

Contemporary “Essentialism” vs. Aristotelian Essentialism

1. *The principal theses of contemporary “essentialism” vs. Aristotelian essentialism*

Contemporary “essentialism”, if we want to provide a succinct, yet sufficiently rigorous characterization, may be summarized in the thesis that some common terms are rigid designators.¹ By the quotation marks I intend to indicate that I regard this as a somewhat improper (though, of course, permitted) usage of the term (after all, *nomina significant ad placitum*²). In contrast to this, *essentialism*, properly so-called, is the Aristotelian doctrine summarizable in the thesis—as we shall see, no less rigorous in its own theoretical context—that things have essences.

The two theses, although related, are by no means identical. In this paper I wish to show exactly how these theses differ in virtue of the radically different conceptual frameworks in which they acquire their proper meaning, yet without these conceptual differences rendering them logically “incommensurable”. By this comparative analysis I hope to provide reasons to reconsider our contemporary philosophical problems in a historical perspective, realizing how their intrinsic difficulties stem from a contingently evolved conceptual heritage. In these considerations, being primarily concerned with the distinction between them, I am going to treat both contemporary “essentialism” and Aristotelian essentialism very broadly and rather indistinctly in themselves, in the sense that I am not going to delve into otherwise importantly different versions of either of the two. For reasons of clarity and influence I have selected Kripke and Aquinas as paradigmatic representatives of their respective conceptual frameworks. Nevertheless, I will try to treat these frameworks in such general terms as to be able to cover the thought of a great number of similarly important thinkers.

¹ To be sure, this characterization by no means covers all versions of what goes by the name of “essentialism” in contemporary philosophy. Still, this is arguably the most widespread notion of “essentialism” nowadays, and it certainly does serve as “the least common denominator” in discussions concerning “essentialism”. Indeed it could also be argued that most of the more stringent versions of “essentialism” are just further refinements of the same notion in basically the same logical semantic framework. Therefore, since in the present discussion my main concern will be to contrast the underlying logic of (the Thomist version of) medieval Aristotelianism with that of contemporary “essentialism”, I think in this comparison this “simplification” is justified.

² This phrase (or some other of its variants) was used by medieval logicians time and again to stress the fact, established by Aristotle at the beginning of his *On Interpretation*, that linguistic items, considered as mere utterances or inscriptions, signify by convention, that is, on the basis of some (mostly tacit) agreement among users of the same language, or among members of some smaller linguistic community (cf. slang, which Jean Buridan explicitly considered in this context) concerning what they are supposed to have in mind when they use any of these items with proper understanding.

2. *The problems of contemporary “essentialism”*

The most widely recognized framework of contemporary “essentialism” is possible worlds semantics. That a common term is taken to be a rigid designator might be reflected in the formal system by stipulating that if an individual is an element of the extension of the corresponding predicate parameter in one possible world, then it is an element of the extension of the same predicate parameter in all other possible worlds in which that individual exists, i.e., the domain of which contains that individual as its element. Such a stipulation basically amounts to saying that rigid designators “stick with their individuals” (“their individuals” being the individuals that fall within their extension in a possible world) across all possible worlds in which those individuals exist.

Now clearly, rigidity is an independent, additional stipulation on the possible worlds framework. For all the logical machinery of possible worlds semantics requires is that the semantic values of the expressions of a modal language be assigned in models involving possible worlds. But this much is obviously taken care of *without* stipulating that some predicate terms are such that whatever falls within their extension in one possible world falls within their extension in any other possible world in which it exists. Thus, this stipulation is in no way part of the logical machinery of possible worlds semantics itself, but something that may or may not be added to this machinery for independent reasons. This is how it comes about, then, that while various intuitions of several philosophers clash over admitting or omitting this additional essentialist stipulation, none of them can have decisive *logical* grounds for definitively proving their own position and/or definitively refuting the positions of others.

To be sure, there is nothing wrong *per se* in having recourse to extra-logical intuitions in philosophical debates. However, what renders using these extra-logical intuitions in the particular debates concerning “essentialism” highly dubious is that these intuitions are formulated and understood within the conceptual framework of a historically quite recent philosophical tradition, which for the most part evolved on the basis of a radically anti-essentialist, indeed, generally anti-metaphysical mentality. Perhaps, a general characterization of what I take to be two main families of arguments in these debates—significantly, comprising arguments both from “essentialists” and anti-“essentialists”—will make clear what I have in mind.

2.1 “Opacity/transparency” arguments

The cluster of arguments I would gather under this heading range from Quine’s cyclist mathematician and number-of-planets arguments, to Kripke’s pain-argument, to Yablo’s statue-argument, and many others.³ All these arguments are based on the perceived inconsistency of three propositions of the following form:

³ All these are conveniently brought together by Michael della Rocca in his: “Recent Work on Essentialism”, *Philosophical Books*, 37(1996), pp. 1-13, and 81-89. For a particularly vivid documentation of the earlier debates on essentialism and modal logic, which already contained virtually *everything* that came to the fore in

1. d_1 is essentially P
2. d_2 is not essentially P
3. $d_1=d_2$

In the various arguments, either these three propositions are used as premises to establish an inconsistent conclusion (e.g., Quine’s cyclist mathematician argument follows this pattern), or two of them are used to conclude to the negation of the third (e.g., Quine’s number-of-planets argument uses propositions exemplifying 1 and 2 to establish the allegedly absurd denial of 3;⁴ while Kripke’s and Yablo’s above-mentioned arguments use propositions exemplifying 1 and 2 to establish the denial of 3, which in Kripke’s case is hailed as a significant philosophical conclusion concerning the non-physical nature of pain, while in Yablo’s case it is deemed to be an unacceptable conclusion, causing much philosophical pain).

The different uses to which these arguments are put by their “essentialist” or anti-“essentialist” proponents depend on the intuitions these philosophers have concerning the particular formulations of their premises and/or conclusions. Yet, what remains common in all these different arguments, despite their conflicting intents and various formulations, is the realization that 1-3 can be regarded as inconsistent only if 1 and 2 provide referentially transparent contexts for d_1 and d_2 —or, what amounts to the same, if both d_1 and d_2 are treated as rigid designators of what they designate. Accordingly, whenever philosophers intend to neutralize the force of any of these arguments (whether for or against some essentialist conclusion), they point out that the proposition corresponding to either 1 or 2 has an equally (or even more) intuitive opaque (or *de dicto*) reading or reformulation which invalidates the argument in question, or correlatively, if they want to preserve the validity of such an argument, they try to show why such a reading or reformulation is unacceptable.

