illo modo quo logicus utitur hoc vocabulo 'subiectum', tunc illius scientiae quae est aggregata ex omnibus sicentiis illarum conclusionum, non est aliquod unum subiectum, sed diversarum partium sunt diversa subiecta. Quando autem omnes conclusiones habent idem subiectum, tunc totius aggregati est unum subiectum, illud scilicet quod est subiectum omnium illatum concluisionum." *Exp. Phys*., prol., §2 [*OPh* IV, 9.76-86].

[345] Regarding the unity of science See Goddu (1984), p, 26; Perini-Santos (2006), p. 144-159.

[346] "Similiter sciendum quod differentia est inter obiectum scientiae et subiectum. Nam obiectum scientiae est tota propositio nota, subiectum est par illius propositionis, scilicet terminus subiectus." *Exp. Phys*., prol., §2 [*OPh* IV, 9.87-89].

The object of knowledge coincides with the object of logic, namely, the propositions which are qualities or habits in the soul. Just as logic as a science is a collection of qualities that has no single subject, but as many subjects as there are parts, so Ockham's mental language is composed of real qualities (*habitus*) with semantic properties that can combine with each other to form propositions, as we saw in the first unit.

In a strict sense of knowledge, all knowledge has to do with a proposition or propositions composed not by things or substances, but by mental contents or concepts that are common to those things.[347]

Thus, the science of nature is not about immutable and corruptible things, but about the mental contents that represent such things in propositions. It is in this sense that Aristotle says that knowledge is not about singular things, but about universals that stand for the individual things. However, if the science of nature is a real science because its terms stand for singular things, logic is a theoretical science, since it is about mental content that stands for mental content. Ockham wants to clarify that real science is not about real things, but about terms that stand for real things.

We may think that one of the reasons why Ockham does not ascribe a unity to science is that, apart from the fact that he considers every priority accidentally, conventionally and unnaturally ordered, the fact that the subject of a proposition of a particular science can be a mental content, as is the case with a logical proposition. In the proposition 'Every sensible substance is composed of matter and form' the subject is either a thing out of mind, or a mental content, or a word. In the first hypothesis, since ordinary things do not exist, the subject must be a singular thing. However, there is no reason for it to be one thing more than another, so the subject must be either a mental content or a word.

What determines what kind of subject is not one's personal opinion but the *supposition* of terms. The notion of supposition is presented in this text as that which defines truth and falsehood (of a proposition).[348]

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[347]"Ad cuius intellectum est sciendum quod omnis scientia est respectu complexi vel complexorum. Et sicut complexa sciuntur per scientiam, ita incomplexa ex quibus complexa componuntur sunt illa de quibus illa scientia considerat." *Exp. Phys*., prol., §2 [*OPh* IV, 11.9-10].

[348] Cf. Boehner (1964), xxxvi

> [...] It does certainly depend on the different *suppositio* of the terms whether a predicate is truly predicated or truly denied of a term. [349]

The truth of a proposition depends on whether what is being predicated on a subject in a given supposition corresponds to the state of affairs of the world.

For a proposition is true when the subject and predicate stand for the same thing. There are three main types of supposition, the simple supposition, when the term subject is a mental content or a concept; the personal supposition, when the term stand for the thing to which it is a sign; the material supposition, when the term stand for itself. Thus, what must be considered to know if a proposition is true is not the thing outside the mind, but the supposition of the term that represents that thing, for "it is the different supposition of the same term that causes something to be truly denied and truly affirmed of this term." [350]

For Ockham, to acquire knowledge is to acquire a habit, either one or a collection of them. These habits, qualities of the spirit correspond precisely to propositions, [complex] mental contents that may refer to real things outside the mind as in natural science or to other mental contents, as in the case of logical propositions. The basic element of these propositions is also [incomplex] mental contents or concepts, which are ultimately mental acts that are retained and actualized in the mind through mental habits.

Thus, as has been seen throughout this chapter, the habit is present from the basic level of contingent knowledge in which [incomplex] terms are apprehended to form propositions, to which an evident assent may be given about the existence of something. And it is also the habit that allows the retention and recall of acquired knowledge and plays an important role in the evident knowledge of past events. The same habit may concern two different knowledge, that is, it may belong to more than one collection of habits that form a *scientia*. Also, on a more complex level, habit or a collection of it is what one acquires when one acquires knowledge. And it is due the use of mental habit that Ockham coordinates his cognitive theory with his metaphysical principles and can abandon the notion of *fictum* that he initially held. Postulating habit

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[349] "Sed diversa supposition terminorum bene facit ad hoc quod de termino aliquod praedicatum vere praedicetur vel vere negetur." *Exp. Phys*., prol., §2 [*OPh* IV, 13.87-89].

[350] "Et ita diversa supposition eiusdem termini bene facit ad hoc quod de eodem termino vere negetur aliquid et vere affirmetur." *Exp. Phys*., prol., §2 [*OPh* IV, 13.94-96].

as a quality of the soul, he avoids the sensible species, intelligible species, common natures, and essences that he considered undesirable in explaining human cognition.

According to the line of reasoning we have developed in this work, the notion of mental habit seems to be the element that gives coherence to the ingenious philosophy of the *Venerabilis Inceptor* whose metaphysical aspirations are realized through logic. We believe that because of its pervasiveness the theory of habit itself deserved to form a discipline within the various domains of knowledge to which our author devoted himself. However, the fact that there is not even in the secondary literature a considerable number of studies exclusive to the subject may indicate that in fact what Ockham would like to stress in his work was his logical nominalism. Therefore, the following two chapters of our work will be devoted to mental language.

3. MENTAL LANGUAGE: THE CONCEPT AS A SIGN

The mental language (ML) developed by Ockham is a detailed compositional structure similar to conventional language. The elements that constitute it can be analyzed by the same instruments used to analyze oral discourse. It means that mental language has a grammar that can be analyzed syntactically and semantically. In its essential composition, the terms of mental language are simple and complex intellectual acts whose articulation occurs in logical-grammatical form. Thought is articulated through its own language which in principle resembles conventional language without, however, pertaining to any language.[351] Mental language precedes the spoken languages with whom it has a hierarchical relation, since the latter is subordinated to the former.

> I say that spoken words are signs subordinated to concepts or intentions of the soul not because in the strict sense of 'signify' they always signify the concepts of the soul primarily and properly. The point is rather that spoken words are used to signify the very things that are signified by concepts of the mind, so that a concept primarily and naturally signifies something, and a spoken word signify something signified by a particular concept of the mind. If that concept were to change its signification, by that fact alone it would happen that the spoken word would change its signification, even in the absence of any new linguistic convention.[352]

Three essential elements present in mental language, as well as in ordinary language, assist us to understand their similarities and differences: grammar, the properties of terms and semantics.[353] Although both have a grammar, not all the elements of spoken language are present in mental language. Synonyms and genders, for instance, are not part of mental language, because what must be preserved is

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[351] "Unde isti termini concepti et propositiones ex eis compositae sunt illa verba mentalia quae beatus A u g u s t i n u s , XV *De Trinitate* [August., *De Trinit.,* XV, c. 10, n. 19; c. 12, n. 22; c. 27, n. 50 (PL 42, 1071 , 1075, 1097)] , dicit nullius esse linguae [...]". *SL*. I, 1 [OPh I, 7, 21-23].

[352] "Dico autem voces esse signa subordinata conceptibus seu intentio nibus animae, non quia proprie acdpiendo hoc vocabulum 'signa' ipsae voces semper significent ipsos conceptus animae primo et proprie, sed quia voces imponuntur ad significandum illa eadem quae per conceptus mentis significantur, ita quod conceptus primo naturaliter significat aliquid et secundario vox significat illud idem, in tantum quod voce instituta ad significandum aliquid significatum per conceptum mentis, si conceptus ille mutaret significatum suum eo ipso ipsa vox, sine nova institutione, suum significatum permutaret." *SL*. I, 1 [*OPh* I, 7-8, 26-34].

[353] Cf. Panaccio (1999), p. 265-277.

essentially the semantic capacity, not the ornamental dimension that we find in spoken languages.[354]Ockham consider that these features do not add to the significative power of language.[355]

Therefore, in contrast to artificial languages that are the object of the study of contemporary Philosophy of Language, ML can be understood on the basis of the knowledge we have already about conventional languages. This is because mental language has all the characteristics present in ordinary language, although the reverse does not occur.

> Mental and spoken names, on the other hand, differ in that although all of the grammatical features of mental names belong to spoken names, the reverse is not true; whereas some grammatical features belong to both mental and spoken names, other are peculiar to spoken and written names. (the grammatical features of these two kinds of names being always the same).[356]

However, in order to understand properly the notion of mental language it is pertinent to conduct some research on meaning of the term "language". In this regard, we have two different questions to answer, the first of which is: what defines or qualifies a language? Then, what constitutes a language? Our response to these questions is based on Ockham's own text.

At the beginning of *Summa Logicae* I he starts discussing language and defining terms. According to him logicians try to show that: "[…] arguments (syllogisms) are

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[354] "Propter quod sicut nominum synonymorum multiplicatio non est propter necessitatem significationis inventa, sed propter ornatum sermonis vel aliam causam consimilem accidentalem, quia quidquid per omnia synonyma significatur posset per unum illorum exprimi sufficienter, et ideo multitudo conceptuum tali pluralitati synonymorum non correspondet, ita videtur quod distinctio inter verba vocalia et participia non est propter necessitatem expressionis inventa, propter quod videtur quod non oportet participiis vocalibus distinctos conceptus in mente correspondere." *SL.* I, 1, [*OPh* I*,* 11,17-25].

[355] "Accidentia autem propria nominibus vocalibus et scriptis sunt genus et figura. Talia enim accidentia nominibus propter necessitatem significationis non conveniunt. Unde et aliquando accidit quod duo nomina sunt synonyma et tamen sunt generum diversorum et aliquando diversarum figurarum, propter quod talem multiplicitatem non oportet naturalibus signis tribuere. Unde quaecumque pluralitas et varietas talium accidentium, quae potest competere nominibus synonymis, potest convenienter a mentalibus amoveri." *SL* I, 3 [*OPh* I, 12, 44-51]

[356] "Est autem inter nomina vocalia et mentalia differentia, quia quamvis omnia accidentia grammaticalia quae conveniunt nominibus mentalibus etiam nominibus vocalibus sint convenientia, non tamen e converso, sed quaedam sunt communia tam istis quam illis, quaedam autem sunt propria nominibus vocalibus et scriptis, quia quaecumque conveniunt vocalibus, et scriptis et e converso." *SL* I, 3 [*OPh* I, 11-12, 27-32]

composed of propositions, and propositions of terms. Thus, a term is simply a component part of proposition".[357] What is being addressed is the notion of term, however, rather than the term being explicitly included as an element of language it is presented as the basic component of propositions that, in turn, compose arguments. Thus, Ockham's notion of language seems to be directly tied to a logical context. Medieval logic is interested, beyond the syntactic and semantic aspects of a proposition, in truth values. Hence Michon states that "the existence of a truth or falsehood is sufficient to indicate the presence of a language"[358].

The notion of term is central to both Ockham's logic and language. Just as arguments can be decomposed into propositions, propositions can be decomposed into terms. Ockham defines the term broadly using a definition given by Aristotle in *Prior Analytics* 24b 16-18: "I call that a term into which a proposition is resolved (i. e., the predicate or that of which it is predicated), when it is asserted or denied that something is or is not the case[359]. Ockham distinguishes three types of terms based on Boethius' distinction of discourse, namely written, spoken and conceptual.

> It should be noted that, according to Boethius in his *Commentary* on the first book of the *De Interpretatione*, discourse is of tree types – the written, the spoken, and the conceptual, this las existing only in the mind.[360]

Similarly, there are three kinds of terms: spoken, written and conceptual. The written term is described as part of a proposition that is inscribed in something material and visible to the eye. While the spoken term is one that can be part of a spoken proposition and capable of being heard. The conceptual term receives a more sophisticated description and function:

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[357] "Omnes logicae tractatores intendunt astruere quod argumenta ex propositionibus et propositiones ex terminis componuntur. Unde terminus aliud non est quam pars propinqua propositionis." *SL* I, 1 [*OPh* I, 7, 3-5].

[358] Michon (1994), p.28.

[359] "Definiens enim terminum Aristoteles, I *Priorum* [Aristot., *Anal. Priora*, I, c. 1 (24b 16-18)], dicit: «Terminum voco in quem resolvitur propositio, ut praedicatum et de quo praedicatur, vel apposito vel diviso esse vel non esse » ". *SL* I, 2 [*OPh* 1, 7, 5-8].

[360] "Est autem sciendum quod sicut secundum Boethium, in I *Perihermenias*, triplex est oratio, scilicet scripta, prolata et concepta, tantum habens esse in intellectu [...]". *SL* I, 2 [*OPh* 1, 7, 13-15].

> The conceptual term is an intention or impression of the soul which signifies or co-signifies something naturally and is capable of being a part of mental proposition and of suppositing in such proposition for the thing it signifies.[361]

A mental term is defined by its capacity of signification.[362] In addition, it is defined according to its natural signification as opposed to conventional signification. It is worth to notice that while spoken and written terms are described as part of a proposition, the mental term is the first that is assigned the function of signifying and suppositing for its objects in a mental proposition. This mental proposition and its terms are described as not belonging to any idiom.[363] Mental terms are unpronounceable, although they can be expressed through the spoken terms which are their signs.[364]

There is a subordination relation between mental language and conventional language. The terms of conventional language are subordinated to conceptual terms in virtue of the way they signify. Conceptual terms signify primary and naturally their objects, while conventional terms signify the same objects and secondarily signify the concepts. Consider, for instance, the mental term "stone" which naturally signifies a stone. The written term "stone" signifies the same stone, but in a secondary way, because the "first sign" of an object is the mental term. This subordination implies that if a mental term changes its signification, the conventional term signifying it, either written or spoken, changes its signification accordingly. [365]

Spoken words serve as signs of the soul's impressions and this means that spoken words signify in a secondary way the things that the concepts called 'passions of the soul' (*passiones animae*) signify primarily.[366] The equivalence between the terms

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[361] "Terminus conceptus est intentio seu passio animae aliquid naturaliter significans vel consignificans, nata esse pars propositionis mentalis, et pro eodem nata supponere". *SL* I, 1 [*OPh* 1, 7, 19-21].

[362] We use "mental term" and "conceptual term" as synonymous.

[363] "Unde isti termini concepti et propositiones ex eis compositae sunt illa verba mentalia quae beatus Augustinus XV *De Trinitate*, dicit nullius esse linguae [...]". *SL* I, 2 [*OPh* 1, 7, 21-23].

[364] "[...] Quia tantum in mente manent et exterius proferri non possunt, quamvis voces tamquam signa subordinata eis pronuntientur exterius" [...]" *SL* I, 2 [*OPh* I, 7, 23-25].

[365] *SL* I, 1 [*Oph* I, 7-8, 26-38]

[366] "Et universaliter omnes auctores, dicendo quod omnes voces significant passiones vel sunt notae earum, non aliud intendunt nisi quod voces sunt signa secundario significantia illa quae per passiones animae primario importantur, quamvis aliquae voces primario importent passiones animae seu conceptus, quae tamen secundario important alias animae intentiones, sicut inferius ostendetu."*SL* I, 1 [*Oph* I, 8, 37-42]

'impressions' of the soul, 'intentions' of the soul and 'concepts' becomes clear below when Ockham says that written words are subordinate to oral words in the same way the latter are subordinate to concepts: “The same sort of relation I have claimed to hold between spoken words and passions or intentions or concepts holds between written words and spoken words.”[367] The most expressive difference between the three types of terms is the mode of signification. While written and oral terms that are conventional might have their signification changed according to a certain linguistic convention, the same do not apply to a conceptual term, that is, one cannot conventionally change the signification of a conceptual term because its signification is natural.[368]

In short, mental terms have priority and precedence over the terms of written and oral discourse. Furthermore, the very signification of conventional discourses is based on the signification of mental concepts. Since natural signification is what differentiates these two levels of language, then what distinguishes natural signification from conventional signification? We will examine in the following session about signs.

3.1. THE CONCEPT AS A SIGN

In Ockham's text we notice that there is no precise distinction between a term and a sign. However, it can be drawn from a contextual analysis. Chapter 1 of *Summa Logicae* is one of the main leads for such an analysis. Although it is not very extensive it summarizes some essential notions of mental language. First and foremost, he defines the term as any component of a proposition. Then, he revisits Boethius' notion of three types of discourse on which he bases the distinction of the three distinct types of terms. Based on this distinction, the notions of conventional and natural signification are introduced, which are the differential of written, spoken and conceptual terms. These are respectively: written and spoken terms have conventional signification while

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[367] “Et sicut dictum est de vocibus respectu passionum seu intentionum seu conceptuum, eodem modo proportionaliter, quantum ad hoc, tenendum est de his quae sunt in scripto respectu vocum” *SL* I, 1 [*Oph* I, 8, 42-45]

[368] “Inter istos autem terminos aliquae differentiae reperiuntur. Una est quod conceptus seu passio animae naturaliter significat quidquid significat, terminus autem prolatus vel scriptus nihil significat nisi secundum voluntariam institutionem. Ex quo sequitur alia differentia, videlicet quod terminus prolatus vel scriptus ad placitum potest mutare suum significatum, terminus autem conceptus non mutat suum significatum ad placitum cuiuscumque.” *SL* I, 1 [*Oph* I, 8, 46-51].

mental terms have natural signification. However, Ockham does not explain natural signification, instead he introduces a further distinction between two types of signs.

> In one sense sign is anything which when apprehended brings something else to mind. Here, a sign need not, as has been shown elsewhere, enable us to grasp the thing signified for the first time, but only after we have some sort of habitual knowledge of the thing.[369]

The first sense of sign is very close to the ordinary sense of term. A sign is anything that leads us to think of something else. However, this other object that the sign drives us to think about must be itself already known, as well as the sign. That is to say, we must already have a habitual knowledge of a thing in order for its sign guide us to think about it. In this sense, a spoken word is the natural sign of an object. On the other hand, the second sense of sign seems to be quite distant from the common notion of sign.

