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On the metaphysical essence of Aristotelian *identity*

Abstract: In the current socio-cultural context in the West, there is a very frequent and very much talk about identity, both in the media and in the official public debates in the decision-making forums, but almost exclusively in psycho-social terms, as natural. Instead, the recourse to the primordial meanings of the concept, is a necessary step in the intellectual environment, often responsible for the epistemic foundation of public politics. This article aims to bring back into discussion some of the foundations of Aristotle's metaphysical thinking, analyzed in terms of their correlations and implications on *identity*, but also to try a demonstration of the priority and essential metaphysical character of the Aristotelian conception of *identity*, understood today in overwhelming proportion only in a logical sense. Last but not least, in order to be able to feel as well as possible the strong scent of the Stagirite's ideas from almost two and a half millennia ago and their universalist vocation, in addition to the abundant references to Aristotelian texts, I also made a series of references, especially in endnotes, to some contemporary conceptions in the sphere of logic, mathematics, science and philosophy, with special relevance in approaching the theme of identity..

Keywords: identity, sameness, being, form, matter, substance, individual, plurality, ontological, logical.

The social and cultural context of approach

If at present the concept of identity is circulated and debated in the public space in most Western states, especially in political correctness discourses about gender, inspired by the excessive ideologization of the individualist component of modern political philosophy, in the countries of the former socialist camp, as a result of the tragic totalitarian experiences of relatively recent date, still prevails at the level of public discourse, but also of the collective mind, its ethno-cultural and even religious connotations, specific to the historical profile of Eastern European societies. It is no less true that in many parts of Europe, in the context of globalization, recent extra-EU migrations and the proliferation of internal radical Islamic movements, the phenomenon of populism (*e.g.*, Great Britain, Italy, Hungary) is growing an exclusive collective component of identity is

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constructed¹. At the same time, at least in the liberal-conservative elite circles in the West, there is a growing need to redefine *European identity* on the traditional millennial foundation of that (meta) unity of spirituality and transcontinental culture (*forma mentis*) that defines the “*European Spirit*”, configured by the twinning of three main historical factors – Greek culture, Roman administrative-legal organization and Christianity – masterfully expressed by Paul Valéry in a famous article published in 1924 in *Revue Universelle*, “*Note (ou L'Européen)*”: “wherever the names of Caesar, Caius, Trajan, and Virgil, of Moses and St. Paul, and of Aristotle, Plato, and Euclid have had simultaneous meaning and authority, there is Europe” (Valéry 2016, 260). From this perspective, the search and conceptual reconstruction of community *identity* requires a mandatory replication on the patterns of founding thought (*forma mentis*), especially on the defining lines of Aristotelian ontology and logic, identifiable in different touches even in the modern picture of analytical philosophy (Frege, Russell, Quine).

Throughout the Greek heritage, ancient philosophy played a central role, and Plato and Aristotle were undoubtedly the giants on whose shoulders rose the prominent thinkers of the next era to build *modernity*, by a continuous report, for or against, within the works of the two. However, in the constitution of modern science – the modern metamorphosis of the Hellenic component of European culture – and, implicitly, in the acquisition of its epistemic autonomy since the seventeenth century, the overwhelming importance was the Aristotelian thinking, focused on “an immanent realism of things because properties [of things] are here with us”, not in the “Platonic heaven” (Mumford 2012, 23), doubled by the Arabic scientific and philosophical contribution. There were also important interpreters such as Whitehead, who, precisely because of the anchoring of Aristotelian thought in this “immanent realism”, perceived the Stagirite more as a scientist than as a philosopher, without denying, however, the metaphysical foundation of scientific knowledge: “geniuses such as Aristotle, ..., must have been endowed with the full scientific mentality, which instinctively holds that all things great and small are conceivable as exemplifications of general principles which reign throughout the natural order” (Whitehead 1967, 7).

Aristotle is also considered the founder of *logic*, in whose analytical territory is placed today, most of the time, the principle of *identity*², although the name of *logic*, like that of *metaphysics*, was not known to the founder of the Lyceum. The name he gave to this branch of knowledge, distinct from the theoretical sciences mentioned in *Metaphysics* (VI, 1026a) – mathematics, physics and first philosophy – was *analytics* (*αναλυτικά*), although the meaning of the name later attributed by the peripatetics to the six works on logic, *Organon*, is much closer to the authentic meaning of *logic*, that of an *instrument*

of science, “a part of general culture, which everyone must go through before studying any science” (Ross 1998, 29). Without actually passing to the *proper formalization*, “Aristotle was the first to grasp the importance of the *formality* of logic and its [epistemic] neutrality”, and this enabled him “to make great contributions to the study of the patterns of reasoning that are the concern of formal logicians” (Bambrough 2011, xxv). Practically, the *formal* logic of the Stagirite, based on the study of the *forms* of thought independent of the matter to which they apply (specific to Aristotelian mathematics), with the nuances and conceptual redefinitions over the centuries, lasted until the beginning of the twentieth century, when it was revolutionized under the strong influence of new mathematical concepts and techniques, developed without emphasizing the ontological correlations of thought with the outside world, but its foundations – the principle of *identity* and the principle of non-contradiction – are stubborn to withstand time almost intact³.

