THE SPELL OF BEING
DEBUNKING THE METAPHYSICS OF ARISTOTLE
(1976/2011)

Aristoteles is the next important figure in the antique philosophy following Plato, and in his younger years he was Plato's student. His giftedness, however, was combined such independence that he found it mandatory to found his own school, the $\lambda\upsilon\kappa\epsilon\acute{\iota}\upsilon$. Over time Aristotle's thinking developed into a comprehensive philosophical system which can be described as *the doctrine of being* ($\grave{o}\nu\tau o\lambda o\gamma\acute{\iota}\alpha$) and its manifestations. Although it is usual to designate his major work as *metaphysics*, this word was never used by Aristotle, but derives from its place on the shelves next to his work on physics ($\tau\grave{\alpha}\ \mu\epsilon\tau\grave{\alpha}\ \tau\grave{\alpha}\ \phi\upsilon\sigma\iota\kappa\grave{\alpha}$) given to it by an archivist in the famous library of Alexandria.

Metaphysics is concerned with being and with things as they are in themselves. Anything is what it is, viz. its being; being is something in which everything partakes and which is common to all, not something that a thing can possess in contrast to other things, so that the concept of a thing without being involves a contradiction in terms. According to Aristotle, being is the most commonplace of all and thus truly universal; indeed, pure being is independent, immutable, eternal, and a prerogative of the deity. So ontology is also theology (Aristotle was the first formal theologian in history).

All there is partakes in being, but not everything partakes in being the same way, and for that reason things are distinguished by the various ways they partake in being. So we get a view of the world where everything has its place in a clear order of ranking. The idea of such order, *The Great Chain of Being*, is the core of Aristotle's metaphysics; in this order every single thing, or individual substance, is a drop in the ocean of being, where it is as a bearer of properties that may be truly essential, or merely accidental. Aristotle's God is impersonal, a Great Being threatening to swallow all small ones.

Let us go into some more detail with our debunking of Aristotelian metaphysics. Aristotle has a many-sided concept of motion, or change, counting four ways in which a thing can be altered; thus there is: a) change of place (*motus localis*), which betokens a spatial displacement of things; b) change of mass (*motus quantitatis*), which signifies an enlarging or diminishing of a thing or a property; c) change of form (*motus qualitatis*), which indicates a transformation of a thing or a property; and d) change of being (*motus substantialis*), suggesting its appearance or disappearance as a thing, or substance.

Aristotle defines a change as the transition of a thing from one state to another state opposite to the first one; but this contrary state cannot be described as non-being, because a thing cannot be fully annihilated, just as it cannot emerge from pure nothing. For all Aristotelians it holds that nothing can originate from nothing (*ex nihilo nihil fit*). The subject of change is the thing as defined by its properties, essential or accidental; substantial change can only occur in the sense that things with certain kinds of being are changed into other things with different kinds of being; but this, of course, is not meant to imply that any kind of thing can be transmuted into any other kind of thing.

By experience we know that some transformations are possible and others are not. Confronted with some thing which under certain conditions can be transformed into another thing, we are entitled to conclude that the first one in its actuality has the second one as its possibility. The newly laid egg of a hen, for instance, contains a full-grown hen as its immanent possibility; in the same vein, a full-grown hen contains the possibility of an egg, yeah, even of a lot of eggs. On the other hand, a hen's egg does not contain the possibility of a grown-up turkey, or a parrot; and likewise, a cat or a dog is not able to provide us with anything like the delicious egg of a hen. In conclusion: we can derive possibility from actuality, but not the other way round.

The pair of notions hinted at: α) *possibility* ($\delta\acute{\upsilon}\nu\alpha\mu\iota s$) & β) *actuality* ($\grave{\epsilon}\nu\acute{\epsilon}\rho\gamma\epsilon\iota\alpha$), is a fundamental pair of contraries in Aristotelian philosophy. Another pair of notions closely connected to this is: *A*) *form*, or *figure* ($\grave{\epsilon}\acute{\iota}\delta os$, $\mu\acute{o}\rho\phi\eta$) & *B*) *stuff*, or *bulk* ($\acute{\upsilon}\lambda\eta$). Every particular thing or individual *substance* ($o\grave{\upsilon}\sigma\acute{\iota}\alpha$), subject to motion or change of any kind, subsists as composite of form and stuff, figure and bulk; these are aspects of all sensible things which are distinguishable by reason, but inseparable in actual reality. On one hand, the form or figure of a thing, by connecting it to other members of a class, indicates the condition of its actuality. On the other hand, the stuff or bulk of a thing, by separating it from other members of a class, embodies its condition of possibility.

