

Existential Commitment in the Port Royal Logic

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Abstract

This paper investigates the truth-conditions put forth in the Port Royal Logic for categorical propositions in terms of “extension”. The new Cartesian semantics was motivated by the rejection of mediaeval logic’s causal theory of reference because of its commitment to the transmission of formal properties from material objects to the mind. Arnauld and Nicole formulate a new referential theory of signification that retain large parts of the medieval semantics of mental language but adopts a dualist metaphysics committed to causal occasionalism. The new account is founded on the use of objective being, a concept developed in mediaeval philosophy but rejected as problematic by major mediaeval logicians committed to Aristotelian semantics. Considered as a term in mental language, the objective being of a subject contains modes that describe the subject – the idea’s comprehension – and these determine the possible objects outside the mind that the idea signifies. Signification, a relation between mental terms and external things, in turn is used to define extension, which in the Cartesian context is a relation among ideas: the extension of a term is any idea that has a comprehension that satisfies the term’s comprehension. Truth-conditions are then defined in terms of extension. Objective being of a subject, as the object of consciousness, also correlates with propositional knowledge that predicates its content modes of a subject. This correlation is used to unpack the medieval notion of a false idea – one in which the content is false of every actual being. It is explained how the truth-conditions for the categorical propositions in terms of extension and the propositional analysis of false idea entail (contra the interpretation of Jean-Claude Pariente) that the terms of true affirmative categoricals carry existential import.

Existential Commitment in the Port Royal Logic

In this paper I will explore the semantic theory of the Port Royal Logic. Contra Jean-Claude Pariente¹, I will argue that though embedded in a logic of ideas, affirmative categorical propositions in the Cartesian system retain the traditional existential import of the Square of Opposition. My purpose, however, is more general. I will sketch how Arnauld and Nicole adapt medieval semantic theory, which assumes a broadly Aristotelian metaphysics, to the radically different ontology of Descartes. To facilitate comparison to modern logic, I will lay out the theory as it would be done today, endeavoring at the same time to ground the interpretation in the text. The properties of existential import will follow as consequences from the more basic definitions and assumptions of the theory.²

To situate 17th century logic, it will be helpful to begin with some remarks on medieval logic. The mature semantic theory of the 14th century was at once a causal and descriptive theory of reference.³ Within that tradition, accidental qualities instantiated in an individual outside the mind were believed to be causally transferred, first to a sensory medium (like air), then to sense organs (like the eyes or ears), and ultimately to the body's central organ of sensation. The modes of the sensed object were then experienced by the perceiver as a phantasm in intuitive cognition. At that point the intellect was thought to abstract from the phantasm its form as essential or accidental modes. Ontologically, the abstracted modes were regarded as modes inhering "intentionally" in the individual thinker or, as they put in, "in the soul." To say a mode inheres intentionally means that although it inheres in the subject, the mode is not true of that subject in the normal way. The mode *red* abstracted from the phantasm of an apple, for example, inheres in the thinker but does not make him red.

The abstracted modes were believed to constitute the terms of mental language. A mode of this sort was called a concept. It could function as a linguistic term because it stands in a causal reference relation to objects in the world and because as a mode it describes its referents. The mode is causally

connected, and in that sense refers, to a species because membership in the species is characterized by that mode and because it was a member of that species that initiated the causal series that terminated in the abstraction of that mode. In addition, the concept can be said to describe its referent because it possesses what the mediaevals called signification. A concept that instantiates the mode *M* intentionally is said to *signify* all possible objects that instantiate *M* non-intentionally. In more modern terms it “describes” its referent as being *M*. A standard version of the theory, which was accepted for example by Aquinas and Ockham⁴, incorporated direct or naïve realism. They believed that the conscious cognition of the phantasm is a case in which the object itself outside the mind, not a representative, is directly perceived.

This picture is inconsistent with Cartesian metaphysics in several ways. First, Descartes seems to have denied, as Arnauld and Nicole certainly did, the possibility of Aristotelian property transfer from material to spiritual substance.⁵ On their account there can be no causal theory of reference using Aristotelian property transfer because no material substance can transmit a form to the soul so as to form a concept. Nor does direct realism make sense, it was thought, because a spiritual substance cannot have a direct relation to matter. The challenge facing Arnauld and Nicole, then, was to reconceive the semantic link between concepts and things in such a way that reference and description does not depend on Aristotelian causation. In what follows I hope to show how they did so while at the same time retaining a good deal of standard medieval semantics.

I will lay out the theory in stages that culminate with a statement of the truth-conditions for the categorical propositions. The theory is contrived so as to formulate the definition of truth according to a formula that originates with Aristotle: a universal affirmative is true if the subject and predicate “stand for the same”. In their theory, the Port Royal gentlemen give this formula a new meaning by analyzing it in terms of *extension*, a technical idea of their own coinage. It is this through this idea that their semantics assumes a Cartesian form because, unlike the notion of extension we are familiar with in modern logic,

the Cartesian variety is a relation among ideas. Adopting a view of medieval nominalists, Arnauld and Nicole believed that genera and species are abstract ideas. The inferiority-superiority relation among species is, therefore, a relation among ideas. Extension is defined in terms of this relation: the extension of a term in mental language is defined as consisting of all the term's inferior species. As we will see in what follows, the truth of a proposition may then be defined in terms of conditions on the extensions of its subject and predicate.

The technical term *extension* in this semantic sense is new. In Latin philosophy *extensio* had always referred to the property that makes matter continuous,⁶ as it does in Cartesian physics where it is used to describe the essential mode characteristic of matter. Though the terminology is new, the idea itself is not. It is easily stated in elementary concepts from Aristotle's *Categories*. A term's Cartesian extension is nothing other the species that a term is truly "said of." Michael Thompson has recently argued that Aristotle himself understood a quantified subject term in a categorical proposition as ranging over the set of all species subordinate to the term. Thompson observes that when Aristotle asserts the particular affirmative *some animals are viviparous*, he does not give individuals like Helen and Penelope as examples of instances. Rather he cites the species man, horse, and camel. Thompson argues that in its canonical form an I-proposition should be understood as *for some terrestrial life form S, the S is viviparous*. Likewise, he argues that when Aristotle asserts *some animals shed their front teeth, but there is no instance of an animal that loses its molars*, he will not concede its falsity when faced with an actual denture wearer. He does not do so because it is a natural *species* he is "quantifying over," namely the species of animal, not individual humans who wear dentures.⁷ In a Cartesian context in which a species is understood as an idea, this quantificational range is nothing other than the term's Cartesian extension.