Thus, through the scope of his encyclopaedic personality and his systematic philosophy, Aristotle “invented the theoretical frameworks of the West” (Russ 2002, 57), so that the reflective recourse to his thinking, especially in the current times of crisis of the European spirit, is always a necessary step.

The primacy of *metaphysics* in approaching *identity* in Aristotle’s thinking

Even if the approach to *identity* nowadays is mainly related to the branch of mathematical logic and the subdomains of algebra and geometry, where the specific (partial) notions of *equivalence*⁴, *equality* and *congruence* are used, in a symbolic language, their conceptual essence can be found in the conception Aristotle’s metaphysics, determinant and structuring for his entire philosophical system. Onto Parmenides, the Stagirite considers that *Being*, hidden in all the individual existences of this world, is both the fundamental ontological and gnoseological principle, so that “*Being* is the only intelligible and expressible thing”, because “any thought, to be a thought, it is the *thought of the Being*”; therefore, in a way, “it can be said that *the thought* and *the Being* coincide” (Reale 2008, 156). Parmenides “necessarily supposes that *Being* [as contrasted with Not-being] is one and that there is nothing else” (*Met.* I, 986b), which is why *Being* must be affirmed and non-being must be denied. Starting from this Parmenidian principle, from which the logical impossibility of the coexistence of supreme contradictions at the same time derives – “it is impossible for anyone to suppose that the same thing is and is not” (*Met.* IV, 1005b) –, Aristotle arrived at the explicit enunciation of the *principle of non-contradiction*, whose metaphysical-logical

pendant is the *principle of identity*: “it is impossible for the same attribute at once to belong and not to belong to the same thing and in the same relationship” (*Met.* IV, 1005b).

Considered by himself in *Metaphysics* “the most certain of all principles” (1005b), the discovery and theorizing of the principle of non-contradiction is rooted in the most general research of the real, that is, of *the Being as Being* ($\tau\acute{o} \delta\upsilon\nu \eta\acute{\nu} \acute{o}\nu$), which we find everywhere, although it never manifests itself directly. Object of *πρώτη φιλοσοφία*, both the subject and the “most common predicate” (Owens 2008, 115), *the Being* precedes including thinking, which necessarily supposes it. *The Being* is identical ($\tau\acute{\alpha}\upsilon\tau\acute{o}\nu$) only with itself, and this fundamental ontological identity results, almost paradoxically, from the very logical imperfection of its tautological definition, centered on the idea that “*the Being* itself, as the supreme gender, can no longer be related to anything else” (Vlăduțescu 1990, 29), than to itself. From this perspective, *the Being* is unique, despite the immensity of its concrete ways of manifestation, and this own nature is expressed by Aristotle through the close correlation with *the One*: “now if *Being* and *Unity* are the same, *i.e.* a single nature, in the sense that they are associated as principle and cause are, and not as being denoted by the same definition” (*Met.* IV, 1003b). Rethinking this metaphysical thesis, the scholastics came to the conclusion that *ens et unum convertuntur*, since they transcend each category. Of course, being the common predicate of all particular substances, “there are just as many species of *Being* as of *Unity*”, so that “the opposite of *Unity*, then, is *Plurality*” and “everything is reducible to *Being* and Not being, and *Unity* and *Plurality*” (*Met.* IV, 1003b; 1004a-1004b).

Undoubtedly, from the research of the fundamental opposites *Being–non-Being*, but especially from the analysis of *unity* in relation to *plurality*, one can easily deduce the existence of an additional principle, both in the ontological order of things and in the order of knowledge – the principle of *identity* – separately approached by the Stagirite in several fragments of his works, well enough articulated to convince us that Aristotle himself considered it a distinct principle⁵. Before being a “law of thought itself, it is a fundamental law of *Being*”, along with the principle of non-contradiction – “the negative side of the principle of *identity*” (Baudart 2000, 63) and “the great principle, ..., which will be not only the starting point of ancient logic, but of the whole logic of the West” (Reale 2008, 157). It is particularly relevant in this respect of the historical importance of Aristotelian principles that the Polish logician Jan Łukasiewicz (1878-1956), the founder of a trivalent logical system (where a sentence can take three values, *true*, *false* and *possible*, meaning false to say that p and $\neg p$ cannot have the same truth value), “he did not name *non-Aristotelian* polyvalent logics,