> In another sense a sign is (1) anything which brings something to mind and can supposit for that thing;
> (2) can be added to a sign of this sort in a proposition (e.g., syncategorematic expressions, verbs, and other parts of speech lacking a determinate signification);
> (3) or can be composed of things that are signs of either sort (e.g., propositions). Taking the term 'sign' in this sense the spoken word is not the natural sign of anything.[370]

There is a major difference between these two notions of sign. While the first is defined according to its epistemological and recalling aspect, the second notion approaches more closely to a propositional context in which the sign no longer has the recalling characteristic of a sign.[371] On the contrary, the sign in the second sense is a linguistic sign that carries the function of *suppositio*, which might have no defined

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[369] "Uno modo pro omni illo quod apprehensum aliquid aliud facit in cognitionem venire, quamvis non faciat mentem venire in primam cognitionem eius, sicut alibi est ostensum, sed in actualem post habitualem eiusdem." *SL.* I, 2 [*OPh* I, 8-9, 51-57].

[370] "Sed tam generaliter non loquor hic de signo. Aliter accipitur signum pro illo quod aliquid facit in cognitionem venire et natum est pro illo supponere vel tali addi in propositione, cuiusmodi sunt syncategoremata et verba et illae partes orationis quae finitam significationem non habent, vel quod natum est componi ex talibus, cuiusmodi est oratio. Et sic accipiendo hoc vocabulum 'signum' vox nullius est signum naturale." *SL*. I, 1 [*OPh* I, 9, 59-65].

[371] Cf. Michon (1994), p. 34

signification, as in the case of syncategorematic terms. Finally, the sign might be itself a proposition.

Ockham's notion of sign appears to be adding to the common notion of sign, according to which the sign is anything that can bring something to mind, the function of supposition. However, what is capable of receiving the supposition function is a term. Therefore, even without strictly differentiating sign from term, the notion of term seems to be itself inserted in the notion of sign. The sign by excellence is not that which signifies in a conventional way, as is the case for spoken and written signs, instead is the mental sign which naturally signifies its objects.

This transformation of the concept into a sign would be widely acceptable if it were not for its epistemological nature. There would be no difficulty in postulating the concept as a sign, since a sign is a sign of something that has already been known – and in order to signify the sign must be previously known as well. However, this notion of sign always seems to refer to a previous knowledge. Michon reveals what he calls the circle of the sign:

> The mental term, the concept, is defined as a sign. But, obviously, it cannot first have to be apprehended, because there would have to be another concept, and so on. Nor can it recall only knowledge already formed, if it can be formed on the occasion of the first knowledge of the object. This sign is therefore neither apprehended nor recordative.[372]

Michon's criticism is that the sign is defined as knowledge, but knowledge is itself defined as signification. Therefore, we have a circle that can return to infinity.

> "If the concept, and with it, knowledge, are to be defined as signs, they should not require, for their significant functioning (on the receiver's side), any previous knowledge. But yet this is what seemed to make a sign a sign".[373]

[372] Michon (1994), p .42 : « Le terme mental, le concept, est défini comme un signe. Mais, il ne peut évidemment pas devoir d'abord être appréhendé, car il faudrait un autre concept, et ainsi à l'infini. Il ne peut, non plus, rappeler seulement une connaissance déjà formée, s'il peut être formé à l'occasion de la première connaissance de l'objet. Ce signe n'est donc ni appréhendé, ni recordatif ».

[373] Michon (1994), p.42 : « Si le concept, et avec lui la connaissance doivent être définis comme des signes, il faut qu'ils ne requièrent pas, pour leur fonctionnement significatif (du côté du récepteur), une connaissance préalable. Mais c'est pourtant bien ce qui semblait faire du signe un signe ».

What Michon attempts to expose, and which is evident from the above quotation is that for Ockham the sign-concept does not appear to be actually a sign, for as such it should be essentially recalling.[374] As a recalling sign the sign-concept would not be able to give us primary cognition of something. For, the sign in the first sense is recalling, while the sign-concept is not. Such a distinction becomes more evident when (In Ord 3:9) Ockham deals with image and trace, which are signs that make something different from itself known. For instance, steps in the mud can bring to mind the cognition of an ox. There are, therefore, two distinct cognitions in which the first causes the second: the cognition of the mud causes the cognition of the ox. However, the first cognition (the cognition of the mud) is not the cause of a primary cognition of the ox. Hence, a first cognition cannot be the cause of the primary cognition of something that has not yet been known.

Ockham distinguishes the transition between a cognition to another. Such a transition can be from one cognition to either a primary cognition or a secondary cognition. Primary cognition is the very first cognition of something. Secondary cognition involves recalling knowledge, a knowledge that was previously obtained through immediate experience or intuitive cognition and stored in memory. When actualized this knowledge is the actualization of a primary knowledge. That means that the statue of Hercules as a sign cannot bring to mind the intellection of Hercules unless I already had previous knowledge of him. Therefore, the sign cannot bring to mind the knowledge of anything that is not already a primary knowledge. The transition from one cognition to another primary or non-recalling cognition can occur in two cases: (1) transition from single to universal cognition (2) transition from syllogism to cognition of conclusion.[375]

However, for Ockham the sign-concept has a specific mode of intellection. According to him there are two ways to reach knowledge of something. First, by the knowledge of the first thing that causes the knowledge of the second. Secondly,

[374] Similar opinion can be found in Boehner, P. (1946) Ockham's Theory of Signification. *Franciscan Studies*. 6(2):140-160. p.144- 149.

[375] "Primo modo contingit dupliciter, quia vel ducit in primam talem notitiam vel cognitionem, vel tantum facit rememorationem de aliquo habitualiter noto. Primo modo notitia singularis est causa notitiae universalis et notitia praemissarum est causa notitiae conclusionis." *Ord*. 3, 9 [*OTh* II, 544, 17-21].

immediately, without previous knowledge.[376] It is in this second sense that the concept is a sign, since it is a cognitive act.

> Thus, it is said that the act of understanding by which I grasp men is a natural sign of men in the same way that weeping is a natural sign of grief. It is a natural sign such that it can stand for men in mental propositions in the same way that a spoken word can stand for things in spoken propositions.[377]

The sign-concept, called natural sign due to its signification is itself a cognitive act. Nevertheless, it is also said to be a sign that can supposit for its objects in mental propositions. In this short extract we notice that signification, semantics and epistemology are interlinked in the definition of a concept. Although in *Summa Logicae* the concept is defined as a mental sign and act of understanding, the distinctive characteristic that differentiates a mental sign from conventional ones - its natural signification - is not really explained in this book. However, we consider this issue to be central to Ockham's understanding of mental language.

3.1.1. NATURAL SIGNIFICATION

In order to explain the natural signification, we must return to some important notions such as intuitive cognition and abstract cognition. As we have already explained[378], the external object causes an impression in the senses, generating a sensitive cognition of the object. This sensitive cognition transmitted to the intellect generates an intuitive intellectual cognition. The latter in turn gives rise to an abstractive cognition that is a confusing cognition of all objects similar to the object originally perceived by the senses. This abstract cognition is a cognitive act which, as such, is also a mental sign. The vocabulary 'mental sign' and 'intellectual act' are used

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[376] “Sed tamen aliquid ducere in notitiam alicuius potest intelligi dupliciter: vel tamquam causativum notitiae alterius mediante sua notitia, ita quod notitia ipsius sit causa alterius. Vel immediate sine notitia, sicut intellectus ducit tamquam causa in notitiam cuiuslibet intelligibilis”. Cf. Ord. 3, 9 [OTh II, 544, 12-17]:

[377] “[...] Quod intellectio qua intelligo hominem est signum naturale hominum, ita naturale sicut gemitus est signum infirmitatis vel tristitiae seu doloris; et est tale signum quod potest stare pro hominibus in propositionibus mentalibus, sicut vox potest stare pro rebus in propositionibus vocalibus“. *SL*. I, 15 [*OPh* I, 53,81-85].

[378] See Chapter 2.

to designate the concept in Ockham's nominalism in such a way that the relation of natural signification among mental signs and their objects corresponds to the relation that occurs between natural concepts and their objects. In short, they are two distinct vocabularies for the same objects. Therefore, if a certain oddness arose when we initially stated that mental language is composed of a succession of cognitive acts, perhaps this statement becomes more comprehensible if we state that mental language is composed of mental signs or mental terms. Mental terms are cognitive acts since the concepts that compose mental language are formed on the occasion of the first contact with a singular object. In the words of Michon "the concept allows the knowledge of what he is concept without being himself known, because it is the act of knowing". [379]

It is worth mentioning that the criticism of Michon regarding what he calls the "circle of the sign" can be understood as a criticism against the use of the vocabulary "sign" to express a concept that is a cognitive act. In his opinion, conceptual knowledge is essentially remembering and representative. That is, the concept functions as a representation of something that is already known. The sign-concept of Ockham, because it is itself an act of knowledge, does not imply reminiscent knowledge, but primary knowledge. Therefore, Michon believes the reduction of the act of knowledge to a sign does not imply that such knowledge is a conceptual knowledge, for it would presuppose a previous knowledge of what the concept represents.[380]

We believe, however, that Michon's criticism that the theory of concept as sign-act cannot be a conceptual theory concerns an attempt to interpret Ockham's thought and his notion of concept through the very parameters that Ockham wished to refute, namely, that concepts are formed in the intellect followed by a long process of abstraction that requires in most cases the recourse to a metaphysical entity, whether a *specie* or a common nature. Ockham's theory aims not to endorse this view of concepts, rather to propose a new way of explaining them.

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[379] Cf. Michon (1994), p. 51 [Our translation].

[380] Michon (1994), p. 51, note 2 [Our translation]: “(…) it is therefore a sign that it works immediately, it leads to the knowledge of a thing by being this knowledge itself. But instead of reducing the mental sign to the act of knowing, Ockham rather reduces the act of knowing to a sign. The first reduction would come back to a nominal definition: 'mental sign' = 'act of knowledge', and would simply make the notion of sign equivocal (it would have the signs-causes to act of knowledge, and the signs-acts of knowledge '. The second, to be intelligible, must presuppose an unequivocal notion of sign, but then what do we understand?”

For Ockham thought is linked to a language of its own. In other words, mental language is the foundation of conventional language because it is the basic language in which human concepts are formed. All the constitutive elements of knowledge are elements of a mental proposition. Since there is no language without proposition, then all the constitutive elements of knowledge are present in mental language. It is as if knowledge itself is translated into linguistic terms.

In Ockham's mental language, thought is structured in a language with defined grammar, syntax and semantics. Even so, its components are part of the cognitive process, without being known a priori or innate, because they are cognitive acts. This fine composition of the cognitive apparatus is an originality of Ockham. However, some general aspects of his theory were inherited from his predecessors. In the following session we will examine the origins of Ockhamian mental language.

3.2 THE INNER SPEECH

Ockham’s mental language take credit for having achieved a remarkable degree of refinement. However, the theory is not originally his. Therefore, it is relevant to revisit his sources in order to understand how he has arrived at the idea of a mental language. His mental language theory was largely based on Augustine theory of inner speech. However, it is not Augustine’s original idea. Instead, it dates back to the soul's dialogue with itself proposed by Plato and has evolved throughout the Middle Ages. In this section our goal is to bring or present a brief overview of the history of medieval mental language. To accomplish it, we use the work developed by Panaccio[381] as our main source. However, we will also present two medieval thinkers who were not included in Panaccio's work, such as Buridan. We intend to examine the foundations of Ockhamian mental language in the history of philosophy. Ockham invokes the authority of Boethius and Porphyry to distinguish three types of speech, namely written, oral and mental speech that are the bases of ML development. However, his mental language is innovative concerning his predecessors mainly because he introduced grammatical categories into mental speech. The inner discourse began to be analyzed

[381] Panaccio (1999).

in terms of propositions and mental terms. Ammonius[382], for instance, although mentioned a language of thought, attributed grammatical categories only to conventional language. He is also responsible for the distinction between natural language and conventional language adopted by Ockham.

From the medieval background the theories of inner discourse we can remark the innovations and originalities present in the theory of the *Venerabilis Inceptor*. Until the 3th Century the philosophical notion of inner discourse remained relatively stable. It was anything approaching a private, purely intellectual, pre-linguistic discourse. Then, it started to be given a theological use to enlighten (by comparison) the status of the son of God. In Augustine, the doctrine of the mental verb was introduced to clarify the theological problem of inner engendering.

Augustine was a great authority in the theorizing Christian faith. The idea of an interior verb, of a verb engendered in the heart - *verbum in corde* - played a major role in his Trinitarian reflection.[383] Although the expressions *verbum mentis* and *verbum mentale*, common in the Middle Ages are not found in his work, they are directly inspired by it.

Augustine's doctrine of the inner verb has become an essential component of Christian theology in the Latin world. According to Panaccio, Augustine's deep motivation remains theological, “(...) to find in the intimate relation of the mind to its own inner word a model to the human dimension of engendering the Son by the Father in God".[384]

The church fathers of the late 2th and 3th Centuries began to use the standard vocabulary of philosophical gnosisology for Christian purposes. In particular, the theme of the *logos endiathelos/logos prophorikos* was current and well discussed. Respectively, *endiathelos logos* concern the pre-existing, while *prophorikos logos* concern the engendered. They wanted specially to identify the *endiatheton logos* with

[382] Ammonius. (1991). *On Aristotle’s Categories*, trad. Cohen, S.M., Mathews, G. B. Londres, Duckworth, p. 31.

[383] Cf. Koch, I. (2009). *Le verbum in corde chez Augustin*. In: Le langage mental du Moyen Age à l’Age classique, edited by Joël Biard, 1-28. Louvain–la–Neuve: Peeters.

[384] Panaccio (1999), p. 94.

the immanent and pre-existing Verb of God, which can be exteriorized through the external Verb (*logon prophorikon*) without being absent to the one who engenders it[385].

However, the exteriorization of the divine word in the incarnation caused a certain scandal. In the sense that what is expressed is no longer of the order of the divine. The word of God had to be exteriorized without ceasing to be interior, and to this purpose a comparison was made with the locution of our thoughts.

> The logos of God can be expressed externally without ceasing to be interior, just as the meaning or content of our intimate thoughts is manifested in pronunciation without leaving the mind of the speaker.[386]

The comparison between thought and the human word aims to support the dogma of the Logos pre-existing in God. Defending this dogma means to affirm that both the Son and the word of God, in spite of being external and distinct from the Father, proceed from Him and, therefore, divine. For what happens with the words we utter also occurs with the divine words: the *logos* that is in us remain in us without diminishing, even when it is expressed through words. It was a matter of defining the status of the logos. The church fathers wanted to insist that it is the same logos that remains inside that is expressed outside. But there was - due to the "terminological duality" *endiathetos/prophorikos* - the risk of an ontological (even hierarchical) distinction between the immanent Word of God and the incarnate Christ, which would jeopardize the divinity of Christ, which was precisely what the Fathers wanted to avoid.

Within this context, Augustine is concerned in comparing the divine verb with human thought. He needed to explain how the *Incarnate Verbum* remains God. At the beginning of his work[387] he took the word only as that which is uttered and articulates a meaning in which the written words are signs of the spoken words. While in *De*

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[385] Cf. Toom, T. (2007) The potential of a condemned analogy: Augustine on and. *The Heythrop Journal*. 48. pp. 205–213

[386] Panaccio (1999), p. 99 : « Le logos de Dieu peut s'exprimer au dehors sans pour autant cesser d'être intérieur, tout comme le sens ou le contenu de nos pensées intimes se manifeste dans la profération sans quitter pour autant l'eprit du locuteur ».

[387] Fragoso (2017) indicates that Augustin starts discussing the inner verb since his "Sermones". See for instance Augustín. (1984). *Sermones 273-338: Sermones sobre los mártires*. Edición bilingüe. Madrid: Biblioteca de Autores Cristianos.

Doctrina Christiana Augustine used "*verbum in corde* " within a theological comparison to clarify the question of the engendering of the Son by the Father.

> Likewise, when we speak - in order that what we produce in the mind may penetrate the mind of the listener through the bodily ears -, the *uerbum* we carry in our heart becomes sound which is called speech. However, our thought does not become that sound, but, remaining perfect in itself, it assumes the form of a vocal expression, in order that it may enter the ears, without any damage in its change. Thus, also the Word of God was not changed and nevertheless became flesh so that it dwelt among us.[388]

Panaccio summarize it as follow:

> [...] the comparison of the divine Verb with human thought, which remains interior while expressing itself in words, has the function of taming the idea that a spiritual being can become incarnate, exteriorize himself, without losing his own interiority, without being diminished in any way.[389]

The word *verbum* is translated from the Greek *logos* according to the Latin version of the Gospel of St. John and designates the inner thought. The precise meaning of "*verbum in corde*", of the word engendered in the heart, comes from Augustine's conception that when we think of something we want to say, the conception of that thing is already a word in our heart.

> In any case, the *uerbum* conceived in the heart precedes the *uox*. That, however, remains in the center of the heart, in the secret of the mind (...).[390]

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[388] Augustin. (1949). *De doctrina christiana*, éd. et trad. fr G Combès et J.Fargues, dans *Oeuvres de saint Augustin*, vol 11, Paris, Desclée de Brouwer. 1,1 3,12: “Sicuti cum loquimur, ut id quod animo gerimus in audientis animum per aures carneas illabatur, fit sonus uerbum quod corde gestamus, et locutio uocatur. Nec tamen in eumdem sonum cogitatio nostra conuertitur, sed apud se manens integra, formam uocis qua se insinuet auribus, sine aliqua labe suae mutationis assumit: ita Verbum Dei non commutatum, caro tamen factum est, ut habitaret in nobis”.

[389] Panaccio (1999), p. 112 : « [...]la comparaison du Verbe divin avec la pensée humaine qui reste intérieure tout en s’exprimant dans les mots a pour fonction d’apprivoiser l’idée qu’un être spirituel peut s’incarner, s’extérioriser, sans rien perdre de son intériorité propre, sans être diminué non plus d’aucun façon ».

