

Aristotle's More Physical Side

Okay we have an overview, a foundation, and a taste of his lectures, now let us start to examine the specifics of his philosophy, beginning specifically his more earthy side: *Physics*. Theoretical knowledge itself has forms and while this subject may seem to be less theoretical than practical, for Aristotle it still falls within the *theoretical* realm (never let it be said that if Aristotle thought that if it was good enough to be categorized, it was not good enough to be sub-categorized). It is because of the *type of thinking* involved not the subject that *Physics* falls under the theoretical sciences, which would seem odd to our 'modern' minds except that *we cognoscenti* understand the way Aristotle classifies knowledge. In order to understand Aquinas, we need to understand Aristotle, not as we understand the world but as he understood the world.

More Than Just Good Looks

That said, the depths to which we plunge are still very shallow, after all looks are only skin deep, right? With that in mind, in this episode let us examine what we might call the 'hard' sciences. Aristotle's *Physics* deals with *things which have a separate existence but are changeable* or to put it another way, things which are in and of themselves are what they are (regardless of what I may think about them) but are able to be 'changed'. The stars are the stars *and* are subject to the laws of motion, i.e. they change positions.

To look at it from a different perspective, *Physical* things (nature) are the things that have *form (substance)* but do not have within themselves *causes* (actions) for change, that is, they are acted upon externally. In the study of physical things, the first level is that of matter and form (define 'star'). Next comes the inquiry into movement ('change') and finally into the cause of movement (what is the source of the change/movement). What all this means is that Aristotle will spend time on the physical attributes of a thing, but in order to *fully* understand it we must also understand the forces which work upon it. Let us return again to the example of stars. Simply put, the motion of heavenly bodies is part of who they are. If we merely look at the substance and accidents of stars but do not look at planetary motion and the relationship of that to the star itself our knowledge is incomplete. Further, if we do not understand the causes of planetary motion we still do not understand stars and their significance. *N'est-il pas?*

A Rugged Exterior

So the physical is observable and the observable gives us knowledge. We know that the Categories help us to understand things and how they relate. We can understand the idea of primary and secondary substances as defining aspects of the thing (primary: human, secondary: male and female). We understand all these things, right?

Well, let us just move on anyway. Suffice it to say from all we understand that the thing itself (not just the individual instances) needs to be kept separate in understanding from the things which are part of it but are not necessarily the thing itself. That is to say, that while we are bi-pedal (which is a thing-in-itself) we cannot say human = bi-pedal. We do know that bi-pedal separates us from quad-pedal dogs even though we are both animals, and therefore defines us

in the animal genus as different from dogs. If you noticed, that little discussion used both the substance and the quantity Categories to discuss a thing or things. Rolling so far?

So physics deals with the things which we encounter every day, the things that surround us and make up our world. These are things which have meaning in and of themselves but they also help us to understand deeper patterns and concepts. Ultimately Aristotle has a sliding scale of reality that includes everything we can know from the physical world to intangibles, from matter without form on one end (think: the *ether*) to form without matter (think: ideas, similar to Plato's *Forms*) at the other. All of these things are observable and quantifiable in some sense even the theoretical ones. We know the sky exists because we see the stars move through it. We know ideas exist because we can think them. All of these things can be understood and not only understood but they allow us through their various properties to understand other things.

So to state it formally, things have four *defining features*: an *origin*, a *purpose*, a *matter*, and *defining characteristics*. A thing's origin is its *efficient* cause; a thing's purpose is its *final* cause (*telos*); a thing's matter is its *material* cause; a thing's defining characteristics are its *formal* cause.

Ch-Ch-Ch-Ch-Changes

Motion is basically *change* according to Aristotle. He postulates four types of motion: *substantive* (changing 'thing', particularly its beginning and its ending), *qualitative* (changing qualities), *quantitative* (increasing and decreasing it), and *locomotive* (changing its place). In addition the ideas of *potentiality* and *actuality* get thrown in for good measure. Recall back to our original discussion (kindly referenced as such) of motion and the idea of *something* or *nothing*. We know that Plato was in the *something* class (a *pluralist*) and Aristotle seems to follow in his footsteps. So, let us take a moment and examine the ramifications of motion. Until now some people argued that if the fact that there is motion implies that there is *something* and if motion stops, then logically the thing stops being *something* because the motion was part of what it was; ergo, no motion. Well we just cannot have that, can we? For our man, activity can be thought of as something even just being itself. Life is in an active state one might say. **Couch Potato Alert:** good news: you are what you are (aside from just being a slug) even at rest, because rest itself does not stop you from being what you are.