because he claimed that Aristotle does not oppose a third possible value of a sentence” (Dumitriu 1993, 214), in the case of *future contingents*. Mircea Florian also considered in a note in *De interpretatione* (9, 19a) that “Aristotle admits an exception to the universal validity of the principle of contradiction and the excluded third: the future that depends on free will” (*DI* 1957, 227), however, on closer inspection, it is observed that it is not the logical principles *per se* that are problematic, but our current limits on the knowledge of reality. About the future contingents sentences (like “Covid-19 will be eradicated in the next three months”) we cannot decide *now* whether they are true or false, “although *in themselves* they are so” (Enescu 1985, 207).

Aristotle went on to nuance the concept of *identity*, only after emphasizing the primordial unity and uniqueness of *Being* with the help of the two fundamental metaphysical principles, by which “the principle of identity states that *Being* is *Being* and non-being is non-being” and the principle of non-contradiction “states that *Being* does not it may not be and non-being cannot be” (Palazo 2021, 110). The relationship between *One* and *Multiple*, on whose ontic structure the conception of the identity of each particular substance in the universe is emphasized, is approached by Aristotle only in the background, as a natural consequence of the plural meanings of *Being*, hidden in each individual thing. This axiom of Aristotelian metaphysics – “*Being* too does not exist apart from some thing or quality or quantity”, because “to be one” is “to be a particular thing” (*Met.* X, 1054a) – is accessible to thinking in the virtue of the *analogous* (and not *equivocal*) character of the definition of *Being*, applicable to all determined individual entities. In a more concise statement, while the *One*, *par excellence*, characterizes *the Being* and absolutely excludes *Plurality* (e.g., there is no plurality of *Beings*, but only different ways of existence), *identity* is a subspecies of the *One*, which characterizes individual compounds, especially in the intra-specific relationships between them, where the form is unique, while the matter ensures the specific difference.

Undoubtedly, the subsistence of *Being* in the particular substances of the world has as its main ontological and gnoseological corollary the immanence of the *universal* (*καθόλου*) in individual things, as opposed to the metaphysical autonomy of Plato’s Ideas in the superlunary world. Thus, in Aristotle, everything that exists in the universe constitutes either a *substance* (*οὐσία*) – “the ultimate subject, which cannot be further predicated of something else” (*Met.* V, 1017b) –, or an *accident* of it (“predicate of the substance”) and is cognitively limited to the ten categories (called by the medieval *praedicamenta*) considered to be a kind of fundamental genres, defined by him in the first book of the *Organon*, *Κατηγοριαι*. In the cosmic order, the substance is “the one to which the being belongs in itself and not

in another, the one that has autonomy and metaphysical consistency, in the sense that it is in itself, without being in anything else, unlike accidents, which do not have their own being, but is in a relationship of ontological dependence with the substance” (Bălănean 2019, 143). On its turn, each existing individual substance has a *hylomorphic* composition of *form* (universal and immobile) and *matter*, distinct from all other substances, mainly on the basis of the spatiality of matter. At the same time, the enormous ontological diversity of the substantial forms existing in the world, responsible for the primary logical distinction between *One* and *Multiple*, contributes, from a dialectical perspective, to the accentuation of uniqueness and, implicitly, of the (self) identity of each particular thing and it is the basis for the inter-specific and transgenic differences, beyond the intra-specific identity of each individual material substance. It must be emphasized here that the notion of *individual*, closely related to the term *suppositum* (the Latin version of the Aristotelian *ὑποκείμενον*) comes from the medieval philosophy where “the term *individuum* is found only in the first category of substances and excludes both generic and specific universality” (Rosenberg 1950, 1).

Aristotle said that “through their *forms* (εἶδος) and only through them, things in the world can be known” (Veatch 2008, 79), without the intentional act of knowledge being limited, however, to them, especially in the case of intraspecific individuals. Mainly, through their *universality*, the metaphysical identity of each compound substance in the plurality of species is understood, while the apprehension of *the individual* within the same species is additionally made, outside the forms, based on the unique spatio-temporal⁶ positioning of matter, as it is delimited by its own substantial form⁷, but also by other constitutive accidents corresponding to the nine categories. The form continues to retain its self-identity, “like Platonic ideas for example, but, unlike them, it actually enters into the composition of things, passes into their substance, or rather produces it”; in a certain sense, *form* is also substance, “insofar as it passes from the condition of *principle in itself* to that of the principle that generates” (Vlăduțescu 1997, 62). Aristotle himself supported this aspect, the fact that by substance we can understand “the shape and *form* of each particular thing”, since “substance is of two kinds, the concrete thing and *the formula*; [...] one kind of substance is the formula in combination with the matter, and the other is the *formula* in its full sense” (*Met.* V, 1017b; VII, 1039b).