For example, consider Kripke’s argument concerning heat and molecular motion.

(H1) Molecular motion is essentially molecular motion

(H2) Heat is not essentially molecular motion

therefore,

(H3) Heat is not molecular motion

Provided that ‘molecular motion’ and ‘heat’ are “rigid designators”, the argument is valid, but the conclusion is scientifically false, hence a problem for “essentialism”.⁵ A “Kripkean

the later discussions, see R. B. Marcus: *Modalities: Philosophical Essays*, Oxford University Press: New York-Oxford, 1993, especially essays 1, 3 and 4.

⁴ Quite characteristically, “essentially” and “necessarily” are often used interchangeably in these arguments, so I am just following this practice here. Cf., however, R. B. Marcus: “Essential Attribution” in: *Modalities: Philosophical Essays*, Oxford University Press: New York-Oxford, 1993, p. 60.

⁵ A good example of a contrary use of the same type of argument, to establish an essentialist conclusion, is Kripke’s argument against body-mind identity. Although in this case Kripke argues that a reformulation is

reconstrual”⁶ accounting for the alleged “strong intuition” for (H2), but invalidating the argument, points out that ‘heat’ can be taken in two ways. It can be taken either as referring to the physical phenomenon which actually causes in us the sensation of heat, which is nothing but molecular motion, and which, therefore, is essentially molecular motion. On this reading ‘heat’ rigidly refers to molecular motion, but then (H2) is false. The other reading, however, takes ‘heat’ as referring non-rigidly to anything whatsoever that may possibly cause in us the sensation of heat, which may back up the intuition behind (H2), but then, since it renders ‘heat’ non-rigid, it invalidates the argument.

Now, whatever one’s reactions to particular formulations of this type of argument may be, it should be clear that such moves merely transform questions of intuitions about the essentiality of certain terms into questions of intuitions about the essentiality of other terms. (In this case, the question whether ‘molecular motion’ is an essential predicate of heat is transformed into the question whether ‘heat’ is a rigid designator, that is, an essential predicate, of the phenomenon that it actually designates.) This, again, would not be harmful in itself, if questions concerning terms about which our intuitions are uncertain could in this way be transformed into questions about terms about which we can be certain. However, given that the underlying logical framework in these discussions not only fails to sort out which particular terms should be deemed essential,⁷ but it also fails to give any reason whatsoever why there should be *any* essential terms at all, arguments of this sort within this framework are doomed to inconclusiveness.

Indeed, as the previous example shows, since *nomina significant ad placitum*, to ask whether, for example, ‘heat’ is a rigid designator, is not a very illuminating question. For the answer is that *it depends*. If we use it as such, making it stick with the phenomenon it actually designates, come what may, then of course it is rigid. But if we use it in another way, making it stick with its actual conditions of applicability (perhaps, expressed in a nominal definition), whether in a possible situation these conditions are satisfied by the same phenomenon that satisfies them in the actual situation or not, then of course it is not rigid.⁸ But then it seems that the whole issue about essential vs. non-essential predicates boils down to determining the proper usage of certain terms, concerning which philosophers may have different intuitions, but certainly no principled *metaphysical* reasons for preferring one usage over the other.

As a matter of fact, this last remark shows one of the most basic problems with Kripke-style “essentialism”, namely, that the modal approach to *essence* apparently puts

unavailable, his critics’ arguments are intended to show precisely this, thereby showing that one of the premises has to receive an opaque reading, which invalidates the argument.

⁶ To adopt Michael della Rocca’s somewhat odd, but fitting expression.

⁷ To be sure, this is good; after all, if essential, or even “essential”, terms should have to do something with the nature of things, such sorting out should not be simply a matter of logic.

⁸ After all, it did not take Locke more to turn the traditional stock-example of an essential predicate, ‘man’, into an accidental predicate: all he had to do was to insist that the meaning of this term is determined by its nominal definition. For more on this issue see the last section of this paper.

the cart before the horse. Since it seeks to explain essence in terms of essential properties, rather than the other way around, it certainly cannot invoke essences in trying to cope with its primary task presented by anti-essentialist criticisms: to offer some reason why some common terms *have to* be regarded as essential to the things they are actually true of. So while the issues in this framework could not be settled on *logical* grounds, in the same framework they cannot be settled on principled *metaphysical* grounds either.

2.2 Insufficiency arguments

This realization seems to be the main motivation for recent criticism of the modal approach by Kit Fine. As he puts it, his objections to the modal account “will be to the sufficiency of the proposed criterion, not to its necessity”.⁹ These objections show that it is easy to find properties deemed essential by the modal criterion; that is, properties that in the Kripkean parlance would be rigid designators of an object, which, however, nobody would take to be essential in the stronger sense of somehow characterizing or expressing the nature of the thing.

Take for instance Socrates and the singleton whose only member is Socrates. On the Kripkean account it would be essential both for the singleton to contain Socrates and for Socrates to belong to the singleton. However, it is hard to see what it has to do with the nature of Socrates whether he belongs or not to any set whatsoever. Socrates would certainly be both the same thing and the same kind of thing, even if there were no sets at all.

But there is no need to appeal to such abstract objects. Consider two distinct physical objects, such as Socrates and the Eiffel Tower. On the Kripkean account each would necessarily have the property of being distinct from the other; yet, why should his being distinct from the Eiffel Tower belong to the nature of Socrates?

In general, the Kripkean account renders any necessary property “essential” to anything, however extrinsic such a property to the thing in question may be. For example, the property $\lambda x[Px \vee \sim Px]$, or the property $\lambda x[Px \rightarrow Px]$ should be essential to any individual whatsoever. Consequently, it should be essential to you that you are either reading or not reading this paper, or that if you are reading it, then you are reading it, which on a stronger reading of ‘essential’ would mean that these properties, and along with them this paper, somehow belong to, and therefore constitute your nature, which is absurd.