So when one asks a question or better, makes a statement like U2's Bono does in *Mysterious Ways*, that we should *see the boy inside the man*, is the man the same as the boy was or has the boy disappeared and stopped being and been replaced by the man? We can see that the *ideas* and *words used* are intricately linked. Change/Motion/Activity then is more than just a movement from here to there, i.e. of position but also *state*: bat to ball, boy to man, egg to chicken. This idea of remaining the same even in change relies on Aristotle's *substance* category we mentioned earlier. Static states rely upon and are the result of some activity of the thing. So, the primary substance defines the thing and secondary substance(s), which might be static, rise from that.

Mysterious Ways

So just what causes a boy to become a man? This is the final idea physics talks about. In what may once again seem a contrary notion to our modern ears, when Aristotle fixes something into its place, he leaves it there. Physics does not imply evolution because the individual thing

contains its definition *within* it. There would be no dinosaur-to-bird evolutionary movement because the bird would already have to be in the dinosaur (or better, be a *dinobird*); part of its *primary* substance or to put it better, due to *contraries* (remember that from the reading?) it would have to cease to be in order for the other to be (extinction aside).

Things do not really shift place because Aristotle believes in a hierarchical structure of nature. Some things are 'higher' than others. Humans over animals over sponges over rocks...you get the idea.

Again, remember way back when our discussion of movement and *something or nothing*? We can place Aristotle in the *something* camp. Aristotle rejects the idea of space being a void because empty space is simply impossible (there must be *something* by definition). In an Einsteinian move he links space, time, and motion together. Space is defined as the boundary of that which surrounds towards that which is surrounded, that is, there is a relationship between things defining their limits (we know when a tree stops being a tree and the bird on the branch starts being a bird). Time is defined as the *measure of motion* in regard to 'before' and 'after', and so depends for its very existence upon motion (queue *Twilight Zone* theme music).

Simply put, if there were no motion/change, there would be no time. This linking them together proves both. Since Time is the measuring of motion, it also depends for its existence on an intellect able to count (something must perceive it) and measure it. If there were no mind to count, there could be no time (hmm, sounds suspiciously like a Biology and Psychology segue).

...Don't Know Much Biology

And so it shall be. Everything has a place and everything in its place (in time that is). Aristotle provides in this groundwork the basis for the main idea for his physics: the study of the *hierarchy* of being. Also called the *scale* of being, it is a movement from simplicity to complexity, with the higher, more complex things being 'worth more' than the lower things (think rocks versus humans). Organizing things together into organisms is based on this idea of a rising scale. So the higher on the totem pole, the more 'valuable'; humans, *the animal that thinks*, which therefore possess a *rational soul*, are at the top.

Still, after all that Aristotle struggles with classification. He knows that a single difference is insufficient to distinguish things, yet he really does not give hard and fast rules for deciding which differences qualify. Again he turns to levels of general divisions and that (as we can still see today) is fairly sufficient.

Put simply, Biology is the classification of the world around us. We divide and understand things within this framework. In this sense there is a bit of *via negativa* here because ultimately we understand, via the logic rule of contraries, what we *are* by what we *are not*. For obvious reasons the definition of Body rests here and by extension the basic concepts of Being and not-Being also fall under this topic (people = being, rocks = !being so we do not study rocks in Biology) but not at the level that we will discuss in the next section.

As a single aside, he also appears to be the first to realize that there are sea mammals, i.e. that dolphins are mammals not fish.

A Heart Of Gold

If Biology is the classification of the world around us, Psychology is the classification of the world within us. The Soul rests here. The focus of this science is different than the study which will take place at other times. The focus here is strictly on the human. There really is not a psychology of non-humans (or rocks). The 'soul' within the contraries (i.e. not-humans) is of a different nature than that of humans, due to the complexity of the human organism and therefore its height on the totem pole. Living or life or the animating principle or the Soul (the Greek term *anima* is most often translated 'soul') is the principle which gives *internal* organization to the higher or organic items on the scale of being. That is to say, the *life-force* of any animate object is part of the level of the organism in the hierarchy.

Souls also fall into categories, and so into the hierarchy. In addition each level contains the attributes of the level below it. Starting at the bottom, plants are the lowest forms of life on the scale, and their souls contain a *nutritive* element by which it preserves itself. Animals are above plants on the scale, and their souls contain an *appetite* feature (not just hunger but as we see St. Paul use the word to mean *desires*) which allows them to have sensations, desires, and thus gives them the ability to move (*hmmmm Philosophy Action*: stroke chin pensively). Finally, at the top, the human soul shares the *nutritive* element with plants, and the *appetitive* element with animals, but also has a *rational* element. This rational element takes us to places plants and animals can never go.