To see how Arnauld and Nicole employ extension within truth theory, we must review the theory's preliminary assumptions and definitions. Like most logicians of their time, Arnauld and Nicole were realists.⁸ On their view, the world consists of substances (material or spiritual) and their modes. Material modes,

which all derive from the basic mode of corporeal extension (in the physical sense), are quasi-mathematical, like motion and figure. They determine a plenum of extended substance moving in vortices – a natural world rather unlike that of Aristotle’s animals and plants classified by the Tree of Porphyry. Among the modes of spiritual substances are ideas, and in their version of the medieval semantics, these serve as terms in mental language. Mental terms fall into two kinds: substantives (nouns) and adjectives. Every term, both noun and adjective, is associated with what the authors call its *comprehension*. This is the collection of modes that determine the term’s signification. Consider the case of the term *man*. Its traditional definition, *mortal animate living material substance*, details a list of progressively more general modes that form its essence and determine what the term stands for. It is standard cases like this that Arnauld and Nicole abstract to nouns and adjectives generally. Each term has a comprehension that consists of modes that inhere in objects that are generally outside the mind. Because these objects are external to the mind, the modes link the idea to the world, and hence serve to define a term’s signification.

In the medieval theory of mental language a concept is a mode that inheres intentionally in the soul but simultaneously inheres non-intentionally in objects outside the mind, and the concept is said to signify all possible objects that possess that mode non-intentionally. Thus, a mental mode signifies the set of possible objects that instantiate it. Arnauld and Nicole accept much of this account.

Let us consider nouns first. In medieval semantics a noun is associated with substances or things that exist. In the Logic this is accomplished through the intermediary of its comprehension. Nouns are either simple or complex. Simple nouns are either innate or formed by abstraction. As in medieval theory, the Logic also allows for complex noun-phases. These are mental modes (ideas) constructed from simpler ones by a grammatical operation called restriction (*determination*⁹) that forms the “complex noun” *SP* by affixing an adjective (or relative clause) *P* to a noun-phrase *S*.

The semantics of noun-phrases is founded on the correlation of each noun with its comprehension understood as a mode or group of modes. Comprehensions are conditioned by grammar. Simple nouns are either innate or abstracted. The comprehension of an innate idea is fixed by nature and Providence. That of an abstract noun is simply the abstracted mode itself. The comprehension of a complex noun SP is the union of the comprehensions of S and P .

Signification, which plays the role of the reference relation in the Logic, is defined in terms of comprehension: a noun-phrase signifies all possible objects that possess all the modes in its comprehension.¹⁰ Extension, even though it is a relation among ideas, is defined by means of signification, a reference relation. Species S_1 is said to be inferior to species S_2 if all the modes in the comprehension of S_1 are true of all objects that satisfy all the modes in the comprehension of S_2 . The extension of S is then defined as the set of species inferior to it. Thus, a term's extension includes any species such that all the modes in the term's comprehension are true of all entities that satisfy the species' comprehension. Nouns may either signify substances or other modes, e.g. *earth* or *heat*.

Now let us consider adjectives. As in medieval semantics, the Logic classifies adjectives as connotative terms. According to the traditional distinction a connotative term is paraphrased by two nouns, first by an abstract noun that signifies a kind or species, and second by the name of a mode that inheres in things of that kind. Ockham's example is *white*, which is paraphrased by (has as its "nominal definition") *some thing informed with whiteness*.¹¹ The connotative term is said to primarily signify the significata of the kind term and secondarily that of the modal term, because in standard substance-mode ontology substances are ontologically prior to modes. In modern logic we would say that the kind term makes explicit the adjective's "type" or significance range. An example given in the Logic is *prudent*, which is implicitly associated with the kind term *man* and the modal name *prudence*.¹²

The authors of the Logic describe these two kinds of signification of a connotative term as relatively more and less confused. In mediaeval semantics *confused* is synonymous with *general* or *universal (universalis)*, and the determinate-confused distinction is used to contrast concepts according to the breadth of the possible objects they signify.¹³ Relative to one another, the term *Brunellus* is more distinct or determinate than the term *donkey*, and *donkey* is more confused than *Brunellus*, because *donkey* signifies a broader range of possible objects than *Brunellus*, which in fact is totally determinate because it signifies a unique individual.

In the Logic this distinction is applied to adjectives. An adjective confusedly signifies the significata of its associated kind term. It does so because the signification of the kind term, which is abstract and signifies a broad range of possible objects, is confused in a prior sense. The adjective signifies distinctly the significatum of its associated modal noun because that noun is proper and signifies a unique mode. Several comments of a semantic nature are in order.

First, the Logic counts any genuine abstract noun-phrase, including those formed by restriction, as a species, and hence it counts as species many nouns that would not count as such in Aristotle's metaphysics.¹⁴ The Logic, nevertheless, continues to apply the traditional terminology of the predicables to this more generous notion of species.¹⁵ A mode is *essential* if it falls in a noun's comprehension; it is a *proprium* if it is non-essential but necessarily true of those entities that satisfy its comprehension; it is *accidental* if it is true but not necessarily true of some entity. The traditional terminology, however, should not obscure the fact that the Cartesian natural world is rather non-Aristotelian. It is an extensional plenum informed by quasi-mathematical modes, any possible combination of which qualifies as the comprehension of a species. The species cited as examples in the Logic are, in fact, strikingly unlike the biological examples common in Aristotle. The author's examples of material species, i.e. of abstract nouns signifying material objects, include: *body, transparent body, motion, time, even number, odd number, prime number, line, triangle, equilateral*

*triangle, right triangle, quadrilateral, trapezoid, parallelogram, chilligon, cube, pyramid, cylinder, rational animal, prudent person, knowledgeable person, sun, moon, and star.*¹⁶ This Cartesian world of mathematized matter is more like that of modern physics than the common sense world of macro-sized animals and plants described by Aristotle's essentialism. Within its framework the Logic nevertheless succeeds in representing the diminished importance of the Aristotelian essence-accident distinction. It does so not by rejecting essentialism as false in the manner of Quine, but by diluting it to triviality. Species do not differ from "arbitrary sets" because every well-formed abstract noun has a comprehension and, in this sense, has an essence. Species therefore include groupings like *prudent person*, which Aristotle would regard as accidental.

It should be remarked that although Arnauld and Nicole avoided Aristotle's essentialism, their account has oddities of its own, especially when combined with a commitment to knowledge as awareness. If knowing an idea consists of being conscious of its content, then when we know an idea, we know its essence, or, to use alternative terminology, we know its real definition. Because this knowledge is kind of direct awareness, it is *a priori*. Moreover, if an idea *S* "contains" a mode *M*, the proposition *S is M* is rightly called analytic. Hence, though Arnauld and Nicole do not say so in so many words, they, like other rationalists, hold that we have *a priori* knowledge of real definitions as analytic truths. This view is a major departure from medieval semantics in which real definitions are regarded as empirical and often difficult to discover.