Well, of course, these arguments can “work” only if someone is willing and able to recognize a sense of “nature” or “essence” that is somehow stronger than what can be reached on the basis of the modal account. As Fine himself cautions: “I am aware, though, that there may be readers who are so in the grip of the modal account of essence that they are incapable of understanding the concept in any other way. One cannot, of course, argue a conceptually blind person into recognizing a conceptual distinction, any more than one

⁹ Kit Fine: “Essence and modality”, in: J. E. Tomberlin: *Philosophical Perspectives*, 8, *Logic and Language*, Ridgeview Publishing Company Atascadero, California, 1994, pp. 1-15. p. 4.

can argue a color blind person into recognizing a color distinction. But it may help such a reader to reflect on the difference between saying that singleton Socrates essentially contains Socrates and saying that Socrates essentially belongs to singleton Socrates. For can we not recognize a sense of nature, or of "what an object is", according to which it lies in the nature of the singleton to have Socrates as a member even though it does not lie in the nature of Socrates to belong to the singleton? Once we recognize the asymmetry between these two cases, we have the means to present the objection. For no corresponding modal asymmetry can be made out. If the singleton essentially contains Socrates, then it is necessary that Socrates belongs to the singleton if the singleton exists. Granted that it is necessary that the singleton exists if Socrates does, it follows that it is necessary that Socrates belongs to the singleton if Socrates exists. But then Socrates essentially belongs to the singleton, which is the conclusion we wished to avoid."¹⁰

But then, again, it seems that we are left here with an appeal to intuition which does not have much to do with the nature of things, but rather with a "feeling"¹¹ as to linguistic usage, this time concerning the usage of 'nature'. However, especially nowadays, when every single philosopher seems to have their own "theory of meaning and/or reference"¹² such an appeal cannot be expected to have a universally compelling force; and again, after all—*nomina significant ad placitum*.

However, despite these and similar concerns, I assume that many philosophers are both willing and able to recognize a stronger sense of "essence" or "nature". Indeed, I think that many philosophers will also recognize the *need* for such a stronger sense, given the intuitive troubles with the modal approach. But the question then is what we should take as the standard for the *proper* expression of such a stronger sense.

Again, when it comes to *stipulating* a certain usage, anyone has the right to *introduce* any sorts of "strengthening" of the sense of this term *ad placitum*. But when it comes to the question of the *proper* usage of a technical term of a philosophical or scientific theory (as the term 'essence' and its equivalents, such as 'nature', 'quiddity', etc. clearly did function as such in the Aristotelian philosophical tradition), then we have to turn to the usage of those who used the term within the context of that theory within which it originally acquired its proper, intended meaning.¹³ Kit Fine, proposing in his alternative approach to recover the lost connection between the notions of essence and *real*, as opposed to *nominal*,

¹⁰ Ibid.

¹¹ In fact, in another argument Fine explicitly appeals to such "feelings": "We have no "feeling" when we say that Socrates is essentially a man but not essentially existent that there has been a shift in the use of the term. If the term had these two senses, then there should be a sense in which Socrates was not essentially a man (in addition to the sense in which he is essentially a man). But there appears to be no such sense."

¹² Cf. "the double indexical definition of meaning" provided by William Lycan: "meaning=_{df.} whatever aspect of linguistic activity happens to interest *me now*", quoted by Devitt, M.: "The Methodology of Naturalistic Semantics", *The Journal of Philosophy*, 91(1994), p. 545-572, p. 548.

¹³ For a brief description of the proper usage of these terms see the first chapter of St. Thomas's *On Being and Essence*.

definition, clearly moves in this direction. However, because of failing to reconstruct the traditional theoretical context of this distinction—which in fact is a comprehensive semantic theory connecting the notions of meaning, reference, predication and being in a particular manner to the notion of essence—his approach, as we shall see, is still significantly different from this tradition. In any case, in the next section I will reconstruct precisely this proper theoretical context, thereby providing not only some *ad hoc* strengthening of the sense of the term ‘essence’, but also reconstructing the sense in which it was properly used in the medieval Aristotelian tradition.

3. The conceptual framework of medieval Aristotelian essentialism

In what follows I present a brief, summary reconstruction of the most basic, formal semantic principles that served as the theoretical background for the traditional Aristotelian concept of essence. For want of space, in this reconstruction I will proceed rather “dogmatically”, without discussing the textual evidence backing the reconstruction. In a historical study such a procedure would be totally unjustifiable. However, what justifies it here is that in the present comparison it is only the reconstructed theory itself that will be relevant, not the historical verification of the reconstruction; and, in any case, I have already done the job of the historical verification in other papers.¹⁴ So, instead of a piecemeal reconstruction based on the texts, I present here only some formal clauses describing (part of) the semantic theory in question, along with some brief explanatory comments on each.

3.1 Semantics

1. Concrete common terms signify individualized forms of individual things.

Formally: $SGT(P)(u)(t) \in W \cup \{0\}$, in a model $\langle W, T, A, SGT, 0 \rangle$, where $W \neq \emptyset$, $T \neq \emptyset$, $t \in T$, $A(t) \subseteq W$, $u \in W \cup \{0\}$, $0 \notin W$, and $SGT(P)(0)(t) = 0$; where W is the domain of discourse, comprising both actual and non-actual individuals, $A(t)$ is the set of actual individuals at time t , SGT is the signification function to be defined (in part) below,¹⁵ and 0 is a

¹⁴ Klima, G. (1996) “The Semantic Principles Underlying Saint Thomas Aquinas’s Metaphysics of Being”, *Medieval Philosophy and Theology*, (5)1996, pp. 87-141; Klima, G. (1993) “The Changing Role of Entia Rationis in Medieval Philosophy: A Comparative Study with a Reconstruction”, *Synthese* 96 No. 1., pp. 25-59; Klima, G. (1993) “‘Socrates est species’: Logic, Metaphysics and Psychology in St. Thomas Aquinas’ Treatment of a Paralogism”, in: K. Jacobi (ed.): *Argumentationstheorie: Scholastische Forschungen zu den logischen und semantischen Regeln korrekten Folgerns*, Brill: Leiden, the Netherlands, pp. 489-504; Klima, G. “On Being and Essence in St. Thomas Aquinas’s Metaphysics and Philosophy of Science”, S. Knuuttila - R. Työrinoja - S. Ebbesen (eds.): *Knowledge And The Sciences In Medieval Philosophy: Proceedings of the Eighth International Congress of Medieval Philosophy (S.I.E.P.M.)*, Helsinki 24-29 August 1987, Vol. II, Publications of Luther-Agricola Society Series B 19, Helsinki, 1990, pp. 210-221.

¹⁵ A description of the complete technical apparatus can be found in Essay 5. of Klima, G.: *ARS ARTIUM: Essays in Philosophical Semantics, Medieval and Modern*, Budapest: Institute of Philosophy of the Hungarian Academy of Sciences, 1988, or, for a simpler language, in my “On Being and Essence in St. Thomas Aquinas’s Metaphysics and Philosophy of Science”, S. Knuuttila - R. Työrinoja - S. Ebbesen (eds.): *Knowledge And The*

zero-entity, a technical device used to indicate the case when a semantic function for a certain argument lacks a value from W.