[390] Cf. Fragoso, D. (2017) *Verbum interior em Agostinho de Hipona. Um estudo sobre a genealogia do conceito.* Doctoral Thesis, p. 59.

Fragoso draws attention to the expression '*uerbum quod corde gestamos*' of *De doctrina christiana*. According to him, it represents a break with Augustine's position on *uerbum* in *De magistro* and *De dialectica*. In these works, *uerbum* does not seem to be separated from *sonu,* for Augustine states that "*all uerbum resonates*". However, in *De doctrina chirstiana uerbum* does not seem to resonate, for it is *uerbum quod corde gestamos*. This *uerbum* can become sound, but it is also possible that it does not. This new meaning of *uerbum* concerns the thought (*cogitatio*), it is interior and anterior to the *sonus*, for it is engendered in the heart. [391]

> The *uerbum* means a great deal of things and without *uox*. The *uox* is empty without *uerbum.* We should offer the reason and explain, if we can, what we proposed. Behold, you wanted to say something: this thing you want to say was already conceived in your heart. It is kept in memory, disposed in the will and lives in understanding. Besides, this what you mean is not from any language. The very thing, that you mean, that was conceived in the heart, is not of any language: neither Greek, nor Latin, nor Punic, nor Hebrew, nor of any other people. The thing is conceived only in the heart, prepared to leave. As I said, therefore, the thing is a certain something, a signification [*sententia quaedam*], a thought conceived in the heart [*ratio corde concepta*], ready to leave, so that it can be introduced to whoever's listening. Thus, just as the thing known to those who [know her] is in their hearts is a *uerbum* already known to those who are going to say it, it is not yet for what they are going to hear. Thus, here is a *uerbum* already formed, already intact, which remains in the heart. He is seeking to leave, so that it may be said to the hearer. He is attentive to the one who has conceived the *uerbum* that he says and has known for himself the uerbum in his heart, he is attentive to the one who is about to speak. [392]

This inner verb is not attached to any language at first. It is only when one wishes to communicate that the inner verb is translated into a traditional language that

[391] Fragoso (2017), p. 38-39.

[392] Augustín. (1984) *Sermones 273-338: Sermones sobre los mártires*. Edición bilingüe. Madrid: Biblioteca de Autores Cristianos. *Sermo* 288,3: “Verbum ualet plurimum et sine uoce: uox inanis est sine uerbo. Reddamus rationem, et quod proposuimus, si possumus, explicemus. Ecce uoluisti aliquid dicere: hoc ipsum quod uis dicere, iam corde conceptum est; tenetur memoria, paratur uoluntate, uiuit intellectu. Et hoc ipsum quod uis dicere, non est alicuius linguae. Res ipsa, quam uis dicere, quae corde concepta est, non est alicuius linguae, nec graecae, nec latinae, nec punicae, nec hebraeae, nec cuiusquam gentis. Res est tantum corde concepta, parata procedere. Ergo, ut dixi, res est quaedam, sententia quaedam, ratio corde concepta, parata procedere, ut insinuetur audienti. Sic igitur quomodo nota est ei in cuius corde est, uerbum est, iam notum dicturo, nondum audituro. Ecce ergo uerbum iam formatum, iam integrum, manet in corde: quaerit procedere, ut dicatur audienti. Attendi ille qui concepit uerbum quod dicat, et notum habet uerbum sibi in corde suo, attendit cui dicturus est”.

is understandable to our audience. An extract that emphasizes the conversion of the inner verb into a conventional language is found in the *Sermo* 288,3:

> Watch the *uerbum* conceived in the heart. He seeks to leave so that it may be said. He is attentive to whom he will be spoken. Has he found a Greek? He seeks a Greek *uox*, through which he leaves for the Greek. Has he found a Latino? He seeks a Latin *uox*, through which he leaves for the Latin. Did he find a Punic? He is searching for a Punic *uox*, through which he can leave for the Punic. Remove the diversity of the listeners and that *uerbum*, which was conceived in the heart, is neither Greek, nor Latin, nor Punic, nor of any language. He seeks such a *uox* to leave, just as the listener is present. [393]

The originality of Augustine's notion of *uerbum* concerns the comparison of human thought with divine verb. The inner verb does not belong to any language but is the silent/sound representation of the words in the mind. We must stress that Augustine did not intend to create an inner language. Instead, his orientation was purely theological and consisted in trying to explain the consubstantiality of the divine persons and to reconcile it with the incarnation of Christ from book VIII of *De Trinitate*. Since the goal was to defend the divinity of Christ, mental verb does not have a precise structure, neither in a grammatical sense, nor linguistic in general.

Most of all, what is retained by the *Venerabilis Inceptor* from Augustine is the notion of a language prior to all languages that he calls a language of thought composed of *verba mentalia*.

> The conceptual term is an intention or impression of the soul which signifies or co-signifies something naturally and is capable of being a part of mental proposition and of suppositing in such a proposition for the thing it signifies. Thus, these conceptual terms and the propositions composed of them are the mental words which, according to St. Augustine in chapter 15 of *De Trinitate*[394], belong to no language. [395]

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[393] Augustín (1984), *Sermo* 288,3: “Videte uerbum corde conceptum, quaerit procedere, ut dicatur: attendit cui dicatur. Inuenit Graecum? graecam uocem quaerit, qua procedat ad Graecum. Inuenit Latinum? latinam uocem quaerit, qua procedat ad Latinum. Inuenit Punicum? punicam uocem quaerit, qua procedat ad Punicum. Remoue diuersitatem auditorum, et uerbum illud, quod corde conceptum est, nec graecum est, nec latinum, nec punicum, nec cuiusquam linguae. Talem uocem quaerit procedenti, qualis assistit auditor”.

[394] Augustine, *De Trinitate.,* XV, c. 10, n. 19; c. 12, n. 22; c. 27, n. 50 (PL 42, 1071 , 1075, 1097).

[395] "Terminus conceptus est intentio seu passio animae aliquid naturaliter significans vel consignificans, nata esse pars propositionis mentalis, et pro eodem nata supponere. Unde isti termini concepti et propositiones ex eis compositae sunt illa verba mentalia quae beatus Augustinus , XV *De Trinitate*, dicit nullius esse linguae, quia tantum in mente manent et exterius proferri non possunt, quamvis voces tamquam signa subordinata eis pronuntientur exterius”. SL I, 1, 7, 19-25.

In *De Trinitate Book VIII, 9* the verb is associated with inner images and is called a sensible image, whether it is reminiscent (*phantasia*) or it is imaginary (*phantasma*).[396] In this case the verb is a mental representation of something else. A mental representation that can be the object of a type of internal vision that is, simultaneously, underlying these external manifestations, especially in communication.

The mental verb of Augustine is not composed of signs. It is prior to all signs and signified by the external word. The sign is of the order of the sensible[397]. A "real" thing that brings something different from itself to the mind.[398] In this sense, Augustine's notion of sign is not close to Ockham's notion of sign.

3.2.1 BOETHIUS AND THE TRANSMISSION OF ORATIO MENTALIS TO MIDDLE AGES

The contact of the theme of inner discourse in the Middle Ages is mediated by Boethius.[399] He is responsible for coining the idea that there are in the mind structured expressions, phrases, discourse, in short, everything that is in the Organon and is called Logos becomes *oratio* with Boethius especially in his second commentary of *Perihermeneias.*[400] Ockham introduces the doctrine of *oratio mentalis* in *Summa Logicae* evoking the second commentary of *Perihermeneias* of Boethius, precisely the distinction between three types of discourse made by Boethius: "As Boethius points out in his Commentary on the first book of *De Interpretatione*[401], discourse is of three

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396 CF. Panaccio (1999), p.115.

397 About signs in Augustine, see: Kirwan, C. (2006). *Augustine's Philosophy of Language*. In: Stump, E., Kretzmann, N. (eds.). The Cambridge Companion to Augustine. Cambridge, Cambridge University Press, pp. 186-204, p. 191-193,

398 Cf. *Ibid*, p.118.

399 Itkonen, E. (1991) *Universal History of Linguistics*: *India*, *China*, *Arabia*, *Europe*. J. Benjamins Publishing Company, p. 220.

400 CF. *Ibid*, p.120.

401 Boethius, *In librum de interpretatione*, ed. 2a, I, cap. *De signis* (PL 64, 407 B). Cf. Boécio. (1847) *Patrologia Latina*, Migne, J.P., ed(). Paris, T. 64, 297 B.

types – the written, the spoken, and the conceptual (this last existing only in the mind).”[402] Boethius, for his part, attributes to Porphyry the distinction between three orders of speech: “[…] one that would be composed of letters, the second that would resonate with verbs and nouns, the third that the intellect would unfold in the mind.”[403] Boethius also attributes to Porphyry the idea that there are names and verbs in mental language. This notion is considered "remarkable" because in the Greek-Latin world the grammatical categories were associated with the oral word.[404]

Ockham evokes in *SL* 3.1 Porphyry's authority to introduce names and verbs into the language of thought. However, according to Panaccio, there is nothing in Porphyry that allows us to infer that he cared about the idea of a grammatically structured mental language: “our only indication in this respect comes from the quote "reported" by Boethius in his commentary on Perihermeneias”[405].

Nevertheless, the medieval tradition that dealt with the *oratio mentalis* can be traced back to Porphyry and his commentaries on Aristotelian logic. Panaccio intends to investigate whether the mental discourse of the Neoplatonics is linked to a specific language or whether it is independent of languages such as the *verbum in corde* of Augustine.[406] He wants to know: did the Neoplatonics want to apply grammatical categories of name and verb to the inner language analysis? His intention is to determine whether Porphyry and his successors determined a semantic-grammatical theory of thought that prefigured the theory of Ockham and which would be the basis of a true compositional analysis of *oratio mentalis*.

However, not even in Aristotle's work the theme of the three speeches is explicitly found. On the contrary, it seems more likely, according to Panaccio, that Porphyry alludes to one or other peripatetic commentators from the time of Andronicus

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[402] “Est autem sciendum quod sicut secundum Boethium , in I *Perihermenias*, triplex est oratio, scilicet scripta, prolata et concepta, tantum habens esse in intellectu, sic triplex est terminus, scilicet scriptus, prolatus et conceptus”. *SL. I*, 1 [*OPh* I, 7, 13-16].

[403] Boece. (1880), *In librum Aristotelis Peri Hermeneias*, vol. II, éd. C. Meiser, Leipzig, Teubner, p. 36. In: Panaccio (1999), p. 122. : « [...] l’um qui serait composé de lettres, le deuxième qui résonnerait de verbes et de noms, le troisième que l’intellect déroulerait dans l’esprit ».

[404] Cf. Panaccio (1999), p. 122.

[405] Cf. Panaccio (1999), p. 126.

[406] Cf. *Ibid*, p. 121.

of Rhodes, for example, whom Boethius mentions through Porphyry.[407] Porphyry's contribution, therefore, seems to have been to precise what was implicit in Aristotle, namely, that the interior discourse is a quality of the soul.[408]

3.2.2. THE CONTRIBUTION OF AMMONIOUS

A thinker whose development of inner discourse certainly influenced Ockham's theory was Ammonius. He mentions the distinction of two *logoi* (*endiathelos/prophorikos*) in his Categories commentary, regarding Aristotle's development of discrete qualities.[409] However, the text in which the inner discourse becomes more explicit is the first chapter of Perihermeneias's commentary where he probably follows Porphyry's teaching. It is there that he resumes the famous enumeration of the three discourses:

> For he said at the beginning that 'It is necessary to set out what are name and verb', since they and the sentence composed of them are seen in three ways: in the soul according to the simple thoughts and the so-called 'internal' speech (*endiathetos logos*), in the actual pronunciation (*ekphôneisthai*), or in the writing (as we also say that of written items one is a name, another a verb, another a sentence).
> Thus, since both names and verbs, which he said one must set out, are seen, as we said, in three ways, in being thought, said, or written, for this reason he said in this way that 'what is in the vocal sound are symbols' of the thoughts in the soul, which he says are its 'affections' for the reason given at the beginning, and that 'what is written' are in turn 'symbols of what is in the vocal sound'[410]

Names and verbs when they occur in the soul are called simple thoughts or inner discourse. When they occur in conventional language, they are pronunciation (if they are spoken) or writing (if they are written). Discursive thinking is constituted of simple or complex concepts (*noemata*) which are the significations of oral expressions. These *noematas* are intellectual (*homoiomata*) similarities of external things (rather

[407] Cf. Ibid, p. 127.

[408] Cf. Ibid, p. 127.

[409] Ammonius. (1895) In Aristoteles Categorias, (ed) A Busse, Berlin, G. Reimer (= Comentaria in Aristotelis Graeca IV 4), p. 57,21-24. Ammonius. (1991) *On Aristotle's Categories*, trad. S.M. Cohen et G. B. Mathews, Londres, Duckworth, p. 68.
[410] Ammonius (1991), p. 31, 12-21.

than representation of oral words) and are not linked to any particular idiom/language nor differ according to the diversity of languages. They are natural to us and identical for everyone.

> So, it is possible for the same vocal sounds to be written with ever different letters, as the invention of so-called 'idiographic' characters shows, and to express the same thoughts with ever different vocal sounds, as the multitude of languages indicates, as well as the changing of names within one language (as the ancients decided to call Aristocles 'Plato' and Tyrtamus 'Theophrastus'). It is, however, impossible to think of one and the same thing with ever different thoughts; each thought must rather be an image (*eikôn*) of the thing of which it is the thought, graven in the soul as if in a tablet, given that thinking (*noein*) is nothing other than having received the form of what is thought or made it accessible.[411]

The names and verbs that are in voice are the symbols of thoughts that are produced in the soul, which are called passions (pathêmata), and the ones that are written are the symbols of those that are in voice. The concepts are not signs, but intellectual images. And the names and verbs are the signs and symbols of the concepts. [412]

> Thus, since both names and verbs, which he said one must set out, are seen, as we said, in three ways, in being thought, said, or written, for this reason he said in this way that 'what is in the vocal sound are symbols' of the thoughts in the soul, which he says are its 'affections' for the reason given at the beginning, and that 'what is written' are in turn 'symbols of what is in the vocal sound'.[413]

Ammonius distinguish "sentence" from "speech", the sentence being an aggregation composed of vocal sounds that signify things. While the speech consists of all the vocal sounds used in language. The sentence is directly linked to the thought whereas the message is linked to the discourse.

> The sentence differs from speech in that the former is an aggregate chiefly composed of the vocal sounds which signify things, while the latter consists of absolutely all the vocal sounds which are used in language. You have the difference between the sentence and

[411] Ammonius (1991), p. 29, 14-24

[412] *Ibid.,* p. 20, 30-35

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[413] *Ibid.,* p. 31, 16-21.

> speech set out also by Plato, in the third book of the Republic, where he says: 'Now let this be the end of the [discussion] about sentences, but next speech must be examined, and then we shall have completely considered both what must be said and how it must be said.' Here it is clear that he is calling the thought (*dianoia*) 'sentence', and the message (*apangelia*) 'speech', whether the message comes to be from the most necessary parts, – name and verb – in which case we have a sentence which is uttered and is properly called 'sentence', or whether it also uses the remaining parts of what is called the 'sentence' in a wider sense, in other words, of the style (*hermêneia*), which strives for beauty and a particular construction.[414]

From this extract we can deduce that for Ammonius thought is composed only of what he calls "vocal sounds" that signify things. Whereas he calls speech concerning all parts of speech. He does not use the term "names and verbs", but he mentioned before that these also refer to thought. Which becomes a problem if we want to claim that thought is structured as a language. In that case, the language of thought would be one in which are included only verbs and names without other parts of speech. It would be at least a primitive, limited language.

For Ammonius names and verbs, in addition to being attributed to spoken and written discourse, are assigned to thought. However, the names and spoken verbs are symbols of the thought and the written are symbols of the names and spoken verbs.

> As has been said, we note that names and verbs are said in three ways – those whichare thought, those which are pronounced, and those which are written – and Aristotle posits that those which are pronounced are symbols of those which are thought, and those which are written of those which are pronounced.[415]

According to Panaccio, what seems to exist is a division between natural language and conventional language[416]. This division is not explicit, but we can

[414] Ammonius (1991), p. 22, 7-19

[415] *Ibid*, 1991, p. 32, 11-15

[416] Panaccio's opinion is that there are not three discourses in Ammonius, but only two levels of language, the conventional and the natural. According to him, names and verbs in the mind are mental representations a speaker can have of the words of his language. However, the inner discourse is not reduced to representations of this kind. Cf. Panaccio (1999), p.132 His hypothesis is that it is reasonable that a name like "horse" or a verb like "run" can be written, uttered, or simply represented in silence in the mind. And because it is such a banal phenomenon it has not been remarked by Porphyry or Ammonius. It was so noticeable that they did not felt the need to explain it, because it was a "common psychological phenomenon and easy to see" Cf. Panaccio (1999) p.133.

understand that concepts belong to natural language while verbs and names belong to conventional language. The " thoughts " are said likenesses of things, while the categories of names and verbs are relegated to the symbolic representation of these thoughts through what we know as conventional language. “For this reason, he calls thoughts ‘likenesses’ of things, but names and verbs, as well as letters, ‘symbols’ and ‘signs’ of thoughts or of names and verbs respectively.”[417]

Another reason why Panaccio believes this is that a few lines after enumerating the three discourses, Ammonius speaks of a "lexical imagination" (*lektikê phantasia*) by which the names and verbs destined to be uttered are formed in the mind.[418] Thought is not limited to a language, for in addition to the words of a language there are independent concepts of languages in the mind. It does not prevent us from mentally associating our verbal representations with linguistic contents to prepare the pronunciation of a word. Ammonius' great contribution is the approach he makes of grammatical categories to inner discourse: “it is said that names and verbs can be considered while they exist within the mind” in their relations with simple thoughts and the discourse we call *endiathetos.*[419] Thus, the thinking agent can form among concepts of his inner discourse mental representations of names and verbs.