The importance of keeping these concepts apart turns up in relation to motion, or change: during any kind of transformation, something new emerges while something old disappears, and such a process of becoming necessarily involves a transition from possibility to actuality, though this, of course, is not meant to imply that the transition itself is produced with necessity. Now any kinds of motion, whereby a thing suffers a change from something to something else, must presuppose an identical something which remains itself and the same during the change. This something, which does not partake in the change, by setting up the backbround needed in order that the change can make itself known as change, constitutes the substratum ($\acute{\upsilon}\pi o\kappa\epsilon\acute{\iota}\mu\epsilon\nu o\nu$) of the change. The substratum, being the thing as possibility, is identifiable as its material.

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So, from a spatial point of view, the alteration of a thing can be described as its material transition from one state to another. But that which designates these states, thereby making them distinguishable from one another, is their varying form. In itself, as a purely conceptual entity distinguished from the thing by a process of abstraction, the form is immutable and timeless. The thing itself being composed of stuff and form, what changes in the thing, following its transition between states differentiated by form, is only its various combinations of stuff and form. Whereas 'form' is the comprehensive designation of the nature and essence of an actual thing, 'stuff' is the comprehensive designation of the material of possible things holding the same form, from which the actual things are eventually parcelled out to be distinguishable only by their number. A thing's material is both its individuating principle and the substratum of its change.

There is also a third pair of notions: 1) *purpose* (*τέλος*) & 2) *defect* (*στέρησις*). By the change of becoming something emerged which was lacking before the change, so the thing emerged from its material by the addition of something new, viz. its form. What was the defect of its stuff before the thing appeared, corresponds to the purpose, interpreted as an urge driving a form to be realized in the bulk, thus producing the thing. This shows that the realization of a thing is the same as the materialization of its form; and since a thing is fully defined by its form, it is impossible that various forms can be materialized simultaneously in the same thing. Evolution occurs when different eternal forms succeed each other in a certain stuff. This explains the growth of living beings.

Hence we can comprise Aristotle's description of the motion and change of things in these words: the realization of the possible according to its purpose as far as possible. Nothing can aspire higher than the fulfilment of being in agreement with its natural end, and by attaining that end it fulfils its divine destiny in perfection. Longer than its natural destiny its inherent possibility does not reach, but to come that far is the purpose of its evolution, and what it has not attained is its defect. Whereas motion as a transformation of being presupposes possibility as an emptiness, purpose determines the direction of evolution by fixing its end as perfection. So a thing's defect creates space for its motion, just as the perfection of its nature determines the goal of its development.

As regards motion and change four questions are relevant, according to Aristotle. Thus one can ask: 1) What is the thing made of? 2) Which properties does it possess? 3) How did it originate? 4) Why is it as it is? It is clear that these four questions are only vaguely related to the four kinds of motion mentioned earlier which was: the change of position, the change of quantity, the change of quality, and the change of substance. Corresponding to the four questions above, Aristotle has a quadruple concept of cause, namely: 1) the material cause (*causa materialis*), 2) the formal cause (*causa formalis*), 3) the effective cause (*causa efficiens*), and 4) the final cause (*causa finalis*).

Now no change can occur by itself, so everything that happens must have a cause. Further no motion can continue in time without being kept alive by a productive power, and this holds even in the case that the motion is eternal: all motion must have a motor whose working must continue steadily over time in order that it may partake in being. Concerning the four kinds of cause, we have already discussed the three, but we still has to present the effective cause; this might also have been called the productive cause, because it is the producer of motion, interpreted as a single particular thing, or being. This cause has a peculiar position since it conditions the working of the other causes. Comparing Aristotle with Plato, it is clear that the efficient cause is *mechanical* whereas the final cause is *teleological* (the other two were not accepted as causes by Plato).