In the equation of his metaphysical thinking, a concept closely related to the natural forms of things, able to make the leap from the ontological to the cognitive plane, is the *essence* (τὸ τί ἦν εἶναι), understood as a bridge between real substances and the intellectual soul. The latter potentially possesses, in the structure of the possible intellect (νοῦς παθητικός), “the one who becomes all things” (*De anima* III, 430a), all the

intelligible forms (considered *species* by the scholastics) of things existing in the cosmic order, so that *the eidos* of known objects penetrates the soul *a posteriori* through the complex processes of actualization (*ενέργεια*) of thought: “it is not the stone which is present in the soul but its form (*εἶδον*)” (*De anima*, III, 431b). Implicitly Aristotle emphasized here the existence of an identity relationship of an *formal-analog* type, of an *a priori* fundamental correspondence between natural and cognitive forms, despite their different natural and intentional nature *esse natural/esse intentionale*⁸. Later, to emphasize the relative nature of this identity relationship, Thomas Aquinas used the expression *similitudo*: “*similitudo* attendatur secundum convenientiam vel communicationem in forma multiplex est *similitudo*, secundum multos modos communicandi in forma” (Aquinas, *Summa Theologiae* I^a, q. 78, a. 4).

The strongly identifiable Aristotelian meaning of the term τὸ τί ἦν εἶναι – what a thing is said to be *per se* –, expressed at first even by *οὐσία*, was also taken over in medieval philosophy as *quidditas*, along with the ontological regime of the duality of forms. Quiddity has become the object of the definition (*definiens*) of everything, in the sense that “to have knowledge of the individual is to have knowledge of its *essence*” (*Met.* VII, 1031b). In this way, “the *essence* is also called *the substance* of each particular thing” (*Met.* V, 1017b), and “a definition (*ὄρος*) is a phrase (*λόγος*) signifying a thing’s *essence*” (*Top.* I, 101b). Undoubtedly, “quidditative definition is mediated by universal *forms*” (Gilbert 2017, 67), because “*εἶδος* is the formal cause of things (*Phys.*, II, 194b), a correlative of matter in compound things and the intelligible essence (*ousia*) of an existent thing (*Met.* VII, 1013a)” (Peters 2007, 85). Therefore „the universal form gives intelligibility to the compounds, while the matter individualizes them” (Gilbert 2017, 83).

Kinds of Aristotelian *sameness*

However, the essence of each individual thing does not deplete the content of its existential structure, but rather reflects its specific and generic characteristics, which is why the knowledge of its specific differences, necessary for the complete establishment of its individuality in space and time, is also done through its accidents, added to the essence and consistent from the metaphysical point of view. Entities “in all ten of categories are examples of *per se* beings: a thing’s colour or shape is as much a *per se* being as the thing itself” (Kenny 2012, 175). About this limited epistemic function of essences, but also about the importance of the accidents of material substances in the full knowledge of their physical identity through individuation, Aristotle tells us explicitly that “your essence, then, is that

which you are said to be of your own nature, but not even all of this is the essence”; it is, “in another [sense], one or other of the predicates, quantity, quality, and the like” (*Met.* VII, 1029b-1030a).

The fact that *the universal* is also the basis of the ontological character of Aristotelian categories related to accidents does not remove the possibility of concrete knowledge of each individual (e.g., of *this* tree and of *this* flower), but it becomes possible precisely by appealing to these universal predicates accessories applicable to “the first determinations arising from the first contact between form and matter” (Dancă 2002, 140) from compound substances. The singularity of each individual thing is known especially through the unique values taken by their qualitative and quantitative material properties within the spatio-temporal coordinates – themselves belonging to the ten Aristotelian categories (where- $\pi\omicron\upsilon$; when- $\pi\acute{o}\tau\epsilon$) –, the only ones able “to define a single entity, simultaneously excluding preaching in relation to other similar entities” (Gae 2013, 190).