However, even though Ammonius placed the grammatical categories of name and verb in the inner discourse, his theory does not seem to rely on the structure of a mental language as we find in Ockham. Nevertheless, it is undeniable his work begins the process of transposing the linguistic structure into thinking that will be well developed by Ockham. Moreover, according to the above-mentioned passages it is clear that he distinguishes between natural language and conventional language. These two levels of language will be very important in the foundation of Ockhamian mental language, since ML in the semantic domain offers the basis of signification for common language, while in the epistemological domain it is the pre-requisite for the acquisition of conventional language.

[417] Ammonius (1991), p. 29, 24-26.

[418] Cf. Panaccio (1999), p. 133.

[419] Ammonius (1991), p.22, 13-14.

3.2.3. BURIDAN'S MENTAL LANGUAGE

According to Pelletier and Roques[420], there are three waves in the scholarship on the medieval history of mental language. The first concerns a comparison between Ockham and Buridan. The second sought to place Ockham in a broader context by examining themes of mental language in philosophers who preceded and succeeded him. The third wave was focused on Ockham's semantic development, concept formation, and cognitive psychology. Afterwards, a research on mental language and nominals began, seeking to investigate if there is a privileged relation between them. In a certain way the investigation of the relation between nominalism and mental language eventually returns to the first wave that compares Ockham and Buridan, since they were the main exponents of the mental language hypothesis in Middle Ages.

The starting point of Buridan and Ockham's philosophy is undoubtedly nominalism. Nominalism can be defined as the metaphysical claim that only individual exists[421] and implies the negation of universals or shared natures. The notion of inner discourse was developed in Ockham's philosophy within the context of the discussion of the problem of universals. He tried to remain consistent with the Aristotelian definition that there is no science except of the universal. However, to sustain this it would be necessary to affirm that the universal exists as a reality outside the soul, in order to preserve that science is about real things (*scientia realis*). This was the argument of indispensability: science in the way we acknowledge it is possible only if the universals exist outside the soul.

Ockham rejected this argument because for him the object of science is propositions, whether oral, written, or mental. Scientific propositions are composed of general terms while reality is composed of individuals.[422] Therefore, science is universal insofar the general terms that compose propositions are universal (terms) representing singular real things existing in the world.

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[420] PelletierJ ; Roques M. (2017), p. 2

[421] PelletierJ ; Roques M. (2017) p. 14

[422] « Ad cuius intellectum est sciendum quod omnis scientia est respectu complexi vel complexorum. Et sicut complexa sciuntur per scientiam ita incomplexa ex quibus complexa componuntur sunt illa de quibus illa scientia considerat. » *Exp. Phys*., prol., §4 (OPh 11.9-12)

In Buridan's nominalism the existence of universals as real entities is likewise denied. Thus, the signification of general terms of conventional language are not universal. Instead, conventional language is semantically subordinated to mental language. Just as for Ockham, for Buridan the propositions are bearers of truth and falsity.[423]

For Buridan, however, the propositions of conventional language cannot be used as truth-bearer. Rather, a proposition is a token sentence, i.e., the occurrence of a written or spoken sentence, inscriptions that are particular individuals, discrete and different from one another.[424] However, logic has its laws directed to the regulation of classes, types or sets of "incriptions". Therefore, it is pertinent to ask how then the logic could regulate Buridan's propositions that are individual inscriptions? Buridan restring logical principles to equiformity-classes of inscriptions.[425]

> Each inscription-token is unique. Logical laws are stated for inscriptions which are similar (*similis*), that is, sufficiently resemble one another in the relevant aspects. But there's no saying what respects are the relevant ones, or which degrees of resemblance are sufficient; these factors depend on the context, on our interests and aims. Inscriptions which are treated as the same in a given context are called "equiform", but there is no such thing as equiformity *tout court*, and so Buridans nominalism is not compromised.[426]

Buridan applies the notion of similarity or likeness to explain the generality and representation of universal concepts. Both for Ockham and Buridan universals are mental signs that refer to a plurality of things while remaining individuals.[427] The concepts, which are the main elements of Mental Language are likenesses of real things. The likenesses concepts are acts of the soul. That means that the concept is

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[423] Klima, G. (2001) Introduction, p. xxxiv In: Buridan, J. *Summulae de Dialectica. An annotated translation, with a philosophical introduction by Gyyka Klima*. New Haven/ London: Yale University Press.

[424] King, P. (1985). Buridan's Philosophy of Logic. In: *Jean Buridan's Logic: The treatise on supposition, The treatise on consequences.* Translated, with a Philosophical Introduction by Peter King. Synthese Historical Library, Vol. 27. Dordrecht: D. Reidel Publising Co.p. 8

[425] King (1985), P. 8

[426] King (1985), p. 9

[427] Cf. King, P. (2001) Buridan's Solution to the problem of universals. In: *The metaphysics and natural philosophy of Buridan*. pp.1-27, p. 4.

representative because of its similarity to objects, that is, concepts represent things because of their similarity to them.[428]

Universal understanding is an important subject in Buridan's theory. He denies that there are universal as *res*, thus reality is composed of individuals. Hence, it is necessary to explain how we can achieve universal knowledge from empirical contact with individuals. "Since there are no universals outside the soul distinct from singulars, and yet everything exists singularly, how does it come about that things are sometimes understood universally?" [429] From the semantic point of view universal are representative concepts in the intellect that function as common names (mental terms) in Mental Language. [430] He explains that the universal terms represent its objects because the likeness (that represents them) is in the intellect. Therefore, unique things can be understood universally.

> Thus, if we want to give a single reason (though not a sufficient one) why the intellect can understand universally even though the things understood neither exist universally nor are universals, I declare this to be the reason: Things are understood not because they are in the intellect but because likenesses that represent them are in the intellect.[431]

[428] "Si species hominis fuerit in phantasia et denudetur seu praescindatur ab omnibus extraneis seu a specibus extraneorum, [quod] ipsa non repraesentabit determinate Socratem uel Platonem, sed indifferenter quemlibet ipsorum aut aliorum hominum; et ita intellectus non intelligeret per illam speciem hunc hominem determinate, sed indifferenter hunc uel illum uel alium. Et hoc est intelligere hominem uniuersali intellectione." Buridani, Johannis. (1987)*Tractatus de differentia universalis ad individuum*. Slawomir Szyller (Ed), In: Przeglad Tomistyczny III, p.2, q 1)

[429] "Ista quaestio continet dubitationes ualde difficiles. Una est cum non sint uniuersalia praeter animam distincta a singularibus, sed, quia omnis res existit singulariter, unde prouenit quod res aliquando intelliguntur uniuersaliter?" Buridani, J. (1968) *Quaestiones super octo Physicorum libros, secundum ultimam lecturam*, Paris 1509. Reprinted by Minerva G.m.b.H. as *Kommentar zur Aristotelischen Physik*, Frankfurt-am-Main 1968, 1.07 fol. 8va (In KING, 2001, p.3):

[430] Leite Júnior, P. (2011). O nominalismo psicológico acerca dos universais em Buridano, *Àgora filosófica*, 11(2):225-242, p. 229

[431] "Si ergo uolumus assignare unam causam, licet non suffi cientem, quare intellectus potest intelligere uniuersaliter, quamuis res intellectae nec uniuersaliter existant nec uniuersales sint, ego dico quod haec est causa: quia res intelliguntur non propter hoc quod ipsae sint in intellectu, sed quia species earum, quae sunt similitudines repraesentiuae earum, sunt in intellectu." Buridani, J. (1990 Quaestiones in Aristotelis De anima secundum tertiam lecturam. Jack A. Zupko (Ed.). IN: *John Buridan's Philosophy of Mind: An Edition and Translation of Book III of his 'Questions on Aristotle's De anima'* (Third Redaction), with Commentary and Critical and Interpretative Essays. Ph.D. Dissertation, Cornell University 1989 (2 vol.). University Microfi lms: Ann Arbor.

By placing likeness as the representative property of concepts in the intellect, Buridan avoids the use of metaphysical entities and preserves his nominalism. On the other hand, in the epistemic scope Buridan adopts a psychological position about the universals, considering them psychological entities: "they are component elements of thought, that is, the primary building blocks of the intellect, acquired through our interaction with the world."[432] Here we will not explore this aspect of the concepts. For, although the intellection of concepts is an important aspect in mental language theory, what is relevant here for our purpose are the constituent elements of the Buridan LM and their dynamics.

Signification is a crucial theme in Buridan's logic and mental language. As for the correspondence between what is signified by the concept and the terms of ordinary language, Ockham and Buridan hold distinct opinions. For the *Venerabilis Inceptor* a concept signifies the things of the outside world. The spoken words subordinate to this concept signify the same object signified by it. Written terms, in turn, are signs of the spoken words.[433] On the other hand, for Buridan a spoken term signifies firstly a concept and, through it, the extra-mental object.

> In his foundational semantic theory, Buridan presents mental language as the foundation of what is natural and priority significant. This is because the name is not imposed to mean directly an object of the world. The spoken terms (*vocem*) arise as an attempt to express the thought or understanding of the world acquired through the concept: after acquiring the concept, the individual creates a first vocabulary, imposing a sound to mean a concept and, through it, the object of the world that was conceived. Then he can create a written word that means that sound. Thus, the process of how these terms acquire signification is given by a kind of causal relation between them and mental language or concepts.[434]

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[432] Leite Júnior, P. (2011), p. 229. Cf. King (2001), p. 4.

[433] "Et pro tanto dicit Philosophus quod voces sunt «earum quae sunt in anima passionum notae ». Sic etiam intendit Boethius quando dicit voces significare conceptus. Et universaliter omnes auctores, dicendo quod omnes voces significant passiones vel sunt notae earum, non aliud intendunt nisi quod voces sunt signa secundario significantia illa quae per passiones animae primario importantur, quamvis aliquae voces primario importent passiones animae seu conceptus, quae tamen secundario important alias animae intentiones, sicut inferius ostendetur. Et sicut dictum est de vocibus respectu passionum seu intentionum seu conceptuum, eodem modo proportionaliter, quantum ad hoc, tenendum est de his quae sunt in scritpo respectu vocum." *SL*. I, 1 [*OPh* I, 8, 34-45].

[434] Miquelanti, R. M. (2009) *O problema da referência a objetos não-existentes na teoria da suposição de João Buridano*. p. 20-21. "Em sua teoria semântica fundacional, Buridan apresenta a linguagem mental como fundamento do que é natural e prioritariamente significativo. Isso porque o nome não é imposto para significar diretamente um objeto do mundo. Os termos falados (*vocem*) surgem como uma tentativa de expressar o pensamento ou a compreensão do mundo adquirida através do conceito: após

For both Ockham and Buridan there is a hierarchy between mental language and conventional language, because the signification of conventional language is subordinated to the signification of mental language. However, in Buridan the relation between the two levels of language is of significance[435], in which written terms signify spoken terms: "[...] written letters mean voices uttered, or that can be uttered, and they do not signify other things outside the soul, such as asses and stones, except through the signification of voices"[436]. Spoken terms, in turn, signify mental terms: "significant voices mean passions, that is, concepts of the soul, and do not [signify] anything other than through the signification of the concept".[437] Mental terms, in turn, are natural likeness of objects they signify: "by every concept something is conceived, or rather, not only a single thing, but many [things] simultaneously".[438]

Klima explains that subordination of conventional language to mental language in Buridan occurs in virtue of concepts' natural likeness to its objects.

> For medieval logicians, the commitment to mental language in its semantic function is simply the recognition of the trivial fact that articulate sounds in themselves are not meaningful: a conventionally significative utterance is meaningful only by virtue of its being associated with (or subordinated to) some cognitive act of a human mind. Such a cognitive act, a concept, is simply something on account of which a human being conceives of, or is in some way aware of, something. Thus, a meaningful utterance ultimately signifies just that thing or those things which it makes anyone who understands it aware of, that is, anyone who has the corresponding concept and knows that the utterance in question is associated in common usage with that concept. In other words, an utterance is meaningful

adquirir o conceito, o indivíduo cria um primeiro vocabulário, impondo um som para significar um conceito e, através dele, o objeto do mundo que foi concebido. Em seguida, pode criar uma palavra escrita que signifique esse som. Assim, o processo de como esses termos adquirem significação é dado por uma espécie de relação causal entre eles e a linguagem mental ou os conceitos."

435 Cf. King (2001), p. 7

436 "Litterae scriptae significant voces prolatas vel proferendas, et non significant alias res extra animam, puta asinos aut lapides, nisi mediante significatione vocum", Buridanus, J. (2004). *Summulae de Practica Sophismatum*. Introduction, critical edition and indexes by Fabienne Pironet. Turnhout: Brepols, p. 18

437 "Voces significativae significant passiones, id est conceptus animae, et non alias res nisi mediante conceptuum" Buridanus (2004), p.19.

438 "Quod omni conceptu aliquid concipitur vel forte non unum solum, sed multa simul." Buridanus, (2004) p.20.

> by virtue of its being subordinated to a human concept, and thus it will immediately signify that human concept, but ultimately it will signify the object or objects of that concept, whatever that concept represents. Therefore, according to Buridan, what a meaningful utterance signifies is neither simply ‘‘an extramental thing’’ nor simply something ‘‘in the head.’’ For a meaningful utterance immediately signifies (or is subordinated to) a concept (whatever a concept is in its own nature), but in virtue of this immediate signification it ultimately signifies that thing which is (or those things which are) conceived of, naturally signified, or represented by this concept (whatever it is or whatever they are in their nature), in the way it is (or they are) represented.[439]

Besides signification, another point of convergence between Ockham and Buridan is supposition theory, a property of terms that was used since the 12th century for the logical analysis of oral language which is applied to mental language as well. King explains the difference between signification and supposition as follows:

> Supposition is a semantic relation, holding between term(s) and thing(s). The relation of signification, however, is also a relation of term(s) and thing(s). Yet it is one matter to assign certain terms to certain things, so that a language may be set up in the first place; this is the contribution of signification. It is quite another matter to actually use that language to talk about things; this is explained by supposition, which accounts for the referential use of (significative) terms.[440]

What is missing in King's explanation, however, is that in medieval times within the context of terminist logic, a term can in isolation have signification such as, for example, a sign where it is written "exit" indicates that that is the place of exit. Supposition, however, is a propositional property. Therefore, a term can supposit for its signification when it is part of a proposition, either as subject or as predicate. Ockham emphatically says that "supposition is a property of terms, but only when it is in a proposition”.[441]

Terms that compose mental propositions may have a referential function these terms or concepts are the subjects or predicates of a mental proposition. Ockham

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[439] Klima (2001), p. xxxiv

[440] King (1985), p. 36

[441] “[...] de suppositione, quae est proprietas conveniens termino sed numquam nisi in propositione.”. *SL*. I, 64 [*OPh* I, 193, 1-2].

distinguishes three types of supposition, namely, personal, material, and simple.[442] The personal supposition is that according to which a term takes the place of singular things to which it signifies.[443] The material supposition is that according to which the term takes the place of an oral or written word to which it corresponds as “man” in "Man is a name".[444] The simple supposition was originally used to refer to a universal or common nature. Ockham, however, maintains the simple supposition in his theory, but uses it to refer to a mental concept.[445]

Buridan, on the other hand, excludes the simple supposition, that in which the term stands for a concept, in his theory. Buridan's theory of supposition derives mainly from Peter of Spain’s theory, which distinguished between personal supposition and simple supposition as a reflection of the difference between two types of things with real existence, concepts and objects.[446] Buridan as a nominalist believes that the universal is not an object really existing in the world, but merely a property of a name. For, since in the simple supposition the term does not exercise its significant function, given that it supposes for a concept and not for an object in the world, simple supposition is rejected or included in the material supposition.[447] Therefore, he admits just the material and personal supposition. The distinction between material and personal supposition concerns the kind of thing to which a term refers in a sentence, that is, whether it is its own ultimate significate, or an inscription, an utterance or a concept.[448]

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[442] “Sciendum est autem quod suppositio primo dividitur in suppositionem personalem, simplicem et materialem” *SL*. I, 64 [*OPh* I, 195, 2-3].

[443] “Suppositio personalis, universaliter, est illa quando terminus supponit pro suo significato [...]” *SL*. I, 64 [*OPh* I, 195, 4-5.

[444] “Suppositio materialis est quando terminus non supponit significative, sed supponit vel pro voce vel pro scripto. Sicut patet hic 'homo est nomen' [...]” *SL*. I, 64 [*OPh* I, 196, 38-40].

[445] “Suppositio simplex est quando terminus supponit pro intentione animae, sed non tenetur significative.” *SL*. I, 64 [*OPh* I, 196, 26-27].

[446] Cf. Miquelanti (2009), p. 53

[447] "Similiter autem aliqui vocabant suppositionem simplicem quando vox supponi pro conceptu secundum quem imponitur, et materialem quando supponit pro se ipsa vel consimili; sed hoc non curo, quia utranque voco suppositionem materialem". Buridano, J. (1975). Tractatus de suppositionibus, 111, ed. M. E. Reina, Rivista critica di sioria della filosofia, 12: 201-202.

[448] King (1985), p. 36

Buridan defines personal supposition as one in which the term supposes for its ultimate significate(s). On the other hand, material supposition occurs when an utterance supposits for itself or something similar to itself or for its immediate significate, which is the concept according to which it is imposed to signify, as the term ‘man’ in the sentence man is a species. [449] However, Buridan's theory does not admit that mental terms presuppose materially in mental sentences. For mental propositions which have terms which can be taken in material supposition are ambiguous since any term can always be taken in personal supposition, that is, a term can always take the place of its immediate significate. Ockham, in turn, does not exclude the ambiguity of his theory. The admission of ambiguities in Ockham’s mental language contradicts the opinion of some scholars[450] that Ockham's ML is an ideal language as conceived by Buridan. Therefore, some commentators think that Buridan's mental language is more philosophical than Ockham's.