However, it is not so that a thing must necessarily have had four different causes. Whereas the four elements - earth, water, air, and fire - are subject to all sorts of motion, eternal things are fully real, free of change, and so do not stem from a mutable material. The heavenly stars only take part in one kind of motion, viz. the perfect one of constant circulation in a fixed orbit; they must therefore consist of a very special kind of stuff, namely a fifth element, the so-called *quint-essentia*, which is crystalline and aetherial. Whereas stuff without form is *pure possibility*, and thus devoid of any real actuality, form without stuff is *pure actuality*, and thus free of any unrealized possibility or defect. The highest form is wholly immaterial and, as such, purpose and end of all things.

To Aristotle it is unthinkable that motion can ever cease, motion being associated with time, which can itself never cease, If nothing were truly immutable, everything could perish and become nothing, which would entail the annulment of all motion. We cannot think of any 'before' or 'after' which does not itself partake in time and, time being either motion itself or its number with regard to before and after, it follows that, just as time is eternal, without beginning or ending, motion can never come to an end. Aristotle apparently did not see that his definition of time as 'the number of motion with regard to before and after' is circular, since it replaces time with what is itself time. This leaves his argument for the eternity of time and motion without any strength.

At this point, Aristotle was also countered by St. Augustine, who from the very same premisses drew the opposite conclusion: time was created together with the world, a view that derives from Plato. But, to Aristotle, real motion is ceaseless, and ceaseless motion can only be real if some real things are sempiternal together with motion itself; therefore some things are both real and eternal. Now it is immediately evident that an eternal thing cannot be subject to substantial change, nor can it be subject to the change of quality or of quantity. This leaves only one kind of change, viz. locomotion, or displacement, which is the motion of a thing within space. If such motion describes a perfect circle with constant orbital speed, it will rest in itself for all eternity.

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Aristotle criticized Democritus for having claimed that motion is conditioned by empty space, his objection being that space in the sense of emptiness is just nothing. Space can only be manifested in relation to bodily things, and thus only as a privation; therefore space should rather be understood as a comprehensive designation of place, where place is defined by the nearest surrounding body. On the basis of this definition Aristotle developed a consistent conception of the universe as a finite sphere, where the utmost surrounding body, *primum mobile*, being surrounded by nothing, is not in space. So the first moveable thing is a sphere containing everything else in the universe.

All mutable things are made up of the four elements: earth, water, air, and fire. The quantitative relationship between these four elements varies from thing to thing, but that element which dominates the thing determines its place in the order of being. Now experience shows that things tend to distribute themselves in different layers that enclose each other outwards in space like concentric spherical shells and, accordingly, every element has its natural place with the heavier ones near the center of the world. Understood this way, the geocentric system involves a hierarchical topology.

According to tradition, Plato had expressed the scientific task of astronomy as "saving phenomena". To this purpose his student Eudoxos devised a solution in the form of a geocentric model of the world constructed by means of circles and epicycles. Aristotle, who sought for the "true causes" of motion, found this solution to be a fake: in his opinion the real problem was physical, not mathematical, and in accordance with this view he replaced the mathematical constructs with a mechanical apparatus which consisted of concentric crystalline spheres rotating about various axes.

The *sublunar* world being subject to change, the *supralunar* world is immutable: the concentric shells are enclosed by *primum mobile*, the utmost of all aetherial shells, which, by comprising everything except God, contains space without having place in it. God, "who" is pure impersonal reason, immaterial, hence not spatial, moves everything by being the *primus motor* of the *primum mobile*; from the first thing moved, motion is transmitted all the way down towards the navel of the world by means of other shells. Aristotle clearly visualized this entire chain of motion as mechanical; on the other hand, its direction of change towards perfection he considered as being teleological.