Aristotle clearly emphasized, in this context, that “to Unity belong *Identity*, *Similarity* and *Equality*; and to Plurality belong *Otherness*, *Dissimilarity* and *Inequality*” (*Met.* X, 1054a). The operative capacity of these *universal* predicates to identify particular substances can be more easily understood by comparison with the new logical-mathematical notions of *class*⁹ or *function* – value dependent on finite/infinite sets of elements or variables – although even Aristotle used in his explanations about the relationship category ($\pi\rho\acute{o}\varsigma$) a mathematical example: “the relation of that which is 1.5 times something else to that something is a definite numerical relation to a number; and that which is $(n+1)/n$ times something else is in an indefinite relation to a number, just as ‘the many times as great’ is in an indefinite relation to 1” (*Met.* V, 1021a). Moreover, for Aristotle, between certain mathematical objects, respectively between geometric figures and some numerical relations (*Met.* XI, 1061b), there may even be some formal relations of identity – “things are [...] ‘equal’ ($\acute{\iota}\sigma\omicron\varsigma$) whose quantity is one” (*Met.* V, 1021a) –, an aspect explainable through the prism of his general formalist conception on mathematics, anchored, essentially, also in the reality of substances (“some branches of mathematics deal with things which are immutable, but presumably not separable, but present in matter – *Met.* VI, 1026a). In Aristotelian metaphysics, “such a relational identity of the form can be established at the level of mathematical objects” (Ștefanov 1995b), foreshadowing the foundations of future algebraic and trigonometric identities.

Through this material individuation, a true horizontal metaphysical division of *the Being*, the ontological identity of all particular things in the realm of the real is delimited, one in relation to the other, and the intra-specific numerical identity of each thing in a plurality is ensured. When *the*

form is common to several things, it gives them a qualitative identity of *idem* type (*similarity* – ὁμοιός), unique in terms of species or gender, and when even *the quantity* is common *the equality* intervenes. In the another train of thought, „cospecific substances are numerically different in virtue of their matter, but they are identical in virtue of their form” (Kirby 2008, 7). All these types of identity are first mentioned in one of the earlier works of logic, *Topics*:

“First of all we must define the number of senses borne by the term *Sameness* (ταυτόν). *Sameness* would be generally regarded as falling, roughly speaking, into three divisions. We generally apply the term *numerically* or *specifically* or *generically* – *numerically* in cases where there is more than one name but only one thing, e.g. 'doublet' and 'cloak'; *specifically*, where there is more than one thing, but they present no differences in respect of their species, as one man and another, or one horse and another: for things like this that fall under the same species are said to be 'specifically the same'. Similarly, too, those things are called *generically* the same which fall under the same genus, such as a horse and a man” (Aristotle, *Top.* 7, 103a).

Following the same chapter in the *Topics*, Aristotle divides numerical identity into three subtypes: identity expressed through a *name* or *definition*, identity expressed by a *property* (“as when what can acquire knowledge is called the same as a man” – *Top.* 7, 103a) and identity expressed by an *accident*, each having in common the fact that it refers to one thing. There is no doubt that for those of us raised „in the protective shadow of Frege¹⁰ it may be shocking to accept an identity relation between the denota of non-individuals terms” (Mignucci 2002, 219), but Aristotle’s first philosophy has tended toward higher degrees of generality. In the case of (formal) identity, specific and generic, *identity* is understood as a *relationship* between two or more things possessing common forms highlighted by the same definition, but also a material numerical difference, and this because in the Stagirite’s metaphysical thinking, as principle, “the substratum of number is *matter*, while the *definition* or *accident* [by which a thing is identified] belongs to the *form* of the thing” (see Ștefanov, 1995b). Maybe “the linguistic character of Aristotle’s definition of numerical sameness in *Topics*, the emphasis he puts on the multiplicity of names, is an inchoate attempt at expressing the idea that numerical sameness is a binary relation”; in this sense, „Aristotle should emphasize that numerical sameness can link items which are referred to by means of distinct linguistic expressions”¹¹ (Crivelli 2002, 243-244).

The explicit approach of the ontological character of the *ipse* identity of each thing with itself and with nothing else was made, later, in the 5th Book (Δ) of *Metaphysics* – “some things are said to be the *same* in an *essential sense*, in the same number of senses as *the one* is essentially *one* [...] things

whose substance is one” (1018a) –, without abandoning, however, the classifications on logical criteria from *Topics*, the supreme argument that metaphysics and logic are closely related; “there is no being on the one hand, and thinking on the other, but thinking is always thinking of the being and the being is always intelligible to thinking” (Berti 2014, 101). At the same time, the primacy of *metaphysics* is underlined in the same book of *Metaphysics* by reiterating the *unity-identity* relationship, although, starting from the multiple linguistic expressions of the same referent, it seems that “numerical sameness bring both duality and unity” (Crivelli 2002, 243): “thus *sameness* is clearly a kind of unity in the being, either of two or more things, or of one thing treated as more than one; as, *e.g.*, when a thing is consistent with itself; for it is then treated as two” (1018a). Throughout this last expression, I do not believe in any way that the great thinker of the ancient world would have made a self-contradictory or confusing statement about the *ipse* identity, as belonging to two individual things, but he referred either to the numerical identity of a thing with two names, in a sense that today it could be symbolically represented by $x = y$ (see Williams 1989, 2), or at two temporal moments of the existence of the same thing (t_1 and t_2). In the first interpretive key, assuming that $x = y$ is true, „it is in virtue of the same fact that makes $x = x$ (trivial identity), namely the identity of the object in question with itself”; and yet, “claims of the form $x = x$ are not epistemologically trivial, because they often provide new information” (Haslanger 1994, 144).