Second, the Logic makes very clear that proper names and singular term phrases count as noun-phrases. A singular term may serve as the grammatical subject of a singular categorical proposition. Indeed, the Logic espouses the traditional view that a singular proposition is a special case of a universal.¹⁷ Hence a singular term possesses a comprehension and extension. Moreover, an abstract noun, like *pope*, can be restricted, e.g. *the present pope*, so that its comprehension signifies only a unique actual entity.¹⁸ The extension of a singular term, to be sure, is a kind of degenerate case because it consisting of only the idea itself, which signifies the unique individual that satisfies its

comprehension. Thus, unlike Aristotle who denied that a singular term has an essence or could be defined,¹⁹ the Logic generalizes comprehension and essence to all noun-phrases including singular terms. Singular terms therefore count as species in a generalized Cartesian sense. It follows that the extension of any noun includes all true singular term inferior to it, i.e. it includes any singular term with a comprehension that is true of any actual entity that satisfies the modes in the noun's comprehension. Thus, there is a sense in which the Logic's Cartesian extension, which consists of ideas, incorporates the referential notion of extension found in modern logic: there is a 1-1 mapping that pairs an object in a term's modern extension with that singleton species in its Cartesian extension that has that entity as its sole significatum.

Let us turn now to the relation that comprehension bears to propositional knowledge. This link proves important to the semantics of existential import. Cartesian semantics rejects any attempt to explain how ideas acquire their descriptive content by appeal to the Aristotelian transmission of modes from matter to the mind because the authors reject that sort of causation. Rather they explain comprehension and its descriptive content by appeal to another distinction from medieval philosophy, *esse objectivum* or objective being. Objective being is the special sort of being that is possessed by an object of thought considered independently of its existence outside the mind. According to Duns Scotus, an object as a seminal idea in God's mind prior to creation, as discussed for example by St. Augustine, has a being of this sort. It is being ontologically prior to being as a possible or actual entity.

More relevant to the Logic, however, is the role objective being played in mediaeval semantics. Both Abelard and Ockham accepted, and then later rejected, objective being as a device for explaining how the form of an external object may be instantiated intentionally in the soul. Ockham's mature view, shared by Buridan and others in the 14th century, is that, in the end, objective being is an unnecessary complication and fails to explain anything.²⁰ The idea, however, was current in the 15th and 16th centuries. Suárez, for example, who was an occasionalist like the Cartesians, consider objective being to be the

object of mental awareness²¹; and the treatises of the Conimbricenses, which were the standard logic texts of the period and well known to Cartesians, laid out as commonly accepted the twofold distinction between concept as mental mode (*esse formale*) and concept as the object of thought (*esse objectivum*).²² Descartes also makes use of objective being, most famously in the ontological argument of *Meditations* III.²³

Arnauld's view, as detailed most completely in his essay *On True and False Ideas*, is that in both perception and thought the object of direct awareness (what is "present to" the mind²⁴) is the idea as objective being. In the Logic the authors do not use the term *esse objectivum* as such, but rather make the same distinction using the somewhat awkward phrase "object as represented by an idea":²⁵ The more technical *être objectivement*²⁶ and *réalité objective*²⁷ occur in *On True and False Ideas*. Ontologically, objective being has no reality apart from the idea itself. What are important for our purposes here, however, are its semantic properties.

First, like an actual or possible being, an *esse objectivum* in a sense "has" or, to use the Logic's jargon, "contains" (*contenir*) and "encloses" (*enfermer*) modes. This "content" is the term's comprehension. Unlike the modes of possible or actual beings, however, the modes contained in objective being are intentional. Even though the mode *red* may be contained in my idea of apple, it is there intentionally in the sense that it does not make either me or my idea actually red. Objective beings also vary in abstractness. Though we perceive an individual with the full panoply of sensory properties, when we think of an idea, its content is more limited. Indeed, the Logic explains abstraction (*abstraction, précision*) as a process of "selecting out" (*considère sans faire attention à*) the modal content of perceptual experience²⁸ to form ideas with a simpler content or comprehension.²⁹

The act of perceiving semantic content is important epistemically because it correlates with propositional knowledge. Corresponding to the mental act of perceiving an idea *S* with modal content *P* is the mental act of warranted assertion of the proposition *S is P*:

everything that is contained in (*contenu dans*) the true idea of a thing (i.e. in the clear perception that we have of it) can be truthfully asserted (*affirmé*).³⁰

Both knowledge and error are explained by this correlation.

Consider knowledge first. If the idea is perceived clearly and distinctly, the propositional act is said to qualify as certain or “scientific” knowledge. Quoting Descartes with approval, Arnauld writes

...he understands the word ‘idea’ in the proposition that ‘everything that I perceive clearly as being in the idea of a thing can correctly be asserted of that thing [*tout que je vois clairement être enfermé dans l’idée d’une chose, eut avec vérité être affirmé de cette chose*],’ which he claims, with good reason, to be the foundation of all the natural sciences. If, examining the idea that I have of a triangle (by reflecting on the perception that I have of it), I find that the equality of its three angles to two right angles is contained in [*est enfermé dans*] this idea or perception, I can correctly assert that every triangle has three angles equal to two right angles³¹

The case of error is more complex, and it is this that has implications for the semantics of existential import. In error, as the Logic explains it, the proposition-idea correlation typically works in the reverse direction: propositional error leads to the formation of false ideas. The Logic’s epistemology uses this correlation to explain why people commonly believe that sensory qualities affect the mind. The explanation proffered has a general form. We form the habit of judging the proposition *S is P*. This habit in turn leads us to form the complex idea *SP* by combining the subject and predicate. If the proposition is false – for example *fire causes pain* – the corresponding idea is false or even confused, e.g. *corporeal pain*. Though in modern semantics truth and falsity are understood as properties of sentences or propositions rather than of terms or ideas, the notion of a true or false idea has a long history in traditional logic, and requires some explanation here.

In mediaeval semantics truth and falsity are properties that inhere in mental acts like sensations or concepts, but only because they inhere in a prior way in propositions. Aristotle, for example, refers to sensations as true or false³², but he does so only because in a more basic sense acts of composition or assertion, and of division or denial are true or false:

For falsehood always involves a synthesis; for even if you assert that what is white is not white you have included not white in a synthesis. It is possible also to call all these cases division as well as combination. However that may be, there is not only the true or false assertion that Cleon is white but also the true or false assertion that he was or will be white. In each and every case that which unifies is mind.³³

Imagination is different from assertion [*phaseōs*] and denial [*apophaseōs*]; for what is true or false involves a synthesis of concepts [*noēmata*]. In what will the primary concepts [*noēmata*] differ from images [*phantasmata*]?³⁴

In his view thoughts, even non-referring terms like *goat-stag*, are not true or false until they are used in propositions:

Nouns and verbs, provided nothing is added, are like thoughts without combination or separation; ‘man’ and ‘white’, as isolated terms, are not yet either true or false. In proof of this, consider the word ‘goat-stag.’ It has significance, but there is no truth or falsity about it, unless ‘is’ or ‘is not’ is added, either in the present or in some other tense.³⁵

The two-stage application of truth and falsity first to propositions and then concepts became standard in mediaeval semantics. In *De veritate*, for example, Aquinas explains the more basic role of propositional truth this way.

Just as it is said that the true is found in a more prior way in the intellect than in things, so also is it to be found more in the intellect’s act of putting together and dividing than in its act of forming the quiddity of things.