According to Aristotle, all motion is directed towards a goal. What causes motion to continue as a process is the urge, drive, or longing of things to attain true perfection, so that they can partake in the eternal life of the deity which is a steady vision of itself. All motion having a goal, it follows - because the recognition of end, plan, or purpose, is conditioned by reason - that the prime cause of all motion must be a rational being; similarly, every one of the crystalline shells has a specific intelligence to be its motor. Naturally, the medieval theologians herein saw a link to their doctrine of angels.

The highest form is the perfect being, the summit of the universal ranking order. As the key concept of form it is at the same time the goal and purpose of all motion, which means that it is the hidden end behind all change, including the struggle for life. Being itself immutable by virtue of its eternal perfection, it exerts its influence all over the universe by being *the unmoved mover* (*ὸ οὐ κινούμενον κινεῖ*) of all becoming, also known as *the first cause*, *the final attractor*, and *the ultimate agent* in the universe. In the God of Aristotle, form and purpose coincide with pure causal activity.

From the directedness of motion as well as the rationality of the productive cause it follows that the highest being, which as *primus motor* upholds the motion of all things by virtue of their urge for perfection, cannot itself be defective with respect to reason. The life of the deity is not only an intellectual life, it is the life of a supreme intellect, and - since its thought as the thinking of thought (*νόησις νοήσεως*) is solely occupied with the best of subjects: itself - this activity is pure pleasure and the highest happiness and shows it to possess the divine property of self-sufficiency (*αὐτάρκεια*).

In the deity, intelligence means both being thinking as well as being thought of. Wisdom is another important prerogative of God. By wisdom (*σοφία*), things are seen as they really are, their true nature being revealed to the vision (*θεορία*) of the intellect, and for this reason divine reason discloses truth (*ἀλήθεια*) as a mirror of being (*τὸ ὄν*). Man can never possess wisdom, but in the humble search for wisdom called philosophy (*φιλοσοφία*), he can eventually fulfil his destination as an animal gifted with reason, which is a life entirely devoted to intellectual contemplation (*βίος θεωρετικός*).

Let us finally take a closer look at the Aristotelian concept of science. Aristotle distinguished between three kinds of knowledge: *i*) *theory*, *ii*) *praxis*, and *iii*) *poiésis*. Poietical knowledge (poetry, rhetoric, aesthetics) aims at describing an activity which has its purpose outside itself. Practical knowledge (ethics, politics, economy) aims at describing an activity which has its purpose in itself. Theoretical knowledge, however, or science proper, is an activity which not only has its purpose in itself, but which aims at investigating its own activity. Aristotle further subdivides theoretical science into the following three disciplines: *a*) metaphysics, *b*) mathematics, and *c*) physics.

Physics describes the motions and changes of material things; these are contingent in the sense that they can be thought to be or not to be, albeit not both at the same time. Mathematics describes the properties of essences and entities which are necessary if only they are consistent, free of contradiction; and the being of such eternal objects is indistinguishable from their being thought of. Metaphysics, or the doctrine of being, which Aristotle called *ontology* (*ὀντολογία*), *first philosophy* (*πρώτη φιλοσοφία*), or *theological science* (*θεολογική ἐπιστήμη*), is primarily concerned with being as such, and secondly with the appearance of being in things and their various properties.

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According to Aristotle, *knowledge* (ἐπιστήμη) is produced by a process leading from the sensory experience of particulars, *via* a determination of their formal nature and essence, forward to the explanation of how they were produced by their causes. Knowledge, therefore, consists in the true intuition of the nature and origin of things and in the cognition of what happens to them, viz. motion or change, and their causes. In order to count as *science*, all insight must be based on *demonstration* (ἀπόδειξις), but the condition for a valid argument is a sound definition of the concepts involved.

In *experience* (ἐμπειρία), particular things, or *substances*, are *perceived* directly by our senses; these cannot be mistaken, since they intuit what is given to them as it is. The task of the *intellect* (νοῦς) to define and classify things, in order to comprehend them by vision (θεωρία); this task is fulfilled when things *conceived* indirectly in the light of common concepts. Our reason understands the things presented to it by our senses by subsuming them under universals derived by abstraction from experience. According to Aristotle, *everything in our reason was already in our senses*.