For Aristotle, there really is no dichotomy between the body and the soul. They are distinctive but not separate. The soul is the animating principle of the body, and the organization of the body involves the soul. One cannot exist without the other.

Aristotle's (Meta) Physical Side

We know he likes kids and long walks along on the Mediterranean but what kind of puppies are his favorite? Okay, not the other side we had in mind. Aristotle's *Metaphysics* is about, as stated earlier, things that we would consider 'beyond the physical'. But I also have a confession to make. The original reason that it was called *Metaphysics* is that an early editor placed these lecture notes *after* the ones on *Physics*; hence he called them *meta-Physics*. Not as sexy, I know, so we will cling in ignorant bliss to our earlier understanding.

Still if we know an object, as Aristotle professed in *Physics* (Bk 1) by understanding its substance, the 'first principles', and its 'simplest elements' what can we know about the ineffable?

Accentuate The Positive

Oddly enough, the ineffable is not so ineffable. For Aristotle, the source of *cause* is the difference between the physical and the metaphysical. If physical things do not have their cause within themselves, then by Aristotle's logic rule of the contrary, there must be things which *do* have their cause within them and are not subject to change. In physics we study the thing through its substance/principles and its change/cause; in metaphysics we study causes and principles, which are knowable through a thing's *being*. Again, in an observable world, first principles and causes are knowable. As a note, things like mathematics studies objects that, although not subject to change are nevertheless not separate from matter.

Let us approach this muddled beginning from another angle by hopping on the *via positiva* line and ask “*What do we know?*” For Aristotle, *Knowledge* consists of two types of truth: *particular truths*, that we learn through experience and the *general truths* that come to us through art and science (observation). *Wisdom*, on the other hand, consists in understanding the most general truths of all, which are the *fundamental principles* and causes that govern *everything*. Remember, in Aristotle’s thought, Philosophy provides the deepest understanding not just of the world around us *but* of everything through pursuing the inborn sense of wonder and awe we feel toward reality. This is the innate drive toward good if you will, the only reason we even pursue knowledge. This is why *Metaphysics* is the *first* science/philosophy, because in his hierarchical world it is the ultimate one by which we even try to know anything.

So, as with all things according to Aristotle, we start with what we know and move to what we do not yet know, and that first thing is *cause*. This idea of cause is larger than just physical causes like bat to ball, and is focused on the idea of *being*. Similar to the four definitions discussed earlier there are four kinds of cause (or kinds of explanation for things, if you will): the *efficient* cause, which explains the process by which it came into being; the *material* cause, which explains what a thing is made of; the *formal* cause, which explains the form a thing assumes; and the *final* cause, which explains the end or purpose it serves (*teleology*). Aristotle acknowledges (dialectically) that Plato’s Theory of Forms gives a viable accounting of the formal cause (i.e. that they exist), but it fails to answer any of the other types or even to prove that Forms exist *and* to explain how objects in the physical world participate in said Forms.

From The Beginning

So Aristotle wants to understand not just the thing, but the relationships of the thing, as we in philosophical circles say: thing *qua* another thing (thing understood by other thing). Plato on the other hand would argue that knowing the Form is sufficient because there is no higher knowledge that will lead you to virtue. But Aristotle wants more; where is the connection? Where is the proof? The problem becomes one of *how to get there*. *Metaphysics* is the way, he tells us, because it concerns itself with the loftier thoughts and questions we have (wisdom, theology, and the like). Okay, all well and good but how do we begin to talk about them? Aristotle introduces us to the principle of *non-contradiction*. Think back to some of our earlier discussions. “...*the same attribute cannot at the same time belong and not belong to the same subject and in the same respect*” (*Metaphysics* 1005b19). Things cannot both be and not be within for defining of the subject they are part of at the same time. Anti-matter and Matter cannot both be present in the *essential* make-up (form/substance) of the universe (though to wander, both can be together as *secondary* substances).

This understanding is the most basic and integral known of all principles, that is the primary “truth”, and it is not just a hypothesis. It cannot, however, be proved, since it is used *implicitly* in all proofs, no matter what the subject matter – which would violate his rules of logic. It is what he calls a “*first principle*” because it is not derived from anything more basic.

In this way Aristotle performs a kind of George Jetson treadmill cry “*Jane, stop this crazy thing!*” saying that we have to start somewhere, or else we keep running into a *Chicken and the Egg* circular argument. This truth, of something not both having and not having an attribute is

therefore a foundational statement in our pursuit of truth, one we can and must, according to Aristotle, take for granted; I think he dares us to deny it.