Comments:

Concrete common terms, such as ‘man’, ‘stone’, ‘tall’, ‘runs’, etc., which are predicable of several individuals, signify individualized forms of these individuals, that is, those individual features of these things in virtue of which these terms apply or may apply to these things, if they can apply to them at all. As this remark intends to make it clear, the term ‘form’ in this rule need not—indeed, must not—be interpreted with all the metaphysical weight it had in Aristotelian metaphysics.¹⁶ Since this is a rule describing the *semantic* function of common terms, it only serves to specify how their *significata*, as I will call them, are assigned, regardless of what the ontological status of these semantic values may be. For to show which semantic values of which expressions fall into which ontological categories can be only the *subsequent* task of a *metaphysical* inquiry, to be carried out in the language whose semantics has been so specified. As can be seen, these *significata*, or “individualized forms”, are assigned to concrete common terms in relation to two individualizing factors, namely, their subject and time, regardless of whether these “forms” are actual or not in these individuals at a given time. For example, the term ‘sighted’ in this framework is interpreted as signifying the individual sights of individual animals (that is, whatever it is in their constitution that enables them to see), at any given time; therefore, if in the formal clause above in an interpretation we let *u* range over the domain of the things and let *t* range over the dates of our actual universe, then we may get, say, the following instance of this clause:

SGT(‘sighted’)(Socrates)(400 B.C.) \in A(400 B.C.),

which merely states that Socrates’s sight was one of the actual things in this universe in 400 B.C. Of course, since *u* ranges over all things in the universe, it can take up values for which this term is not interpreted. It is such cases that are represented by assigning the term the zero-entity as its value. Thus, for example,

Sciences In Medieval Philosophy: Proceedings of the Eighth International Congress of Medieval Philosophy (S.I.E.P.M.), Helsinki 24-29 August 1987, Vol. II, Publications of Luther-Agricola Society Series B 19, Helsinki, 1990, pp. 210-221. Here I only supply some of the relevant clauses of the definition of an interpretation for a language similar to the one described in this paper. I think that even without going into further technical details, these clauses will sufficiently indicate how the construction of the whole theory should proceed. In any case, they should be sufficient to serve the purpose of the present comparison.

¹⁶ As St. Thomas wrote: "...dicendum est quod illud a quo aliquid denominatur non oportet quod sit semper forma secundum rei naturam, sed sufficit quod significetur per modum formae, grammaticae loquendo. Denominatur enim homo ab actione et ab indumento, et ab aliis huiusmodi, quae realiter non sunt formae." QDP, q. 7, a. 10, ad 8. Cf. also e.g. Cajetan: "Verum ne fallaris cum audis denominativum a forma denominante oriri, et credas propter formae vocabulum quod res denominans debet esse forma eius quod denominatur, scito quod formae nomine in hac materia intelligimus omne illud a quo aliquid dicitur tale, sive illud sit secundum rem accidens, sive substantia, sive materia, sive forma." Cajetan, Thomas de Vio: *Scripta Philosophica: Commentaria in Praedicamenta Aristotelis*, ed. M. H. Laurent, Angelicum: Romae, 1939, p. 18.

$SGT('sighted')(the\ Statue\ of\ Liberty)(1996\ A.D.)=0$

As can be seen, in general, by picking up various individuals in the place of u , and various times (dates, time-points, or any other time-intervals, depending on the scale of the actual interpretation), we get the significata of a common term belonging to these individuals at these different times, whatever these semantic values are, regardless of whether they are actual or potential, or even whether the term can apply to the thing in question at all (for if not, then it simply gets 0 as its value).¹⁷

2. **A concrete common term, as the subject of a proposition, has the function to supposit for (refer to) the individuals in which its significata are actual at the time connoted by the copula of the proposition.**

Formally: $SUP(S)(t) \in \{u: SGT(S)(u)(t) \in A(t)\}$, provided this set is not empty, otherwise $SUP(S)(t)=0$.

Comments: If we say: 'A dinosaur is running', the term 'dinosaur' should refer to, or using the transliteration of the medieval technical term, *supposit for*,¹⁸ individual, actually existing dinosaurs at the present time of the actual use of the proposition. But of course only those things are actual dinosaurs in which the significata of the term 'dinosaur' is actual (i.e. those individual u 's, for which it holds that $SGT('dinosaur')(u)(1996\ A.D.) \in A(1996\ A.D.)$). However, since at this time there is no such a thing in our actual universe, this term refers to nothing, that is, since $\{u: SGT('dinosaur')(u)(1996\ A.D.) \in A(1996\ A.D.)\} = \emptyset$, given that for any u , $SGT('dinosaur')(u)(1996\ A.D.) \notin A(1996\ A.D.)$, since nothing is a dinosaur at this time, $SUP('dinosaur')(1996\ A.D.) = 0$. On the other hand, if we say: 'A dinosaur was running', the term 'dinosaur' should, and actually does, refer to whatever *was* a dinosaur, that is, whatever *had* the significata of the term 'dinosaur' in actuality in the past relative to our present. That is to say, since $\{u: SGT('dinosaur')(u)(t < 1996\ A.D.) \in A(t < 1996\ A.D.)\} \neq \emptyset$ in our actual universe, this term will successfully refer to, or supposit for things that were dinosaurs at some time in our past: $SUP('dinosaur')(t < 1996\ A.D.) \in \{u: SGT('dinosaur')(u)(t < 1996\ A.D.) \in A(t < 1996\ A.D.)\}$. Aside from this contextual character of this theory of reference, another important

¹⁷ We may also suggest that "in between" these two cases, that is, getting an actual form or 0 as its value, a predicate may get non-actual forms as its values, 'non-actual' covering several possible sorts of natural potentiality (or the lack thereof), which is a very rich field of further metaphysical inquiry, but which is irrelevant in our present analysis. For further technical details the reader should consult Essay 5. of Klima, G.: *ARS ARTIUM: Essays in Philosophical Semantics, Medieval and Modern*, Budapest: Institute of Philosophy of the Hungarian Academy of Sciences, 1988.