In the 10th Book of *Metaphysics* (I), dedicated to the issue of the relationship between *One* and *Plurality*, Aristotle makes a new classification of identity, according to the ontological criterion of matter and form. In the first sense, the material identity that subsumes the three types of numerical identity mentioned in the *Topics* was considered: “*Identity* has several meanings. (a) sometimes we speak of it *in respect of number* (*Met.* X, 1054a). The material character of the identity is given here by the fact that thing designated by different descriptive terms keeps the same matter, one by number (see Stefanov 1995b). In the second sense, Aristotle referred to the absolute identity of *ipse* type, material and formal – (b) “we call a thing the same if it is one both in formula and in number, *e.g.*, you are one with yourself both in form and in matter” (*Met.* X, 1054a) –, and in the third sense the formal identity (*idem*) was defined, which includes the identity of the species and gender: “(c) if the formula of the primary substance is one, *e.g.*, equal straight lines are the same, and equal quadrilaterals with equal ($\acute{\iota}\sigma\omicron\varsigma$) angles, and there are many more examples” (*Met.* X, 1054b).

From the analysis of these texts it results that only the *ipse* type identity was understood by Aristotle as a true predicate (“*the same* it is predicated of all things which exist”, *Met.* X, 1054b), with univocal

applicability, while in the other subclassifications of identity the emphasis is on the relational character existing both at the logical level (numerical identity), as well as ontological level (*idem* identity). While for the first level, the identity relationship is established between names e^{12} or other descriptions and an individual thing (or even an particular accident), the formal identity has as object a relationship between at least two numerically distinct things, but having a common, specific or generic form \tilde{a}^{13} . On the other hand, the latter kind of *sameness* can also be conceived as a predicate, which the mind applies to the embedded form: e.g., with respect to form, then, Socrates and Callias are numerically identical. Last but not least, identity as a relationship can be considered both as a subspecies of the Aristotelian category of the *relationship* (*πρός τι*) and as a predicate applied by the mind to this category itself, exegetical hypothesis in which “it cannot be preached synonymously except about other relations” (Ștefanov 1995a), established between individual things or geometric objects (e.g., Thales’ Theorem).

Following diaporematic method, Aristotle made a distinction between *essentially the same* and *accidentally the same*, which allowed him to save the attribute of the persistence of the *ipse* identity of a thing from the threat created by the Heraclitian paradox. In other words, given the obvious reality of the irreversible flow of time and, implicitly, of movement and change, the Stagirite could not avoid approaching one of the most disputed issues in ancient philosophy, crucial for analyzing the identity of an individual thing with itself, but especially in the matter of the personal identity of the human being. Beside this, Heraclitus’ relativism was overcome by Aristotle also by using the *act-potency* binomial, stating both the reality of being and change, specifying that although the Being is one, it exists in different ways, depending on the updated potentials.

“*The same*” means *accidentally the same*. E.g., *white* and *cultured* are the same because they are accidents of the same subject; [...] Hence none of these predications can be made universally. For it is not true to say that every *man* is the same as *the cultured*; because universal predications are essential to things, but accidental predications are not so, but are made of individuals and with a single application” (*Met. V*, 1017b).

Through this conceptual prism, Aristotle dismantled the thesis developed by the sophists that of the non-identity between Corsicus-in-the-Lyceum and Corsicus-in-the-market-place, considering the accidental character of the two personal hypostases of the student from Athens. For understanding and establishing *identity*, only the student's person is essential. In an anachronistic formulation, Aristotle accepts the Leibniz’s Law – the principle of the indiscernibility of identicals, which asserts that if x is

identical to y , then every property of x is a property of y – “only in a restricted form: if x is *essentially* identical cu y , then if x is F , y is F ” (Barnes 1999, 92), where F is either the substantial form or an essential accident; in the case of non-essential accidents, x and y are identical, without sharing the same accidents¹⁴. Thereby, accidental sameness is not substantial sameness and is not covered by “Aristotelian version” of the Leibniz’s Law.