If you have noticed, while we have returned to the idea of *Substance* we are also touching on the idea of the eternal, the *Prime Mover/Cause* or the *Unmoved Mover* as well. So, if you think about it theologically, *God* must exist because the idea of an infinite causal series is absurd, and thus there must be a first cause which is not itself caused.

Mind Games

Knowledge in and of itself then is different than wisdom. The eternal things, which we study here are only studied by humans; dogs and rocks do not care. Dogs may know to come when you call, but what is the *end* (telos) of that knowledge?¹ The same question applies to humans. We can understand how a clam is put together or that whales and dogs are mammals but what understanding do we gain from that?

Because we do have gain from thinking about things like God and ethics, humans are different than every other being in the universe. Our sense of wonder and awe causes us to ask the deeper questions, to seek something other than just the bare minimum level of existence. We desire more than just sustenance and, procreation.

Why is this so? What is it about our mind which sets us apart from the minds of animals? How do we come to know? Is the sensible world sufficient to tell us everything we know? I can know that a rock is a rock or a table because its sensible (observable) properties help me identify it as such but in addition, allow me to communicate that understanding; I can identify it to you by the mere action of pointing. We on the other hand are defined by something more, something ineffable, we are in a sense responsible for our own definition. We eat food, drink liquids but do not become those things. Unlike a wet rock the water we drink becomes part of us. Despite the changes we undergo physically, our true nature is eternal and unchangeable. So in terms of our last section, Metaphysics is the study of the One Substance (and its Properties) which exists and causes all things, and is therefore the necessary foundation for all human knowledge.

Knowledge of cause is the key. Those that know the first principles, i.e. acquire wisdom, are wise because they know the *why* of things, unlike those who only know *that* things are a certain way based on their memory and sensations. Thus Aristotle's ideas are very important, for within them are the clues to the solution of this most profound of all problems, "*what exists?*", and thus what it means to be 'human'.

Soul Man

Aristotle was a true soul man, minus the hat, soul patch, and dark sun glasses. He tells us that while metaphysics is the first science, the study of the soul is the top of the top, the *primary* first science. The soul is the reason for the body. Sure, he says, we look at it in Psychology, because it is so bound to the body, but its realm of study of its nature is here (in actuality, and by way of full disclosure, it actually is not in *Metaphysics* but is instead in the work devoted solely to it, *De Anima*, but we tend to think of it as a major metaphysical subject so I lump it here). **Caution** –

¹ I do not know about your pet but for my dog, it is food.

Big Words Ahead: Substance (that which makes a thing that thing) and essence (the actuality of the thing) become closely identified in Aristotle's thought. Being, and the animating force which powers it, in this case is still called substance but is more like *be-ing*. What he is really saying is that in the category of substance, regardless of the study (physics or metaphysics), *the thing is what the thing is* (thing qua being). The Soul defines the Body and asking if they are separate is as, Aristotle says, like asking "*whether the wax and the shape given it by the stamp are one...*" However, the soul does survive the body, at least *parts of it* do.

As to how and where, well there is some discussion on that. This work is looking at the philosophical language of theology and so this author falls into the camp that it is in relationship to the Prime Mover (God). As some of our earlier discussions (and some of Aristotle's later ones) it is something from which we are separate (else by definition, we would be that thing) and yet we participate within it via our soul, our mind and wisdom. Sounds like God to me.

Being There

For a moment let us wander through this thought garden. From the basic understanding of categories and substance we arrive at the understanding or wisdom which helps us to understand ourselves in terms of two things: the *observable substances* and the *principle substances*. These two boundaries (in the simplest of terms) help us to understand our *being*. That is to say that our ability to distinguish one thing from another and the fact that things have something which helps us to identify them as things similar yet separate from one another help give us the idea that there must be something like 'being'. Still simplicity is apparently not in his vocabulary, and so there are many forms of being and Aristotle explores them. So, similarly, because being and substance are so closely related for Aristotle, an ability to separate things and 'this-ness' are also fundamental to our concept of *substance*. Our individuality relies on these concepts. Along these lines Aristotle distinguishes within the human mind the *active* and *passive* intellects in a way similar to the idea that there is kinetic and potential energy. Aristotle says that the passive intellect receives the intelligible forms of things, but that the active intellect is required to make the *potential knowledge* into *actual knowledge*, in the same way that colors always exist but it takes light to make those 'potential' colors into 'actual' colors.