¹⁸ Medieval supposition theory, as even the enormous recent secondary literature proves, is a topic deserving a book in itself. Here I reconstruct only one particular aspect of a tiny fragment of this theory. For further references, both to primary and secondary literature, and for further details of my reconstruction of the "core theory" see Klima, G.: *ARS ARTIUM: Essays in Philosophical Semantics, Medieval and Modern*, Budapest: Institute of Philosophy of the Hungarian Academy of Sciences, 1988. To see how this theory of reference can be developed into a formal theory equivalent to generalized quantification theory see especially Essay 3, "General Terms in their Referring Function" in the same book, and Klima, G.-Sandu, G. (1990) "Numerical Quantifiers in Game-Theoretical Semantics", *Theoria*, 56, pp. 173-192.

thing to notice here is that as far as the semantic theory is concerned, there is no stipulation as to the identity or distinctness of the significata and supposita of the same term. So, anyone who is taken aback by the apparently “obscure” character of these significata is free to identify these semantic values *in their metaphysics*. Then, for example, a “dinosaurhood” will be no more “obscure” than a dinosaur is, but obviously such a position will have its own further *metaphysical* consequences. In fact, the possibility of identifying a concrete term’s significata with its supposita is one of the most important conceptual tools in Aquinas’ arsenal to express divine simplicity. For, expressed in terms of this reconstruction, Aquinas has proofs to the effect that $SGT('God')(God)(t) = SUP('God')(t)$, that is, that God’s deity is God; or that $SGT('good')(God)(t) = SUP('God')(t)$, that is, that God’s goodness is God, etc. But note that these formulations are *not semantic stipulations* concerning the usage of the term ‘God’, but only metalinguistic expressions of what has to hold in the actual interpretation of the language in which Aquinas’s conclusions are true. As can be seen, however, in these remarks I was already compelled to use the abstract counterparts of the concrete terms in order to be able to refer to the significata of these concrete terms. In fact, according to this theory, this is precisely the function of abstract terms, as stated in the next rule.

3. The abstract counterpart of a concrete common term both signifies and supposits for the significata of the concrete common term.

Formally: $SGT([P])(u)(t) = SGT(P)(u)(t)$, and $SUP([P])(t) = SGT(P)(SUP(P)(t))(t)$, where [P] is the abstract counterpart of P.

Comments: As has been remarked above, the semantic rules concerning concrete terms do not stipulate anything concerning the identity or non-identity of the supposita and significata of concrete terms. This semantic rule, however, does stipulate this identity concerning abstract terms, and it also stipulates that these semantic values of the abstract terms have to be identified with the significata of their concrete counterparts.

4. The predication of a common term of an individual supposed for by the subject of the predication is true if and only if the significata of the common term in the individual thus supposed for is actual at the time connoted by the copula of the predication.

Formally: $SGT(S—P)(SUP)(t) = 1$ iff $SGT(P)(SUP(S)(t))(t) \in A(t)$ ¹⁹

Comments: Take, for instance, the proposition: ‘Socrates is sighted’. According to this theory, the predication expressed by this proposition is true if and only if what is signified by ‘sighted’ in the suppositum of ‘Socrates’ at the time of the actual use of this proposition is actual at that time. That is, assuming that we are using (i.e. forming, asserting, or reading and actually understanding) this proposition at the date 1996,²⁰ then

¹⁹ Since it is only the significata of predicates that are relevant in the present analysis, here I omit the reconstruction of Aquinas’s theory of the copula altogether. The reconstruction of that theory can be found in the papers referred to in n. 14.

²⁰ Of course the scale might be different, say, decades, centuries, or months, days, hours, etc.

SGT('Socrates is sighted')(SUP)(1996)=1 iff
SGT('sighted')(SUP('Socrates'))(1996)∈A(1996),²¹

which, in our actual case would evaluate this proposition as false, because Socrates's sight is certainly not among the actually existing things at this date, given the fact that now Socrates is dead, and only an actually living animal can have sight.²²

As can be seen, this formulation is just one possible way of putting what historians of medieval logic usually refer to as *the inherence theory of predication*.²³ Even without going into its further technical details, I think it is clear that it is this theory which establishes the crucial conceptual connection between what may be called the *via antiqua* semantics of medieval Aristotelianism, and the essentialist metaphysics of the pre-Ockhamist tradition.²⁴ For this is the theory that, by providing the truth conditions of simple predications in terms of the actuality of the significata of the predicates in the supposita of the subjects, connects the notion of the signification of forms of individual things to the central notion of this metaphysical tradition, the notion of being.

3.2 Metaphysics

Of course, there are many technical issues that would need to be clarified regarding exactly how this theory works. However, even this skeletal presentation of this semantics will be sufficient to deal with our central concern at the moment: the metaphysical payoff of this theory in handling the contemporary issues. To be sure, this payoff cannot be gained simply by deriving certain essentialist metaphysical principles from these semantic principles. On the contrary, as we could see, this semantics does not dictate to metaphysics any more than the contemporary framework does. However, by providing the above-described systematic connection between the semantic notions of the signification and supposition of both concrete and abstract terms and the central metaphysical notion of

²¹ Here we assume that for any t and any SUP, SUP('Socrates')(t)=Socrates, if Socrates∈A(t) and SUP('Socrates')(t)=0 otherwise.

²² Indeed, given the rule in the previous note, we get that since Socrates∉A(1996), for any SUP, SUP('Socrates')(1996)=0. Then, since by rule 1 above SGT('sighted')(0)(1996)=0, for any SUP, SGT('sighted')(SUP('Socrates'))(1996)=0, and of course 0∉A(1996). Therefore, for any SUP, SGT('Socrates—sighted')(SUP)(1996)≠1, that is, the predication is false. As can be seen, if we had a common term as the subject of the predication, the truth value of the predication might be different for different supposition functions, so such a predication would behave exactly like a propositional matrix with a free (restricted) variable. This is the feature of this conception that can be exploited in dealing with quantification, but I need not pursue this line here. I have already dealt with these issues in my technical essays referred to in the earlier notes.

²³ Cf. e.g. L. M. de Rijk's *Introduction* to his edition of Abaelard, P.: *Dialectica*, Assen, 1956, pp. 37-38; Henry, D. P.: *Medieval Logic and Metaphysics*, London, 1972, pp.55-56, Geach, P.T.: "Nominalism", in Geach, P. T.: *God and the Soul*, London, 1969.