At the same time, however, he acknowledges the secondary usage in which a definition or a “composite thought” (*ratio compositionis*) is true or false. He cites as an example of a false definition *insensible animal*. He explains that it is false because the corresponding proposition *animal is insensible* that affirms one term of the other is false.³⁶

The Logic’s account of error in terms of false ideas derives from Descartes, who in *Meditation* III includes false ideas as a sub-variety of factitious ideas, which is what he calls a complex idea of our own composition. In his usage a false idea is one that fails to be “like or to conform to things that are external to us” or that fails to be “an idea of a real object”.³⁷ He wonders about the composition of the ideas *heat* and *cold*, whether *heat* is a composite from

negation (privation) and cold, or cold from privation and heat. When construed as containing in addition the idea *caused by the external world*, both ideas are false.

Arnauld and Nicole appeal to false ideas to account for vulgar believe generally. In their account defective ideas fall into two types. The first and more general is called simply a false idea. This is a complex idea with a comprehension that consists of modes that are jointly true of no actual object. The example they regularly cite is *golden mountain*. This is false because it is correlated with the fact that for any *S*, the propositions *S is a mountain* and *S is golden* are jointly false.

Some false ideas are possible in the sense that they contain modes that could be instantiated. Such an idea has a comprehension that describes a possible object, which the Logic describes – again using medieval terminology – as a *being of reason*.³⁸

A more grievously defective type of idea is impossible. Such an idea has a comprehension that consists of modes that cannot possibly be instantiated. In the Logic's technical vocabulary such an idea is called *confused*. Its modes may contain a logical contradiction or simply a metaphysical impossibility. Vulgar beliefs that attribute to the same subject a material mode like *has a material cause* and a mental mode like *is suffering pain* generate confused ideas of this sort because they describe an impossible content. It is impossible for the propositions *S has a material cause* and *S is suffering pain* to be jointly true. Examples of confused ideas that result from of habitual false judgment include *corporeal pain, heat caused by fire, gravity, and happiness caused by material wealth*.³⁹

The motivation for calling such ideas “confused” comes from a rather specialized and uniquely Cartesian application of the standard distinct-confused distinction from mediaeval semantics. According to this distinction a concept with broader range of signification is more confused and less distinct than one with a narrower range. When applied to defective ideas, however, this distinction is used in combination with another.

Mediaeval semantics and in like manner the Port Royal Logic distinguish in addition between first- and second-order concepts. In its normal use the spoken word like *donkey* is associated with the concept *donkey* which signifies things outside the mind, as in the proposition *Brunellus is a donkey*, but any word also has a second-order use in which it stands for an idea that signifies mental entities like other ideas, as in the sentence *donkey is a species*. A concept that signifies things is said to be a first intention and one that signifies ideas that in turn signify things is a second intention.⁴⁰

In mediaeval semantics the determinate-confused distinction is normally applied to primary intentions. Relative to one another the concept *Brunellus* is more distinct or determinate than *donkey* and *donkey* is more confused than *Brunellus* because *Brunellus* signifies a narrower range of possible objects than *donkey*. If a term is completely determinate, like the proper noun *Brunellus*, it signifies a unique individual.

When the Cartesians apply the determinate-confused distinction to false ideas, the distinction is applied to ideas in second intention. A term that signifies ideas is confused if it signifies multiple ideas, and it is totally determinate or distinct if it signifies a unique idea. Strictly, it is not correct to call a confused second-order idea ambiguous because such an idea does not signify one idea in one context and a different idea in a second context. Rather, it is confused because given its unambiguous signification, it signifies multiple ideas.

This rather careful distinction is applied by Descartes, and by Arnauld and Nicole, to the false ideas of vulgar opinion. The complexes *rational animal* and *golden mountain* are false, but in the Cartesian use they are not called confused. Though false they are nevertheless well-formed complex ideas. Each describes a possible though non-actual object because the comprehensions of its parts are mutually compatible. The new complex is a well-formed abstract noun. Because this idea is unique, its second-order name⁴¹ has determinate signification: “the idea *rational animal*” and “the idea *golden mountain*” each signifies a unique idea.

The idea *corporeal pain*, on the other hand, is a defective complex. The abstract nouns *body* and *pain* do not succeed in forming an abstract combination because the comprehensions of its component ideas *body* and *pain* fail jointly to describe a possible object. Ontologically the two sets of modes are necessarily disjoint. Though we might try to combine the ideas, the effort is futile. At best, we can form the second-order name “the idea *corporeal body*”, but this would necessarily be a confused idea in the technical sense. Its signification ranges over two different ideas. Though it is a well-formed name in second intention – it is an idea signifying ideas – it fails to be determinate. This second intension, therefore, signifies confusedly.⁴²

It remains to explain which among the ideas that describe possible objects are true and which false. As a general rule there is a correlation between objective being and possibility: there is an idea with modal content *M* iff there are possible objects that instantiate the modes *M*.⁴³ However, from what has been said so far, it is perfectly possible that the contents of our ideas fail to signify anything actual. It is possible that these ideas fail to refer.

The theoretical commitment that insures the existential import of ideas with objective being is the Logic’s particular version of occasionalism.⁴⁴ On the authors’ view, an undecieving God would not allow the mind to possess an innate idea of a being, or to have a perceptual experience of one, if that being did not exist in the actual world.⁴⁵ It follows that the content of simple ideas, both those that are innate and those that are abstracted from perceptual experience, is actually realized in existing things.⁴⁶

Like Descartes, the Port Royal logicians hold that it is possible to distinguish in mental experience between those ideas that are distinct but false and those that are distinct and true: the criterion is clarity. Here *clarté* seems to be like Aquinas’ *claritas*, a subjective property of ideas that enables conscious experience to occur, just as light enables vision.⁴⁷ Just as we are able to see an object only when it is illuminated by light, so we are able to be conscious of the content of an idea only when it possesses clarity. On this view, God has set up the world so that only distinct ideas that are true are experienced as clear.⁴⁸ This

particular epistemic or psychological view has implications beyond semantics. What is important here, however, are the implications of the doctrine of clear and distinct ideas for existential import.

According to the theory, clear and distinct ideas are true and warrant knowledge. Moreover, true ideas carry existential import and false ideas do not. This result follows trivially from the definition of a false idea as one that has content that is not instantiated in an actual object. The definition also entails the more interesting result that a true affirmative categorical proposition cannot be composed of false ideas. It follows, for example, that *some golden mountain is gold* is true only if some subject is jointly golden and a mountain, a conclusion that would contradict the assumption that *golden mountain* is a false idea.