In fact, for the preservation over time of the identity of a person or any other individual substance, but also for the knowledge of this aspect as a result of physical changes in the cosmic order (including special changes), it is absolutely necessary the persistence and survival over time of their *substantial forms*, because the essences belong only to the forms and only in relation to them the human intellect can appreciate whether or not there is still individual identity (*ipse*) between two moments. Although for Aristotle forms are indestructible, composite material substances do not have this property, due to *the divisibility* of matter. Certainly, in Aristotelian philosophy, “the *forms* does not admit of destruction in the sense that it is ever *being* destroyed, since neither does it so admit of generation; for the essence of house is not generated, but only the essence of *this* house” (*Met.* VII, 1039b). Only sensitive substances can decompose materially (chemically), but from a metaphysical point of view, a substance always *becomes* another substance, by the substitution of forms, precisely because of their hylemorphic metaphysical nature: “generally things which come to be, come to be in different ways [...] by *change of shape*” (Aristotle, *Phys.*, I, 190b). In other words, in the virtue of the uniqueness of the form, “no substance is composed of substances” (*Met.* VII, 1041a), so that following the physical destructuring of a compound substance, matter is *re-informed* by another substantial form: “matter remains while the shapes follow one another on its surface” (Gilbert 2017, 81).

So, regarding the analysis of the *identity* of an individual thing in time – because „persistence over time is a criterion for substance and it is crucial for *identity* (Hartman 1976, 550) –, what really matters is the preservation of the substantial form, despite the change in accidental forms, as Aristotle himself showed in *Physics*: “we speak of ‘becoming that from *this*’ instead of ‘*this* becoming *that*’ more in the case of what does not survive the change” (*Phys.*, I, 190b). Related to the paradox of Heraclitus, the river that was here last day is here, not because the particular water is still here, but because the *substantial form* of river is still here. The unity of sensible composites “is grounded in the more basic (or prior) unity of substantial form” (Haslanger 1994, 170), and for this reason “forms, *as* agents of change, do not themselves change over the course of processes for which they are responsible” (Jiménez 2014, 357). Or, in the Aristotelian terms of causality, *formal causes* are coextensive with change, “*coexist* with their effects”, while

“moving causes are causes in the sense of pre-existent things” (*Met.* XII, 1070a).

When the process of becoming/change leads to the very replacement of the substantial form with another, we can no longer talk about the identity of the same particular entity x between moments t_1 and t_2 , but we are in the presence of something else, having other substantial form and other *in-formed* matter. In conclusion, “the terms ‘matter’, ‘form’, and ‘composite’, have the same referent, and, nevertheless, cannot be substituted *salva veritate*” (Kirby 2008, 83-84), as in the case of mathematical identities.

Notes

¹ In contrast to identity politics practiced by minority groups, “the new identity politics, as seen mostly in Europe, is often exclusionary, [...] focused on the understanding of *identity* based on ascriptive characteristic, such as race, ethnicity, and religion” (Noury, Roland, 2020, 423).

² Seen as a logical and ontological principle, *per se*, *identity* is not a real “problem”, but analyzed in the context of other difficult related topics (individuation, the nature of reality, particle physics, psychiatric disorders), its understanding becomes problematic. “Can we identify an elementary particle and how, what is the cultural identity of this community, how do we identify people over time?” – all these questions are subsumed by the *problem of identity* (see Ștefanov 1995a). In general, although “*identity* is one of the simplest and clearest concepts we possess, it has given rise to much philosophical puzzlement”, because “it is not quite obvious that *identity* is properly a notion to be studied directly by logic” (Anderson 2014, 55). On a different note, “it is fairly common to say that logic deals with arguments that are valid in virtue of their *form*, but *identity* is expressed by a binary predicate”; in spite of some ambivalence, “most logicians count *identity* as a logical concept” (Anderson 2014, 55).

³ Even Wittgenstein “had no intention of dispensing with the *notion* of identity; [...] All he excludes is *sign* for identity” (Williams 1989, 32). In *Tractatus*, he argues that “identity of the object I express by *identity of the sign* and not by means of a *sign of identity*, [...] difference of the objects by difference of the signs” (5.53). Regarding the principle of non-contradiction, inseparable from the principle of identity, but also from the principle of excluded middle – all analyzed by George Boole in the famous *Laws of Thought* (1854) –, Aristotle has already emphasized in *De Interpretatione* the idea that not all statements can be described simply as *true* or *false*, which is the basis of contemporary polyvalent logics, useful in researching deep material realities. For example, for some uncertain microphysical phenomena that seem to affect the principle of non-contradiction, the most appropriate logical structure is Reichenbach’s logic, trivalent logic with the values 1 (verified truth), 2 (false verified) and 3 (impossible to determine) (see Enescu 1985, 185; 207), perfectly compatible with the Aristotelian principle. The last value (3) is also found in the philosophy of mathematics, where “Brouwer rejected the principle of the excluded middle (the statement $p \vee \neg p$ must always be true), which he regarded as equivalent to Hilbert’s conviction that all mathematical problems are solvable”; e.g., “it follows from PEM that either the decimal expansion of π contains infinitely many sevens or it contains only finitely many sevens, even though we do not have proof of which” (Ferreirós 2008, 149).