²⁴ For more on these qualifications see Klima, G.: "Ontological Alternatives vs. Alternative Semantics in Medieval Philosophy", in: J. Bernard: *Logical Semiotics, S - European Journal for Semiotic Studies*, 3(1991), No.4, Vienna, pp. 587-618.

actual being, it provides a natural framework for formulating such plausible metaphysical principles from which the essentialist conclusions at issue are easily derivable.

To see this in detail, let us consider first how the semantics of the verb ‘exists’ and its abstract counterpart, the noun ‘existence’, as determined by the above semantic principles provides grounds for formulating some metaphysical principles. Let us take the proposition: ‘Socrates exists’. In accordance with rule 4 above, this proposition is true if and only if the significate of its predicate in the suppositum of its subject is actual. But given that ‘existence’ is the abstract counterpart of ‘exists’, we can use the term ‘existence’ to refer to this significate, and so we can say that this proposition is true if and only if Socrates’s existence²⁵ is actual. Now, of course, as far as the above-described semantics is concerned, it would be possible to have models in which, say, Socrates is an element of the domain of actual things, while, his existence is not, or *vice versa*, but such models would verify the metaphysical absurdity that Socrates would be actual while he would not exist, or that his existence would be actual while he himself would not be one of the actual things. Therefore, on the basis of these considerations it is reasonable to add the further rule concerning the metaphysically relevant notion of existence that

(E) $SGT('exists')(u)(t) \in A(t)$ if and only if $u \in A(t)$.

But this will immediately establish the predicate ‘exists’ as an essential predicate of anything in the contemporary sense, for, of course, on the basis of this rule the predicate ‘exists’ will necessarily²⁶ be true of anything as long as it exists, that is, as long as it is actual.

In fact, Kit Fine has already drawn this conclusion concerning the modern theory, namely, that the predicate ‘exists’, interpreted as true on the basis of elementhood in the actual domain, will be one of the “trivial” essential predicates of things. However, he found this conclusion to be unacceptable, because on his reading this would mean that a contingent being, such as Socrates, essentially exists.²⁷

But in this framework we need not regard this conclusion unacceptable at all. On the contrary, St. Thomas explicitly holds that existence in this sense has to be an essential

²⁵ Of course, strictly speaking, to express this in the formal system, we would have to introduce such complex singular terms that refer to some singular significate of a concrete term, but I think it is quite obvious how this can be done. In general, if s is a singular term, P is a common concrete term, and ‘ $s[P]$ ’ is the complex singular term in question, then $SUP('s[P'])(t) = SGT('s[P'])(t) = SGT(P)(SUP(s)(t))(t)$, that is to say, for example, the term ‘Socrates’s whiteness’ supposits for what the term ‘white’ signifies in the suppositum of the term ‘Socrates’. For the rule concerning $SUP(s)(t)$ see n. 21.

²⁶ Interpreting necessity as alethic necessity, that is, truth in all models.

²⁷ “In addition to the difficulties which are common to the two forms of the modal account, there is a difficulty which is peculiar to the conditional form. Consider Socrates again: it is necessarily the case that he exists if he exists. But we do not want to say that he essentially exists.” *ibid.* p. 6.

predicate of all beings²⁸, which, nevertheless, does not mean that he would identify the essence of any creature with its existence. In fact, this is precisely the point of St. Thomas's famous metaphysical thesis of the real distinction between essence and existence in the creatures, which, for want of the required expressive resources, could not even be formulated in the contemporary framework, let alone be argued for or against.

To see this in more detail, having seen what the semantic values of 'existence' are, now we have to see what the semantic values of 'essence' are. To put it briefly, in accordance with what Aquinas says, the term 'essence' primarily stands for the significata of substantial predicates of substances,²⁹ while these substantial predicates are those terms the existence of the significata of which is identical with the existence of the things that have these significata. This criterion of the substantiality of a predicate (other than 'exists'), therefore, can be formulated in the semantics as follows:

(SP) P is a substantial predicate if and only if
 $SGT('exists')(SGT(P)(u)(t))(t) = SGT('exists')(u)(t)$

and thus, if P is a substantial predicate, and in line with Aquinas's metaphysical theory we also assume that all substantial predicates have the same significata in the same individuals, then the semantic values of 'essence' can be assigned by the following rules:

(ES1) $SGT('essence')(u)(t) = SGT(P)(u)(t)$ and

(ES2) $SUP('essence')(t) = SGT(P)(SUP(P)(t))(t)$

So, for example, to say that Socrates is essentially a man means that what 'man' signifies in him, his humanity, is such a form that the actual existence of this form is nothing but the actual existence of Socrates, or, to put the same in perhaps more familiar terms, for Socrates to be is for him to be a man.³⁰

Now, of course, upon this understanding of 'essence', 'exists' and 'existence', it is clearly possible to hold that 'exists' is an essential predicate of everything in the modern sense, and yet, it is not an essential predicate in the stronger sense that it would signify every thing's essence. For although in virtue of (E) above, it will be necessary for the predicate 'exists' to be true of everything if it exists, still, the significata of the predicate 'exists' in a thing need not be identical with the significata of any of the thing's substantial predicates. However, of course, this identity is not excluded by the semantic theory either; so, again, it takes separate metaphysical arguments to establish what the actual truth is, indeed arguments of the sort Aquinas used to establish the real distinction of these semantic values in the case of creatures, and their real identity in the case of God. But rather than going into

²⁸ Cf.: "Esse vero quod in sui natura unaquaeque res habet, est substantiale. Et ideo, cum dicitur, Socrates est, si ille Est primo modo accipiatur, est de praedicato substantiali. Nam ens est superius ad unumquodque entium, sicut animal ad hominem." in *Meta* 5, 9. n. 896.

²⁹ Secondly, that is, in a secondary, analogical sense, it stands for the significata of the essential predicates of accidents; as St. Thomas explains in the last chapter of his *De Ente et Essentia* and in his comments on bk. 7 of the *Metaphysics*. However, here I cannot go into this issue.

³⁰ To be sure, the same goes for his other substantial predicates, say, 'animal', 'body', etc.

these traditional metaphysical issues, it is time for us to see what we can gain from this approach in handling the contemporary issues outlined above.