To see how this result follows, we must first lay out the truth conditions for affirmative categoricals as they are explained at I,vxii. The conditions for both the universal and particular affirmative are formulated as identity statements:

...the nature of affirmation is to unite and identity...⁴⁹

This identity is one of extension:

...it is the nature of affirmation to put the attribute in everything expressed in the subject according to its extension in the proposition.⁵⁰

The relevant extension of the predicate (translated *attribute* below) is determined by the subject:

Thus because affirmation puts the idea of the attribute in the subject, it is properly speaking the subject that determines the extension of the attribute in the affirmative proposition. The identity it indicates takes the attribute as restricted to the extension equal to that of the subject...⁵¹

Here “determinate” is understood in its mediaeval sense of “less general”. The operation that limits the extension of the predicate is restriction. As defined earlier, restriction is a grammatical operation that joins an adjective to a noun to form a noun-phase that has as its comprehension the union of those of the noun and adjective. As the authors describe restriction for an A-proposition, it is the subject *S* that restricts the predicate *P*. Hence in this application it is the subject that is understood in the role of adjective, which as a connotative term would signify secondarily the modes in its comprehension. Because the

comprehension of the complex noun SP is the union of those of S and P , *its* extension will be a restricted subset of that of S and P .

In the truth-conditions we must also make explicit the condition that the subject (and hence the predicate) is not a false idea, for otherwise, as we shall see in more detail below, propositions with empty subjects would be automatically true, and there would be no false ideas. Accordingly, the truth-conditions for the universal affirmative may be stated as follows:

Every S is P is true iff the non-empty extension of S is identical to that of SP .

If Ext is the operation that assigns to each term its extension, the conditions may be expressed in a more modern notation as:

Every S is P is true iff, $Ext(S) \neq \emptyset$ and $Ext(S) = Ext(SP)$.

Because of the 1 to 1 correspondence noted earlier in the paper between the modern and Cartesian notions of extension, the clause for the universal affirmative holds if and only if the equivalence in modern set theory holds between $A \subseteq B$ and $A = A \cap B$. It also follows that the Logic's truth-conditions are essentially equivalent to George Boole's representation of an A-proposition in terms of sets as $a = ba$.

The Logic is somewhat less precise in its statement of the truth conditions for the particular affirmative. This much is clear. We have been told in the passage quote above that like the universal case the particular affirmative asserts the identity of two ideas. As the authors explain, in this case two these two ideas are formed by restriction:

So in particular affirmative propositions, for example, when we say "some people are just,": the subject and the attribute are both particular, since the subject "people" is particular by the mark of particularity added to it. The attribute "just" is also particular, because its extension is restricted by that of the subject, and so it signifies merely the justice found in some people.

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This passage tells us that the predicate *just* is restricted by the subject *people*. Unlike the universal case in which the predicate would be restricted by whole of the subject, in this case it is restricted so that it signifies only some of the entities

signified by the subject. At one point the authors explain that restriction “can be done in two ways” [*se peut faire en deux manières*]:

Now the extension of a general idea can be restricted or narrowed in two ways.

The first is by joining another distinct or determinate idea to it, as when I join the idea of having a right angle to the general idea of a triangle. Then I narrow this idea to a single species of a triangle, namely the right triangle.

The other is by joining to it merely an indistinct and indeterminate idea of a part, as when I say “some triangle.” In that case the common term is said to become particular because it now extends only to a part of the subjects to which is formerly extended, without, however, the part to which it is narrowed being determined.⁵³

It is the second way of restriction that is employed in the truth-conditions for an I-proposition. Here the predicate is restricted by an “indistinct or indeterminate idea” formed from the subject – the *some triangle* of this example or the *some people* of the example above.

Jean-Claude Pariente has interpreted this text as positing a second sui-generis variety of restriction used in the truth-conditions for I-propositions that is different from the restriction operation that is used to form complex ideas generally or that is employed in the truth-conditions of A-propositions. This second restriction, he suggests, operates on an idea – in this case the subject – to form a new “indeterminate or indistinct” idea. The predicate is in turn restricted by this indeterminate idea, and the proposition is true if the indeterminate idea is identical with the restriction of the predicate.⁵⁴

The authors of the Logic, however, give no extended discussion defining or giving examples of either a second restriction operation or a new category of “indeterminate” ideas. These phrases occur only in the passages quoted. I would like to suggest a simpler interpretation that does not require new distinctions.

Aristotle sometimes explains why an I-proposition is true by “setting out” a species that is a subspecies of both the subject and predicate.⁵⁵ If two terms can be restricted so as to form a common species, then their extensions are identical, and the corresponding I-proposition is true. Arnauld and Nicole are

suggesting that an I-proposition be understood in just this way. As they put it, the extension of the predicate is determined or restricted by “a part” of the subject:

If the subject is particular, the attribute is conceived only in a part of the extension of the subject.⁵⁶

The authors indicate what they mean here by the phrase “conceived of only in a part of the extension.” They use the same phrase in an adjacent text to describe the restriction of the predicate in the truth-conditions of the universal affirmative.⁵⁷

As they use the expression to explain the A-proposition, “to be conceived in a part of the extension” of a term P means simply that a new idea SP is formed from P by restricting it in terms of a second idea S , with the result that the extension of SP is included in that of P . Partial-conception in the truth-conditions for an I-proposition should be understood in the same way. As in the case of a true A-proposition, two ideas are identical. In the case of a true I-proposition, however, the first idea is the partially conceived subject term, and the second is a restriction of predicate by this partially conceived subject.

Which of ideas are appropriate for this restriction? Normally it would be some species in the extension of the subject. In a given case a suitable term may be implicit from the context⁵⁸, similar to the way that a connotative term has implicitly associated with it a kind term that specifies the range of application. However, all that is required for a statement of the truth-conditions is that there be some term that meets the relevant conditions.

Why do the authors call the restricted subject in this case “indefinite or indistinct”? The way to understand “indefinite” here, I would suggest, is as a higher-order property. It is not that the idea in terms of which the predicate is restricted is itself indefinite. The extension of both the subject and its restricting subspecies may or may not be broad. Their extensional scope is irrelevant so long as they are non-empty. Nor need we appeal to any restriction operation other than the single operation that has already been mentioned, namely that used in the formation of noun-phrases generally and in the interpretation of A-propositions. Rather “indefinite” is to be read as a true second-order description of the meta-name for the class of species relevant to the subject’s restriction; i.e.

indefinite is a meta-adjective that is true when it modifies the meta-name *suitable idea in terms of which the restriction is performed*. It is that second intention that is indefinite, or in the mediaeval sense “confused”. It is so because any number of ideas could serve that purpose of restricting the subject so long as it is a subspecies⁵⁹ of the subject term. In the examples quoted, then, *some people* is short for the metalinguistic expression “some term in the extension of *people*”, and “restriction by *some people*” means “restriction by some term in the extension of *people*”

Before stating the truth-conditions formally, we must also note that the terms mentioned in the truth-conditions must be non-empty. Not only is this requirement necessary to insure that I-propositions with false ideas as subjects are false, it is also required to coordinate syllogistic inferences with A-propositions. As we have seen, A-propositions have a similar clause requiring non-empty terms, and the Logic validates subalternation.⁶⁰

We may now state the truth-conditions for an I-proposition in general form:

Some S is P is true iff the restriction of *S* by some term has the same non-empty extension as the restriction of *SP* by that term.

In the idiom of modern metatheory this would be expressed in terms of the existential quantifier:

Some S is P is true iff, for some *T*, $Ext(TS) \neq \emptyset$ and $Ext(TS) = Ext(TSP)$.