> Buridan’s theory of mental language would be even more elaborate and coherent than Ockham’s. Buridan holds that there is no ambiguity in mental language and so he denies that there is any kind of supposition in mental language apart from personal supposition (De fallaciis 7.3.4; van der Lecq 2009).[451]

Buridan's theory of supposition has several subdivisions, mainly concerning personal supposition. The most important for our purposes is the referential function that terms assume in propositions in Buridan's mental language, so we will not deal with the subdivisions of supposition. Although in the following chapter we will discuss Ockham’s supposition theory. Similarly, Buridan's theory of mental language is much broader and more complex than we have detailed here, but what we have already exposed is enough to provide an idea of how mental language was developed after Ockham. Although the interpretation that ML developed by Ockham achieves its

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[449] “Sed suppositio materialis dicitur quando vox supponit pro se aut sibi simili aut pro suo significato immediate, quod est conceptus secundum quem imposita est ad significandum, ut iste terminus ‘homo’ in ista propositione ‘homo est species’.” Buridanus, I. (1998) Summulae de Suppositionibus. Introduction, critical edition and indexes by Ria Van der Lecq. Nijmegen: Ingenium Publishers, p.38

[450] See for instance Spade, P.V. (2009) Synonymy and equivocation in Ockham’s mental language. *Journal of the History of Philosophy*, 9-22.. It is worth to mention that normore change his mind about Ockham’s mental language being an ideal language.

[451] Pelletier J. ;Roques M. (2017), p. 8

"perfection" with Buridan is widespread, we believe that Ockham's intention was not to create an ideal language, but rather a language that would serve as the semantic foundation for conventional language. Thus, all the imperfection present in his theory does not seem to us to be the result of a failure to build an ideal language. On the contrary, we consider that his language of thought carries the possibility of flaws, mistakes, and deceptions to which human thought and language itself are subject.

There are, of course, several points considered to be flawed in his theory. The first of these refers to the syncategorematic terms in mental language. Since common concepts and terms are learned from contact with the external world and there is no innate content in the LM, how does Ockham explain the apprehension of the syncategorematic terms? There is an extensive discussion and bibliography on the subject, which we will discuss in the following chapter.

Another topic considered controversial regarding Ockham's mental language is his claim that ML is prior to conventional language. The problem with this statement is that most features of ML are features of Latin described as proper to ML. If Ockham has derived the structure of his mental language, which is supposed to be the foundation of conventional language, from an already existing language, does this invalidate the hypothesis of mental language? This is an issue that we will discuss in the next chapter.

3.2.4.THE BEGINNING AND THE END OF MENTAL LANGUAGE

Mental language can be found in several different ways. It can be like an inner verb of Augustine, or in the thought that contains verbs and names, as in the case of Ammonius. In any case, the idea of a "mental speech" concerns the articulation of thought in a linguistic structure. Ockham's ML is one of the most remarkable examples of that, for his *oratio mentalis* concerns exactly a discourse that resembles conventional discourse, - whether written or spoken - but which occurs in the mind, a thought speech. Thus, we can inquire: are there some defining parameters of what a mental language is? According to Panaccio, the basic idea of a mental language is:

> [...] that exist within individual minds, in one form or another, mental representations, which, though independent of the languages of communication, are combinable between them

> into more complex units, in precisely the same way that the words of the language are combined into phrases.[452]

We underline from Panaccio's definition the compositional aspect of mental language which is very similar to the structure of ordinary language: a complex is formed by smaller parts, just as a proposition is formed by terms.

This description resembles Normore's description, which also establishes the conditions that a mental language must satisfy:

> First, it must be a medium in which thinking is carried on. Second it must have a syntax which is similar for all thinkers and which makes it possible to combine elements of thought so as to form other items which are capable of representing and bearing truth-values. Third it must be expressively complete in the sense that anything which can be expressed in any natural language could in principle be expressed in it. Fourth it must be prior to natural language in the sense that one does not need already to have a natural language in order to have (or to acquire) it. Fifth it must be such that elements of natural languages have their meaning in virtue of relations they bear to its elements so that if its elements were to behave differently semantically the corresponding elements of each natural language would also behave differently. Both the *oratio mentalis* of Ockham's *Summa Logicae* and Fodor's *Language of Thought* are mental languages in this sense.[453]

From the statement that mental language is a medium in which thought is carried on, we may consider how the hypothesis of mental language represents an evolution of the way thought is considered throughout the philosophical tradition. After all, what is conceiving a "thought"? The hypothesis of mental language defends there is a deep grammatical structure in thought. The association of thought with language is very present in philosophy, especially in the field of analytical philosophy. However, there is another way of conceiving thought which is through the notion of idea. Starting with Aristotle[454], who defended that "the soul never thinks without images" until the

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[452] Panaccio (1999), p. 17. « [Ils font l'hypothèse] qu'il existe dans les esprits individuels, sous une forme ou sous une autre, des reprèsentations mentalis qui, bien qu'indépendantes des langues de communication, sont combinables entre elles en unités plus complexes, de la même façon précisémente que les mots de la langue se combinent en phrases ».

[453] Normore, C. (2009). The end of mental language. In: Biard, J. (ed), *Le langage mental du Moyen Âge à l'Âge Classique*, Louvain/Paris :Éditions Peeters, pp. 293-306, p. 294.

[454] De Anima (III, 7, 431a, 14-17).

philosophical movement called Way of Ideas, which in the 17th century dominated thinking about thought.[455] This movement maintained that thinking is to have ideas, the combination of ideas and the passage from one idea to another. The notions of thought as language, and as image, are not exactly irreconcilable, but to suppose that thought is structured as a sequence of ideas or images is far from the assumption that thought is structured as language.[456]

The hypothesis of mental language was in evidence in philosophical discussions at least twice in the course of history, with Ockham and Fodor being the greatest exponents in this regard. It seems reasonable to agree that mental language was not created by Ockham, as we shall further see.[457] However, there is a considerable historical distance between the two thinkers, which leads us to question the gap between Ockhamian *oratio mentalis* and Fodor's language of thought. Normore investigates what reasons led to the disappearance of mental language after its summit in the 14th century, and which reasons led to its emergence in the first place, and its subsequent reappearance in the 20th century with Fodor. For Normore, the development of the mental language hypothesis is linked in some way to terministic logic and nominalism in late scholastics.[458] However, he claims the end of terministic logic is not, as Nuchelmans points out, the reason for the disappearance of the LM.[459] Likewise, the theory of mental language is not strictly linked to nominalism, although it is often accompanied by it. The reason for the end of mental language suggested by Normore is that the notion that the mind is a computational system has prevailed over the notion that the mind has a grammatical structure. [460]

Although the decline of medieval nominalism is not the cause of the end of mental language after the 14th century, mental language hypothesis often accompanies nominalism. The mental language hypothesis suggests an isomorphism between thought and language, while nominalism suggests an isomorphism between

[455] Normore (2009), p. 304.

[456] Normore (2009), p. 304.

[457] For more details concerning the origins of mental language see chapter 3.

[458] Normore (2009), p. 302.

[459] Nuchelmans, G. (1980) *Late-scholastic and Humanist Theories of the Proposition*. Amsterdan: North Hilland,

[460] Normore (2009), p. 306.

language and the world. However, it is possible to be a nominalist without necessarily admitting that the thought has a linguistic structure.[461] This is the case of Abelard who defends a nominalist theory without defending a mental language.[462]

However, adhering to the hypothesis of mental language is in general very convenient for a nominalist. This seems to have been Ockham's strategy, since his mental language is at the service of his nominalism and not the other way around.

> Ockham's development of a theory of mental language was, if not determined by, at least fostered within his nominalist project. Desiring to preserve the universality of scientific knowledge without a commitment to universal objects, Ockham found it attractive to take propositions, rather than common natures, as objects of knowledge, for even universal propositions could be verified, on Ockham's nominalist semantics, only to particular individuals in the world.[463]

The approximation between mental language and nominalism is present not only concerning the end of mental language, that is, its disappearance in the 17th century, but it also appears in the explanation of what is mental language in secondary literature.

We consider that Ockham's mental language has reached full development due the context in which it was developed. That is, the tradition that preceded it has sufficiently developed the notion of mental language, which has favored, along with his nominalism, the sophistication of his own theory.

[461] Normore (2009), p. 300-301

[462] Cf. Pelletier, J.; Roques, M. (2017) An introduction to Mental language in Late Medieval Philosophy. In: Pelletier, J.; Roques, M. (eds.) *The language of thought in Late Medieval Philosophy*. Switzerland: Springer, pp.1-26, p. 14; Cf. Normore (2009), p.301

[463] Hochschild, J. (2015). Mental language in Aquinas? In: Klima, G. (ed) I*ntentionality, cognition and mental representation in medieval philosophy*. New York: Fordham University Press, p. 30.

4. THOMAS HOBBES'S MENTAL DISCOURSE

Mental language is frequently connected with nominalism. However, a nominalist does not need to hold a theory of mental discourse for his nominalism to be coherent. On the other hand, when we consider a mental discourse, especially the 14th century model advocated by Ockham, it is associated with a grammatical structure of thought. Would it be possible to conceive a mental discourse that does not have a deep grammatical structure?

Despite the disappearance of mental language, we find with Thomas Hobbes, in the 17th century, a mental discourse. He differentiates the notion of mental discourse from that of oral discourse, meaning that mental discourse occurs in the mind whereas oral discourse or speech is spoken. However, his mental discourse does not have a grammatical structure. He conceives mental discourse not as a sequence of propositions or as a grammatical structure, as Ockham and the scholastics of the 14th century did, but as a sequence or enchainment of thoughts, the succession of one thought to another. For Hobbes, thought is not itself discursive, which means that it does not have a deep grammatical structure because he conceives thought in a different way from the logical terminists of the 14th century. On the one hand, the hypothesis of late scholastic mental language defended the notion that our thought is structurally discursive, meaning, structured as a language, with grammar and propositions composed by subject, predicate, and *copula*. On the other hand, Hobbes conceives thinking as having ideas, as having a sequence of ideas coming from the sensations that we have through the body. The specificity of Hobbes' mental discourse is to be a continuous succession of phantasms originating from the sensation. However, the indefiniteness of sensation does not give rise to an indefiniteness of mental discourse, but only to an indeterminacy, as to which series of images will follow a first image in the discourse. These two conceptions of thought, and consequently the theories of mental discourse on which they are based, represent a paradigm shift between the grammatically structured thought of medieval scholastics and Hobbes' computational thought. This chapter aims to show how the notion of mental discourse of Thomas Hobbes represents the paradigm shift from the medieval conception of thought as a grammatical structure to the modern conception of computational

thought.[464] Our intention is to contrast the notion of mental discourse developed by Hobbes in the 17th century with the mental language developed in the 14th century by Ockham. We will compare the main characteristics of Hobbes' mental discourse with Ockham's mental discourse[465].

Hobbes' mental discourse represents the paradigm shift from a grammatical thought model to a computational thought model. Hobbes does not advocate for a notion of thought and mind that possesses a deep grammatical structure as we can find with Ockham. On the contrary, he conceives reasoning as computation, that is, as calculation. Therefore, thinking for Hobbes is not forming mental propositions, but rather calculating. This calculus is present from the naming or imposition of names to objects and our thoughts, through the formation of concepts that also involves a calculation of the accidents of objects, to the reasoning itself that is the calculation of syllogisms.

Hobbes deals with the mind and language propaedeutically in his books before properly entering his discussion of political philosophy. This is found in both *Elements of Law, De Corpore* and *Leviathan*. These three works have similar content and structure in some points, but as far as the mind and language are concerned, Hobbes usually deals in this order: meaning, imagination, language (or names), understanding, reasoning and passions. Hobbes usually deals with these topics in the first chapters of his works because he believes it is easier to understand how individuals work in groups, the subject matter of their political works, if we know a little about how individuals function separately.[466]

4.1 SENSATION

At the basic level of perception Hobbes defends a form of empiricism in which our thoughts are derived from our sensations. Likewise, mental discourse, language

[464] For Hobbes both mental and verbal speech have this computational characteristic.

[465] About Hobbes' nominalism see Zarka, Y. C. (1987). *La decision métaphysique de Hobbes*: conditions de la politique, Vrin.

[466] Cf. Ducan, S. (2017)a. Thomas Hobbes. *Stanford Encyclopedia of Philosophy*, Library of Congress Catalog Data. https://plato.stanford.edu/archives/spr2017/entries/hobbes/

and reasoning also derive from sensation to some extent. The thoughts of men are considered in two ways, alone or in chains, depending on each other. In isolation, each thought is a representation or appearance of some quality, or another accident of an object (an external body). The object can act upon the eyes, ears, and other parts of the body, producing diverse appearances.[467] The enchainment of thoughts is what he will later call mental discourse.

The origin of appearances is the sensation, "for there is no conception in a man's mind, which has not at first, totally, or by parts, been begotten upon the organs of sense".[468] The sensation is caused by the external body, or rather, by the pressure that the object causes on the organs of the senses.

> The cause of sense, is the external body, or object, which presseth the organ proper to each sense, either immediately, as in the taste and touch; or mediately, as in seeing, hearing, and smelling: which pressure, by the mediation of the nerves, and other strings, and membranes of the body, continued inwards to the brain and heart, causeth there a resistance, or counter-pressure, or endeavour* of the heart, to deliver itself: which endeavour because *outward,* seemeth to be some matter without. And this *seeming,* or *fancy,* is that which men call *sense;[…].*[469]

Hobbes distinguishes the object from the image, that is, from the appearance it produces in us. Even though the sensitive qualities are in the objects that cause the appearance, the sensation is an appearance caused by the pressure of the external objects in the organs of the senses.[470] The emphasis on distinguishing the appearance from the external object that has caused it is attached to Hobbes' critique of *species* theory which was widely defended by scholastics of Aristotelian tradition. According to Hobbes, this doctrine taught in universities is "a discourse lacking in significance".[471]

Hobbes associates the sensation that gives rise to appearances or phantasms with a dynamic of movement. The pressure the objects cause in the senses is a

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[467] Hobbes, T. (1996) *Leviathan*. Edited with an Introduction and Notes by. Gaskin, C.A. Oxford Universtity Press, Oxford. p. 9

[468] *Lev*. I, p. 9

[469] *Lev*. I, p. 9

[470] *Lev.* I, p. 9

[471] *Lev.* I, p. 10

movement that generates an internal movement in our body as a response to that stimulus. For Hobbes, the conceptions that come from the senses are inherent to the subject who senses and not the object.[472] Pécharman describes this movement: "every element of inner discourse is initially produced by a movement coming from the outside and extending inside the brain, giving as a reaction the feeling that a property of an object is currently perceived on the outside".[473]

The imagination itself comes from this movement.[474] According to Hobbes, what scholastics call imagination is the conservation of the image of a thing seen even when that thing is no longer present. The Greeks call it phantasm, which means appearance, and is a term that suits all senses, unlike the term 'imagination' which refers to sight (the conservation of the image seen even when it is no longer present) but the Latins erroneously attribute imagination to designate the retention of the phantasm of all senses.[475]

Imagination is a diminished sensation. Or yet, the imagination is what is left of the sensation.[476] However, this decrease refers to an obscuration of the sensation, not to the decrease of the movement made in the sensation. What occurs is that in the sensation, when we have many competing impressions, only the predominant impression is felt. The same way as during the day we perceive only the sun, although the other stars continue to exist and shine, we perceive only the one those impressions that stands out.[477]

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[472] *Human nature*, Ch. II, In: Hobbes, T. (1840). Human Nature, or The fundamental elements of policy. Bohn, John (trad). *The English Works of Thomas Hobbes of Malmesbury*, Vol. 4, London, p. 3.

[473] […] tout élément du discours intérieur est d'abord produit par un mouvement venu du dehors et qui se prolonge au-dedans du cerveau, donnat par réaction le sentiment qu'une propriété d'un objet est actuellement perçue à l'extérieur." De quel langage intérieur Hobbes est-il le théoricien? P. 276.

[474] "[…] so also, it happeneth in that motion, which is made in the internal parts ofa man, then, when he sees, dreams, &c. For after the object is removed, or the eye shut, we still retain an image of the thing seen, though more obscure than when we see it. And this is it, the Latins call *imagination […]"* Lev. II, p. 11

[475] *Lev*. II, p. 11

[476] *Human Nature*, Ch. III, p. 9: "And this obscure conception is that we call PHANTASY or IMAGINATION: imagination being (to define it) conception remaining, and by little and little decaying from and after the act of sense."

[477] *Lev*. II, p. 11-12.

However, just as the movement contributes to the formation of appearances through sensation, it also contributes to their destruction. So, the further we move away from a certain sensation, the weaker our imagination is of it: “For the continual change of man’s body destroys in time the parts which in sense were moved: so that distance of time, and of place, hath one and the same effect in us.”[478] When this diminished sensation expresses itself, that is, the phantasm itself, it is called imagination. On the other hand, when the sensation express that the sense is fading, is called memory. In general, memory and imagination names for the same thing considered under different aspects.[479]

Memory, or the memory of many things is called experience. Imagination refers to things that have been perceived by sensation and is divided into simple imagination, which consists in imagining the object in its totality, as it presented itself to sensation; whereas composed imagination refers to a composition we make between simple imaginations we have. For example, when we imagine a man or a horse, it is a simple imagination. When, from these imaginations, we imagine a centaur, we are producing a composite imagination that is nothing more than a fiction of the mind.[480]

4.2 MENTAL DISCOURSE

Hobbes calls understanding the imagination that appears in men through words or any other voluntary sign. This understanding also applies to animals or any other creature endowed with understanding. However, in men, the understanding that occurs in the imagination is an understanding that necessarily involves language. For, he defines mental speech as the consequence or succession from one thought to another.

> By *Consequence,* or TRAIN of thoughts, I understand that succession of one thought to another, which is called (to distinguish it from discourse in words) *mental discourse.*[481]

Just as the phantasms in mind is derived from a sensation that we have already had, likewise the passage from one phantasm or image to another also comes from

[478] *Lev*. II, p.11-12.

[479] *Lev*. II, p. 12

[480] *Lev*. II, p. 12.