⁴ “Identity is the strongest of the *equivalent relations* that are transitive, reflexive and symmetrical” (Barcan-Marcus 1993, 202).

⁵ There are also logicians who have denied the distinct presence of this principle in Aristotelian thought. Thus, Bocheński stated in *Formale Logik* (1950) that “Aristotle mentioned the principle of identity only briefly (*flüchtig*)”, and Łukasiewicz argued in a 1951 work (*Aristotle's Syllogistic*) that “the principle of identity does not even appear in his work. Aristotle”(see Dumitriu 1993, 212).

⁶ The concrete existence of matter in individual substances requires the existence of a “space that precedes the individual, matter thus occupying a space *a priori* - the condition of its *a posteriori* individuation” (Gilbert 2017, 85). Nowadays, physicists talk about the granularity of space, in the sense that “space is created by the interaction of *individual quanta* of gravity, ..., [which] are not *in space*, [but] *they are themselves space*” – a “powerfull intuition” of Democritus, reported by Aristotle (Rovelli 2016, 148,150).

⁷ According to Erwin Schrödinger, we consider that the possibility of the coexistence of two subatomic particles in the same place and at the same time it is not ontological, but is only a corollary of Heisenberg’s uncertainty principle, being a limit of knowledge. “One consequence of the uncertainty principle is that it is impossible fully to predict the behaviour of a system and the macroscopic principle of causality cannot apply at the atomic level” (Cullerne 2009, 507). Regarding the spatio-temporal coexistence of massless physical entities (*energy, wave, field*), from the point of view of Aristotelian metaphysics, they are not real *substances*, which is why their spatio-temporal differentiation is not a necessary condition of existence.

⁸ In the Thomistic gnoseology, the preliminary cognitive process called *communicationem in forma*, essential in the act of knowledge, is based on the principle: *omne quod recipitur in altero, recipitur secundum modum recipientis*.

⁹ If Russell, in a totally anachronistic way, criticized Aristotle for confusing a *class* with an element and the element itself, Porphyry, in his Commentaries on the *Categories*, rejected this criticism with an interesting example: “the phoenix bird, being a species, does not say much about several specimens, if only one phoenix bird is born” (Porfir 1968, 18v).

¹⁰ Although for Frege as for Aristotle, identity is a relation between names, not between the things they name, the latter did not notice – or at least he didn't explain it well enough – an essential aspect: “if two names are semantically different, does not prove that they are referentially different” (see M. Dumitru 2019, 178), regarding empirical knowledge. Instead, they both understood that a proper name, *qua* proper name, “points to an individual, being a sort of index finger, and its main function consist in this act”, contrary to *definite description*, which implies “the use of an attribute which is supposed to be predicated uniquely and contingently (only in the Aristotelian perspective) of the individual” (Mignucci 2002, 228).

¹¹ Aristotle “states a proposition expressing sameness of a particular with itself as an example of (numerical) identity”, such as “the bearers of the identity relation [...] can be not only individuals, but also what is referred to by universal terms (*Met. X, 1054a*) (Mignucci 2002, 219).

¹² As Paul Crivelli in his comments has acutely remarked, “this approach to identity implies that things to which identity applies must have a name, and this assumption is not at all obvious; worse than that, identity seems to apply only to things which have at least two possible names” (Mignucci 2002, 219). In addition to this, Aristotle has considered that names cannot match things, anyway, because “names are finite and so is the sum-total of formulae, while things are infinite in number” (Aristotle, *SE, 1, 165a*).

¹³ “Things are *similar* if, while not being the same absolutely or indistinguishable in respect of their concrete substance, they are identical in form; [...] If things have an attribute

which is the same and one in form — e.g. *white* — in different degrees, we say that they are similar because their form is one” (*Met. X*, 1054b).

¹⁴ Some have glimpsed the Leibniz’s Law, starting from a quote from *Topics*: “for all that is predicated of the one should be predicated also of the other, and of whatever the one is a predicate, the other should be a predicate of it as well” (VII, 1, 152a-b) (see Barnes, Kenneth T. 1977. “Aristotle on Identity and Its Problems”. *Phronesis*, No. 1: 48-62 and Feldman, Fred. 1970. “Leibniz and Leibniz’ Law”. *Philosophical Review*, 79: 510-522).

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