Because of the correspondence between the modern and Cartesian notions of extension, this analysis is similar to George Boole’s representation of an I-proposition as $ax = bax$ in which the variable *x* serves the role of restricting the set-theoretic extensions of both the subject and predicate.⁶¹

To complete the statement of truth-conditions, it is necessary to state those for negative propositions. For our purposes here it is sufficient to remark that the Logic stipulates that the universal negative is the contradictory of the particular affirmative, and the particular negative of the universal affirmative.⁶²

Given these the truth-conditions, we may now take up directly the issue of existential import. It follows directly from the truth-conditions for the universal affirmative and the earlier definition of false idea, that the terms of a true

affirmative proposition carry existential import. The argument goes as follows. By definition, a false idea is one such that if it is affirmed universally of a subject, the proposition is false. But if a false term were the subject of any universal affirmative, its extension and that of the predicate restricted by the subject would both be empty and hence identical. The assertion would hence be true. That is, any universal affirmative with a false term as subject would be true. Hence, for any term, that term is the predicate of some true universal affirmative. Hence there is no false term. It follows that if a universal affirmative is true when the extension of the subject is identical to that of the restricted predicate, and if the content of a false idea is false of every subject, then there are no false ideas. The same result may be expressed as a contrapositive: a universal affirmative with an empty subject term is false even though the extensions of the subject and restricted predicate are identical.

The argument may be formulated as a reductio. Suppose both that *every S is P* is true and that *S* is a false idea. It follows that *S* is true of no actual object. But the truth or falsity of an idea is a function of the truth or falsity of propositions. What propositions would this be? Because the term is false of every object, any universal affirmative with *S* as its predicate must be false: for any term *T*, *every T is S* is false. Then by the definition of restriction, it follows that *SP* is false of every term. By the truth conditions for the universal affirmative, then, it follows for every *T* that *every T is SP* is false. Hence *every S is SP* and *every S is P* are false. Hence the original assumption that *S* is a false idea has led to a contradiction.

False ideas, however, have an important place in the Logic's Cartesian epistemology. Accordingly, to accommodate them within the theory, it is necessary to attribute existential import to true affirmatives.

For the sake of argument, it is instructive to note the unacceptable consequences of the opposite view. If the truth-conditions for the universal affirmative were defined so that it was true when the extensions of the subject and predicate were empty and hence the same, the following counter-intuitive propositions would be true:

*every square circle is an infinite being,
every dragon is a god,
every dragon is a square,
every dragon is a round square,
some dragon is a god,
some square circle is a square,
some square circle is a cube,
something is a round square.*

It would also follow that any traditional contrary pair, like *round* and *square*, or *odd* and *even* could both be true of the same subject. It would also follow that *nothing is a square circle* is false.

Logical theory from the Middle Ages to the 17th century required as a standard practice that a true universal affirmative have a non-empty subject.⁶³ If the Logic had rejected this assumption, it would have been contradicting centuries of doctrine. However, nowhere does the Logic explicitly reject this practice, nor does it cite as true any example of a universal affirmative with an empty subject.⁶⁴

Jean-Claude Pariente has advanced the interpretation that the truth-conditions for categorical propositions do not carry existential import.⁶⁵ His reasoning is that the truth-conditions do not carry existential import because they are formulated in terms relations on extensions, which are relations among ideas, not things in the world, and that in principle ideas may be empty. What he fails to observe is that if A-propositions with empty terms are true, then there can be no false ideas. Since the Logic is committed to false ideas, its semantics must also be assuming, in common to the logic of the period, that the terms of a true affirmative are non-empty.

It should also be remarked that the examples of particular affirmatives above, like *some square circle is a cube* are counter-intuitive indeed. Even first-order logic, which accepts as true universal conditionals with false antecedents, treats these existential cases as false. Indeed, it is hard to conceive of a rationale for a logic that would accept the truth of particular affirmatives with empty terms. But given that the Logic is committed to subalternation, it would follow that if the Logic were also committed to the truth of universal affirmatives

with empty terms, these particular affirmatives with empty terms would also be true. Again, the Logic cites no examples of true particular affirmatives with empty terms. Nor need it be interpreted as doing so. As I have shown above, its logic of ideas is perfectly coherent while at the same time maintaining traditional commitments to existential import.

In conclusion, I hope I have shown in some detail that not only is the existential import of affirmative propositions consistent with the Cartesian semantics; the theory of false ideas requires it. Its epistemology and semantics are formulated in terms of ideas, to be sure, but the Cartesians were dualists, not idealists. Their commitment to occasionalism and the veridicality of clear and distinct ideas grounds signification in actual objects, and as a consequence, an affirmative proposition is true if its terms are non-empty and it corresponds to the world.

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¹ See Jean-Claude Pariante, *L'analyse Du Language À Port-Royal* (Paris: C.N.R.S. Éditions de Minuit, 1985), I.1-2, pp. 232-244.

² Because this account is a broad summary of the views of Arnauld and Nicole, I will cite the textual basis for only those interpretations that might be considered controversial or novel. The *La Logique ou l'Art de Penser* will be abbreviated as *LAP*, and *Des vraies et des fausses Idée* as *VFI*. The standard edition of Arnauld's works, which includes *LAP* and *VFI*, is Elmar and Denis Moreau Kremer, ed., *Oeuvres Philosophique D'arnauld*, 6 vols. (Bristol: Thoemmes Press, 2003), abbreviated *KM*, and that of Descartes is René Descartes, *Œuvres De Descartes*, ed. C. Adam et P. Tannery, 11 vols. (Paris: Vrin, 1897-1909), abbreviated *AT*, both cited by volume and page. The standard English translation of *LAP* is Antoine and Pierre Nicloe Arnauld, *Logic or the Art of Thinking*, trans. Jill Vance Buroker (Cambridge: Cambridge University Press, 1996), abbreviated *B*, and that of *VFI* is Antoine Arnauld, *On True and False Ideas*, trans. Stephen Gaukroger (Manchester: Manchester University Press, 1990), abbreviated *G*.

³ See Calvin Normore, "Meaning and Objective Being: Descartes and His Sources," in *Essays on Descartes' Meditations*, ed. Amélie Oksenberg Rorty (Berkeley: University of California Press, 1986), for an account of medieval semantics relevant to Descartes.

⁴ See Aquinas, *Summa Theologica*, p. I.1, q. 85, a. 2. On Ockham see the discussion of intuitive cognition, which presupposed direct realism, in Elizabeth Karger, "Ockham's Misunderstood Theory of Intuitive Cognition and Abstractive Cognition," in *The Cambridge Companion to Ockham*, ed. Paul Vincent Spade (1999: Cambridge University Press)..