[481] *Lev*. III, p. 15

the passage from one sensation to another. In other words, every image of mental discourse was initially a phantasm originated in the sensation. Similarly, every passage from one image to another in the imagination is related to the passage from one phantasm to another in sensation. These movements that were immediately succeeded one by another in the sensation remain associated after the sensation. However, in speech, it is not possible to predict exactly what the next imagination will be. It is only possible to know that each image is inserted in a chain corresponding to a chain of phantasms originated in the sensation because mental discourse works mainly with similarities and dissimilarities of these sensations.

Mental discourse is of two types: guided and unguided. Unguided mental discourse is one in which thoughts wander and do not seem to have a pertinent connection with each other, as occurs when we dream. In guided mental discourse the chain of thoughts is regulated by a desire or design. [482]

> The train of regulated thought is of two kinds; one, when of an effect imagined, we seek the causes, or means that produce it; and this is common to man and beast. The other is, when imagining anything whatsoever, we seek all the possible effects, that can by it be produced; that is to say, we imagine what we can do with it, when we have it. Of which I have not at any time seen any sign, but in man only; [...].[483]

Although mental discourse seems to be oriented to the past it is also the discourse of prudence, oriented towards the future, for Hobbes states that "whatsoever (as I said before,) we conceive, has been perceived first by sense, either all at once, or by parts; a man can have no thought, representing anything, not subject to sense."[484] This is the empirical thesis regarding thoughts: everything that can be thought must have been the object of a sensation before.

According to him, the speech is one of the noblest and most useful inventions "[…] consisting of *names* or *appellations,* and their connection; whereby men register their thoughts; recall them when they are past; and also declare them one to another for mutual utility and conversation […]"[485]. The role of speech is to make our thoughts

[482] Lev. III, p. 16.

[483] Lev. III, p. 17.

[484] Lev. III, p. 19

[485] Lev. IV, p. 20

known, that is, the role of speech is to communicate what we think: “The general use of speech, is to transfer our mental discourse, into verbal, or the train of our thoughts, into a train of words.”[486] Hobbes' verbal discourse is, therefore, a language at the service of communication, it has a utility and social function.

Language names are used in two ways, first as marks, when they are used to record the consequences of our thinking. Through these marks our thoughts can be remembered, which saves the trouble of restarting a sequence of thoughts from scratch. The second use of names is as signs, which are used, as the name suggests, to signify when the same word is used by many to express similar conceptions or thoughts.

> Special uses of speech are these; first, to register, what by cogitation, we find to be the cause of anything, present or past; and what we find things present or past may produce, or effect: which in sum, is acquiring of arts. Secondly, to show to others that knowledge which we have attained; which is, to counsel, and teach one another.[487]

There does not seem to be a subordination relation between mental discourse and spoken discourse. However, the mental marks used in mental discourse seem to serve the purpose of oral discourse when sharing thoughts with others.

> For example, a man may begin with a word, whereby the hearer may frame an idea of something in his mind, which nevertheless, he cannot conceive to be the idea which was in the mind of him that spoke, but that he would say something which began with that word, though perhaps not as by itself, but as part of another word. So that the nature of a name consists principally in this, that it is a mark taken for memory’s sake; but it serves also by accident to signify and make known to others what we remember ourselves […].[488]

For Hobbes, the meaning of the signs used in language does not derive from the meaning of the mental marks used to register our thoughts. Hobbes attributes the signification of words to imposition and convention: “the manner how speech serveth

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[486] Lev. IV, p. 21

[487] *Lev.* IV, p. 21

[488] *Computation or Logic* II, In: Hobbes, T. (1839) Elements of Philosophy concerning the body. Bohn, John (trad). *The English Works of Thomas Hobbes of Malmesbury*, Vol. 1, London, p. 15

to the remembrance of the consequence of causes and effects, consisteth in the imposing of *names,* and the *connexion* of them."[489] The attribution of marks to our thoughts is done arbitrarily. [490] However, even if Hobbes' mental discourse does not offer a semantic foundation for spoken language such as Ockham, this does not mean that mental discourse can be completely isolated from spoken speech.

On the contrary, the arbitrary imposition of names suggests that language is conventionally used for a social function of communication. In a passage about names in *Computation or Logic*, Hobbes corroborates our interpretation that mental discourse is at the service of spoken discourse. According to him, it is of no use to man to reason and invent marks to help his memory if only he benefits from it.

> For unless he communicates his notes with others, his science will perish with him. But if the same notes be made common to many, and so one man's inventions be taught to others, sciences will thereby be increased to the general good of mankind.[491]

Thus, it is necessary not only to create marks to register our thoughts and be able to remember them, but also to institute signs to share our thoughts with others. In *Computation or Logic*, Hobbes defines signs as "the antecedents of their consequents, and the consequents of their antecedents, as often as we observe them to go before or follow after in the same manner".[492] Hobbes' sign examples are very similar to the examples given by Ockham: a thick cloud is a sign of rain to follow, and rain a sign that a cloud has gone before for, it is common that when we see clouds, they are followed by rain, and when we see rain, it is usually preceded by clouds. However, this sense of signification that Hobbes calls natural signification is what Ockham calls signification in the broad sense that occurs, for example, when we see smoke and it is the sign of fire, deducing the cause from the effect. The attribution of spoken signs is arbitrary, i.e., done by convention for both Hobbes and Ockham. For Hobbes, the precise

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[489] *Lev*. IV, p. 21

[490] *Computation or Logic* II, p.16 "And it is for brevity's sake that I suppose the original of names to be arbitrary, judging it a thing that may be assumed as unquestionable".

[491] *Computation or Logic* II, p. 14

[492] *Computation or Logic* II, p. 14

difference between marks and signs is that the former is instituted for personal use (and therefore not conventional), while the latter is for use with others.

However, speech occurs only when words are connected so that they become signs of our thoughts. Each part of this speech is called a *name*. For Hobbes, names fulfill both the function of marks and signs:

> A name is a word taken at pleasure to serve for a mark, which may raise in our mind a thought like to some thought we had before, and which being pronounced to others, may be to them a sign of what thought the speaker had, or had not before in his mind.[493]

A name only has signification, that is, it only becomes a sign when it is inserted in a speech.

> Words so connected as that they become signs of our thoughts, are called speech, of which every part is a name […] Again, names though standing singly by themselves, are marks […] but they cannot be signs, otherwise than by being disposed and ordered in speech as parts of the same.[494]

In the same way that names alone do not form a speech, neither do thoughts alone form a speech. It is the translation of thought into speech that makes it significative. For, names when used for the individual to remember his own thoughts are called marks or notes. However, when names are used in a connected and orderly manner to signify to others what an individual conceives or thinks, these names are called signs.

> The general use of speech, is to transfer our mental discourse, into verbal; or the train of thoughts, into a train of words. And that for two commodities; whereof one is, registering of the consequences of our thoughts. Which being apt to slip out of our memory, and put us to a new labor, may again be recalled, by such words as they were marked by. So that the first use of names, is to serve for *marks*, or *notes* of remembrance. Another is, **when many use the same words, to signify (by their connexion and order,) one to another, what they conceive, or think of each mater; and also, what they desire, fear, or have any other passion for. And for this use they are called *signs***.[495]

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[493] *Computation or Logic* II, p. 16

[494] *Computation or Logic* II, p. 15

[495] *Lev*. IV, p. 21 [The bold is ours]

From this passage, we understand that names when ordered in a speech are signs and therefore have signification. The marks, in turn, seem to be a notation system that has no signification for others, but only for the individual who uses it.

Hobbes' mental discourse becomes orderly and significant when it is translated into spoken speech. In a certain sense, mental discourse is the foundation of spoken discourse, although not semantically. According to Pécharman, the signification of language depends on the knowledge of the meaning instituted to names. That is, signification depends on the ability to recognize the connection between a name and its objects, whether they are things or ideas: "To know the instituted meaning of names is to be able both to use for oneself and to use for another to master the sequences of names that replace the sequences of images in mental discourse."[496] Pécharman emphasizes the sequential notion of discourse and argues that it is the essentially sequential and chained character that defines oral discourse as derived from the sequential structure present in mental discourse.[497]

For Hobbes, the thought is based partially on sensation. Such reasoning corroborates his anti-realistic position regarding the universal. The rejection of the conception that the universals are real was very common in the beginning of modernity. Hobbes is a proponent of this tendency and conceives universals as names that are common to many things, as opposed to proper names that name only one thing.[498] By

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[496] Pécharman, M. (1992) Le discours mental selon Hobbes. *Archives de Philosophie*. 55, 553-573, p. 571. :"Connaitre le sens institué des noms, c'est donc être toujours capable, dans l'usage pour soi comme dans l'usage pour autrui du discours, de maîtriser les consécutions de noms qui remplacent les consécutions d'images dans le discours mental."

[497] In this sense she believes that the conventional character of name-imposing language leaves no scope for an interpretation of Hobbes as an advocate of a private language. About the assumption of a private language in Hobbes Cf. Ducan, S. (2017). Universal Names, and Nominalism. In: Di Bella, S.; Schmaltz T.M. (eds) *The problem of Universals in Early Modern Philosophy*. Oxford Scholarship Online.

[498] Referring to the notion of universal ideas: "Whatsoever we imagine is *finite.* Therefore, there is no idea, or conception of anything we call *infinite.* No man can have in his mind an image of infinite magnitude; nor conceive infinite swiftness, infinite time, or infinite force, or infinite power. When we say anything is infinite, we signify only, that we are not able to conceive the ends, and bounds of the things named; having no conception of the thing, but of our own inability. And therefore the name of God is used, not to make us conceive him; (for he is incomprehensible; and his greatness, and power are unconceivable;) but that we may honor him.[…] No man therefore can conceive anything, but he must conceive it in some place; and endued with some determinate magnitude; and which may be divided into parts; nor that anything is all in this place, and all in another place at the same time; nor that two, or more things can be in one, and the same place at once:* for none of these things ever have, or can be

stating that universals are names he denies that they are things or ideas. Hobbes also criticizes the conception that the representation we have of the objects that surround us comes from *species* that are in the objects and are received by the senses and then transmitted to the phantasm, and from the phantasm to the memory and from memory to judgment “like handing of things from one to another, with many words making nothing understood”[499].

The context in which Hobbes most expresses his anti-realism in relation to the universals is when it comes to language. He claims that there are no universal things, only universal names. Names are distinguished between proper and common names according to how they signify. Proper names nominate only one thing, like Peter, John, this man, this tree, etc. [500] The common names of many things such as 'man' and 'tree' denominate many common singulars:

> […] some [names] are *common* to many things; as *man, horse, tree;* every of which though but one name, is nevertheless the name of diverse particular things; in respect of all which together, it is called a *universal;* there being nothing in the world universal but names; for the things named are every one of them individual and singular.[501]

In this section it becomes clear that Hobbes reduces the universals to names and denies that there is anything that is a universal. Ockham, in turn, believed that there is no universal outside the mind, turning the universal into a quality in the mind. Beyond anti-realism, there is in Hobbes the refusal to assume a conceptualistic posture, as is the case of Ockham. In this sense, what the two thinkers have in common is that the universality of the common names will be explained by both through the similitude between several similar singulars.

Although they agree that universality is given by virtue of signification, there is an expressive difference between Hobbes' and Ockham's conception of what is a

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incident to sense; but are absurd speeches, taken upon credit (without any signification at all,) from deceived philosophers, and deceived, or deceiving Schoolmen.” In this passage, referring to the quantities in which one can think, Hobbes makes it clear that such quantities cannot be thought of without having had a sensitive experience of them previously, contrary to what is taught in Universities.

[499] *Lev.* III, p. 15

[500] *Lev*. IV, p. 22

[501] *Lev*. IV, p. 22

universal. For Ockham, the concepts or universals are unique realities of the mind, and universality is given by virtue of signify many particular objects outside the mind. However, for Ockham and Hobbes the universal concept itself is a particular that only represents similar particulars. For Hobbes, only names are universal, and, as such, these names are not signs of things but of our cogitations. [502] However, he does not say that our cogitations are universal ideas, but that when we hear, for example, the sound of the word "stone", it is only possible for someone to understand that it is the object stone if he assumes that the speaker is thinking of a stone.[503] The mental representation of which the name is a sign is a particular representation, not universal. He then adds, “[...] that disputation, whether names signify the matter or form, or something compounded of both and other lie subtleties of the metaphysics, is kept up by erring men, and such as understand not the words they dispute about.”[504] In this passage, referring to the classic formulation of the problem of universals, Hobbes criticizes this metaphysical dispute as being a confusion about what the names refer to. According to Ducan, in Hobbes’s view, the name is associated with ideas, but only with particular ideas of particular things”[505]. Ducan's interpretation, which seems quite coherent, is that Hobbes not only criticizes realism, but also the conceptualism that places universals as mental entities like Ockham’s.

4.3 NOTATION AND SIGIFICATION

Hobbes, as an early modern thinker has a conception of signification that differs from the Ockhamian notion accepted in late scholastics in general. This new conception of signification is presented when Hobbes distinguishes names as marks and signs. According to him, names alone are marks that are accidentally used to communicate our thoughts.

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[502] *Computation or Logic* II, p. 16.

[503] *Computation or Logic* II, p. 16.

[504] *Computation or Logic* II, p. 16

[505] Ducan, S. (2017). Universal Names, and Nominalism. In: Di Bella, S.; Schmaltz T.M. (eds) *The problem of Universals in Early Modern Philosophy.* Oxford Scholarship Online, p. 14.

> Words so connected as that they become signs of our thoughts, are called speech, of which every part is a name […] Again, names though standing singly by themselves, are marks […] but they cannot be signs, otherwise than by being disposed and ordered in speech as parts of the same"[506]

In fact, names as marks are instituted to register our thoughts. However, the very nature of these thoughts is that of a sequence rather than dispersed fragments. In such a way that to express thoughts in a coherent way means to express them within a certain sequence and not through isolated marks that express only one thought instead of a sequence. Names express a thought when they are articulated in a speech. However,it does not mean that names do not have signification in isolation. For, names are also said to be parts of speech such as proper names, common names, and descriptions. So, if we think, for example, of the expression "this man" which is a description, even if it is not a discourse "*per se*", we cannot say, at least not in Hobbes' modern conception, that such description has no signification.

We must stress here the difference between naming and signifying. At first, a mark has a broad meaning that is not restricted to names and may even be an object that was elected to serve as a reminder of some past event.

> A MARK therefore is a sensible object which a man erecteth voluntarily to himself, to the end to remember thereby somewhat past, when the same is objected to his sense again. As men that have passed by a rock at sea, set up some mark, whereby to remember their former danger, and avoid it.[507]

Hobbes conceives names as appellation which he attributes essentially to the marks used to register our thoughts. These marks become names only when they are human voices sensitive to the ear "by which we recall into our mind some conceptions of the things to which we give those names or appellations"[508]. A name is the voice given to a mark that was arbitrarily imposed to assist the memory to remember some conception. "A NAME or APPELLATION therefore is the voice of a man, arbitrarily imposed, for a mark to bring to his mind some conception concerning the thing on

[506] *Computation or Logic* II, p. 15
[507] *Human Nature*, V, p. 20

[508] *Human Nature*, V, p. 20

which it is imposed."[509] However, that name as a mark does not communicate, because whoever listens to a certain locution cannot understand to which conception or idea it refers, since its attribution was arbitrarily made according to the will of who attributed that mark to a certain content of his thoughts.

Communication occurs when a sign is used to refer to a thought or idea. In order to have a signification, a name must be attributed by convention, not arbitrarily. Both the speaker and the listener must agree that that specific utterance signifies a certain thought. Therefore, the use of language presupposes a mastery of these signs and their significations.

However, when Hobbes says that marks can only be signs when ordered in a discourse it does not means that thought is not in itself discursive, but that the names, that is, the marks that are used for the reminiscence of thoughts do not constitute a significative discourse when taken in isolation. This significative discourse occurs in the coherent articulation of signs voluntarily attributed to signify our thoughts. However, the discursiveness of mental discourse is preserved. According to Pécharman "there is no image detached to the mind, whose discursiveness begins in the sensation, of the 'variety of phantasms' and, consequently, the succession that is constitutive of it." [510] In other words, mental discourse, as the name itself indicates, is a discourse, but this discursiveness denotes a "sequentiality" that comes from sensation and is also expressed in spoken discourse; in mental discourse the sequence is the enchainment of one thought to another. The claim that marks do not constitute a discourse means that there is no *oratio mentalis* in Hobbes' mental discourse but is not equivalent to claim that there is no mental discourse.

4.4 UNDERSTANDING

Like in any language, some degree of convention is necessary in the nomination of objects in order to make communication possible. There must be something common, shared by the speakers, whether in the objects, in the mental

[509] *Human Nature*, V, p. 20

[510] Péchaman, M. (2009), p. 279 "Il n'y a pas d'image détachée pour l'esprit, dont la discursivité commence dès la sensation, dès la 'variété de phantasmes' et partant la successivité qui en est constitutive."

representations, or in the language. For Hobbes, the generality of names derives from sensation, the sensation delivers an indefinitely differentiated sequence, and the mind, in an equally uninterrupted way, retains which are the particular accidents under which each individual thing being offered to the sensation is similar to a more or less great number of other individual things already perceived. Thus, it is due to the similarity between objects that the universal names are imposed on the objects: “One universal name is imposed on many things, for their similitude in some quality, or other accident: and whereas a proper name bringeth to mind one thing only; universals recall any one of those many.”[511]

The understanding that language provides is an understanding that initially comes from an arbitrary attribution of marks to thoughts and later it becomes an arbitrariness in the imposition of names. It is a convention instituted by people's own will to promote communication and understanding among themselves. The arbitrary imposition of names is what makes language possible. In general, language is an essential component to Hobbes' notion of understanding. This understanding concerns his conceptions and thoughts:

> That understanding which is peculiar to man, is the understanding not only his will; but his conceptions and thoughts, by the sequel and contexture of the name of things into affirmations, negations, and other forms of speech […].[512]

According to him, understanding is the conception to which a person attains in his mind after hearing an articulate speech designed to signify the conception to which he has attained.