Because there could be objections to this teachings, Aristotle embarks on an exploration of the idea *Potentiality* verses *Actuality* or you might say Actual (visible) to Potential (unseen). These are part and parcel of the fundamental questions about how we know something *is* something, of potential possible and potential probable. Will a rock always remain a rock? Is a boy a man? Does God or the gods exist? Are there hidden and plain natures?

Substance is potential; Being is an action. Hence our words for life are active. Ah, but could you not argue though that someone sleeping is not truly alive? Do the things which define and explain a thing all have to be present *and* active in order for the thing to be the thing? This is where the singular view of Aristotle must be kept in mind. Nothing can be pigeon-holed, except that a pigeon-hole is part of a cote. Though we categorize we categorize to separate for understanding, not for isolation; everything is in relation to everything else. What we see are recognizable patterns.

We derive such terms as kinetic energy from the Greek word Aristotle uses to define cause within the thing (*kinêsis*). Cause within the thing is probably best re-worded as the ability within

the thing to change. We even tend to think of it that way. For instance a yo-yo has potential or kinetic energy stored within it and we attribute its return up the string to that internal force. Of course, we also use the other word he uses for actuality – *energeia*. *So if irony were not dead then the term kinetic energy could be used to describe the whole of Aristotle’s thought on the subject.*

Actuality is to potentiality, Aristotle tells us, as “*someone waking is to someone sleeping, as someone seeing is to a sighted person with his eyes closed, as that which has been shaped out of some matter is to the matter from which it has been shaped*”. (*Metaphysics* 1048b) Great, but what does this mean? Ultimately and for our purposes, it means that the thing remains itself regardless of the state it finds itself. This is true of the ineffable as much as it is of the observed.

Putting It Together

Metaphysics was the *First Philosophy* to Aristotle but unlike Plato he recognized it was not the only one. The physical had its understanding within the metaphysical, because it is understood by the Soul first. Only by understanding these physical things first could we come to understand the world around us and our place within it. Still, in opposition to Plato, you did not have to leave the world to understand its forms and to be led to an understanding of the metaphysical. There was no need to posit a Form when every instance of everything has within it its *form*, its *motion* and its *cause*.

Relationships are what Aristotle is talking about. Everything is in relationship to something else, whether it be in time, space or complexity. But even the complex things are based on the simpler things and it is the relationship of those simpler things in the complex which help us to understand complex systems. Certainly we categorize and organize things based on traits but that does not mean they are not dependent on each other, or in any way separate. The reason to make distinct species or distinguish between things is to enable the understanding of all things and ultimately ourselves; eventually this will be the basis for the idea of evolution.

There is a great struggle within this section. Besides the obvious struggle to put complex works and ideas into some order, there is the challenge to follow Aristotle down some roads we may or may not be willing to take. For Aristotle, *Metaphysics* is the ultimate goal of thought and learning. With echoes of Plato ringing in our heads, knowledge in and of itself has only wisdom as its end and is not an end in itself. This really flies in the face of modern scholarship and the scientific pursuit of knowledge. That we have to ask ourselves “just because we can do something should we?” is not something Aristotle would have ever asked himself; knowledge had only one end – wisdom.

Aristotle knew that Physical Science is not the final answer. To reduce human thought and spirit down to a couple of electrodes and hormones/chemical reactions really does injustice to the human which is only slightly beneath the unmoved mover at the top of the being chain. The whole is not just the sum of its parts, though without those parts one would not be what one is. How do we understand/come to understand the distinctions which make us human and individuals? And past that, where do we fit in the larger universe of being?

There are also many ramifications of this question and its answer which we will cover in the next and final installment of the Aristotle series. For now, know that there are many approaches to Aristotle and many aspects of his thought which overlap and the ability to easily and chaotically

shift from one subject to another is ably demonstrated here by this humble author. Reading his works in order may be the best route, but the *Metaphysics* can be daunting because of the sometimes disjointed nature of the notes, most probably redacted together into the one work. Still, it is a good place to see the overlap of Aristotle's thought and how one aspect relies on another.

PHILOSOPHICAL MOMENT:

1. Do Aristotle's idea of *Substance* and Leibniz's idea of *Identity of Indiscernibles* (from *Chapter 1*) correlate?
2. "*The first philosophy (Metaphysics) is universal and is exclusively concerned with primary substance. ... And here we will have the science to study that which is just as that which is, both in its essence and in the properties which, just as a thing that is, it has. The entire preoccupation of the physicist is with things that contain within themselves a principle of movement and rest. And to seek for this is to seek for the second kind of principle, that from which comes the beginning of the change*". (Aristotle) What is he trying to say? Is this a good summary of *Metaphysics*?