⁵ Suárez, Arnauld and Nicole clearly deny the possibility of Aristotelian transmission of modes from matter to the soul, and espouse a version of occasionalism to the effect that on the occasion of the instantiation of a material mode in the sense organs, God causes there to be an idea in the mind in which that mode occurs as an intentional "content". See *LAP* I,i, *KM V*, 132-33, *B* 29-30; I,ix, *KM V*, 157-78, *B* 49-50; I,xii, *KM V*, 168-170, *B* 58-60; *VFI* Chapt. 6, *KM I*, 204, *G* 71-71; Chapt. 27, *KM I*, 349-50, *G* 208. On Suárez see *De Anima* iv 2:13,17,18, and 4,1; *Opera* III,719,721,731; and the discussion in T. J. Cronin, *Objective Being in Descartes and Suarez*, vol. 154, *Analecta Gregoriana* (Rome: Gregorian University Press, 1966).. Descartes' official view seems to be similar. See *AT* 8b 358:20-359:12, and the discussion in Daniel Garber, "Descartes and Occasionalism," in *Causation in Early Modern Philosophy*, ed. Steven M. Nadler (University Park, Penn.: Pennsylvania State University Press, 1993)..

⁶ See, for example, Aristotle, *Physics*, V,3-4.

⁷ See Michael Thompson, "The Representation of Life," in *Phillipa Foot and Moral Theory*, ed. Gavin Laurence Rosalind Hursthouse, Warren Quinn (Oxford: Clarendon Press, 1995)..

⁸ The authors declare the existence of modes outside the mind at the outset of the Logic (*LAP* I,i, *VFI* Chapt 2, *KM I*, 204, *G* 71-71.), and dismiss the realism-nominalism controversy as one of various scholastic debates that are difficult and of little use. *LAP*, *Discour* 1, *KM V*, 112-113; *B* 9-10. A commitment to the existence of forms outside the mind was, for example, standard among the Conimbricenses. See I.87 in *Commentarii Collegii Conimbricensis E Societate Jesu in Universam Dialecticam Aristotelis*, Reprint of 1607 Edition ed. (Hildesheim: Georg Olms Verlag, 1976 [reprint of 1607]), and IV.4.C in Pedro da Fonseca, *Intitucionum Dialecticarum Libri Octo*, vol. 1 and 2 (Coimbra: Universidade de Coimbra, 1964)..

⁹ *LAP* I,viii. For mediaeval restriction see Buridan, *Treatise on Supposition* 4.1.46-47 and 4.63, and *Treatise on Consequence* 6.3.1 in John Buridan, *Jean Buridan's Logic: The Treatise on Supposition, the Treatise on Consequence*, trans. Peter King (Dordrecht: Reidel, 1985).., and Book III, pp 286, 648, and 835 of John Buridan, *Summulae De Dialectica*, trans. Gyula Klima (New Haven: Yale University Press, 2001)..

¹⁰ *LAP* I,viii. *KM V*, 153; *B* 46.

¹¹ See "On Connotative and Absolute Terms" in *Summa Logica* I.10 in Willam of Ockham, *Ockham's Theory of Terms: Part I of the Summa Logicae*, trans. Michael J. Loux (Notre Dame, IN: University of Notre Dame, 1974).. The Logic makes these distinctions in *LAP* I,ii.

¹² *LAP* I,ii. *KM V*, 135; *B* 32.

¹³ See for example the following texts from Aristotle, Abelard, Aquinas, and Buridan: *Physics* I.1 184^a22-24; *In Isagogen* ed. Geyer, *Logica ingredientibus* L1.01 /21/-/29/ [<http://individual.utoronto.ca/pking/resources/index.html>]; *Summa Theologica* p I.1, q. 85, a. 3 *Responsio*, Buridan line 95 ff.. p. 291 ff. in John Buridan, "Question on Aristotle's *De Anima* (Third Redaction)," 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*, ed. John Alexander Zupko (Ann Arbor, MI: Ph.D. Dissertation, Cornell University. University Microfilm, 1989)..

¹⁴ *LAP* I,vii. *KM V*, 146-7; *B* 44-41. 17th century logic as a rule subscribes to both mental language and realism. Concepts, or ideas in the Cartesian context, do not serve as they do in nominalism as mental proxies as universals, but rather are mental terms (modes) that correlate with universals (material modes) that have independent existence outside the mind.

¹⁵ *LAP* I,vii.

¹⁶ Examples of proper names and singular terms are: *myself*, *God*, *Alexander son of Philip*, *the present Pope*, *the earth*. Examples of false idea: *rocks* (that fall from gravity), *fire* (that burns), *wealth* (that makes us happy), *corporeal pain*, *colored rainbow*, *bent stick in water*.

¹⁷ *LAP* II,iii, *K V*, 199, *B* 84; *LAP* III,ix, *K V*, 278, *B* 160.

¹⁸ *LAP* I,viii, *KM V*, 151-152, *B* 44-45.

¹⁹ *Metaphysics* VII.

²¹ On Abelard see Peter Abelard, "From the 'Glosses on Porphyry', Logica 'Ingrredientibus'.,", in *Five Texts on the Mediaeval Problem of Universals*, ed. Paul Vincent Spade (Indianapolis: Hackett, 1994). and John Marenbon, *The Philosophy of Peter Abelard* (New York: Cambridge University Press, 1997).. Ockham accepts objective being in *Primum Sententiarum* d. 2, q. 8 and William of Ockham, ed., *Question XIII, Reportatio*, vol. Book II, *Opera Philosophica Et Theologica* (St Bonaventure, N.Y.: Franciscan Institute, 1981). pp. 299, 304-308, but rejects it persuaded by Walter Caton's refutations in *Quodlibets* IV, q 19. See Paul Vincent Spade, "Thought, Words and Things; an Introduction to Late Mediaeval Logic and Semantic Theory," and Normore, "Meaning and Objective Being: Descartes and His Sources,"..

²¹ See *Disputationes Metaphysicase* 2, 1,1 Francisco Suárez, *Opera Omnia* (Paris: Ludovicum Vivès, 1856-1878). ,25, 26 and 64-65. Likewise Scotus individuates the object of sensory perception by identifying it as an *esse objectivum* (§§ 20-22, 31, 33-34, 38 in John Duns Scotus,, 1987.) and Descartes understands an *esse objectivum* to be the object of reflexive cognition (*Responses* 4ae, AT 7 234:25 to 235:4).

²² Some of the logicians and philosophers in the tradition of Conimbra who employed the distinction are: F. Toletus S.J., *Commentaria Una Cum Quaestionibus in Universam Aristotelis Logicam* (Cologne: 1596). p.3. 30.; Petrus Fonseca S.J., *Commentarii in XII Libros Metaphysicarum Aristotelis* (Frankfurt: 1599.). q ii, §§1; Eustace-of-St.-Paul, *Summa Philosophiae Quadripartita, De Rebus Dialecticis, Moralibus, Physicis Et Metaphysicis* (Paris: 1609)., *Metaphysia, De natural entis, de conceptus formali et objetivo*, p. 1; M. de Raconis, *Totius Philosophia, Hoc Est Logicae, Moralis, Physicae Et Metaphysicae, Brevis Et Accurata, Facillique Et Clara Methodo Disposita Tractatio* (Paris: 1648 [7th edition 1641])., *De principis entis*, a. 3, §1a, p. 827. Parts of some passages are quoted in Cronin, *Objective Being in Descartes and Suarez*..