> When a man upon the hearing of any speech, hath those thoughts which the words of that speech, and their connection, were ordained and constituted to signify; then he is said to understand it; *understanding* being nothing else but conception caused by speech.[513]

It is from understanding caused by speech that knowledge comes and for this reason Hobbes says that understanding is “to find out the true meaning of what is

[511] *Lev*. IV, p. 22

[512] *Lev*. II, p. 15

[513] *Lev*. V, p. 27

said”[514]. Therefore, it becomes clear that knowledge and understanding are language dependent. For the condition for understanding the meaning of what is being said is to understand the signification of what is being expressed by a discourse. In turn, spoken discourse is structured by propositions composed of names. This explains Hobbes' long explanation of the different types of names, their functions and misuse: to be able to relate a name to what it signifies is a condition for being able to understand speech. In the following, we will see Hobbes' description of the different types of names before explaining his notion of reasoning. This distinction will be especially useful for us to compare the aspects of Hobbes' theory of mental language with that of Ockham.

4.5 NAMES AND THEIR DIVISIONS

First Hobbes distinguishes positive names, which are those by which we conceive something or conceptions themselves, and privative names, by which we conceive a deprivation of something.[515] In the *Computation or logic* Hobbes defines “positive [names] are such as we impose for the likeness, equality or identity of the things we consider; negative, for the diversity, unlikeness, or inequality of the same”. Thus, "a man" is a positive name that denotes a man within a multitude of men, just as "a philosopher" denotes one among several philosophers because of their similarity.[516] Privative names are, in general, names in which a privative or negative prefix has been added as "not-white" or "unlike'. Positive and negative names are said to be contradictory, that is, they cannot name the same thing. For Hobbes, some metaphysical problems arise from a confusion or even a misuse of contradictory names. For example, to say that "the same thing cannot exist and not exist at the same time" or that "everything that exists, either exists, or does not exist" is to speak in an obscure and absurd way. In fact, what these statements say “in an obscure way” is that for each pair of contradictory names, in relation to a certain thing, only one of them

[514] *Human Nature* V, p. 23

[515] *Human Nature* V, p.20-21.

[516] *Computation or logic,* II, p. 18.

will be the name of the thing. The certainty of the reasoning depends on the fact that something will either have a negative or a positive name.

> The certainty of this axiom, viz. of two contradictory names, one is the name of anything whatsoever, the other not, is the original and foundation of all ratiocination, that is, of all philosophy; and therefore, it ought to be so exactly propounded, that it may be of itself clear and perspicuous to all men […].[517]

Hobbes also distinguishes singular, common, and proper names. The names that are common to many things are the universal names, while those that are proper to a single thing are called proper names like Socrates. Universal common names are called singular or individual when used to designate a single thing.[518] A universal name for Hobbes does not denote a collection but names individually separated. Therefore, the universal name is not the name of something that exists in nature, nor of an idea or phantasm formed in the mind, but always the name of some word or name.[519]

In addition, there is the distinction between common names and more common names, which are those common to less things and those common to more things. For example: "living creature" is common to man, horse, or lion because it encompasses all of them. The lesser common names are called species, or special, and the more common names, genus or general names. For Hobbes, we understand the extension of a common name through the faculty of imagination, by which we remember that these universal names sometimes bring a particular one to mind, sometimes bring another.

> […]So that when a living creature, a stone, a spirit, or any other thing, is said to be universal, it is not to be understood, that any man, stone, etc., ever was or can be universal, but only that these words, living creature, stone, etc. are universal names, that is, names common to many things; and the conceptions answering them in our mind, are the images and phantasms of several living creatures or other things.[520]

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[517] *Computation or logic*, V, p. 19.

[518] *Computation or logic*, II, p. 22

[519] *Human Nature* V, p. 22

[520] *Computation or logic* II, p. 20.

It is from the distinction between general names and special names that another distinction is made between names of first and second intention. Names of first intention are names of things like stone, man, etc. Names of second intention, in turn, are names of names such as universal, particular, genus, species, syllogism, etc. However, second intention names like genus, species, definition, etc. are names of words and names and not of things or natures of things.[521]Here we should note that Hobbes is using a traditional distinction of first and second intention names that is proper to the medieval logic of Aristotelian tradition.

Names can also be distinguished between certain-determined and uncertain-undetermined signification. Defined and undefined. First, of defined signification are those names whose signification is determined, for example ‘Homer’, ‘this tree’, etc. Secondly, names which are together with others as 'all', 'each', 'both', 'one to the other' and similar are also defined because these universal names mean each of the things to which they are common, in which case the listener's understanding of these terms is exactly what the speaker intended. The names of uncertain signification, in turn, are those containing the word 'some' or similar, it is called a particular name. The same occurs for common names which are used without quantifier as in the case of 'man', 'stone': they are called indefinite names. These names are called indefinite because their meaning is uncertain, since the listener cannot conceive of what the intent of the speaker is. These quantifying names, whether of universality or particularity, as 'all', 'each', 'some' are not names in themselves, only parts of names. For example, 'every man' and 'the man the listener conceives in his mind' are the same. The same applies to 'some man' and 'the man the speaker has thought of'. [522]

Universal names are subdivided as univocal and equivocal. Univocal names are those that in a discursive sequence always signify the same thing.[523] The equivocal names, in turn, are those common to many things but which, for some reason, are not given to all particulars. These are names or appellations that do not have a constant signification. For example, the word faith which sometimes signifies the same as belief, sometimes signifies the belief that makes someone Christian and sometimes just

[521] *Computation or logic* II, p. 21.

[522] *Computation or logic* II, p. 21-22.

[523] *Computation or logic*, II p. 22.

signifies keeping a promise. Most words are equivocal depending on context, pronunciation, and gestures. [524] Most metaphors, for example, are a misuse of words. Names can also be absolute or relative. Absolute when it has only one signification and relative when its signification is attributed by virtue of some relationship such as ‘father’, ‘child’, ‘cause’, ‘effect’, etc.[525]

The last division of names is between simple and composed. Hobbes differentiates the name in philosophy and the name in grammar. For grammarians, a name is equivalent to a word. In philosophy, however, the name is a set of words used to signify something. For example, 'sensitive animated body' is a single name in philosophy, while for grammar it is three. However, a simple name and a composed name are distinguished not by a preposition, as in grammar. They are distinguished according to their universality. A simple name is a universal name that is as common as possible. For example, in the conception of man, the word 'body' is a simple name used to describe man. From the moment other conceptions are added, for example, additional rational body, this name becomes a composed name. Therefore, a composed name, by adding different conceptions is a less universal name than a simple name. This composition of names is intricately connected with the composition of the conceptions themselves: “for, as in the mind one idea or phantasm succeeds to another, and to this a third; so, to one name is added another and another successively, and of them all is made one compounded name”[526]. However, although the names and conceptions are compositional, the same does not follow the objects to which they refer. Nothing in nature is composed in a similar way as our conceptions are composed.

The difference between how things are composed in nature and how our conceptions are composed leads us to question how concepts are formed in Hobbes' theory. In other words, how do we move from phantasms derived from sensations to concepts, and from concepts to understanding? This explanation goes through Hobbes' theory of knowledge, which is nevertheless a theory linked to language.

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[524] *Human nature,* V, p. 23

[525] *Computation or logic II*, p. 23

[526] *Computation or logic II*, p. 24.

4.6 KNOWLEDGE

Hobbes distinguishes two types of knowledge. One comes from the senses, which he calls original knowledge, and one he calls science, which is the knowledge of the truth of proposition. The latter is the knowledge that derives from understanding:

> […] we may understand, there be two sorts of knowledge, whereof the one is nothing else but sense, or knowledge original (as I have said at the beginning of the second chapter), and remembrance of the same; the other is called science or knowledge of the truth of propositions, and how things are called, and is derived from understanding.[527]

There is a distinction in the secondary literature between two types of language theory in Hobbes. [528] One of the languages is a system of signs, while the other concerns a language that supports the notion of meaning and truth.

> The first of these language-theories treats 'language' as a system of signs (sounds in the air or marks on paper), functioning in the first instance as 'mnemonic marks' and afterwards as media of communication; and this theory has the character of a quasi-scientific, psycho-physiological theory of language, a theory of 'sign-functioning'. The other treats 'language' as discourse and affirms that meaning and truth are properties of 'language' in this sense ("Truth, and a true proposition is all one"); and this is Hobbes's strictly philosophical theory of language, his doctrine of meaning and truth.[529]

The first theory of language concerns the original knowledge, which is the experience of the effects of things that work upon us. The second theory of language concerns the scientific knowledge, that is, the experience that men have of the proper use of names in language.

There are two things implied in the word knowledge. One is truth and the other is evidence.[530] Truth is defined as *a true proposition*, while the evidence is said "the

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[527] *Human nature* VI, p.27.

[528] See Krook, D. (1956) Thomas Hobbes's Doctrine of meaning and truth. *Philosophy*, 31(116): 3-22. p.4

[529] Krook (1956), p. 4

[530] We must underline, however, that the theme of evidence will be abandoned by Hobbes in later works.

concomitance of a man's conception with the words that signify such conception in the act of ratiocination".[531] This means that, for Hobbes, there is no point in anyone saying something true that is not in agreement with what he/she thinks. That is, if a man just repeats true propositions without him conceiving in his mind what is being said by those words, he is not "speaking the truth," for the evidence is the concordance between what is said and what is thought.

> For when a man reasoneth with his lips only, to which the mind suggesth only the beginning, and followeth not the words of his mouth with the conceptions of his mind, out of a custom of so speaking; though he begins his ratiocination with true propositions, and proceed with perfect syllogisms, and thereby make always true conclusions; yet are not his conclusions evident to him, for want of the concomitance of conception with his words. For if the words alone were sufficient, parrot might be taught as well to know a truth, as to speak it. Evidence is to truth, as the sap is to the tree, which so far as it creepeth along with the body and branches, keepeth them alive; when it forsaketh them, they die. For this evidence, which is meaning with our words, is the life of truth; without it truth is nothing worth.[532]

For Hobbes, knowledge in a strong sense is achieved through reasoning which in turn depends on the knowledge of names, the relation of names to each other, the formation of assertions and the relation between them.

> By this it appears that reason is not as sense, and memory, born with us, nor gotten by experience only, as prudence is, but attained by industry; first in apt imposing of names; and secondly by getting a good and orderly method in proceeding from the elements, which are names, to assertions made by connexion of one of them to another; and so syllogisms, which are the connexions of one assertion to another, till we come to a knowledge of all the consequences of names appertaining to the subject in hand; and that is it, men call science. [533]

However, what does *reasoning* mean? In *Human nature* Hobbes affirms that ratiocination or reasoning is "the making of syllogisms". However, in *Computation or logic* he defines ratiocination as *computatio*.

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[531] *Human nature*, VI, p. 28

[532] *Human nature*, VI, p. 28

[533] *Lev. V*, p. 31

> By ratiocination I mean computation. Now to compute is either to collect the sum of many things that are added together, or to know what remains when one thing is taken out of another. Ratiocination, therefore, is the same with addition and subtraction […] So that all ratiocination is comprehended in these two operations of the mind, addition and subtraction. [534]

Hobbes attributes a computational model to reasoning, computing being understood here as a synonym for calculating, which means that the mental operations which we call reasoning, and that concerns the use of reason, are for Hobbes calculation. To say that to ratiocinate is to compute, means to say that ratiocinate is to calculate, in other words, to sum or subtract one thing to another, so that adding or subtracting the parts of a syllogism is a part of the sense of calculation. Hence, science and the very definition of truth and falsehood, although essentially linguistic, are subject to a calculation. To think is, therefore, to calculate the consequent of a precedent in a syllogism. Nevertheless, this calculation presupposes a knowledge of the names and the relation between them. The reasoning is made on the basis of language and, in a certain sense, the use of language is a certain mode of computation.

Besides the two theories of language, I have identified a third type of mental activity in Hobbes that concerns the formation of concepts. Hobbes speaks of a mental reasoning by which it is possible to silently add and subtract from our thoughts without the use of words, which suggests to us that this mental activity, that is, this reasoning precedes the theories of language.

> If therefore a man sees something afar off and obscurely, although no appellation had yet been given to anything, he will, notwithstanding, have the same idea of that thing for which now, by imposing a name on it, we call it *body*. Again, when, by coming nearer, he sees the same thing thus and thus, now in one place and now in another, he will have a new idea thereof, namely, that for which we now call such a thing *animated*. Thirdly, when standing nearer, he perceives the figure, hears the voice, and sees other things which are signs of a rational mind, he has a third idea, though it has yet no appellation, namely, that for which we now call anything *rational*. Lastly, when, by looking fully and distinctly upon it, he conceives all that he has seen as one thing, the idea he has now is compounded of his former ideas, which are put together in the mind in the same order in which these three

[534] *Computation or logic* I, p. 3

> single names, body, animated, rational, are in speech compounded into this one name, *body-animated-rational*, or *man*.[535]

Reasoning is defined as the calculus of syllogism, but we have identified that the calculation is already present in a pre-ratiocination stage, namely since the imposition of names on our *cogitations*. Likewise, the calculation is also part of the formation of concepts in the mind. The formation of concepts coincides with the naming of our *cogitations* or mental representations. And this imposition of names only occurs because we are able to identify certain qualities in the objects we perceive and, from a comparison and calculation of these qualities we distinguish them and nominate our representations and phantasms. Therefore, for Hobbes the act of naming already presupposes in itself a calculation of our own phantasms. According to Pécharman, this internal *ratiocinatio* is the mental discourse that enchains considerations about different accidents, represented by different phantasms.

> Let us consider, for example, the reasoning by which is formed the idea composed of an individual thing such as a man; the different successive modes of the conception of this body, which are the reasons why it will receive the different names "*corpus*", "*animatum*", "*rationale*", are the object, one by one, of a first consideration; the "*tota idea*" of the individual thing with all the accidents which were thus first conceived separately is formed only by a second consideration, by which the internal reasoning concludes: the consideration of the sum obtained by the addition of these phantasms.[536]

The act of internal reasoning must initially be an act of distinction of several concepts, of one and the same individual thing, for example, the whole idea of man, *corpus animatum rationale*. [537] However, the total idea of an individual thing is not confused with the total perception of this thing. That is, it is not all the accidents of the perceived individual that are represented in the images that constitute its whole idea.

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[535] *Computation or logic* I, p. 4.

[536] Péchaman, M. (1992), p. 564. “Soit, par exemple, le raisonnement par lequel se forme l'idée composée d'une chose individuelle telle qu'un homme; les différents modes successifs de la conception de ce corps, qui sont les raisons pour lesquelles il recevra les noms différentes "corpus", "animatum", "rationale", font l'objet, un a un, d'une première considérations; la "tota idea" de la chose individuelle avec tous les accidents qui ont été ainsi d'abord conçus séparément n'est formée que par une deuxième considération, par laquele se conclut le raisonnement interne: la considération de la somme obtenue par l'addition de ces phantasmes.”

[537] Péchaman, M. (1992), p. 564.

Thus, the possession of the phantasms caused in us by the perception of a human individual no longer implies the possession of an idea of man.

> The succession between the two considerations, the consideration that separates and the consideration that unites what was first separated, is inseparable from the observation of an order, between the detached conceptions that will then compose the *tota ideia* of man.[538]

The formation of a concept, as well as the "imposition" of language, also depends on reasoning, and this internal reasoning of our phantasms Pécharman also calls mental discourse.

Similarly, the institution of language that Hobbes calls the translation of mental discourse into oral discourse consists of the passage of a mental mark to a significative name. This passage is already computational. The mark is a notation of a mental representation that is translated into a common language to be communicated and to perform in the listener a conception similar to the one the speaker thought and registered. In terms of input/output as in a programming language, our thoughts and their respective marks are the input data, the input that through the significative language delivers to the listener conceptions similar to what the speaker has in mind.

In this sense, what allows language to be significative is the arbitrary attribution of the signs of language, which occurs from a common agreement among speakers to assign certain signs to designate certain conceptions. There is also a certain universality of the content of our representations, but this universality is *a posteriori*. For it is not necessary that I already have in me the same phantasms or conceptions as my interlocutor for me to understand him when he speaks. On the contrary, this understanding can be reached from the stimulus I receive through his speech. Hobbes states that language can be used to teach, which in our understanding is nothing more than to provoke in others the knowledge we reach.

The notion of truth and falsehood are attached to language, more specifically to the proposition: "For true and false are attributes of speech, not of things. And where speech is not, there is neither truth nor falsehood".[539] For Hobbes the truth coincides

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[538] Péchaman, M. (1992), p. 564: “Or la succession entre les deux considérations, considération qui sépare, et considération qui réunit ce qui a d'abord été séparé, est inséparable de l'observation d'un ordre, entre les conceptions détachées qui vont ensuite composer la tota ideia d'homme.”
[539] *Lev*. IV, p. 23.

with the true proposition and the falsehood with the false proposition.[540] Therefore, if mental discourse were propositional, that is, if there were propositions in the mind, then truth and falsehood would also be mental properties; they would be in the mind, or rather, truth and falsehood would be "thoughts," "cogitations," "ideas". It is because the computational model is applied to mental discourse that Hobbes' mental discourse is non-propositional. For one of the essential aspects of a grammatically structured thought is its compositionality, namely, the fact that mental terms can compose among themselves and form propositions. In this model, every statement made in spoken language was thought of before, thus justifying the existence of mental propositions and, consequently, of a language of thought. Hobbes' mental discourse, however, has no terms or names, so it is impossible to form propositions. Hobbes' mental discourse must be understood as a sequence of mental images, or of ideas, thoughts. For Hobbes, to think is to calculate these ideas instead of composing propositions in the mind. In this sense, the calculation attributed to thought is precisely that which renders his mental discourse non-propositional.