The process of *abstraction* has a important function in Aristotelian metaphysics. As already stated, any sensible thing has two aspects: *form*, or *figure*, which settles the nature of its defining properties, thus ensuring its membership of a specific class with a predestined place in the great chain of being; and *stuff*, or *bulk*, which separates it as a single thing among others of its kind. So abstraction is reason's way of separating those aspects of a thing which it can understand from those which are incomprehensible to it. Abstracting form from stuff, reason comes to know the thing by receiving its form as a seal, or stamp, but leaving the thing itself outside together with its material bulk.

Aristotle's view of universals, the common concepts of things, is firmly realistic: this view brings him in opposition to those who regard universals as our own constructs. The reason why we conceive things right, if we conceive them right, must be found in the things themselves: thus, what the universals refer to must be latent in the things, denoting their nature, essence, or "that which it was (for them) to be" (τὸ τί ἦν εἶναι). This is the correspondence between word and thing, mind and matter, truth and reality; and *correspondence*, according to Aristotle, is *the rock-bottom of truth*.

The question of truth (ἀλήθεια) turns up in relation to reason's passing judgment. Reason (νόησις) is wrong if it misjudges what is shown to it by intuition (αἴσθησις). Not all verbal expressions have truth-value, but knowledge in the strict sense, especially scientific knowledge, must be expressible by means of statements, or propositions, to which we can ascribe the value 'true'. In order to be bearers of truth-value, a statement must contain at least two elements: a) *subject* & b) *predicate*, and in all such statements, we assert something about something, the something we talk about being represented by the subject, and the something we say about being represented by the predicate.

All propositions with truth-value entail that properties are *affirmed* or *denied* of a thing, and our statement is *true* if the predicate affirms of the subject what applies to the thing or if the predicate denies of the subject what does not pertain to the thing; likewise our statement is *false* if the predicate affirms of the subject what does not apply to the thing or if the predicate denies of the subject what applies to the thing. Aristotle's logic of subject and predicate thus reflects his doctrine of being - or should we rather say that his doctrine of being is a metaphysical projection of his subject-predicate logic?

It is clear that we cannot speak of reality without making use of statements with truth-value - but how can we judge if a certain judgment corresponds to reality, or not? How can the bond between mind and matter, thought and reality, be put into words? The truth of a proposition can always be challenged by a contradictory proposition claiming that the truth of the first proposition was only apparent - but truth itself can never be overtrown. However, this insight is of no use if we are unable to verify truth. So, how can we ever know the supposed correspondence between word and reality?

Aristotle's solution to this quandary is that a meaningful coupling of subject and predicate presupposes that things exist to which properties can truthfully be ascribed. Hence, if we only say that there are things, that substances exist, this statement is true with necessity, the predicate adding no information which is not contained in the subject already. Necessarily true statements cannot be rejected except on pain of contradiction, so his ontology seems to be supported by strict proof. Can anyone wish for more?

The spell of being emanating from Aristotelian metaphysics has haunted western thought as a ghost for more than two millennia, and it is due time for it to come to rest. Nevertheless, the combined efforts of thinkers and scientists have hitherto been in vain; something like an Aristotelian view of being still survives despite the following attacks:

Tycho's discovery of the 1572-*nova*, showing the supralunar world to be mutable; Galileo's refutation of the belief that heavy bodies fall faster than light ones; Newton's theory proving supralunar and sublunar worlds to be ruled by the same laws; Descartes' campaign against final causes; Berkeley's argument that the abstract general notion of being is a *flatus vocis*; Kant's view that reason does not derive its laws from experience by abstraction, but prescribe them to experience by subsumption - etc., etc.

But probably the best way to attack Aristotle's metaphysics is to criticize its logic. This is precisely what was done by Russell and Whitehead in the years 1910-13, when they showed that the traditional logic of subjects with predicates could be replaced by a logic of predicates and quantificational operators. Even more radical was the invention of modal and temporal logic which took up the heritage from Stoic propositional logic; in this, the statement as bearer of truth-value is not analyzed further into its elements. If we can make do with such logic this will suffice - nothing more is needed.

Mogens True Wegener