4. *Traditional essentialism, and the problems of contemporary “essentialism”*

First of all, even if the semantic apparatus sketched above does not in itself determine that there are any essential predicates, it allows us to formulate plausible *metaphysical* reasons for showing that there have to be some, since such predicates are those that signify the essences of things, and we have to concede that things have essences.³¹

1. For suppose there is a substance that has no substantial predicates. This would mean that the existence of the significata of all predicates of this substance other than ‘exists’ would be distinct from the existence of the thing itself. This substance, therefore, would have existence, but no essence. So it would be possible for this substance to exist, but not to have any true predicates besides ‘exists’ at all. But then it should be possible that there is a substance which is neither material nor immaterial, that is to say, which is neither a body nor a non-body, and which is neither a man nor any kind of thing other than a man, etc., but this is impossible.
2. As the Philosopher says: *vivere viventibus est esse*—for a living thing to be is for it to live. Therefore, for a living thing to begin to live and to cease to live is for it to come to exist and to cease to exist; indeed, everybody would agree that the birth and the death of living things is their coming to be and passing away. However, if there were no essences, then, since it is the essence of a thing that constitutes it in its specific kind, determining what (kind of thing) it is, a living and a non-living thing would not differ as to what (kind of thing) the one and what (kind of thing) the other is. Consequently, a living thing could turn into a non-living thing without ceasing to be what it is. However, whenever a thing changes, but without ceasing to be what it is, it can continue to exist.³² So, if things had no essences, a living thing could pass away without ceasing to exist, which contradicts what we have just conceded above.

³¹ In case anyone has doubts about the “logical order” here, the procedure is this: first we start out with a metaphysically neutral, noncommittal formal semantics, that stakes out the “playground” for a number of possible metaphysics. Then, using this semantics, we find that a number of propositions that in this noncommittal semantics would come out as possible, are in fact unacceptable. On the basis of this realization, then, we restrict the available models in the semantics, thereby producing a metaphysically somewhat more “loaded” version, which, however, may still leave a number of open alternatives, which can be the subject matter of further, even more specific metaphysical considerations. Well, of course, basically the same procedure would be, and in fact is, available in the modern framework. However, due to the inherent non-metaphysical origins of this framework, lacking the required expressive devices systematically connecting the semantics of concrete and abstract terms to the semantics and metaphysics of being, it is just not the “natural playground” for this sort of metaphysical inquiry.

³² For an extremely clear, brief description of the distinction between substantial and accidental (acts of) being, and the corresponding distinctions between substantial and accidental forms and change, see the first chapter of Aquinas’s *De Principiis Naturae* (On the Principles of Nature).

3. Again, existence is nothing but the actuality of essence, since an essence is nothing but the determination of a certain kind of existence.³³ But then, whenever a thing exists in its determinate kind of existence, say, as *this* kind of thing rather than *that*, there also has to be an essence, namely, this thing's essence in actual existence. So, if there exists anything at all, its essence also exists. But we know that there exist certain things in our actual reality (at least, nobody can reasonably doubt his or her own existence), and that these things exist in some determinate way, as *this* kind of thing rather than *that*; therefore, we should also know that things actually have essences in our actual reality.
4. Furthermore, the essence of a thing, which determines what kind of a thing it is, determines what species of entities the thing in question belongs to. Therefore, whoever denies that things have essences has to deny that there is any specific difference between him or her and, say, an ass or a cabbage. But then such a person is no more worth talking to than an ass or a cabbage.³⁴

So, on the basis of these and similar *metaphysical* reasons, and on the basis of the overwhelming evidence in our experience that things come in different kinds, it is safe to conclude that things in our actual reality do have essences. But then, since the essences of things are the significata of substantial predicates, it follows that there indeed *are* such predicates in our actual language(s) interpreted in our actual reality. Furthermore, since, as we have seen, such predicates are necessarily true of the things whose essences they signify, provided these things exist, these predicates will also be essential predicates of these things in the modern sense. Therefore, the Aristotelian position that things have essences implies the modern claim that things have essential predicates in the modern sense, thereby providing the required metaphysical underpinning for the modern claim. But the converse claim does not hold. Of course, all the "trivial" properties listed in the objections of Kit Fine are also necessary properties of anything in this semantics, yet in this semantics they need not signify the essences of anything; indeed, they are probably best handled as signifying some *entia rationis*, which do not have essences, given that essence is the determination of the act of existing of a real being.³⁵

³³ What exactly a "determination of a certain kind of existence" means, and how this can be expounded with reference to the medieval Aristotelian theory of qualified vs. absolute (*secundum quid* vs. *simpliciter*) predication, is an issue I cannot go into here. I am only hoping the notion is intuitively clear enough for the purposes of this argument. (The point, after all, simply is that whatever exists, exists *as* this or that kind of thing.) I did, however, deal with the issue at length in Klima, G.: "The Semantic Principles Underlying Saint Thomas Aquinas's Metaphysics of Being", *Medieval Philosophy and Theology*, (5)1996, pp. 87-141.

³⁴ Anyone who feels shocked by the apparently rude *ad hominem* character of this argument should consult Aquinas's discussion of Aristotle's instructions concerning the necessity to use *ad hominem* arguments *contra principia negantes*, that is, against those who deny some first principles, in bk. 4 of the *Metaphysics*.

³⁵ A similar solution is available for Fine's problem concerning Socrates and singleton Socrates. Since singleton Socrates is just a degenerate one-member collection, and collections are *entia* only in a diminished sense, singleton Socrates does not have an essence at all, since it exists only in the mind with some *fundamentum in re*. For a detailed analysis of what this means see again the papers referred to in n. 14.

However, even if we could in this way come up with principled metaphysical reasons to support the modern “essentialist” claim, neither these metaphysical reasons, nor the semantic rules that make their formulations intelligible are sufficient to sort out *which* predicates of our language(s) should be regarded as substantial. Yet this is how it should be. For, in the first place, *nomina significant ad placitum*, so just any term of any language can be used by anyone in any way, of course, under pain of occasionally making a fool of themselves. (Such occasions occur when their usage is blatantly divergent from the received usage without any acceptable justification for such a divergence.) But the really interesting cases are the subtle, hardly detectable deviations, or indeed cases where the established usage is underdetermined, allowing individual users leeway in stipulating usage as they please.

In any case, it is sometimes possible that users of the same language might disagree as to what should count as the correct specification of the proper usage of some term. While some user may insist that a certain term should stick with the things it normally designates, under whatever “abnormal” circumstances, another may insist that “the proper meaning” of the same term is correctly specified by some sort of nominal definition specifying the actual conditions of applicability of the term, no matter what may satisfy these conditions under various possible circumstances.