Although Hobbes is a nominalist, his nominalism advocates an isomorphism between word and thought, but not between language and thought. On the contrary, Hobbes' spoken language is not a means of declaring sentences that have been thought, but of expressing ideas. These ideas, in turn, are expressed through sentences when organized in oral discourse. Therefore, for Hobbes language is not structured in the same way as thought. For, although mental speech and oral speech are defined as sequences of thoughts and names respectively, a computational model of mind and reasoning does not include a grammaticalization of thought. That is, the structure of language cannot be transposed to mental discourse.

4.7 COMPUTATIONAL MODEL VERSUS GRAMMATICAL MODEL

When we look closely at Hobbes' writings on language, it is inevitable not to notice the similarity with some aspects of terministic logic. We find in Hobbes' consideration of names, distinctions remarkably close to those we see in Ockham even though there are some changes of names, such as the concrete and abstract names that Hobbes calls univocal and equivocal. Ockham describes abstract names as

[540] *Lev*. IV, p. 23.

“names which have the same stem but different endings”[541]. They are distinguished according to their function: “sometimes concrete names signify, connote, designate or express, and also supposit for something, which the abstract name in no way signifies and, consequently never supposits for.” Examples of concrete and abstract names are: ‘just – justice’, ‘brave – bravery’, etc. Hobbes' definition is that “univocal are those which in the same train of discourse signify always the same thing; but equivocal those which mean sometimes one thing and sometimes another”.[542] Although in Hobbes there is not the pair of concrete and abstract names as in Ockham, his description is similar to that of the Franciscan friar.

We also find the defined and undefined names in Hobbes that are in Ockham's terminist vocabulary categorematic and syncategorematic terms. For Hobbes:

> Determined and certain signification is […] secondly that which has any of these words, all, every, both, either, or the like added to it; and it is therefore called a universal name, because it signifies every one of those things to which it is common[543]

For Ockham:

> Both spoken and mental terms are subjects to yet another division for some terms are categorematic while others are syncategorematic. Categorematic terms have a determinate signification. Thus, the term ‘man’ signifies all man; the term ‘animal’, all animals; and the term ‘whiteness’, all whiteness. Examples of syncategorematic terms are ‘every’, ‘no’, ‘some’, ‘all’, ‘except’, ‘so much’, and ‘insofar as’. None of these expressions has a definite and determinate signification, nor does any of them signify anything distinct from what is signified by categorematic terms.”[544]

Furthermore, when Hobbes distinguishes general names from special names, he calls them first and second intention names, the same name used by Ockham. Both describe first intention names as the names of objects and second intention names as names of names.

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[541] *SL* I, 5, p. 56

[542] *Computation or logic* II, p. 22.

[543] *Computation or logic*, p. 21.

[544] *S.L*. I, 4. P.53.

Evidently, there are differences. To begin with, in Hobbes' mental discourse there are no mental terms or names. The names "originating" from the mental are for Hobbes marks, but these marks that we call notation are not in the mind as Ockham's mental terms. The marks refer to a notational system and, in that sense, are similar to the broad meaning of Ockham's signs, according to which anything can be a sign, such as smoke can be a sign of fire. For Hobbes, the same goes for marks: anything can serve as a mark for our thoughts.

However, the reason we believe that Hobbes does not use the term "sign" for marks is because he does not attribute to mental discourse a relation of signification, but something that we understand as a notation. Signification is not even a property of names in isolation, but a property of articulate and ordered oral discourse. Hobbes' conception of signification can give us a clue about his connection to the model of terministic logic. For Hobbes, a name has signification only when inserted into a discourse, then we may think that it is his intention that signification is a relation between names and ideas and not between names and objects. The terministic model of signification, in turn, inherits from Porphyry a triple conception of meaning in which the word signifies an object through a concept. [545]

Porphyry and his followers would say that 'the word signifies the thing' without hesitation except when they feared lest people forget that the concepts also play a role. Then, they would say 'the word signifies primarily the concept and secondarily the thing' or 'the word signifies the thing *via* the concept'.[546]

Hobbes breaks with this tradition and presents a signification in which concepts are formed from the exposure to the objects, but the words signify the concepts without making a return to the object. The intention of Hobbes' discourse is to cause in the listener a conception similar to that of the speaker and not necessarily to cause in the listener the mental representation of an object. Hobbes' semantics is distinct from the

[545] I owe this track of thought to Pécharman, M. (2004) Sémantique et doctrine da proposition: Hobbes inconciliable avec la tradition terministe. In: Friedman R.L.., Ebbesen, S. (eds.), *John Buridan and Beyond*. Historisk-filosofiske Meddelelser 89, The Royal Danish Academy of Sciences and Letters, Copenhagen. pp. 203-236, p. 213- 217.

[546] Ebbesen, S. (1990) Porphyry's Legacy to Logic : a Reconstrucion, In : Sorabji E. (ed), *Aristotle Transformed, the Anciente Commentators and Their Influence*. London : Duckworrth, pp. 141-71, p. 150

terministic semantics because words mean concepts, while in the Porfirian tradition, the concept is an intermediary between names and objects. [547]

With Ockham, however, there is already a certain distance from this tradition, at least as far as the signification of names is concerned. There is no such relation object - concept - name. Although concepts refer to objects, the concept is not an intermediary between the thing and the name. Both the concept and the names signify the objects. The signification of names is derived from the signification of concepts. The primordial relation of signification in Ockham is the relation between concepts and objects, which is confirmed by the priority and anteriority of mental language in relation to spoken language.

However, although Ockham does not make this triangulation through concept, it is not the signification that plays the semantics role in his theory, but the property of the supposition. Supposition is the property of terms when placed in a propositional context, while signification is assigned to terms or names separately. The theory of supposition used to verify the true value of a proposition preserves this semantical characteristic that links names to objects. That is, the truth of a proposition will be given when there is an agreement between what the subject and predicate express. In other words, when subject and predicate refer to the same object in the same way, then the proposition is true. The truth and falsehood are based on a return, through the context of the propositions, to the objects themselves.

This notion of truth is not so far from that defended by Hobbes: “A true proposition is that, whose predicate contains, or comprehends its subjects, or whose predicate is the name of everything, of which the subject is the name.”[548] We know that Hobbes takes true proposition and truth as synonyms. So we must ask ourselves if Hobbes intended to re-read or apply the theory of the supposition of terms that "went wrong" as Kretzmann suggests.[549] We believe not, because Hobbes adds that truth consists in speech, and not in the things spoken of; and though true be sometimes

[547] See Pécharman (2004), p. 214 “ Mais ce que Hobbes refuse, c’est de maintenir dans le processus de signification la relation à la chose qui a été la cause de la formation d’um concept dans l’esprit, alors que la sémantique porphyrienne repose sur la triade chose/concept/mot”.

[548] *Computation or logic* III, p. 35.

[549] Kretzmann (1967), Semantics, History of, In : Edwards, P. (direction) *The Encyclopaedia of Philosophy*, London, Macmillan. 377b. in : Pécharman, M. (2004) p. 222

opposed to apparent or feigned, yet it is always to be referred to the truth of proposition […] and therefore truth or verity is not any affection of the thing, but of the proposition concerning it."[550] It does not seem to have any analytical system in Hobbes that is similar to the supposition. According to Pécharman "*De Corpore's* logic refuses that the semantic relation can also be a relation to things themselves". [551] For Hobbes the truth of the proposition is based on the signification of names, which does not necessarily mean return to the thing.

For Hobbes' *Computatio sive Logica*, the articulation, in a name, between the property of designation or denotation of the thing and the property of signification of a conception of this thing is self-sufficient for founding the truth of a proposition where this name appears in the position of subject or predicate. The truth of the proposition "homo is animal" is one with the truth of the consequence "if this thing has a *homo* as a name, this same thing also has animal as a name", i.e., of the consequence "if there is a conceptual reason to name this thing *homo*, there is also a conceptual reason to name this same thing animal".[552]

In other words, for Hobbes it is not a question of verifying whether the subject and predicate refer to the same object in the world, but of knowing whether the subject and predicate represent two distinct natures of the same object. However, it is not necessary return to the object itself to make such a verification. For, the same object can have several distinct names, each one of which represents its own quality, because the same object is taken under different aspects. What seems to be most important to Hobbes in considering the truth of a given proposition is the calculation of the causes of imposing a given name on an object.

> […] in every proposition three things are to be considered, viz. the two names, which are the subject, and the predicate, and their copulation; both which names raise in our mind

[550] *Computation or logic*, p. 35.

[551] Pécharman (2004), 218.

[552] Pécharman (2004), 219-220. "Pour la *Computatio sive Logica* de Hobbes, l'articulation, dans un nom, entre la propriété de désignation ou dénotation de la chose et la propriété de signification d'une conception de cette chose, est auto-suffisante pour fonder la vérité d'une proposition où ce nom figure en position de sujet ou de prédicat: la vérité de la proposition "homo est animal" ne fait qu'un avec la vérité de la conséquence "si cette chose a pour nom homo, cette même chose a aussim pour nom animal", c'est-à-dire de la conséquence "s'il y a une raison conceptuelle pour nommer cette chose homem, il y a aussi une raison conceptuelle pour nommer cette même chose animal".

> the thought of one and the same thing; but the computation makes us think of the cause for which those names were imposed on that thing […] [553]

Although it is tempting to interpret the second chapter of *Computation or logic* as a re-reading of the theory of supposition, some points make us withdraw from this temptation. Though Hobbes dedicates this chapter entirely to the propositions, he also introduces his own vocabulary to the calculation for the elements of the proposition.

> A proposition is a speech consisting of two names copulated, by which he that speaketh signifies he conceives the latter name to be the name of the same thing whereof the former is name; or (which is all one) that the former name is comprehended by the latter.[554]

However, he then adds: “Now the former name is commonly called the subject, or antecedent, or the contained name, and the latter the predicate, consequent, or containing name.”[555] Antecedent and consequent are nomenclatures that remind us of the calculation. As well as the connection between precedent and consequent that is commonly called *copula*, but Hobbes then calls "sign of connection". It suggests to us that the propositional format is not strictly necessary for the calculation. Taking into account the hypothesis that there may be nations that do not have the antecedent-*copula*-consequent structure, it does not prevent them from calculating, because the position of one name after another indicates the antecedent-consequent structure as in the case of “man is a living creature” and “man a living creature”: “[…] the very order of the names may sufficiently show their connections; and they are as apt ad useful in philosophy, as if they were copulated by the verb is.”[556] It does not seem plausible to us that to hypothesize a proposition that does not fit the conventional structure is in agreement with the intention of reconstructing an supposition theory that depends essentially on a propositional structure. On the contrary, it seems to us that Hobbes is preparing the ground for presenting the proposition as a structure that can be submitted to calculation.

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[553] *Computation or logic* III, p. 31.

[554] *Computation or logic* III, p. 30

[555] *Computation or logic* III, p. 30

[556] *Computation or logic* III, p. 31.

A stronger reason that makes us believe that Hobbes does not develop a theory of supposition is that in his *Computatio sive logica* he states that the foundation of the imposition of names that guides the relation of signification between concepts and signs is purely arbitrary.

> From hence also this may be deduced, that the first truths were arbitrarily made by those that first of all imposed names upon things or received them from the imposition of others. For it is true (for example) that a man is a living creature, but it is for this reason, that it pleased men to impose both those names on the same thing.[557]

This arbitrary attribution of names also represents a rupture with the mode of naming and signification of terministic logic. In Ockham, for example, signification is a natural relation between concepts and objects. To other medieval thinkers, signification represents an essential relation in which the name maintains an isomorphic relation with the thing named. The arbitrariness of naming in Hobbes dismantles this notion of signification that prioritizes the relation between object and concept and begins to prioritize the relation between concepts and names. We can assume, then, that the reasoning that leads to knowledge in Hobbes concerns not to a verification of what is being expressed by a proposition in relation to its object, but in a mastery of the employment of names to certain conceptions. In other words, reasoning presupposes a knowledge of language: knowing to which conceptions a given name applies to. This calculation, indispensable for a good understanding of a discourse, and for the reasoning and calculation of a syllogism, is very much prioritized in relation to knowing how to link certain names to their objects, as proposed by the theory of the supposition of terministic logic.

Hobbes' mental discourse cannot be considered as a mental discourse in the strict sense. However, his conceptions of language and mind can be opposed to the model of mind and grammatical mental speech that we find in William of Ockham. Hobbes' mental language, which introduces the mind (and the use of language) to a computational model, marks the rupture with an essentially propositional mental discourse of the 14th century and also with the semantic theory that supports it. This model that introduces calculation as a mental operation that can be applied to language is the entrance door to the analogy of the mind as a machine that marks the passage

[557] *Computation or logic* III, p. 36.

from the Middle Ages to modernity. The notion of a mental language with a deep grammatical structure that was popular in the 14th century ceded space for the development of a computational model applied to mind and language in modernity.

CONCLUSION

The objective of this research was to investigate the relation between concepts and mental language in William of Ockham. Our first effort was to establish a synthesis of what the notion of concept is for Ockham. We were initially faced with three distinctions, namely, the concept as a mental act, as a mental sign and as universal. In the search for the nature of concepts we questioned ourselves about which are the pre-requisites for something to be called a concept? Or rather, what is a satisfactory definition of concept? As far as Ockham's philosophy is concerned, a concept must be a mental reality. As universal, the concept cannot refer to or signify anything other than particular objects. In an epistemological sense, concepts must be formed appealing to the razor: the process of cognition of concepts must not appeal to any kind of metaphysical entity, here, notably the concept must not be the result of a *species* transmission, be it sensible or intelligible. It is in this sense that Ockham says that concepts are mental acts: they are formed from the empirical contact with particular objects. Once formed in the mind, concepts serve as universal, since they represent all the particulars that are similar to each other. In this sense, a concept is also a sign, for in the mind a concept is a "mental word" which signifies the particular objects

outside the mind. Therefore, there does not seem to have incoherence in Ockham's definitions of concept, for nothing prevents a sign from being a mental act, since a mental sign can be itself actualized in the mind several times. Nor there is any logical impediment to the sign being universal and actualized.

Having established how concepts can be both a sign and a mental act, we examined the cognitive process of concepts. It was necessary to explain how, from empirical contact with only particular objects, it is possible to form general concepts in the mind without the aid of intelligible *species* or common natures that are transmitted from objects to our mind. Ockham generally defined this process as "by habit", and in the second chapter we strive to understand what this means. The concept for Ockham is formed from the sensitive contact with a particular object. This contact forms an intellectual act called intuitive knowledge. From this knowledge derives another intellectual act called abstract knowledge, which conceives the object in a confusing way, abstracting both its singular characteristics and the conditions under which it was known. It is from this sequence of mental acts, provoked in the individual by the perception of the object, that the concept is formed. The mental habit is formed from an act of abstract cognition. The habit is an inclination, a mental disposition to perform again the mental act from which it originates. The habit is responsible for the storage of the content of mental acts. For, if there were not in our mind the disposition to re-actualize certain mental content, we would have to learn the same thing several times. The mental habit allows that, once a certain knowledge is repeated, that is, re-actualized several times, it can be consolidated. If our mind had only mental acts, it would be impossible for us to reach a consistent knowledge about anything. Therefore, habits are responsible for storing and unifying the contents of our thoughts. Without the habit, it would be impossible to elaborate science. It is through habit that we can unify different knowledge on the same subject. This unification is also called science by Ockham. The main result we have obtained from this research between the notion of habit and its role in Ockham's cognition was the establishment that knowledge and mind for Ockham are not only constituted by concepts (that is, only mental acts), but also by *habitus*. Without the mental habits, all our mental contents would be just fragmentary, without a unit that we could call a specific knowledge or science about a specific subject.

Understanding concepts as signs is the fundamental piece of Ockham's mental language. This theory reveals the conception of mind and how it works for Ockham. Thought is a sequence or an enchainment of mental acts, or in other words, a sequence or an enchainment of mental signs. These signs are combined with each other to form mental propositions, just as in spoken language the words combined with each other form propositions. Ockham defended the existence of mental language by arguing that everything we speak was thought beforehand, so that all the propositions we speak are the consequence of previous mental propositions. If there are propositions in the mind, then there are terms. Thus, with terms and propositions we can say that the mind has a mental discourse.

One of the most essential elements of mental language is natural signification: all terms that are part of the mental naturally signify the objects of which they are signs. It is also through natural signification that the relation between mental concepts and objects is determined. A concept as a mental act formed by contact with an object is also a natural sign of this object and of all other objects similar to it. It was through natural signification that Ockham avoided that the relation between concepts in the mind and objects in the world was mediated by language. Because of this, mental language is the foundation of spoken language. That is, a term of spoken language has its signification subordinated to the mental terms to which it is subordinated. Both mental and spoken languages immediately refer to the objects in the world. This direct relation of signification between object-concepts and word-objects was an innovation of Ockham in relation to his contemporaries, who normally used the concepts as mediation between names and objects.

Finally, after having seen Ockham's mental discourse, we presented Thomas Hobbes' (17th century) mental discourse in order to compare two models of mental discourse. On one hand, Ockham's mental discourse argued that thought has a deep grammatical structure. On the other hand, Hobbes' mental discourse conceives thoughts as ideas or images subject to calculation. Hobbes' mental discourse is not propositional or grammatical like Ockham's. Thus, we do not find in his mental discourse terms or propositions, but a sequence of thoughts/images/ideas. Therefore, thinking is calculating ideas. While Ockham's mental discourse was a discourse aimed at constructing arguments composed of propositions, Hobbes' mental discourse is a discourse aimed at reasoning, at calculating ideas. This different notion of thought

points, on one hand, to Ockham as a medieval thinker to whom thinking serves to develop arguments for dialectical disputes; while for Hobbes, a thinker of early modernity, thinking is directed more towards mechanical scientific thought. We have contrasted the two models of mental discourse to underline which aspects of Hobbes' theory represent this paradigm shift between the medieval notion and the modern notion of thought, mind and concept. And finally, we conclude that the hypothesis of mental language defended by Ockham has disappeared in the beginning of modernity because of the model of grammatical mind on which it was based. The result of our research was more than just evaluating Ockham's mental discourse, reassessing his conception of the mind and how it works.

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