²³ See also *Preface to the Meditations* § 4, and *Responses* 2a, AT 7, 161:7-9, 162:8-9, 166:14-16, 166:23-25, and 2ae, AT 7 161:10-13, 166:22-25.

²⁴ VFI Chapt 6, KM I,204, G 71-71.

²⁵ In the Logic the authors do not use the term *esse objectivum* as such, but rather make the same distinction using the somewhat awkward phrase "object as represented by an idea": « *Tout ce que nous concevon est représenté à notre esprit ou comme chose, ou comme manière de chose, or comme chose modifiée* ». LAP I,2, KM V,134, B 30.

²⁶ VFI Chapt 4; KM I,193, 198-199, 200-201; G 61, 66, 68.

²⁷ VFI Chapt 6, KM I,204, G 71-71.

²⁸ LAP I,v,xi; KM V,142-43,168-170; B 37-38,58-59; VFI, G Chapt. 6, 56-58, 98-100 correct references.

²⁹ LAP I,v.

³⁰ VFI Chapt. 6: KM I,209; G 76.

³¹ VFI Chapt. 6: KM I,206; G 73.

³² See for example *De anima*, iii:3, 428^a11.

³³ *De anima* III,6, 430^a25-^b6.

³⁴ *De anima* III,8, 432^a8-14.

³⁵ *Parts of Animals* I,16^a13-19.

³⁶ See *De veritate* q. 1, a.3 co.; 51615. See also 54811.

³⁷ *Meditation* III, 7 and 19.

³⁸ LAP I,ii, KM V,136, B 32.

³⁹ For passages in which the formation of such ideas are described see: *LAP Discour* I., KM V, 110, B 9-10; I,ix. KM V, 157-78; B 49-50; I,xi. KM V, 168-170; B 58-60.

⁴⁰ LAP I,ii. KM V,136; B 32.

⁴¹ In the Logic the idea of an idea is called the idea in second intension, which is its standard name in medieval logic. LAP II,ii, K V,136, B 32. Cf. Book 6.4, p. 428 Buridan, *Summulae De Dialectica*..

⁴² The Conimbricencis Antonius Rubius anticipates this Cartesian usage by calling a term *confused* because it ambiguously names more than one *esse objectivum*. See E. J. Ashworth, "Antonius Rubius on Objective Being and Analogy: One of the Routes from Early Fourteenth-Century Discussions to Descartes's Third Meditation," *Meeting of the minds : the relations*

between medieval and classical modern European philosophy. *Acts of the international colloquium held at Boston College, June 14-16, 1996 organized by the Soci te  internationale pour l' tude de la philosophie me die *, (1966)..

⁴³ VFI Chapt 5-6, KM I,200,204, G 67,71-72.

⁴⁴ For references to occasionalism by the authors of the Logic see note _ above.

⁴⁵ VFI Chapt 5, KM I,202, G 69-70;Chapt 28, KM I,351,353-354, G 209,313-214.

⁴⁶ This is the Cartesian version of Aristotle's view that "perception is always true." See, for example, *De anima* 427^b6-22.

⁴⁷ The Logic (I, ix) characterizes a clear idea as one that "*nous frappe vivement*," like pain. For Aquinas clarity, which finds its ultimate form in the beatific vision, is analogous to light in vision. It is something that when added to an essence brings it to consciousness. When Paul was knocked to the ground in the blinding light, he was, according to Thomas, experiencing God's essence with clarity. He writes,

But *claritas*, which is the principle of the vision of the divine and the actualization of glory, is glory's endowment. If therefore the mind of Paul saw God through an essence, and was illuminated by the light that was the principle of his vision, he was simply glorified. [*Sed claritas quae est principium divinae visionis, quae est actus gloriae, est dos gloriae. Si igitur mens Pauli Deum vidit per essentiam, et illustrata fuit luce quae est principium huius visionis, fuit simpliciter glorificata.*] *De veritate*, q. 13 a. 2 arg. 4

Hence, clarity is a necessary condition for being conscious of the content of objective being. It comes in degrees and presumably, as Aquinas holds, is a gift of God. See *De veritate*, q. 13 a. 2 co., *Responsio*.

⁴⁸ See, for example, LAP I,ix. KM V,157; B 14.

⁴⁹ LAP II,xvii, KM V,247, B 129.

⁵⁰ *Ibid.*

⁵¹ LAP II,xvii, KM V,248, B 130.

⁵² LAP II,xviii, KM V,249-250, B 131.

⁵³ LAP II,vi, KM V,145, B 40.

⁵⁴ Pp. 247-238 in Jean-Claude Pariente, *L'analyse Du Language   Port-Royal* (Paris: C.N.R.S.  ditions de Minuit, 1985).

⁵⁵ On ecthesis see John N. Martin, "Ecthesis and Existence in the Syllogistic," in *Themes in Neoplatonic and Aristotelian Logic* (Aldershot: Ashgate, 2004).

⁵⁶ Third axiom, LAP II,xvii, KM V,249, B 129.

⁵⁷ See the remarks about the universal case in the fourth axiom, *ibid.*

⁵⁸ Terrance Parsons has suggest this to me in correspondence.

⁵⁹ If there are shared entities that satisfy jointly the comprehensions of the subject and predicate, and if every singular term is a species, then there will exist appropriate subspecies of the subject for a restriction that will make the appropriate identity true, namely the names for the shared entities.

⁶⁰ LAP II,iv. KM V,201; B 36. It would be an odd syllogistic system indeed if A-propositions and singular propositions carried existential import, I-propositions did not, and subalternation held. Ecthesis, the implication from *some S is P* to *every T is S* and *every T is P*, for some term *T*, would fail even though *T* is essentially the same as the Logic's "indefinite" restriction of *S*. Though the Logic's treatment of the syllogistic is relatively cursory, there is no textual evidence that the authors intend to depart from the standard set of inferences. Indeed one reason the treatment is cursory is that they regarded the standard account as true. See *LAP Discour I*, KM V,111, B 10; *Discour I*, KM V,121, B.19.

⁶¹ These formulations are used in, for example, George Boole, *The Mathematical Analysis of Logic* (Oxford: Blackwell, 1948 [1847]). and George Boole, *An Investigation of the Laws of Thought, on Which Are Founded the Mathematical Theories of Logic and Probabilities* (N.Y.: Dover, 1951). Boole assumes that a relevant *x* can be found.

⁶² See LAP II,4.

⁶³ Subalternation was a fixed feature of syllogistic logic. On the existential presupposition of universal affirmatives see E. J. 1973 Ashworth, "Existential Assumptions in Late Medieval Logic," *American Philosophical Quarterly* 10 (1973).

⁶⁴ Pariente (p. 243) remarks correctly that two affirmative propositions with empty subjects could both express different propositions, but he fails to remark on their truth-values. In the conventional logic of the period, as well as the Port Royal Logic, though non-synonymous both would be false.

⁶⁵ See the refernces in note 1.