For example, take the term ‘water’ in English. On the former user’s account the rule governing its use would be:

(U1) $SGT_{U1}(\text{‘water’})(SUP(\text{‘water’})(t))(t) = SGT_{U1}(\text{‘essence’})(SUP(\text{‘water’})(t))(t)$

On the other user’s account, however,

(U2) $SGT_{U2}(\text{‘water’})(SUP(\text{‘water’})(t))(t) = SGT_{U2}(\text{‘TCDL’})(SUP(\text{‘TCDL’})(t))(t)$,

where ‘TCDL’ is short for ‘tasteless, colorless, drinkable liquid’, or anything of that kind of nominal definition, the actual values of which should of course be determined compositionally on the basis of the values of its constituents, but we need not go into such technical details here. We may simply assume that this has already been done in the framework of a fully articulated semantics. Since, however, the thing which under the present “normal” circumstances both users would identify as water could stay in existence without satisfying this definition under different circumstances, under those different circumstances ‘water’ would still signify the actually existing essence of water according to the first user’s usage, while according to the second user’s it would signify some non-actual feature of the same thing (and thus he would no longer call it ‘water’).³⁶ Hence, clearly,

³⁶ Obviously, it is the first user’s usage that follows actual English, for of course ‘water’ in English is used as a substantial term. So no wonder it cannot apply to Putnam’s XYZ. In fact, the only reason why this otherwise trivial observation could be hailed as the harbinger of a “new theory of reference” was the tremendous influence of empiricism, which for its own epistemological reasons (in fact, going back to the original British empiricist program of trying to analyze all our mental contents ultimately in terms of simple sensible ideas), tied the meaning of all terms to their nominal definitions, ideally, ultimately analyzable in terms of simple sensible qualities. But since all such qualities are accidents, no wonder that in this (mostly programmatic) analysis all terms came out as accidental, non-essential, non-rigid designators of their

SGT_{U1}('water')≠SGT_{U2}('water').

So, they are obviously using the same term with different significations, that is, equivocally, so their disagreement is merely verbal, and can easily be settled by making this difference clear. In any case, the philosophically important point is that it is only after this issue of usage is settled that we can start the metaphysical inquiry into the natures of the things that are picked out by means of their essential terms.³⁷ For in merely specifying the meaning (signification) of a term by means of a nominal definition, we simply cannot go wrong as to the nature of the thing actually referred to by the term, since the nominal definition has nothing to do with the nature of the thing, it merely specifies the proper usage of the term (although, of course, we may have disagreements over what the proper usage is). However, when it comes to trying to characterize the nature of the thing referred to by the term by means of a real, essential, or quidditative definition, we definitely can, and very often do, go wrong.

In fact, among other things, it was precisely this type of error that discredited most of Aristotelian science in the late medieval and early modern period. But later on, it was not only particular Aristotelian claims concerning the natures of specific kinds of things that were called into doubt, but the whole Aristotelian conceptual apparatus with the entire metaphysical enterprise it defined. By now, however, we have come full circle. The originally anti-metaphysical trends of modern philosophy gave rise to analytic philosophical techniques which not only allowed, but more recently even demanded metaphysical reflection. Furthermore, the development of modern science recently put us into a position from which we can quite safely provide the real definitions of several natural kinds. For example, the essence of water is by all probability correctly described by saying that water is a body of H₂O molecules. If this is indeed the correct essential definition of water, then (taking 'H₂O' short for 'body of H₂O molecules') what this means is the following:

(H₂O) SGT('water')(SUP('water')(t))(t)=SGT('essence')(SUP('water')(t))(t)=
SGT('H₂O')(SUP('water')(t))(t)

individuals. However, if we abandon the rather narrow-minded empiricist platform and the consequent philosophy of language (as most analytic philosophers by now have done), it is no longer a sacrilege to insist that some terms do designate "rigidly" their individuals, regardless of their accidental features, which of course under "normal" circumstances may be useful indicators of what kind of thing we are actually dealing with, but which, under "abnormal" circumstances may be deceptive, in that they may not belong to the kind of thing they normally belong to, and/or they may belong to some other kind of thing that normally they do not belong to.

³⁷ As Saint Thomas says, the question of *what* a thing is [*quid est?*] is preceded by the question of *whether* the thing is [*an est?*], but even this question presupposes that we know what is meant by the name of the thing in question [*quid significatur per nomen*]. Cf.: "... antequam sciatur de aliquo an sit, non potest sciri proprie de eo quid est: non entium enim non sunt definitiones. Unde quaestio, an est, praecedit quaestionem, quid est. Sed non potest ostendi de aliquo an sit, nisi prius intelligatur quid significatur per nomen. Propter quod etiam Philosophus in iv *Metaphysicae*, in disputatione contra negantes principia docet incipere a significatione nominum." in PA lb. 1, lc. 2, n. 5.

Of course, this move will make ‘water’ and ‘H₂O’ have the same signification, that is, synonymous. Yet, this need not imply that whoever knows the signification of ‘water’ would thereby know that water is H₂O. For one of course can have perfect possession of the concept of water without having any idea of chemistry whatsoever. What this person does not know is only that the chemical concept, which he or she does not have, picks out the same essence that his or her concept of water does. So to acquire this knowledge is to acquire this concept and to establish this quidditative definition. But the *original* acquisition of this concept was precisely what happened in the recent history of chemistry, in the course of scientific research. So it should be clear that, contrary to the apparent practice of “essentialists”, to find out what is essential to a given kind of thing is not a matter of personal intuitions, but rather a matter of experience, indeed, of scientific experiments, putting the thing in “abnormal” circumstances, making it interact with other things (after all, as St. Thomas says, the nature of the thing is the principle of its proper operation), precisely the way modern science investigates the nature of things.³⁸ So modern science in no way needs to undermine Aristotelian essentialism. On the contrary, if we manage to recover the adequate conceptual framework of traditional essentialism in the broadest, formal semantical terms, modern science can in principle just as well be integrated into the project of the traditional metaphysical enterprise, studying the first principles of being *qua* being, as Aristotelian science could. All in all, it seems that the time is ripe for a *radical recovery* of our lost metaphysical tradition, yet this is possible only through recovering the language in which it is properly conveyed, uniting the formal rigor of contemporary logical techniques with the metaphysical vigor of the pre-modern tradition.

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³⁸ In fact, this has also been the way we acquired our pre-scientific substantial concepts, but in a slow, uncontrolled, unsystematic accumulation of experience, getting encoded in, and passed down to generations by, language. This is precisely the point Aristotle makes at the end of his *Posterior Analytics*, and, not by pure chance, also at the beginning of his *Metaphysics*.